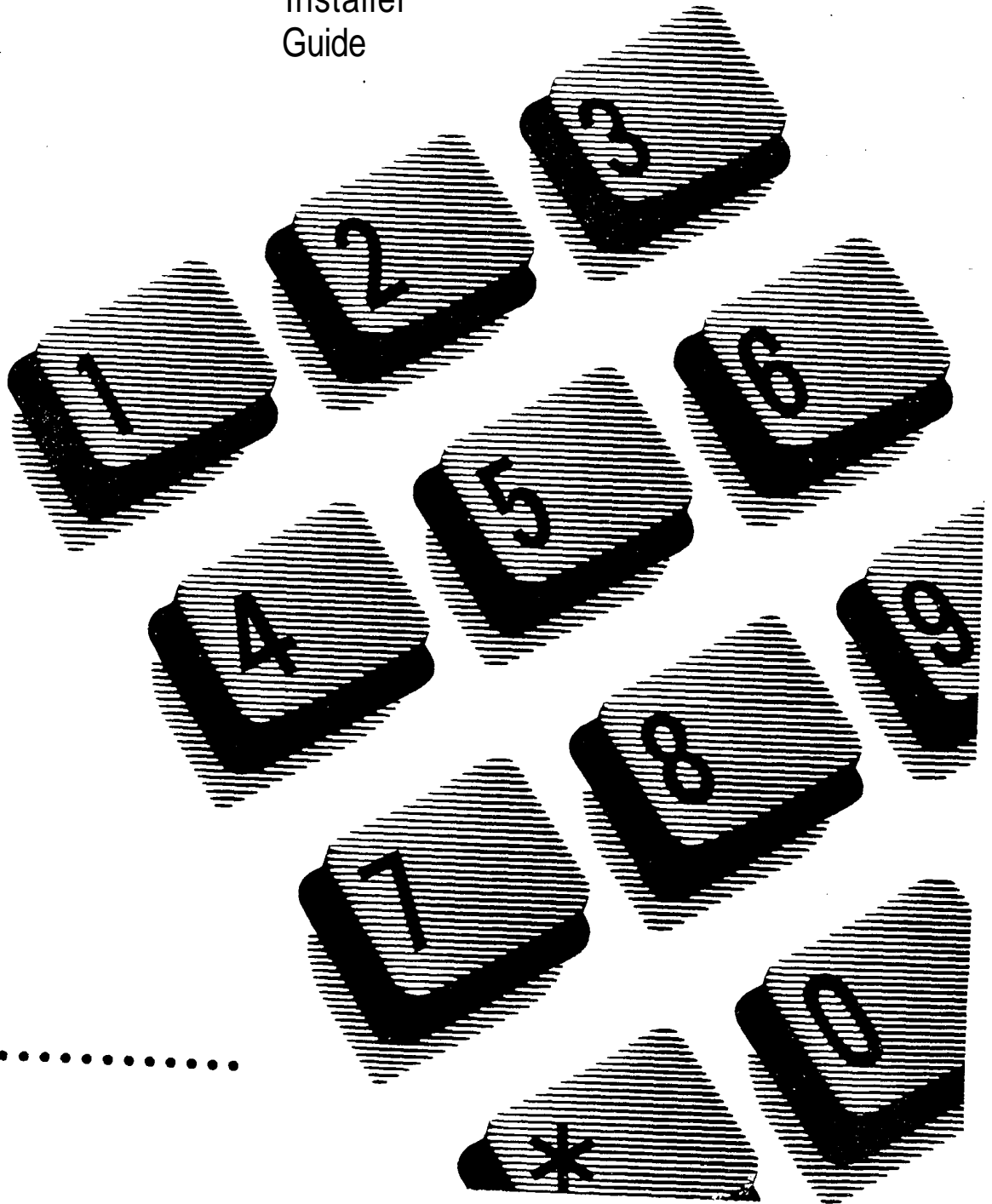




*norstar*

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Modular DR4  
Installer  
Guide



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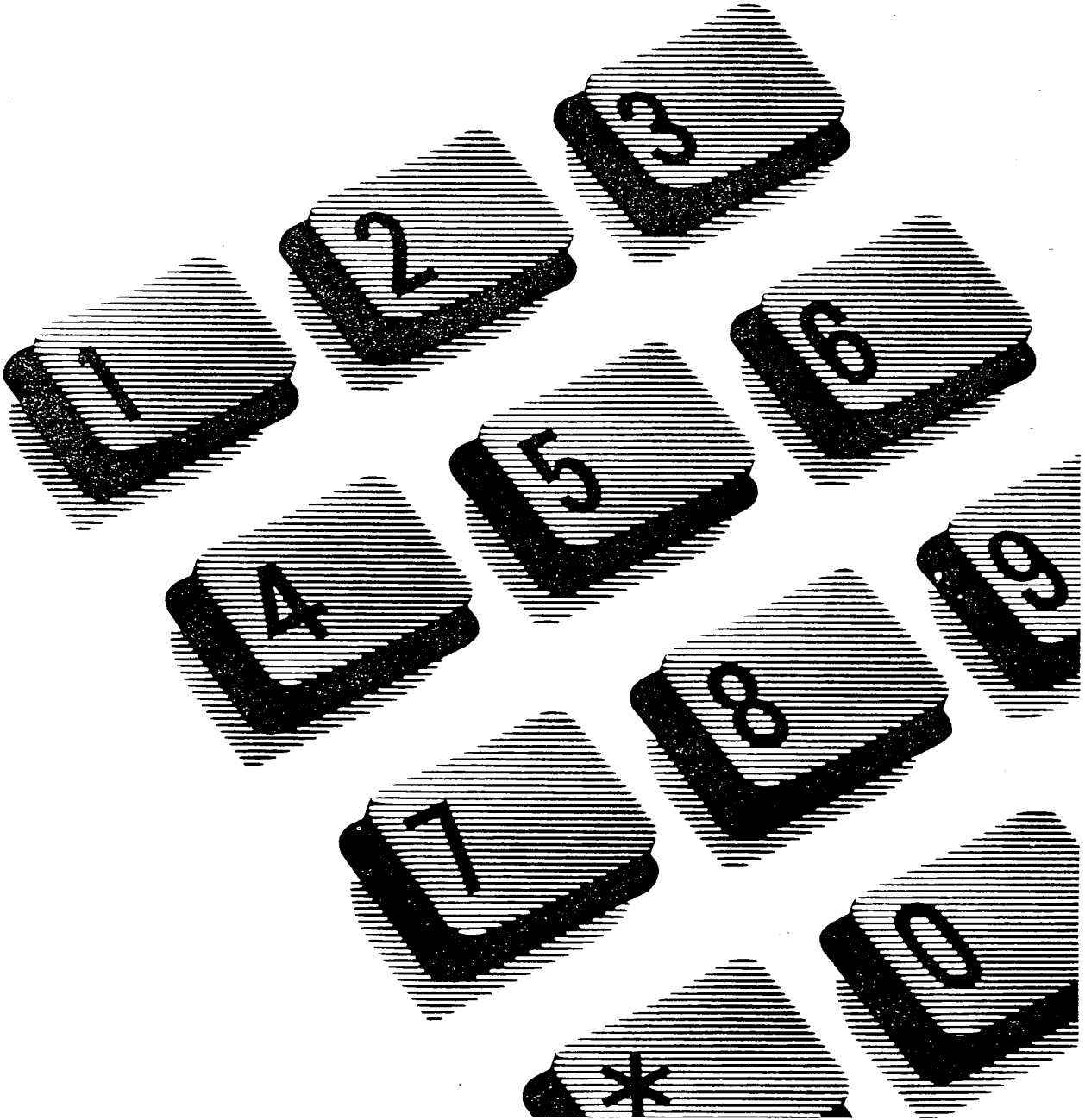
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# Planning a network with **Norstar**

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# What's new about Norstar?

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Norstar Modular Design Release 4 can now be part of your corporate telecommunications network. You can connect Norstar to your existing private network, or to other Norstar systems to form a Norstar network.

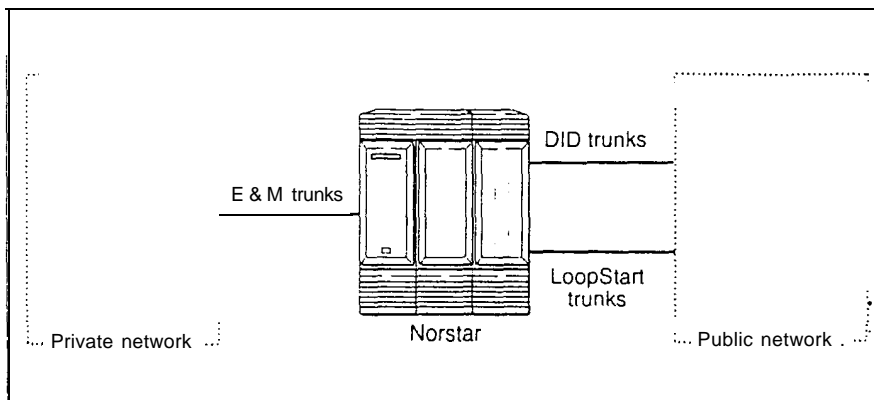
As a Network Manager, you understand your corporate network, but you want to know how Norstar can add to your network. This chapter will explain:

- how Norstar components behave in a network,
- how they benefit your business, and
- how you can configure Norstar to achieve those benefits.

This chapter will not teach you about telecommunications networks, and it will not teach you about Norstar in general. If you want to know more about Norstar, see the other chapters in the *Norstar Modular DR4 Installer Guide*.

\*

## The Big Picture



Norstar Modular is a digital key system that uses enhanced trunking abilities to broaden network access. Where a company once had to rely on the public network to access a small branch office, it can now reach the small office through the corporate network.

A series of Norstar systems can be linked together to extend the communications reach of a business. Authorized users can also access tie-lines, Central Office lines, and Norstar features from-outside the Norstar system.

### Bits and pieces

The components that make network access possible are the trunks and lines that Norstar uses. Target lines concentrate incoming calls on fewer trunks, and three types of trunks provide the network access:

- E&M trunks handle incoming and outgoing traffic between the Norstar system and the private network.
- DID trunks route incoming calls from the public network directly to telephones within the Norstar system, without an attendant.
- Loop Start trunks handle incoming and outgoing calls between Norstar and the public network.



## Benefits

### Security

Norstar provides the security that expanded access demands:

- Control remote access to tie-lines, Central Office lines, and system features by setting up a specific Class of Service for each type of caller.
- Restrict outgoing calls to certain telephone numbers or area codes by applying dialing filters to lines and telephones.
- Screen remote callers by configuring trunks to answer with DISA, a system response that requires callers to enter a valid password.

### Unified dialing plan

When you link a number of Norstar systems into a network, you can configure them so that the length of Directory Numbers (DNs), the line pools, and the Line Pool access codes are consistent from one system to the next.

### Call handling capabilities

In the Norstar system, the concentrated environment supports call handling features on up to 184 lines, of which 80 are physical trunks and 104 are target (virtual) lines.

## Customer use

Callers in the public network can:

- call directly to one or more Norstar telephones.
- call into the Norstar system and select outgoing tie lines to access the private network.
- call into the Norstar system and select outgoing Central Office lines to access the public network.
- call into the Norstar system and use remote features.

Callers in the private network can:

- call directly to one or more Norstar telephones.
- call into the Norstar system and select outgoing tie lines to access other nodes in the private network.
- call into the Norstar system and select outgoing Central Office lines to access the public network.
- call into the Norstar system and use remote features..

Callers in the Norstar system can:

- call directly to a specific Norstar telephone:
- select outgoing tie lines to access the private network.
- select outgoing tie lines to access features that are available on the private network.
- select outgoing Central Office lines to access the public network.
- use all of the Norstar features, including two new ones: Line Redirection and Unsupervised Conference with two external parties.

---

# Bits and pieces

---

To understand the capabilities that are described later in this chapter, you need to know how the trunks and lines behave in the Norstar Modular system.

A trunk is a physical connection between the Norstar system and the outside world. A line is a flexible communication path between a Norstar user and the outside world. This allows a one-to-many relationship between trunks and lines.

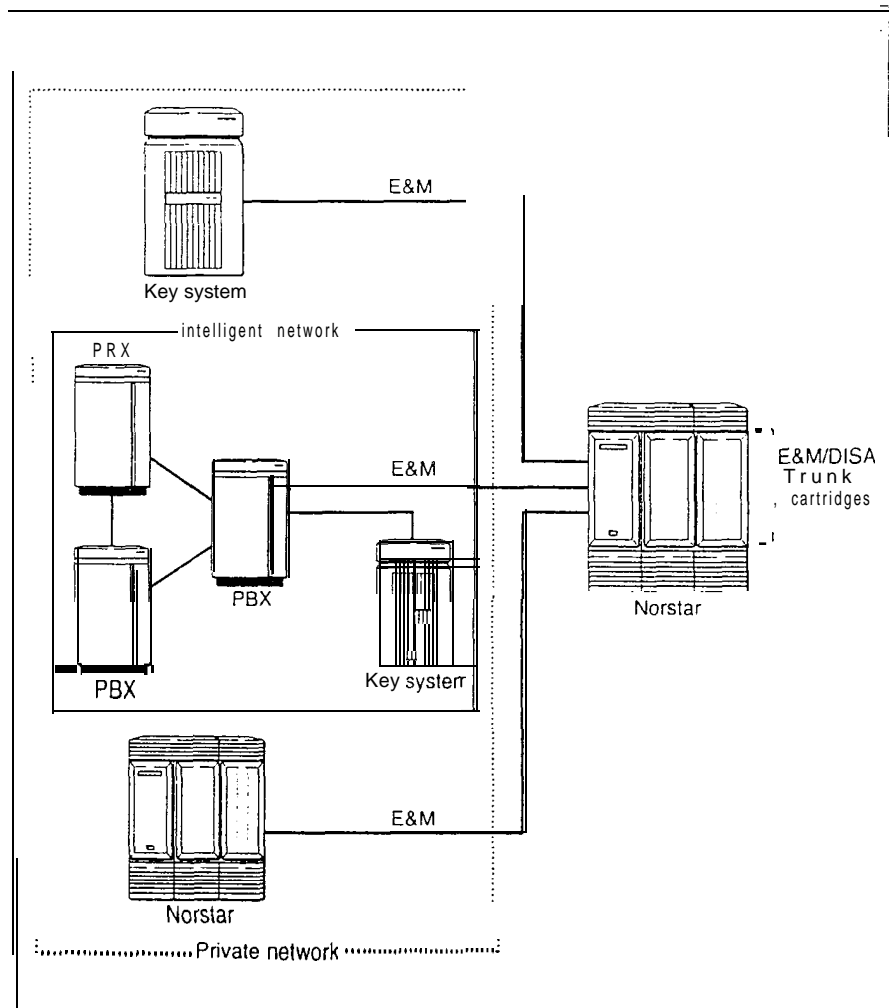
What this means is that one trunk does not have to represent one line, but can represent several lines. You achieve this in two ways:

1. **Auto-answer trunks** – If you want one trunk to serve many lines, you configure it as Auto-answer. The Norstar system answers calls and maps incoming digits onto numbers that you define in programming. The numbers can access the system, so that callers can then use selected features or call out to another destination (calling through the system). The numbers can also access target lines that appear on one or more Norstar telephones. Target lines are the subject of the next paragraph.
2. **Target lines** – incoming calls on one trunk can map onto a number of different target lines. These are virtual lines that can appear on a Norstar telephone like any other line. They are incoming lines only, and can not be selected for outgoing calls. They are identified to the system by their number. Any line with a number from 081 to 184 is a target line.

Of course, you can still have a one-to-one relationship between a trunk and a line. In this case, you configure the trunk as manual-answer.

You can read more on target lines in the Configuration chapter of the *Nor-star Modular DR4 Installer Guide*. To learn more about the types of trunks and the important differences between auto-answer and manual-answer trunks, read on.

## E&M Trunks



An E&M trunk gives incoming and outgoing tie-line access from other systems in the private network to the Norstar system. E&M trunks can be configured as manual-answer or auto-answer.

When a call comes in on a manual-answer E&M trunk, it alerts at all telephones with that line appearance.

When a call comes in on an auto-answer E&M trunk, the Norstar system responds:

- If the trunk is configured to answer with DISA, the caller hears stuttered dial tone. The caller must then use a DTMF telephone to enter a 6-digit Class of Service (COS) password.
- If the trunk does not have DISA, or if the password is valid, the caller hears system dial tone. The caller can then use a DTMF telephone to enter a target line number, the DISA DN (the number that will call for a COS password), a Line Pool access code, or a remote feature code.

When a call comes in on an auto-answer E&M trunk from an intelligent network, the Norstar system answers the call and interprets the incoming digits:

- If the digits map onto a target line, Norstar routes the call to all Norstar devices with an appearance of that line.
- If the digits map onto the DISA DN, the caller hears stuttered dial tone, after which the caller must use a DTMF telephone to enter a valid Class of Service password to get system dial tone.
- If the digits map onto the Auto DN (the number for direct system access), the caller hears system dial tone, after which the caller can use a DTMF telephone to enter a target line number, the DISA DN, a Line Pool access code, or a remote feature code.

To place an outgoing call, a Norstar caller selects an E&M trunk by dialing a Line Pool access code or by pressing a line button on the telephone or by pressing a memory button which has been programmed with a Line Pool access code.

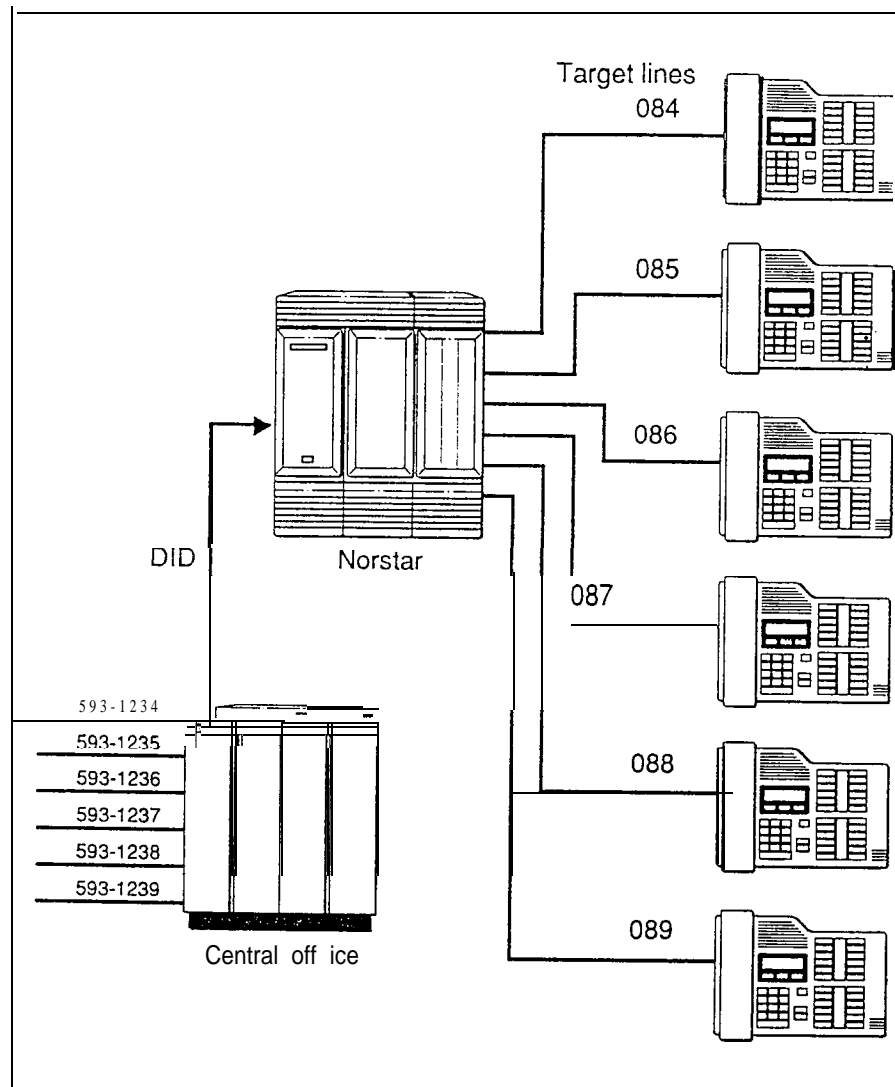
## Configuration requirements

In your configuration, you need one E&M/DISA Trunk Cartridge for every:

- 2 E&M trunks.
- 2 DTMF receivers that you require for DISA on Loop Start trunks.

You may configure an E&M trunk as the prime line for a Norstar telephone.

## DID Trunks



DID trunks give you direct inward dialing (DID) from the public network to the Norstar system. A typical application of these trunks is to map incoming digits onto target line appearances within the Norstar system. DID trunks can operate only as auto-answer trunks.



When a call comes in on a DID trunk, Norstar interprets the incoming digits:

- If the digits map onto a target line, Norstar routes the call to all Norstar devices with an appearance of that line.
- If the digits map onto the DISA DN, the caller hears stuttered dial tone, after which the caller must use a DTMF telephone to enter a valid Class of Service password to get system dial tone.
- If the digits map onto the Auto DN, or if the COS password is valid, the caller hears system dial tone. The caller can then use a DTMF telephone to enter a target line number, a Line Pool access code, or a remote feature code.

## Configuration requirements

You need one DID trunk cartridge for every four DID trunks. Each DID Trunk Cartridge has four DID trunks and four DTMF receivers dedicated to those trunks.

You can not configure a DID trunk as the prime line for a Norstar telephone.

## Loop Start Trunks

Loop Start trunks give you incoming and outgoing access to the public network. However, you would typically configure your system with Loop Start trunks for outgoing calls and DID trunks for incoming calls. Loop Start trunks can be configured as manual-answer or auto-answer.

When a call comes in on a manual-answer Loop start trunk, it alerts at all telephones with that line appearance.

When a call comes in on an auto-answer Loop start trunk, Norstar responds:

- if the trunk is configured to answer with DISA, the caller hears stuttered dial tone. The caller must then use a DTMF telephone to enter a 6-digit Class of Service (COS) password.
- if the trunk does not have DISA, or if the COS password is valid, the caller hears system dial tone. The caller can then use a DTMF telephone to enter a target line number, the DISA DN, a Line Pool access code, or a remote feature code.

To place an outgoing call, a Norstar caller selects a Loop Start line by dialing a Line Pool access code or by pressing a line button on the telephone or by pressing a memory button which has been programmed with a Line Pool access code.

## Configuration requirements

You need one Loop Start Trunk Cartridge for every four trunks beyond the eight that come with the Key Service Unit.

If you wish to configure your Loop Start lines as auto-answer, the lines must have disconnect supervision. You will also need one E&M/DISA Trunk Cartridge for every two Loop Start lines that you configure as auto-answer.

Note that an auto-answer Loop Start trunk can give you the same kind of direct inward dialing function as a DID trunk, but you will require E&M/DISA Trunk Cartridges (as mentioned in the previous paragraph) to receive the incoming digits from the Central Office.

You may configure a Loop Start line as the prime line for a Norstar telephone.

•

# Benefits

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## Security

In the Capabilities section of Administration programming, there are several ways of protecting your Norstar system from unauthorized access.

### Class of Service

Class of Service (COS) refers to the capabilities that Norstar provides to users who access the system from the public or private network. The Class of Service includes:

- filters that restrict dialing on the line.
- an access package, which defines the set of line pools that may be accessed and whether or not the user has access to the paging feature.

The Class of Service that is applied to an incoming remote-access call is determined by:

- the filters that you apply to the incoming trunk, or by
- the COS password that the caller used to gain access to the Norstar system.

In cases where DISA is not applied to incoming calls, the remote caller can change the Class of Service by dialing the DISA DN and entering a COS password.

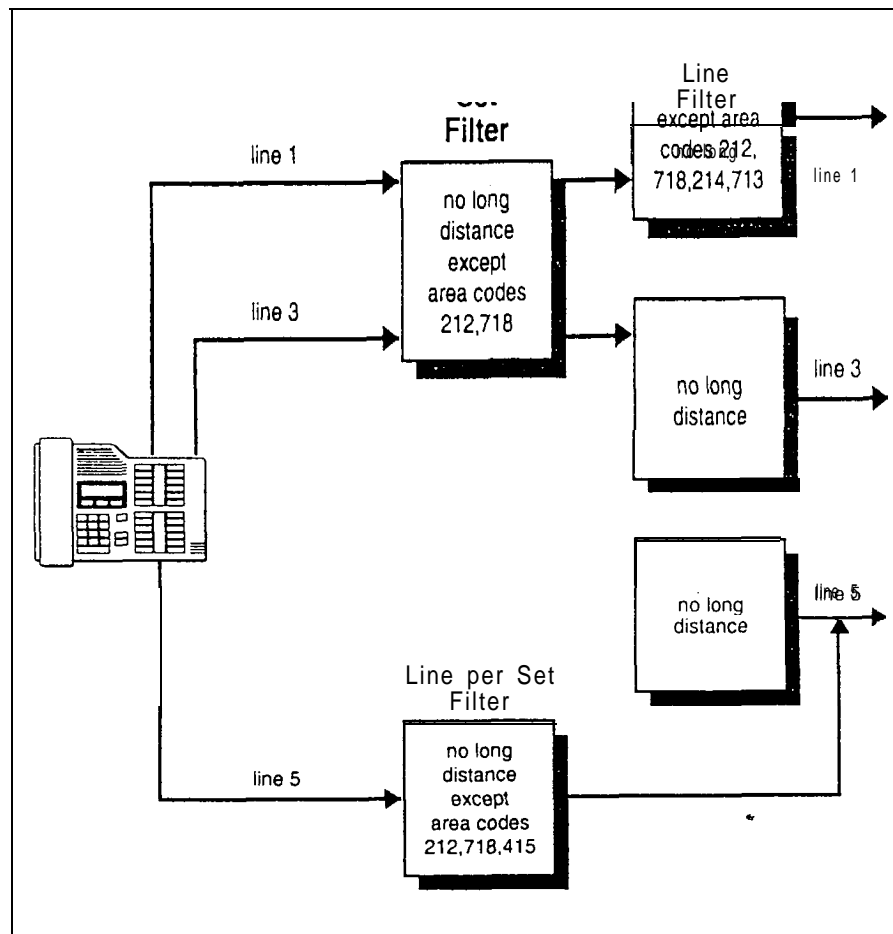
To program COS passwords, see Capabilities in the Administration chapter of the *Norstar Modular DR4 Installer Guide*.

## Dialing filters

You can use dialing filters to restrict the numbers that may be dialed on any external line within your Norstar system. You may specify up to 100 dialing filters for the system. A dialing filter consists of up to 48 restrictions and their associated exceptions.

### Dialing within the system

To restrict dialing within the system, you can apply dialing filters to outgoing external lines (as line filters), to telephones (as set filters), and to external lines on specific telephones (as line per set filters).



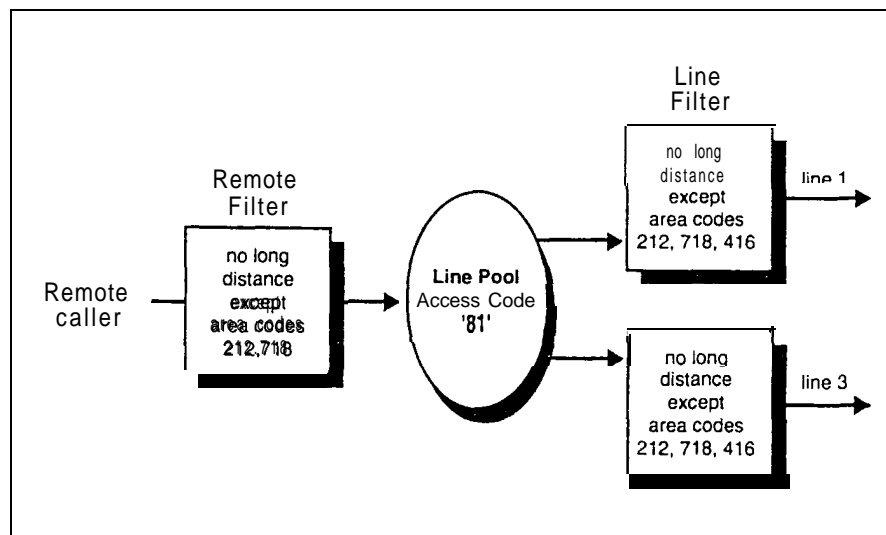
Dialed digits must pass both the line filter and the set filter. The line per set filter overrides the line filter and set filter.

In the diagram on the previous page, a caller using line 1 could not dial any long-distance number except to area codes 212 and 718. A caller using line 3 could not dial any long-distance number. A caller using line 5 could dial long-distance numbers to area codes 212, 718, and 415.

Note: Set filters have no effect on the numbers that are dialed out on an E&M trunk.

### Dialing outside the system

To restrict dialing outside the system (once a caller gains remote access), you can apply dialing filters to incoming external lines (as remote filters).



Dialed digits in this case must pass both the remote filter and the line filter. A remote caller can override these filters by dialing the DISA DN and entering a Class of Service password.

For programming instructions, see the Administration chapter of the *Norstar Modular DR4 Installer Guide*.

## Direct inward system access (DISA)

To control access from the public or private network, you can configure auto-answer trunks to answer with DISA. Remote callers hear stuttered dial tone and must then enter a Class of Service password that determines what they are allowed to do in the system.

Auto-answer Loop Start and E&M trunks are configured to answer with DISA by default.

*Note:* You must have one E&M/DISA Trunk Cartridge for every two auto-answer Loop Start trunks.

DID trunks can not be configured to answer with DISA. If you want incoming DID calls to be answered with DISA, configure the system with a DISA DN. Incoming DID calls that map onto the DISA DN will then be routed to a line that has DISA.

For programming instructions, see the Configuration chapter of the *Norstar Modular DR4 Installer Guide*.

## Unified dialing plan

The Norstar system does not support a coordinated dialing plan for other systems in the network. However, if you are configuring more than one Norstar system in your network, you can make access between the systems much easier with a unified dialing plan.

## Directory Numbers

Make sure that the length of your DNs is the same for all the Norstar systems.

## Line pools

If the Norstar systems are close to each other geographically, you can conserve resources by not duplicating access. For example, system A has a line pool to New York, System B has a line pool to Los Angeles, and system C has a line pool to Dallas. A Norstar user in system A calls system C to get the line pool to Dallas.

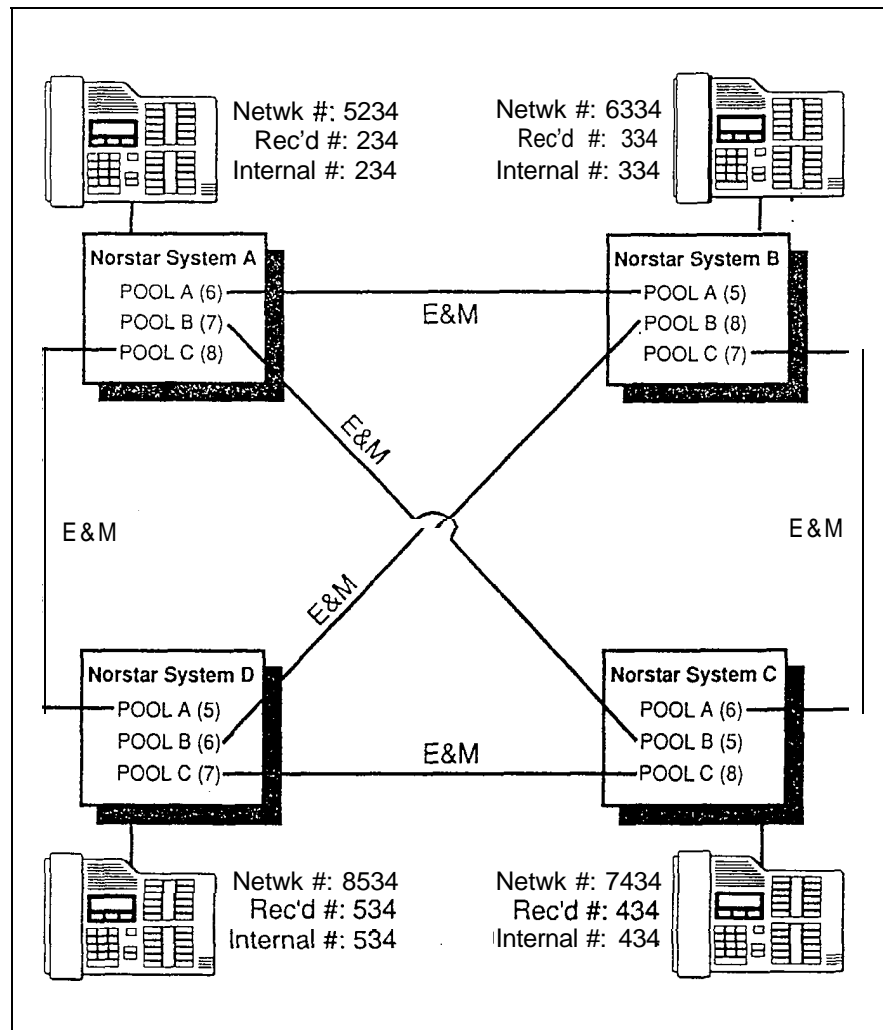
## Line Pool access codes

To simplify access between Norstar systems, all line pools that go to the same destination should have the same Line Pool access code. For example, system A and system B both have a line pool to Nashville. You can configure both systems with the same Line Pool access code for the Nashville line pool.



## Unified dialing plan among four systems

A dialing plan similar to the one below will let you to create a company directory that includes the line pool access codes.



For instance, the person on System A at telephone 234 can select an intercom button and dial 7434.

This means that telephone 234 has dialed the line pool access code of the trunk to System C, and will receive the dial tone of System C. The digits 434 then map to the Received number 434, and ring telephone 434 with an appearance of the associated target line.

## Call handling capabilities

The addition of target lines to the Norstar Modular system means that call coverage is extended. All call handling features that apply to regular lines also apply to target lines.

Here are some brief descriptions of features that apply to any line appearance on a Norstar telephone. For complete information on these features, see the Telephone features chapter of the *Norstar Modular DR4 Installer Guide*.

### Auxiliary Ringing

If the Norstar system has an auxiliary ringer (a bell that is not part of a telephone), the target line can be administered so that the auxiliary ringer alerts in addition to the telephone ringer.

### Callback

When an external call on a target line is transferred to a busy telephone or not answered after a few rings, the call automatically rings at the prime telephone for that line. The display shows that the telephone was busy or that the call was not answered.

### Camp on

Even when a telephone is busy, a call on a target line can be routed to the telephone, where it waits in a queue until the telephone is not busy.

### Delayed Ring Transfer

Target line calls that go unanswered after a specified number of rings can be routed to the prime telephone if programmed to do so in Configuration.

## Held Line Reminder

When a target line call is placed on hold, the telephone gives two reminder tones at periodic intervals until the call is taken off hold. This happens only if Held reminder is activated during Configuration programming.

## Overflow Call Routing

If a call comes in for a target line that is busy, Norstar routes the call to the prime telephone for that target line. If you don't assign a prime telephone for the target line or if a call can not be mapped onto a target line, the call will go to the prime telephone for the incoming trunk.

## Prime Telephone Call Capture features

See the *Prime Telephone User Card* for details.

## Privacy

When a Norstar user is on an external call and the Privacy feature is turned on, no other Norstar telephone with the same target line can join in on the call. If Privacy is turned off, another person with the same line can press the line button to join in your conversation, forming a conference.

## Service Modes

When there are fewer people available to answer calls during lunch hours, nights, or weekends, you can administer the system so that target line calls ring at certain telephones.

# Customer Use

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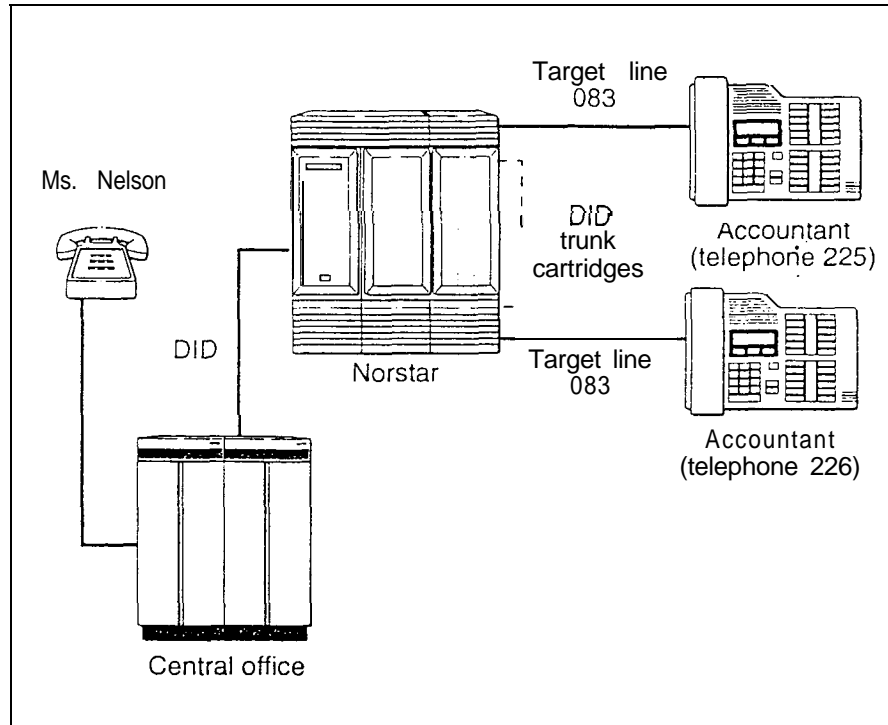
This section shows you sample configurations for the different types of network access. Each example has four parts:

- A diagram shows the route that a call follows from beginning to end.
- A scenario explains the caller's goal and the actions needed to accomplish it.
- A list shows the Norstar hardware required to support the configuration.
- A table shows the programming settings in Configuration and Administration. Only those settings that are important to network access are described here.

In many cases, there are several ways to configure your Norstar system for a particular type of network access. The examples show the more typical configurations.

## In the public network

Call one or more **Norstar** telephones



Ms. Nelson is a bank customer who has a question for an accountant. She dials the telephone number that maps onto target line 083. All of the accountants' telephones ring.

Hardware : any version of KSU, 1 Trunk Module, 1 DID Trunk Cartridge.

Program heading

Setting

1. Trk/Line Data

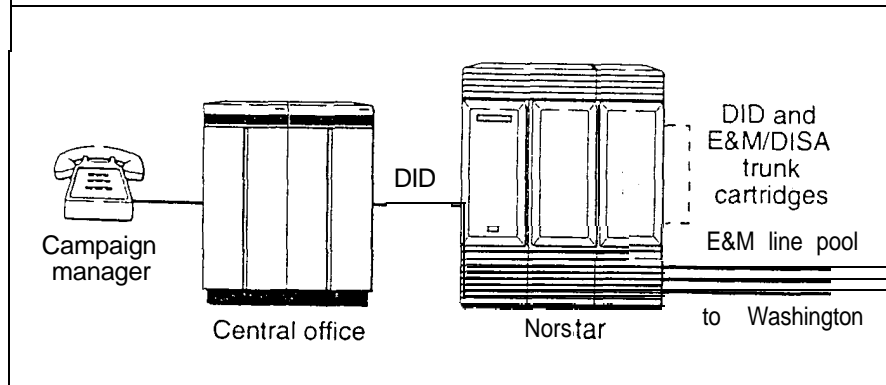
Rec'd #:4321  
(for Line083)

Line009:DID

5. System Data

Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)

## Call Norstar and select tie lines to the private network

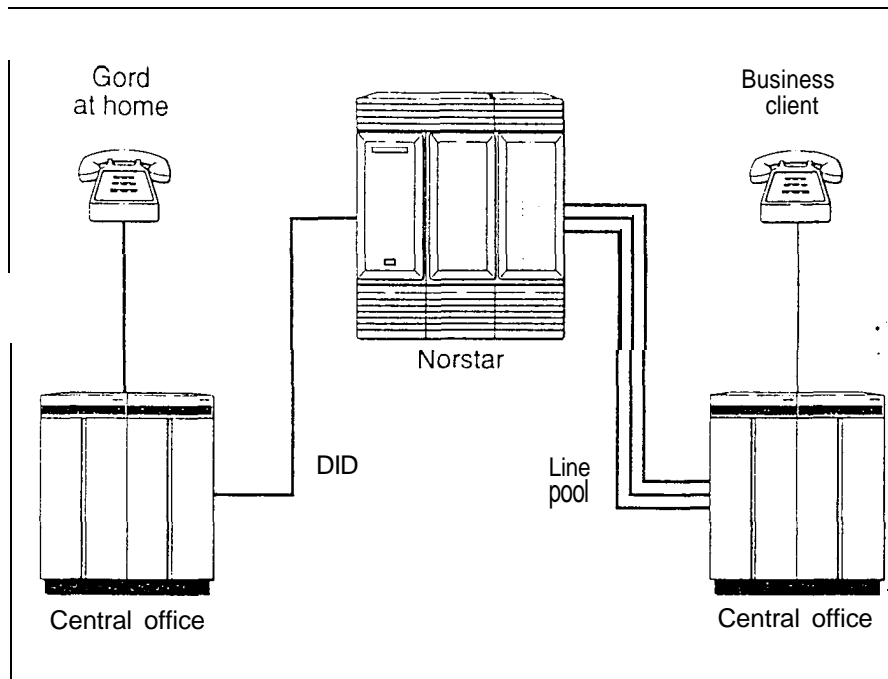


A campaign manager in Georgia wants to use the tie lines at headquarters to call Washington. The manager dials a telephone number that maps onto the DISA DN, enters a Class of Service (COS) password, then dials a Line Pool access code to select a tie line to Washington.

Hardware : any version of KSU, 1 Trunk Module, 1 DID Trunk Cartridge, 2 E&M/DISA Trunk Cartridges (for the three trunks in the line pool to Washington)

Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line009:DID
4. Miscellaneous	DISA DN:5321
5. System Data	Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)
Outgoing trunk:	
1. Trk/Line Data	Line01 3:E&M Line type:Pool F
4. Miscellaneous	Line pool F:6 (up to 4 digits)
5. Capabilities	
Dialing filters	Define filters.
Rem access pkgs	Define remote access pkgs.
Line filters	Assign a dialing filter to the line.
COS passwords	Assign passwords and filters for each class of service.

## Call Norstar and select lines to the public network



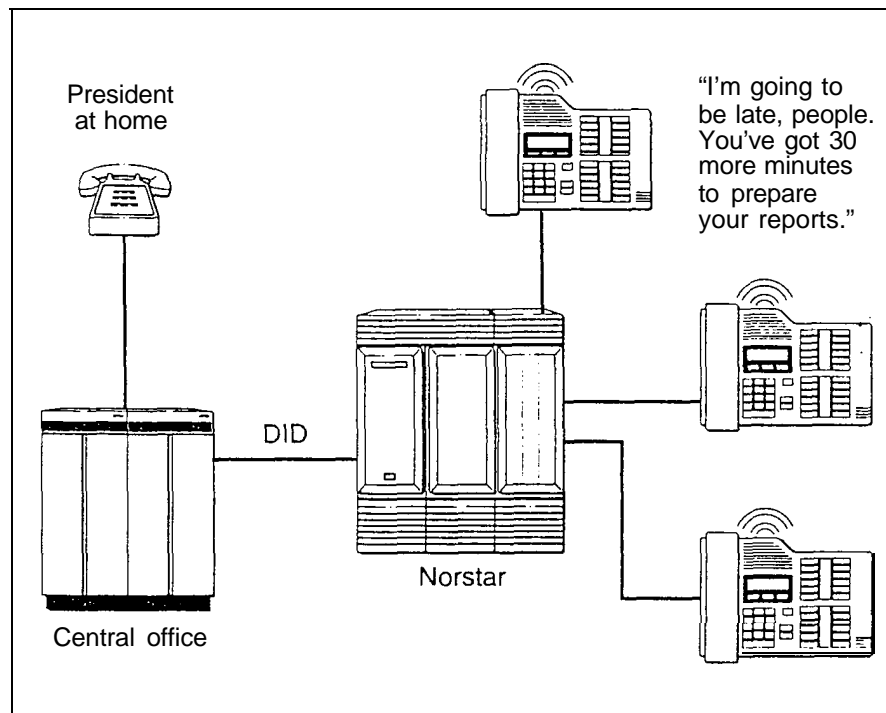
Gord wants to make a long-distance business call from home. To avoid being charged, he dials the telephone number that maps onto the Auto DN at work. After hearing dial tone, Gord dials a Line Pool access code to select a line to the public network. He then dials the long-distance number.

Hardware : any version of KSU, 1 Trunk Module, 1 DID Trunk Cartridge



Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line009:DID
4. Miscellaneous	Auto DN:4321
5. System Data	Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)
5. Capabilities	
Dialing filters	Define dialing filters.
Rem access pkgs	Define remote access pkgs.
Line abilities	Assign a remote filter and remote pkg to the line.
Outgoing trunk:	
1. Trk/Line Data	Line001 :Loop Line type:Pool A
4. Miscellaneous	Line pool A:1234
5. Capabilities	
Line filter	Assign a dialing filter to the line.

## Call Norstar and use the paging feature



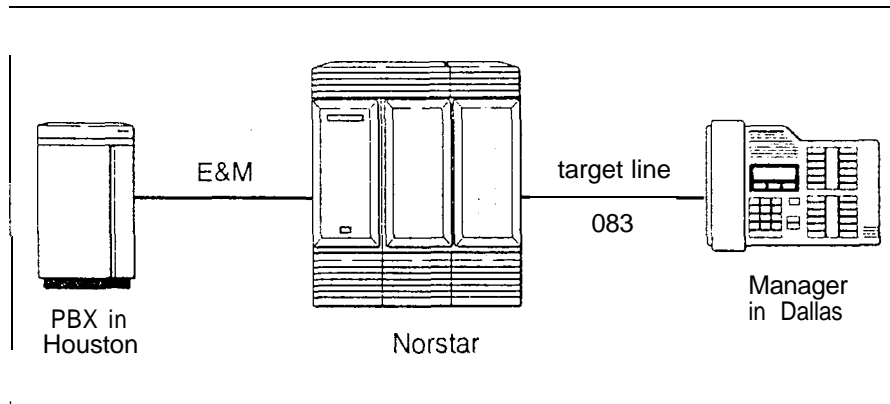
The company president is going to be late for a meeting at the office. The president dials the number that maps onto the Auto DN, dials the paging feature code, selects a page zone, and makes an announcement.

Hardware : any version of KSU, 1 Trunk Module, 1 DID Trunk Cartridge

Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line009:DID
4. Miscellaneous	Auto DN:4321
5. System Data	Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)
5. Capabilities	
Rem access pkgs	Define remote access pkgs.
Line abilities	Assign a remote pkg to the trunk.

## In the private network

Call one or more **Norstar** telephones



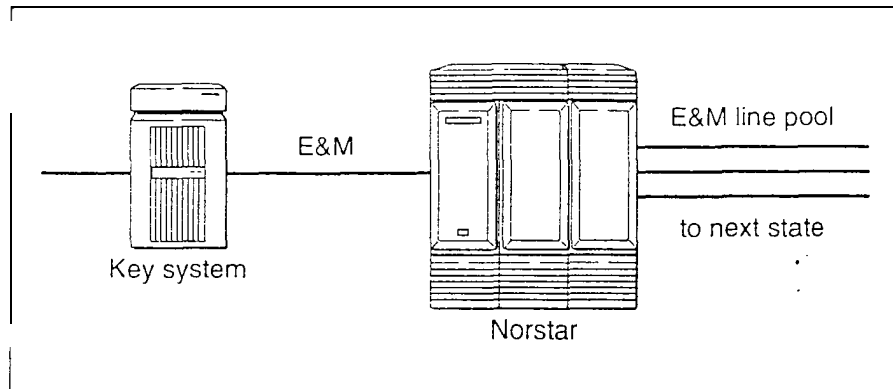
The production supervisor in Houston selects the less-expensive company tie line to call the manager at the Administration office in Dallas. Once the line is selected, the production supervisor dials the digits that will map onto the target line of the manager in Dallas.

Hardware : any version of KSU, 1 Trunk Module, 1 E&M/DISA Trunk Cartridge

Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Rec'd #:4321 (for target line 083) Line009: E&M Ans mode:Auto
5. System Data	Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)

---

Call Nor-star and select tie lines to other nodes in the private network

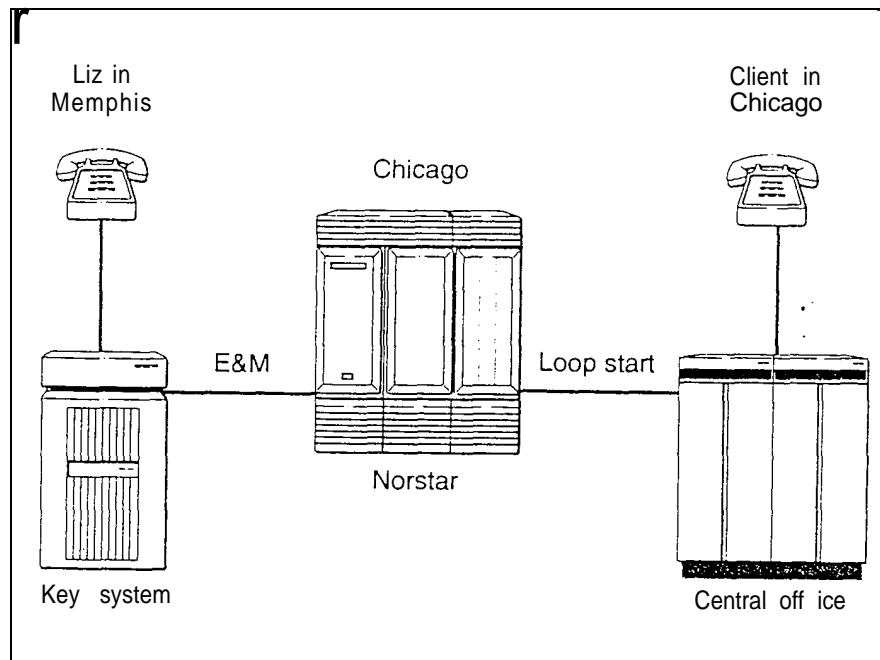


At a branch office, Joan selects a tie line to the government office downtown. After hearing dial tone, she dials a Line Pool access code to select another tie line to a government office in the next state.

Hardware : any version of KSU, 1 Trunk Module, 2 E&M/DISA Trunk Cartridges (for the three lines in the line pool and the one incoming line)

Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line009:E&M Ans mode:Auto
5. Capabilities	
Dialing filters	Define dialing filters.
Rem access pkgs	Define remote access pkgs.
Line abilities	Assign a remote filter and remote pkg to the trunk.
Outgoing trunk:	
1. Trk/Line Data	Line01 0:E&M Line type:Pool D
4. Miscellaneous	Line pool D:71 (up to 4 digits)
5. Capabilities	
Line filter	Assign a dialing filter to the trunk.

## Call Norstar and select lines to the public network



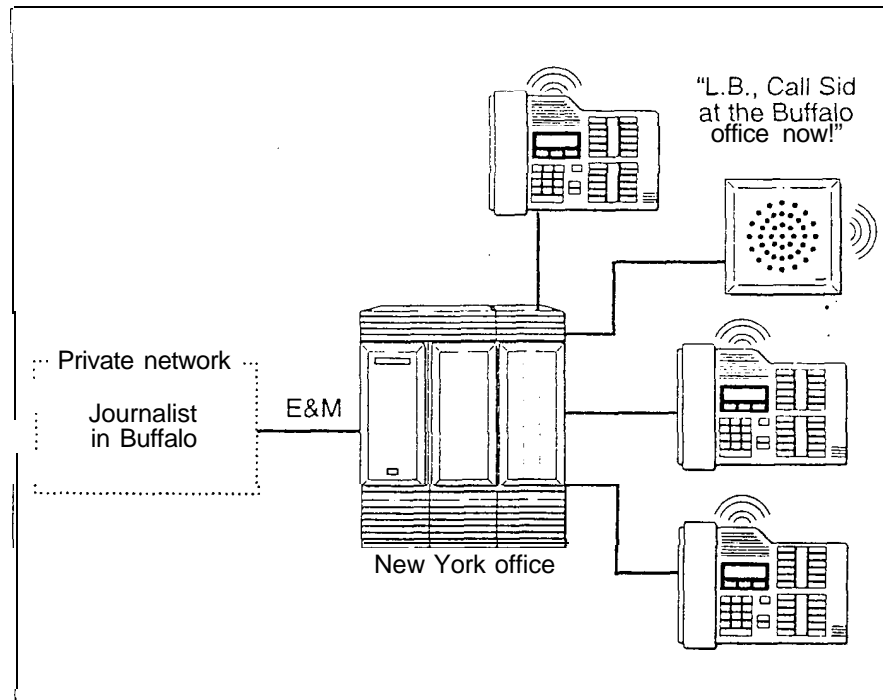
Liz needs to call long-distance to a client in Chicago. She selects a tie-line to the branch office in Chicago. After hearing dial tone, she dials a Line Pool access code to select a line to the public network. Then she dials the client's number as a local call.

Hardware : any version of KSU, 1 Trunk Module, 1 E&M/DISA Trunk Cartridge

Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line009:E&M Ans mode:Auto
5. Capabilities	
Dialing filters	Define dialing filters.
Rem access pkgs	Define remote access pkgs.
Line abilities	Assign a remote filter and remote pkg to the trunk.
Outgoing trunk:	
1. Trk/Line Data	Line001 :Loop Line type:Pool B
4. Miscellaneous	Line pool B:73 (up to 4 digits)
5. Capabilities	
Line filter	Assign a dialing filter to the line.



## Call Not-star and use the paging feature



A journalist in Buffalo knows that the New York editor is never at her desk. The journalist selects an E&M tie-line to the New York news office and dials the Page feature code. The journalist then selects a page zone and pages the editor.

Hardware : any version of KSU, 1 Trunk Module,  
1 E&M/DISA Trunk Cartridge

Program heading

Setting

Incoming trunk:

1. Trk/Line Data

Line009:E&M

Ans mode:Auto

5. Capabilities

Dialing filters

Define dialing filters.

Rem access pkgs

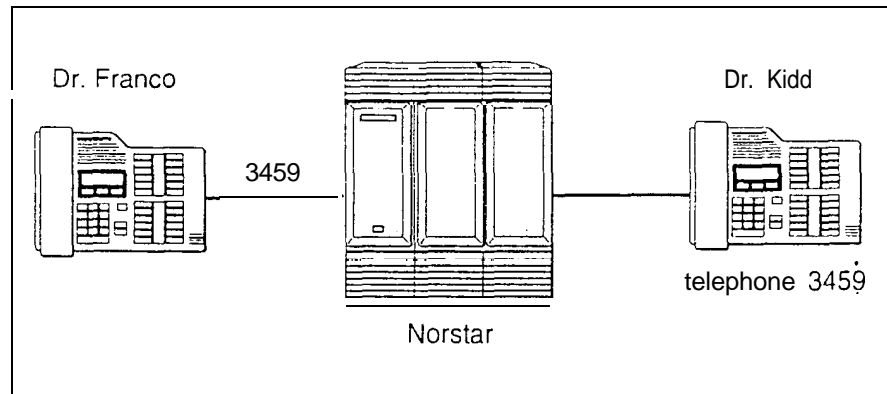
Define remote access pkgs.

Line abilities

Assign a remote filter and remote pkg to the trunk.

## In the Norstar system

### Call a Norstar telephone



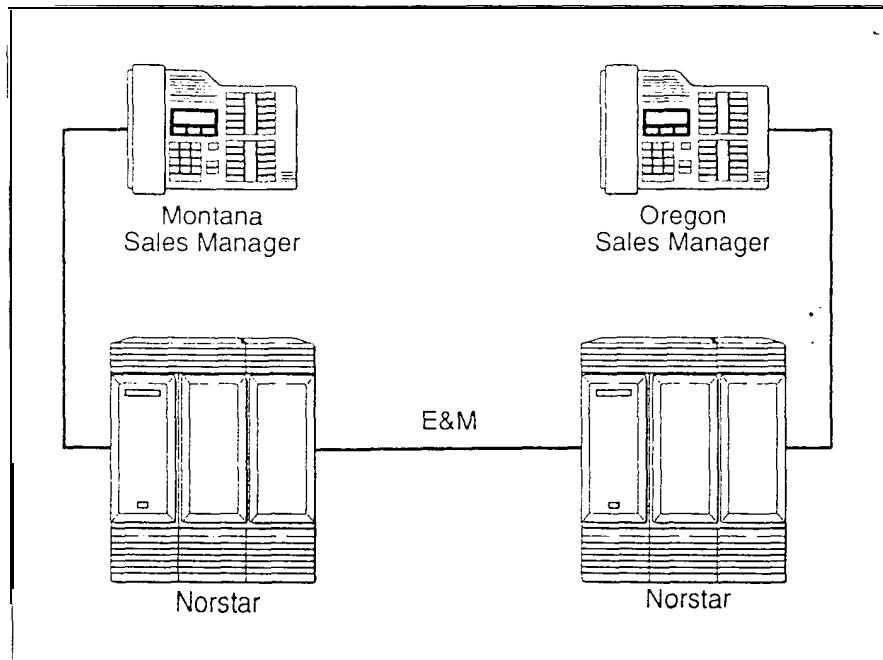
To call within the Norstar system, Dr. Franco in Research dials an internal telephone number which makes Dr. Kidd's telephone alert in Pediatrics.

Hardware : Version 1 or higher KSU

Programming:

There are no network-related programming requirements for an internal call.

## Select tie trunks to the private network

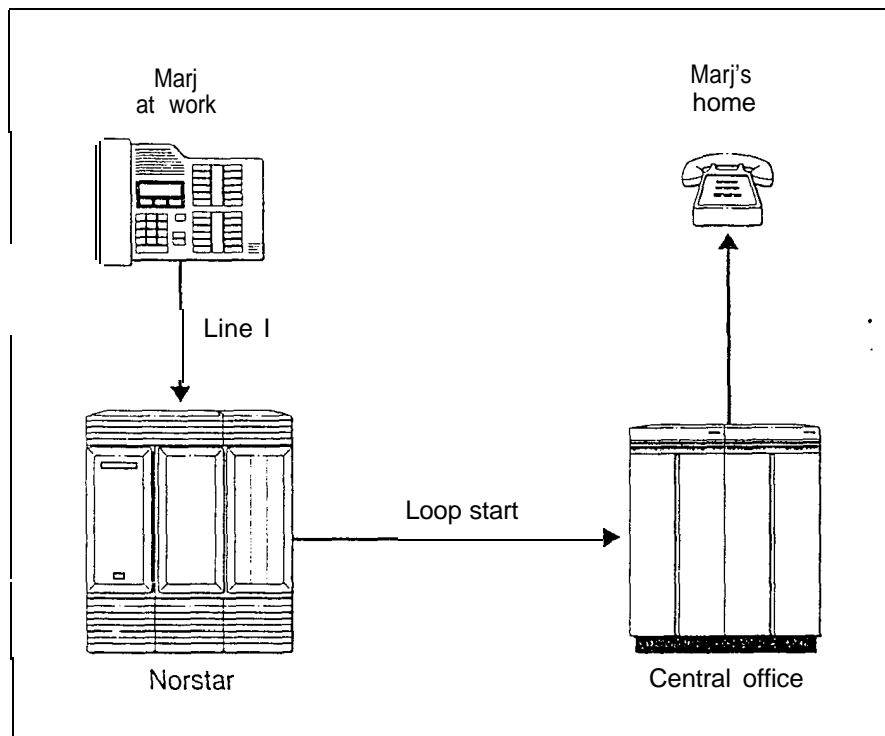


For a confidential call, the Montana sales manager presses the line button for a private E&M trunk to the Oregon office. This automatically alerts at the line appearance on the telephone of the Oregon sales manager.

Hardware : (for both systems) any version of KSU, 1 Trunk Module, 1 E&M/DISA Trunk Cartridge

Program heading	Setting
Outgoing trunk (Montana):.	
1. Trk/Line Data	Line009:E&M Line type:Private
Incoming trunk (Oregon):	
1. Trk/Line Data	Line009:E&M Ans mode:Manual Line type:Private

## Select lines to the public network



To call her home nearby, Marj in shipping presses a line button on her telephone to select an outgoing line to the public network. She then dials her home telephone number.

Hardware : Version 1 or higher KSU

Program heading

Setting

Outgoing trunk:

1. Trk/Line Data

Line001:Loop

Line type:Public (or Private)

5. Capabilities

Dialing filters

Define dialing filters.

Set filter

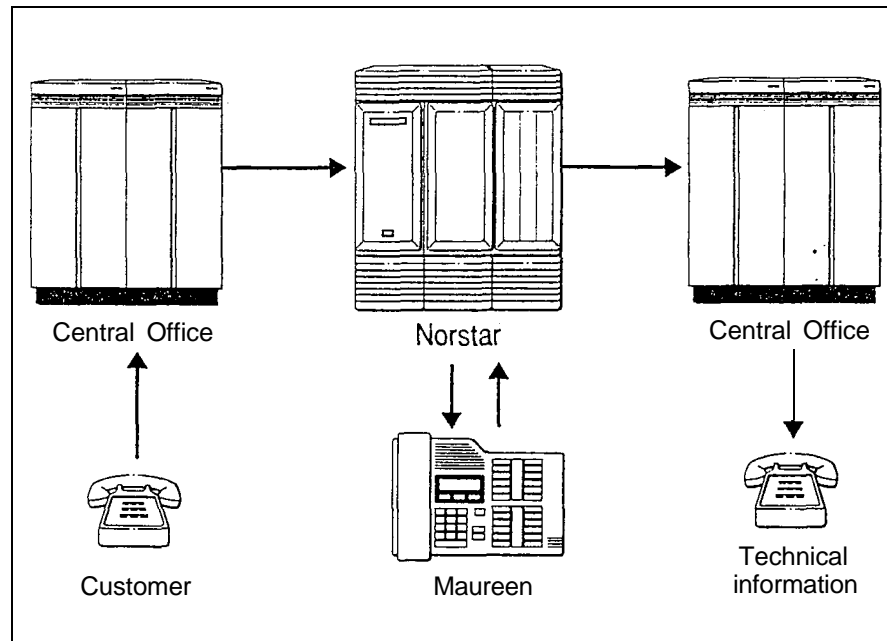
Assign a dialing filter to the set.

Line filter

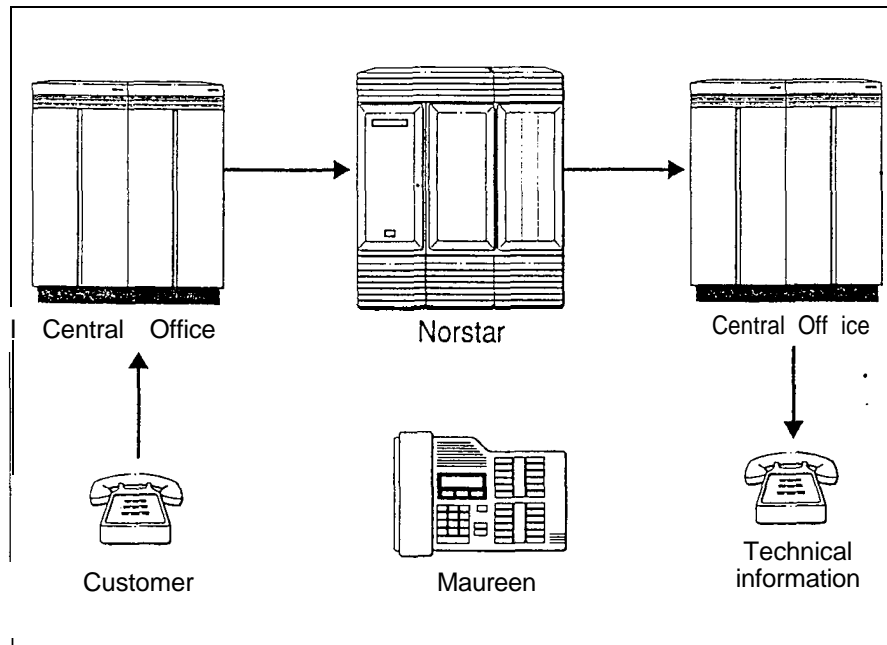
Assign a dialing filter to the line.

## Use Norstar system features

### Unsupervised Conference with two external parties



A customer dials the number that maps onto the target line at Maureen's telephone. Maureen, the technical representative, sees that the customer wants highly technical information. She puts the customer's call on hold and calls a technical information service. Then she joins the two parties in a conference call.



When it is clear that she is not needed, Maureen dials the Transfer feature code and leaves the conference. The other two parties remain connected, and the lines on Maureen's telephone stay busy until one of the two parties disconnects.

Hardware : Version 2 or higher KSU, a DID Trunk Cartridge

Note: The incoming trunk must have disconnect supervision.

Program heading

S e t t i n g

Incoming trunk:

1. Trk/Line Data

Line009:DID

Rec'd #:5454 (for Maureen's target line)

5. System Data

Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)

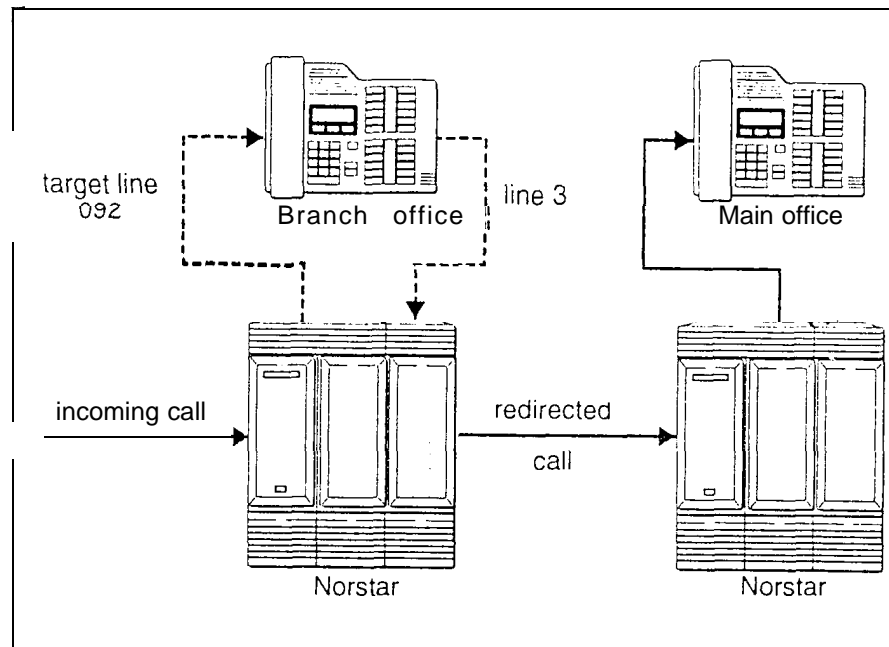
Outgoing trunk:

1. Trk/Line Data

Line001:Loop

Trunk mode:Super

## Line Redirection feature



The branch office is receiving more calls than it can handle, so it redirects one of its lines to the main office. All calls that come in on target line 092 will be routed out on line 003 to the main office. Whenever a call is redirected, the target line and outgoing line will be busy for the duration of the call.

**Hardware :** Version 2 or higher KSU, an E&M/DISA Trunk Cartridge if the incoming trunk is E&M, or a DID Trunk Cartridge if the incoming trunk is DID.

**Note:** Any line appearance on a telephone can be selected as the incoming line to be redirected. A target line can not be selected as the outgoing line for redirection.

**Note:** The incoming trunk must have disconnect supervision.

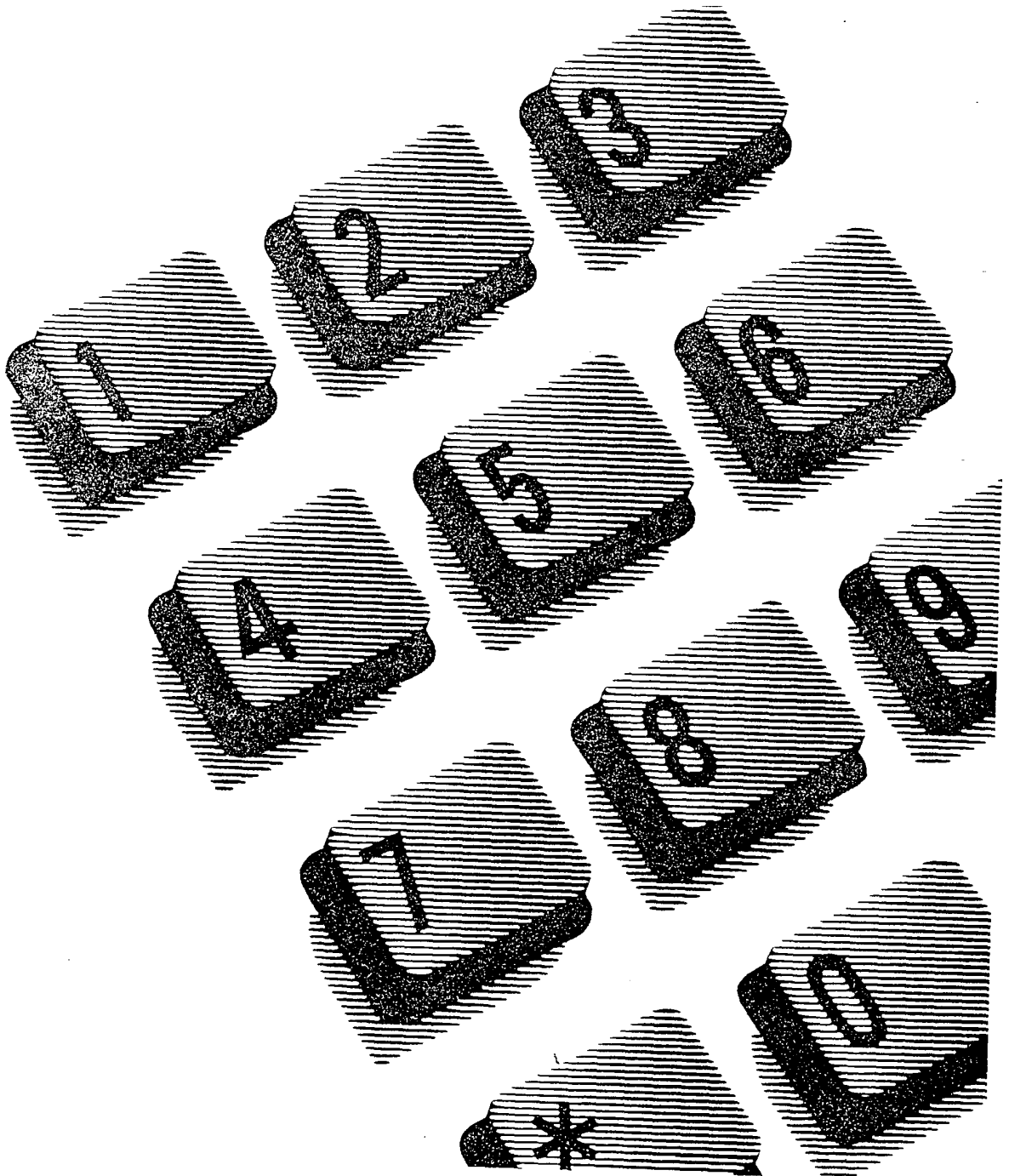
Program heading	Setting
Incoming trunk:	
1. Trk/Line Data	Line001 :Loop Trunk mode:Super Ans mode:Auto OR Line 009:DIDI OR Line 013:E&M Ans mode:Auto
	Rec'd #:4321 (for target line 092)
5. System Data	Rec'd # length:4 (can be up to 7 digits, but must match number of digits sent by Central Office)
Outgoing trunk:	
1. Trk/Line Data	Line 003:Loop OR Line01 4:E&M

For more information on features, see the Telephone features chapter of the *Not-star Modular DR4 Installer Guide*.





# Components



telemanuals.com

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# About this chapter

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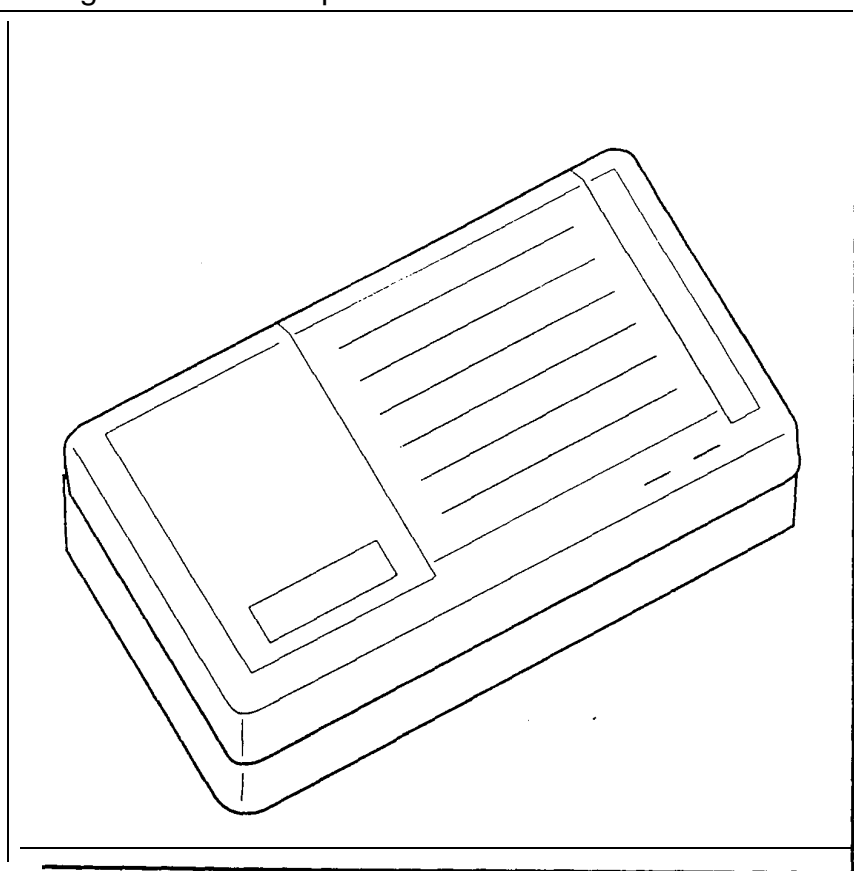
This chapter briefly describes the main components of the Norstar Modular system. The components are arranged in alphabetical order. For quick reference, each component's description appears on a separate page. Illustrations help you identify each component.

# Analog Terminal Adapter

---

The Analog Terminal Adapter (ATA) converts the Norstar digital interface to analog signals. This allows the connection of analog devices such as single line telephones, FAX machines, modems, and answering machines. The ATA allows single line telephones to access Norstar features such as Transfer, Call Pickup, and Exclusive Hold.

Analog Terminal Adapter



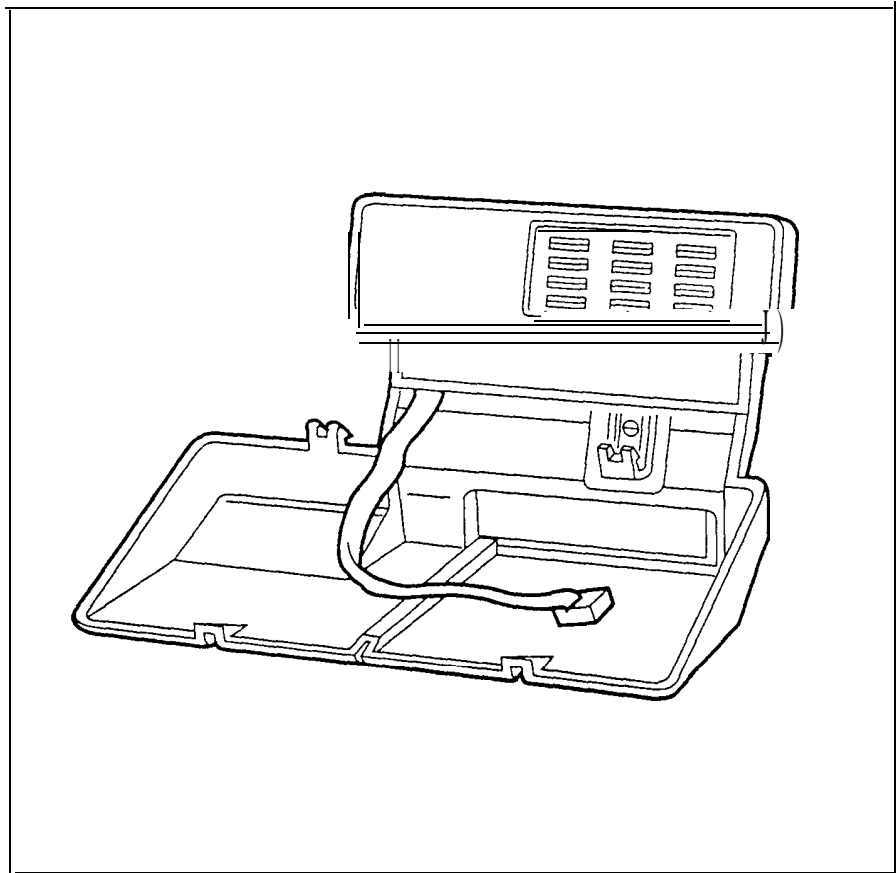
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# Busy Lamp Field

---

The Busy Lamp Field (BLF) contains a panel of LCD indicators, and connects to the M7310 telephone. These indicators reflect the status (idle or busy) of Norstar telephones corresponding to dual-memory buttons programmed for Internal Autodial.

Busy Lamp Field



# Cable troughs

---

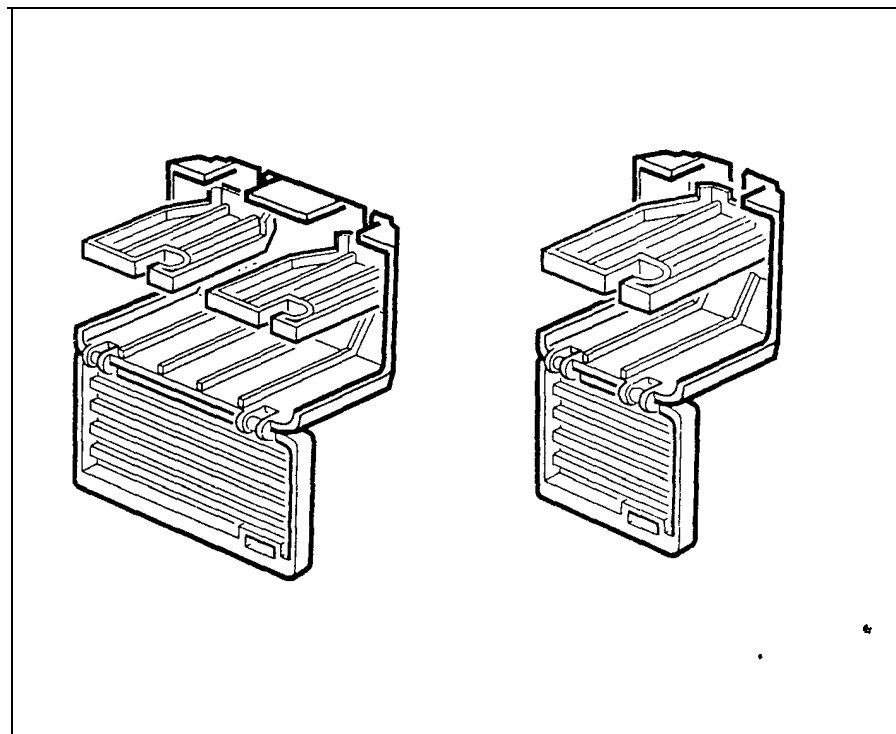
Cable troughs are used to route the cabling from the Key Service Unit (KSU), the Trunk Module, and the Station Module. Each cable trough is detachable from its module.

... There are two sizes of cable troughs:

- | half-size
- | quarter-size

Two half-size cable troughs are attached to the KSU; one half-size cable trough is attached to the Trunk Module; and the quarter-size cable trough is attached to the Station Module.

Half-size and quarter-size cable troughs





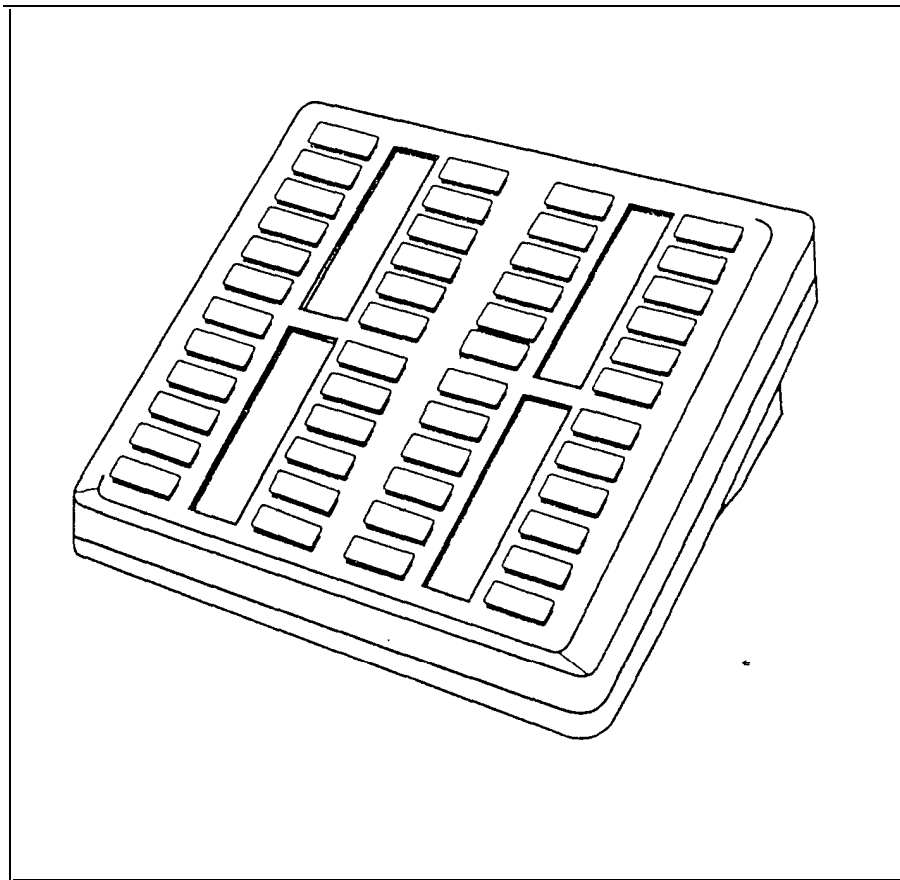
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# Central Answering Position module

---

The Central Answering Position (CAP) module is a device which connects to an M7324 telephone. A second CAP module can also be attached to the first. Each CAP module shows the status (busy or not busy) of as many as 48 Norstar telephones. You can press CAP module buttons to answer external calls on up to 80 lines (if two CAP modules are attached). You can also use CAP module buttons to program features and Autodial numbers. You need a Station Auxiliary Power Supply for every two CAP modules.

CAP module

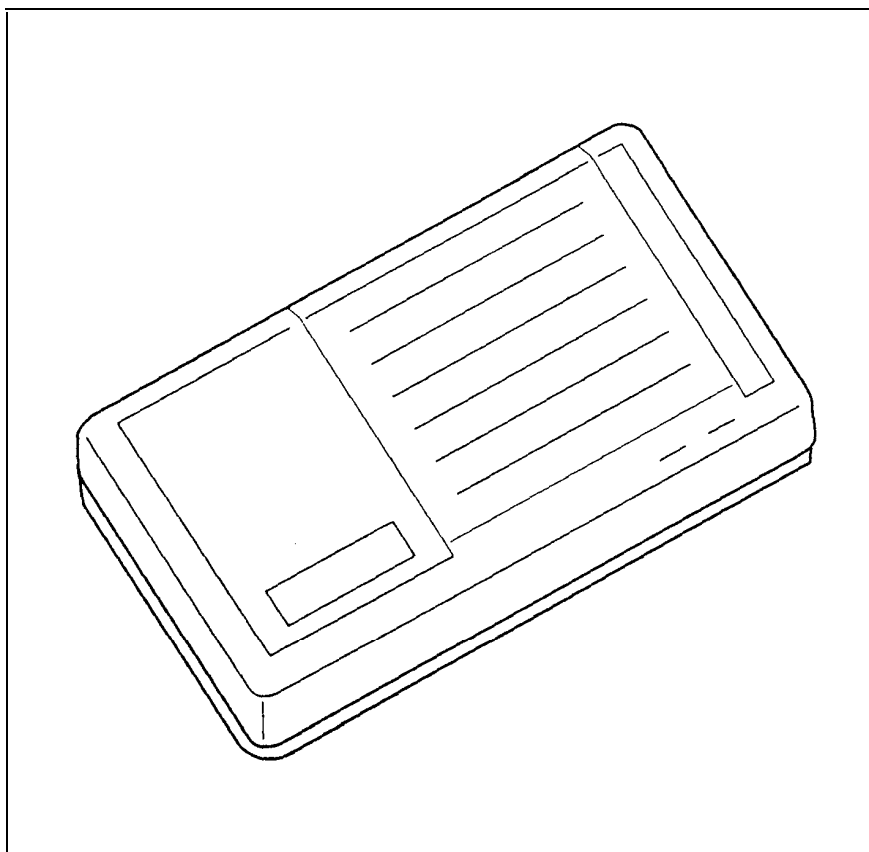


# Data Communications Interface

---

The Data Communications Interface (DCI) allows you to attach any serial RS-232 data device to the Norstar system. You can then place external data calls using an external line, or place internal data calls to other DCIs within the Norstar system.

## Data Communications Interface



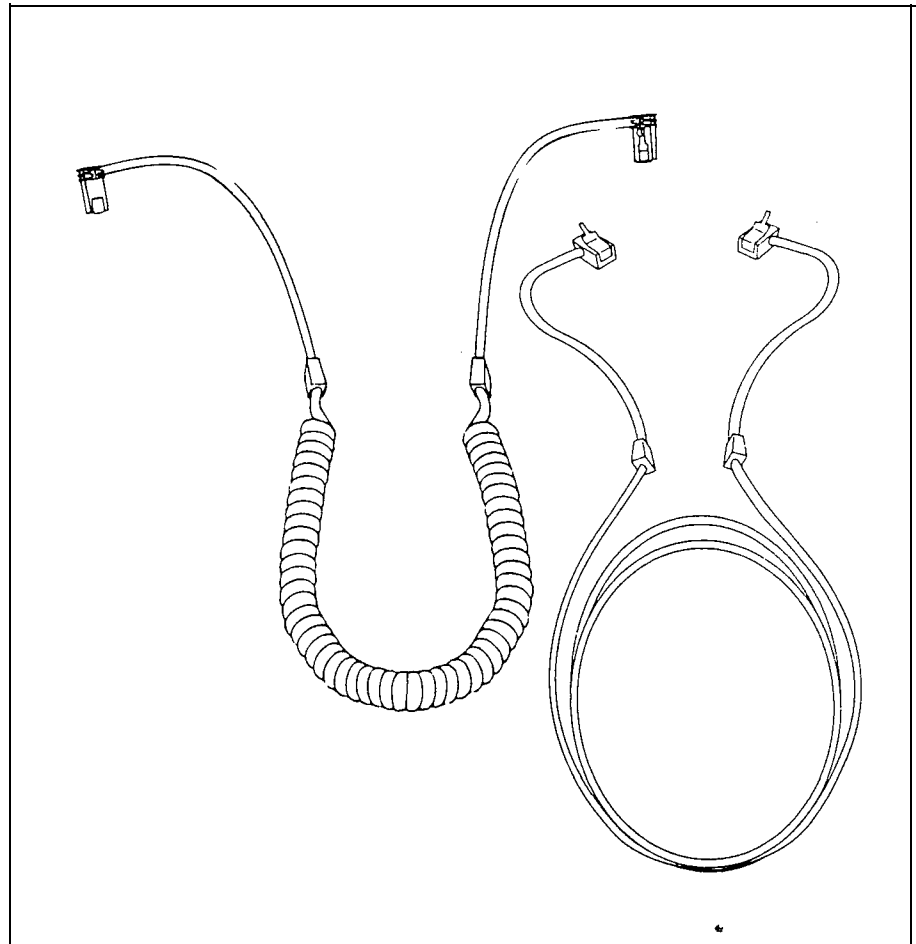
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# DS-30 cables

---

DS-30 cables connect Trunk Modules and Station Modules to the KSU. One end of a DS-30 cable plugs into the appropriate connector in the Trunk Module or Station Module. The other end plugs into a connector in the Expansion Cartridge.

DS-30 cables



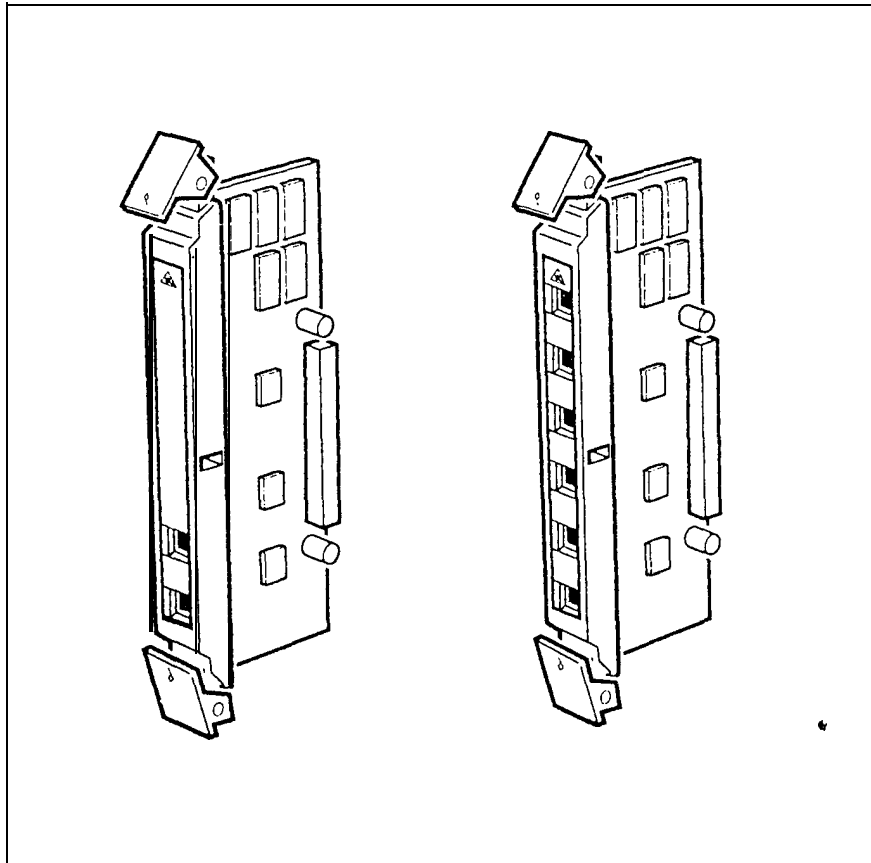
# Expansion Cartridge

---

The Expansion Cartridge allows for the addition of extra Trunk Modules and/or Station Modules to the Norstar system. This Cartridge fits into the right slot of the Key Service Unit (KSU).

The two-port Expansion Cartridge allows up to two additional modules (Trunk Modules and/or Station Modules) to be connected to the Modular system. The six-port Expansion Cartridge allows the connection of up to six additional Trunk or Station Modules.

## Two-port and six-port Expansion Cartridges



---

# Feature Cartridge

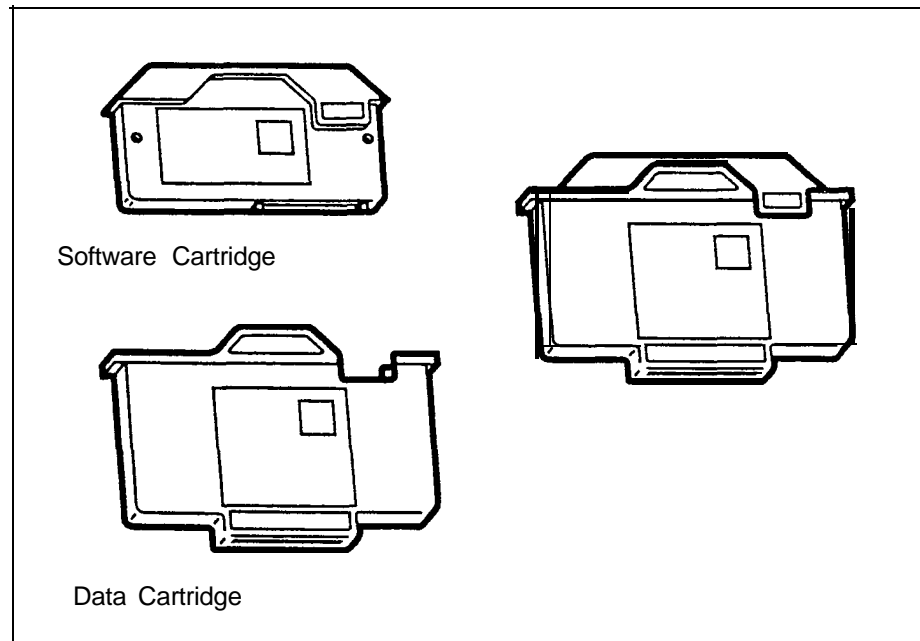
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The Feature Cartridge is made up of a Software Cartridge and a Data Cartridge. The Software Cartridge contains the system programming. The Data Cartridge contains the data from Configuration and Administration programming.

The Software Cartridge slides into the Data Cartridge. The Feature Cartridge assembly is then inserted into the KSU.

When there is a software upgrade, only the Software Cartridge, and not the Data Cartridge, needs to be replaced.

## Unassembled and assembled Feature Cartridges



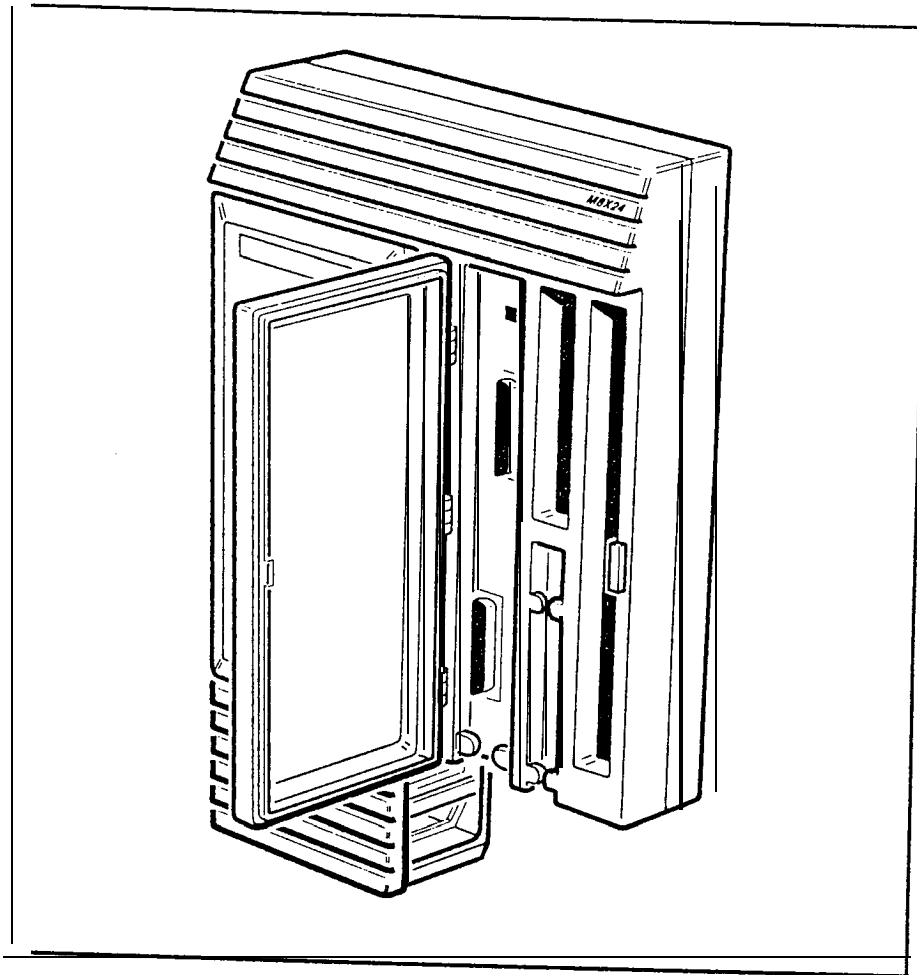
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# Key Service Unit

---

The Key Service Unit (KSU) is the hub of the Norstar System. It can function on its own as a basic system (with up to 24 Norstar telephones and eight external lines). The system may also be expanded by any combination of up to six Trunk Modules and/or Station Modules.

## Key Service Unit



---

# M7100 telephone

---

The Norstar M7100 telephone offers the following features:

- a one-line display
- one memory button without an indicator

M7100 telephone



# M 7208 telephone

---

The Norstar M7208 telephone offers the following features:

- | a one-line display
- eight memory buttons with indicators
- | Handsfree capability

M7208 telephone





---

# M7310 telephone

---

The Norstar M7310 telephone offers the following features:

- | a two-line display
- three display buttons
- | 10 memory buttons with indicators
- | 12 dual memory buttons without indicators
- | a shift button
- | Handsfree capability

**M7310** telephone



# M7324 telephone

---

The Norstar M7324 telephone offers the following features:

- a two-line display
- three display buttons
- 24 memory buttons with indicators
- Handsfree capability

M7324 telephone



---

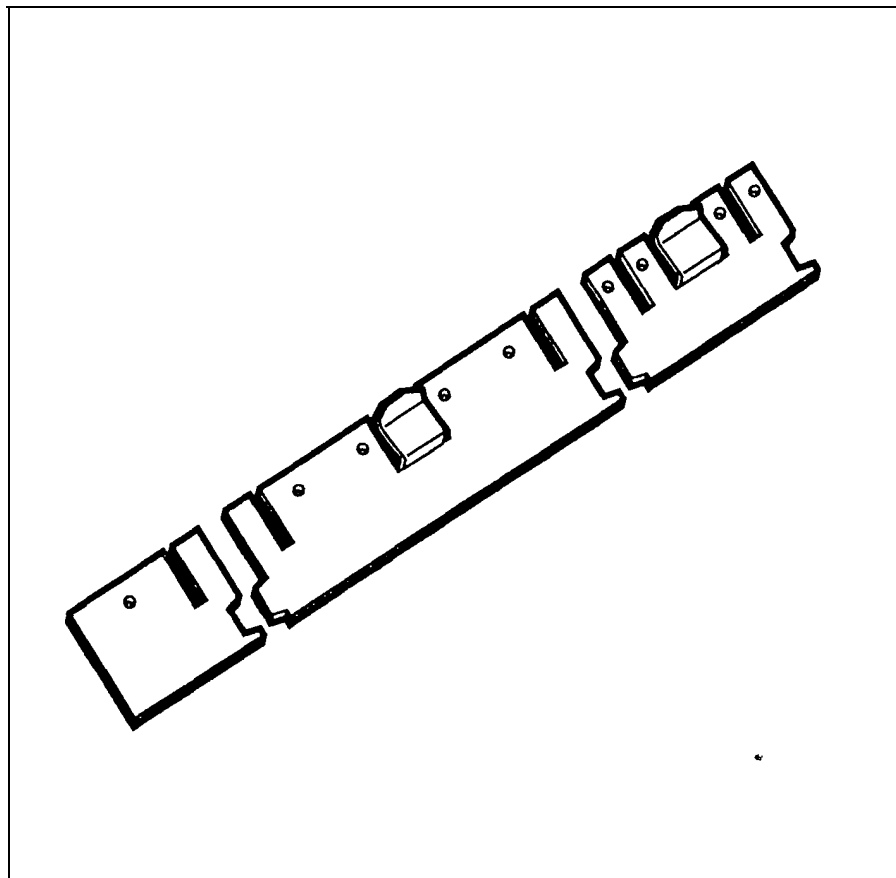
# Mounting brackets

---

Mounting brackets support the Key Service Unit, Trunk Module and Station Module on a wall. These brackets are notched at the ends to aid in mounting the modules. Three sizes of mounting bracket are available:

Size:	Mounting for:
Full-size	Key Service Unit
Half-size	Trunk Module
Quarter-size	Station Module

Mounting brackets

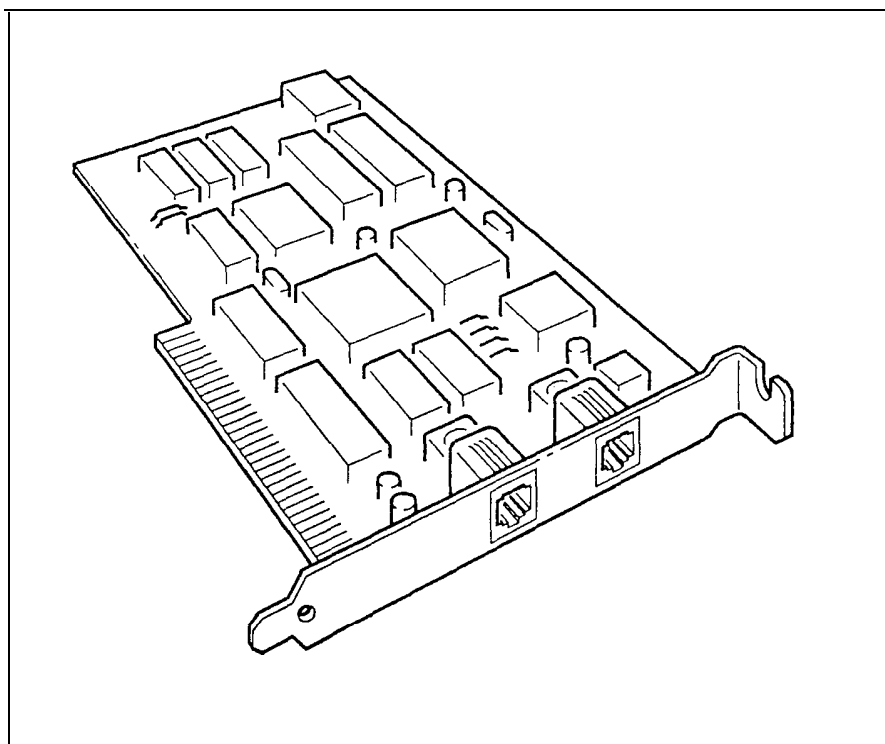


# PC Interface card

---

The PC Interface card connects the Norstar system to a Personal Computer (PC). This allows PC applications to run with the Norstar system. The PC Interface card fits inside the PC.

PC Interface card



---

# Power bar

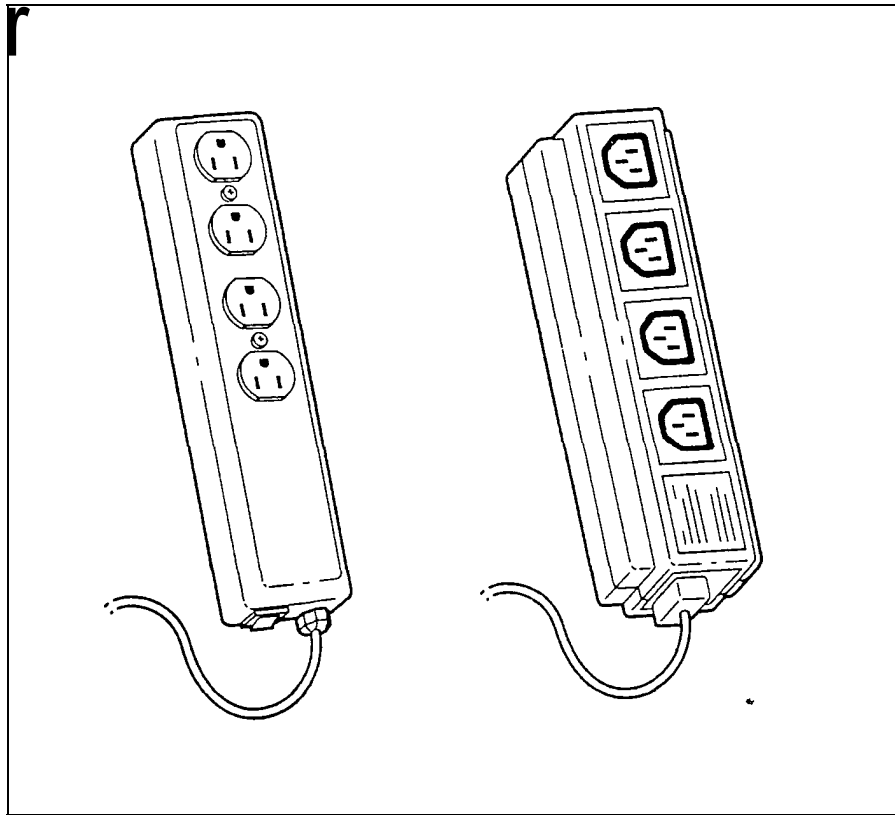
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The power bar provides four plug-in outlets for Trunk Modules and/or Station Modules. It should be installed in the lower half of the cable trough. If more modules are required than can be plugged into one power bar, a second power bar is required.

There are two types of power bars:

- the 110 volt power bar which is CSA/UL approved for use in North America
- the 220 volt power bar for use outside North America

1 IO and 220 volt power bars



# Station Auxiliary Power Supply

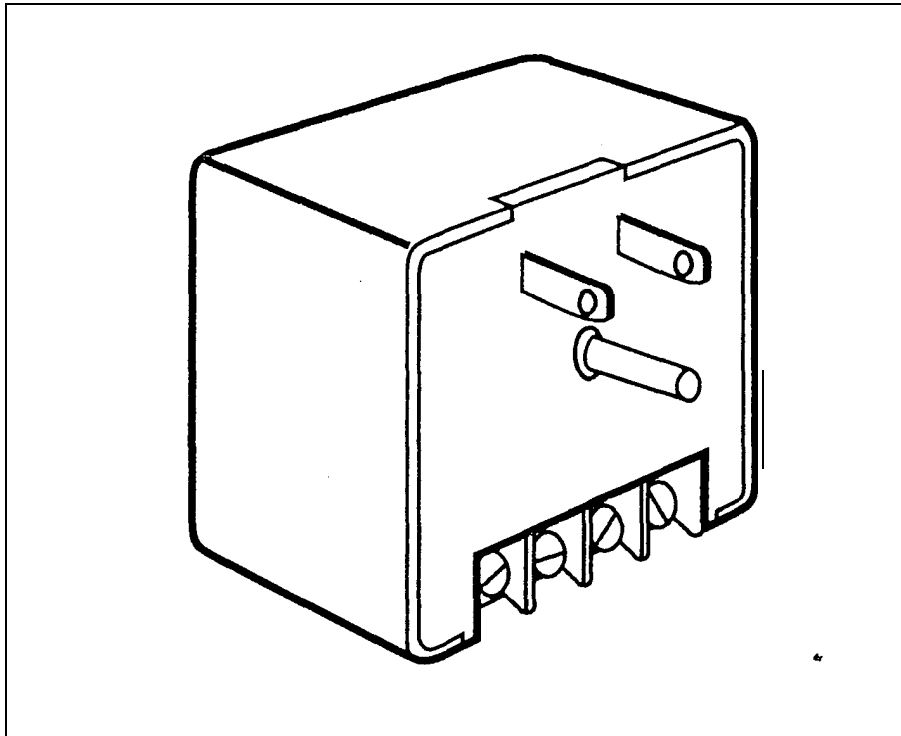
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The Norstar Station Auxiliary Power Supply (SAPS) is a power transformer which plugs into a grounded 110 V ac outlet. The SAPS provides regulated direct current for either of two Norstar applications:

- station loops longer than 305 m (1000 ft)
- a Central Answering Position (CAP)

One SAPS can power two CAP modules, which do not have to be connected to the same M7324 telephone.

## Station Auxiliary Power Supply



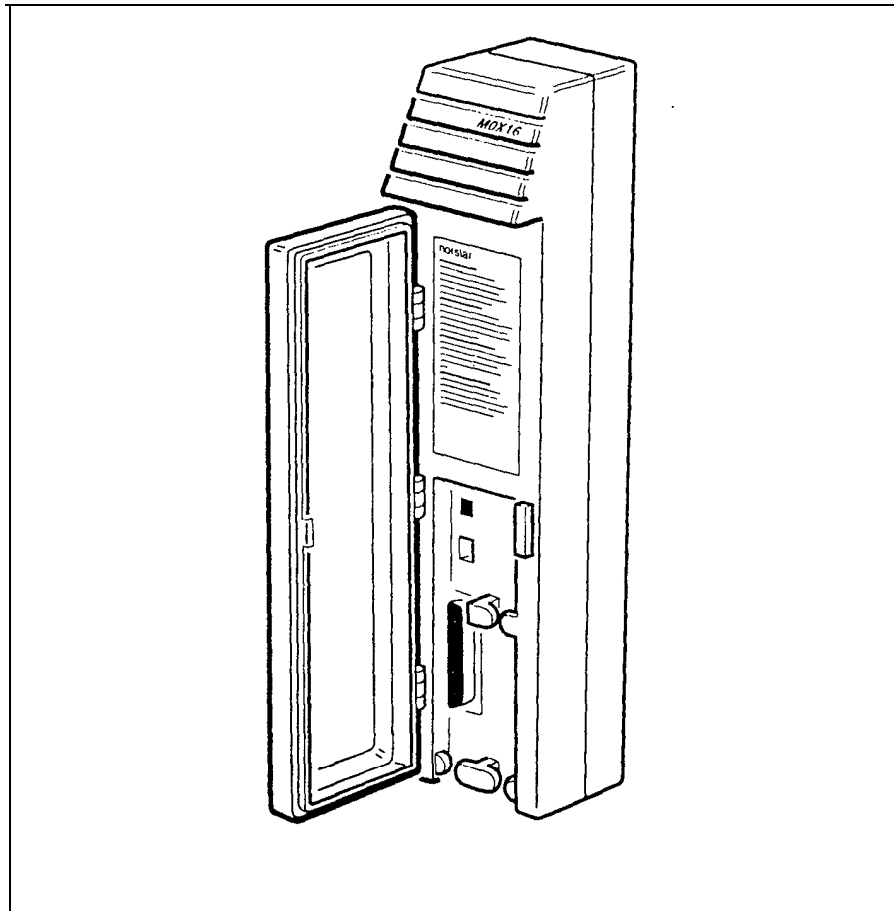
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# Station Module

---

The Station Module allows up to 16 additional Norstar telephones to be connected to the Modular system. A DS-30 cable connects each Station Module to the KSU.

## Station Module



# Trunk Cartridge

---

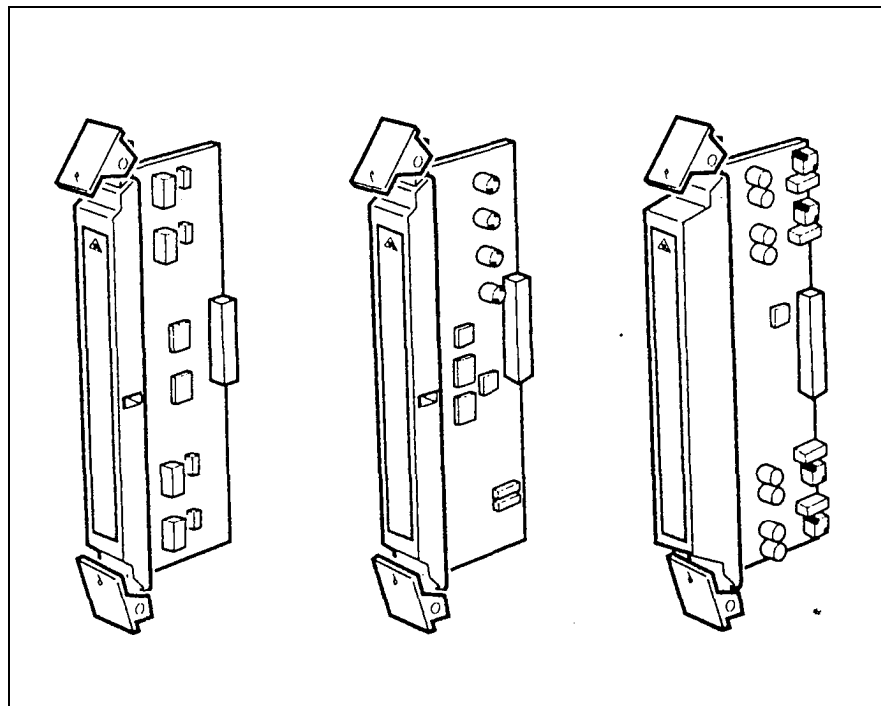
The Trunk Cartridge, when inserted in a Trunk Module, adds up to four external lines to the Norstar system. Up to three Trunk Cartridges can be added to each Trunk Module.

There are three types of Trunk Cartridges:

- the Loop Start Trunk Cartridge (4 lines)
- the E&M/DISA Trunk Cartridge (2 trunks)
- the DID Trunk Cartridge (4 trunks)

The Loop Start Trunk Cartridge supports regular external lines. The E&M/DISA Trunk Cartridge connects Norstar to a private network. The DID Trunk Cartridge supports direct inward dialing on incoming external lines.

Loop Start, **E&M/DISA**, and DID Trunk Cartridges





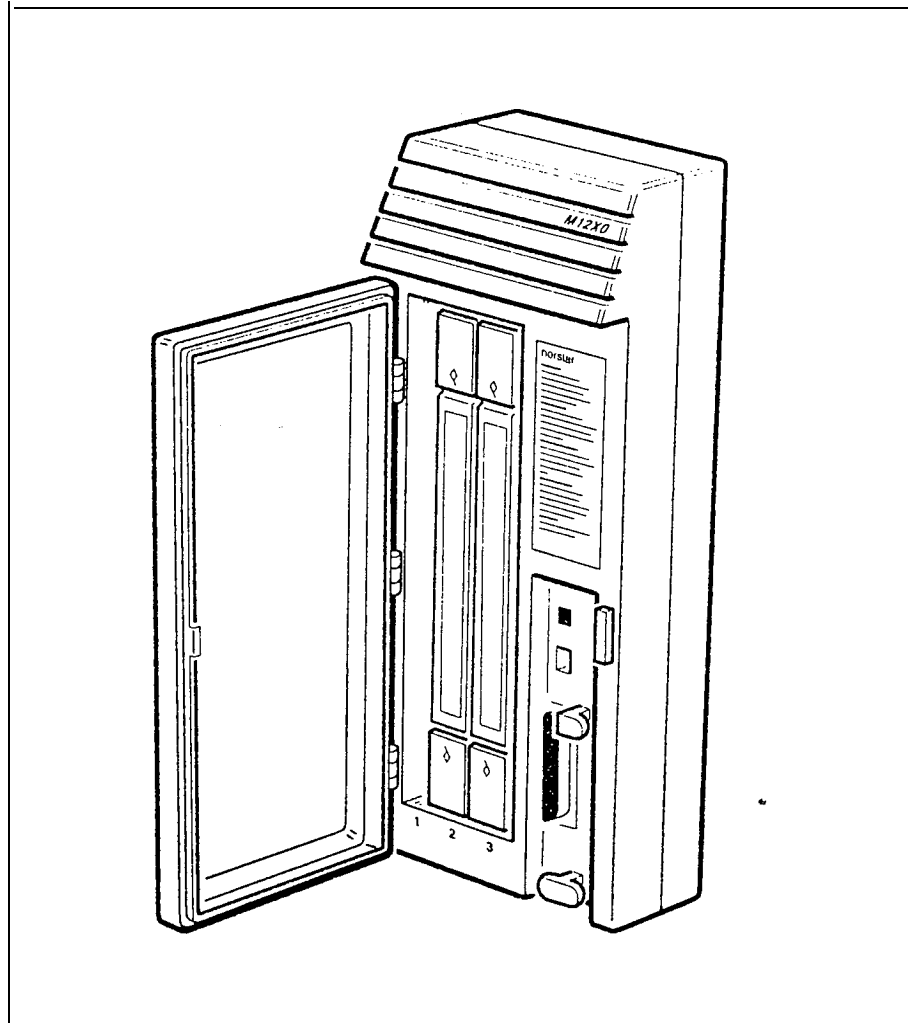
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# Trunk Module

---

The Trunk Module allows additional Trunk Cartridge installation. This in turn allows more external lines to be connected to the Norstar system. The Trunk Module has three slots in front for inserting Trunk Cartridges. Each Trunk Module can add a maximum of 12 external lines (four external lines per Trunk Cartridge). All three types of Trunk Cartridge (Loop Start, E&M/DISA, and DID) can be mixed in one Trunk Module.

Trunk Module





# Hardware installation

| \*\*ooeaooooo\*oooooooooooooooooooooooooooo



## Rights of the Telephone Company

If the system is determined to be causing harm to the telephone network, the telephone company may discontinue your service temporarily. If possible, the telephone company will notify you in advance. If advance notice is not practical, you will be notified as soon as possible. You will be given the opportunity to correct the situation and you will be informed of your right to file a complaint to the FCC. Your telephone company may make changes in its facilities, equipment; operations or procedures that could affect the proper functioning of your system. If it does this, you will be notified in advance to give you the opportunity to maintain uninterrupted telephone service.

In the event of an equipment malfunction, all repairs will be performed by Northern Telecom Inc. or by one of its authorized dealers.

### Address of repair facility

#### USA

Northern Telecom Inc.  
Product Service Center  
720 Massman Drive  
Nashville, TN  
37210  
Attn. RA# \_\_\_\_\_

#### Canada

Northern Telecom Canada Ltd.  
Customer Service Dept. 914  
12345 Boul Albert Hudon  
Montréal-Nord, Québec  
H1G 3L1

## Use of a Music source

In accordance with U.S. Copyright Law, a license may be required from the American Society of Composers, Authors and Publishers, or similar organization if Radio or TV broadcasts are transmitted through the Music On Hold or Background Music features of this telecommunication system.

Northern Telecom Inc. hereby disclaims any liability arising out of the failure to obtain such a license.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio interference Regulations of the Canadian Department of Communications.

## General installation warnings

### WARNING

Norstar telephones must not be used as Off Premises Station Sets (OPS). Norstar telephones are for use with Norstar equipment only. Connecting a Norstar telephone directly to a CO line may result in equipment damage. For OPS applications use the Norstar Analog Terminal Adapter (ATA) with single-line telephones.

Installers should also check the lightening protectors at the cable entry point to the building with special attention to the ground. Any problems should be reported to the telephone company in writing. Norstar telephone wiring should not leave the building, as it is not lightning-protected.

### WARNING

To avoid electrical shock, hazard to personnel, or equipment damage, observe the following precautions when installing telephone equipment:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying the telephone lines.

---

# Regulations

---

## FCC Regulations

### Radio Frequency Interference

#### WARNING

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference. Each Meridian Norstar Key Telephone System is assigned an FCC Registration Number and a Ringer Equivalence designation. The number and designation are printed on the Key Service Unit (KSU) label on the front of the unit inside the door.

### Registration

The Meridian Norstar Key Telephone System is registered with the FCC based upon compliance with Part 68 of its rules. Connection of the Meridian Norstar Key Telephone System to the nationwide telecommunications network is made through a standard network interface jack that you can order from your telephone company. Jacks for this type of customer-provided equipment will not be provided on party lines or coin lines.



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## Hardware installation

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# Pre-installation

---

## Checking the location

Check the location where the Norstar system modules, the telephones, and auxiliary equipment are to be installed. This includes making sure sufficient space is available to install the components.

If a smooth surface is not available, cut a backboard large enough to accommodate the system modules and the distribution block. The system module physical dimensions are listed in the Installation section of this chapter.

**CAUTION**

All modules must be mounted well above the floor to prevent water damage.

**CAUTION**

Mount the KSU vertically to avoid overheating.

Check also that the requirements for the environment and for the power source are met.

## Environment

- Clean, dry, and well-ventilated
- Temperature: 0°C to 50°C (32°F to 122°F)
- Humidity: 5% to 95%, non-condensing
- Location: at least 4 m (13.1 ft) from equipment such as copiers, electrical motors, and other equipment that can produce electromagnetic, radio frequency, and electrostatic interference.

Note: Installers should also check the lightning protectors at the cable entry point to the building with special attention to the grounding. Any problems should be reported to the telephone company in writing. Norstar Telephone wiring must not leave the buildings, as it is not lightning-protected.

### Power source

- Non-switched outlet
- ac outlet located not more than 1.5 m (4.9 ft) from the Key Service Unit (KSU). The actual distance from the KSU to the Power Bar may vary with additional Trunk and Station Modules. Do not use an extension cord between the KSU and the power bar.

### For the 110 V system

- Dedicated 110 V ac nominal, 50/60 Hz, 15 A minimum service with third wire ground.

### For the 220 V system

- Dedicated 220-240 V ac nominal, 50/60 Hz, 10 A minimum service with third wire ground.

<b>WARNING</b>
----------------

The ac outlet must be equipped with a third wire ground to avoid electromagnetic interference.
--

## Checking the equipment

Check that you have the equipment required for installation.

### Internal wiring

All new or existing wiring must meet the following specifications:

- one twisted or spiraled pair per telephone
- dc loop resistance less than 59 ohms
- cable length (0.5 mm or 24 AWG) not exceeding 305 m (1000 ft)
- A Norstar Station Auxiliary Power Supply can be used to extend the length of the loop if the cable length exceeds 305 m (1000 ft) but is less than 785 m (2600 ft)
- no bridge taps.

### Tools

- screwdriver, diagonal cutters, pliers, connecting tool, pencil, level (optional)
- backboard, wooden, 19 mm (<sup>3</sup>/<sub>4</sub> inch) thick (when recommended)
- 19 mm (<sup>3</sup>/<sub>4</sub> inch) screws suitable for surface mounting bracket
- 38 mm (1 <sup>1</sup>/<sub>2</sub> inch) screws for cable trough.

## Unpacking the equipment

When unpacking the equipment, keep the boxes and inserts in case any of the equipment has been damaged and must be shipped back.

# Installation

---

## The MSU, TM and SM

The Key Service Unit (KSU), Trunk Modules (TM) and Station Modules (SM) can be physically mounted in any order. Allow suitable wall space for installing Trunk and Station Modules for future expansion.

Note: The doors of the KSU, TM and SM should not be removed.

## Recommended cable routing in cable troughs

Cable troughs beneath the KSU, TM and SM hold the 25-pair cables, the DS-30 cables, the power cord(s) and the Power Bar (if required for a particular installation).

The cable troughs have been designed to keep the ac power cords and ac Power Bar separate from the 25-pair cables and to allow ease of access after the installation. Place the cabling in the two shelves as described in the following chart.

### Cable placement

Upper shelf	All 25-pair cables and DS-30 cables only.  Place 25-pair cables in the back.  Place the DS-30 cables in the front.
Lower shelf	All power cords and the Power Bar(s) only.

## Norstar Modular system hardware configuration

This chart shows combinations of Trunk Modules (TM), Trunk Cartridges (TC) and Station Modules (SM) for expanding the Modular system. The first number represents the number of physical external lines; the second number represents the number of telephones. See the next page for how to read the chart.

### Possible line and station configurations

TM	TC	SM	SM	SM	SM	SM	SM	SM
		0	1	2	3	4	5	6
0	0	8-24	8-40	8-56	8-72	8-88	8-104	8-120
1	1	12-24	12-40	12-56	12-72	12-88	12-104	
	2	16-24	16-40	16-56	16-72	16-88	16-104	
	3	20-24	20-40	20-56	20-72	20-88	20-104	
2	4	24-24	24-40	24-56	24-72	24-88		
	5	28-24	28-40	28-56	28-72	28-88		
	6	32-24	32-40	32-56	32-72	32-88		
3	7	36-24	36-40	36-56	36-72			
	8	40-24	40-40	40-56	40-72			
	9	44-24	44-40	44-56	44-72			
4	10	48-24	48-40	48-56				
	11	52-24	52-40	52-56				
	12	56-24	56-40	56-56				
5	13	60-24	60-40					
	14	64-24	64-40					
	15	68-24	68-40					
6	16	72-24						
	17	76-24						
	18	80-24						

Note: Number of physical lines shown is for Loop Start and DID Trunk Cartridges only. E&M/DISA Trunk Cartridges provide half the number of lines.

Key to the terms for the hardware chart

Term	Description
TM	Number of Trunk Modules
TC	Number of Trunk Cartridges (maximum of 3 for each TM)
SM	Number of Station Modules
8-24	The KSU has a maximum of 8 lines and 24 telephones.

### Reading the hardware chart

To find the maximum number of lines and telephones for a particular configuration of KSU, TM(s) and SM(s):

1. Find the number of TMs in the left column.
2. Find the number of SMs in the top row.
3. Read across to the right from the TM column and down from the SM row. A pair of numbers indicates lines and telephones for that combination of TMs and SMs.

For each pair of numbers on the chart:

- left number = maximum number of lines.
- right number = maximum number of telephones.

Examples:

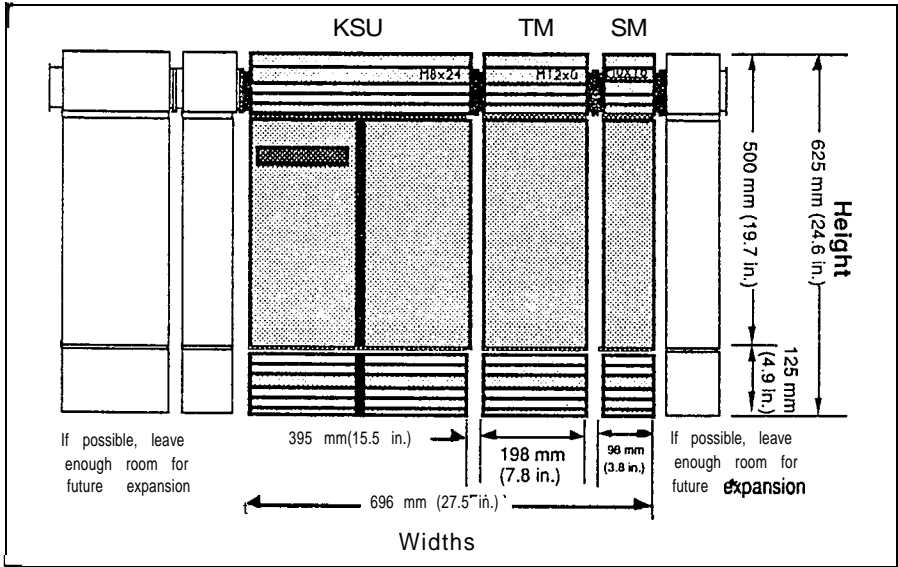
8-24	=	8 lines and 24 telephones (KSU without TMs or SMs).
12-24	=	12 lines and 24 telephones (KSU lines and telephones, plus one TM and one TC with 4 more lines, and no SMs).
12-40	=	12 lines and 40 telephones (KSU lines and telephones, plus one TM and one TC with 4 more lines, and one SM with 16 more telephones).



Physical dimensions of **Norstar** KSU, TM & SM

Dimension	KSU	TM	SM
Height with cable trough	625 mm (24.6 in)	625 mm (24.6 in)	625 mm (24.6 in)
Height without cable trough	500 mm (19.7 in)	500 mm (19.7 in)	500 mm (19.7 in)
Width	395 mm (15.5 in)	198 mm (7.8 in)	98 mm (3.8 in)
Depth	171 mm (6.7 in)	171 mm (6.7 in)	171 mm (6.7 in)
Clearance (front)	346 mm (13.6 in)	346 mm (13.6 in)	245 mm (9.6 in)
Weight	7.5 Kg (16.6 lb.)	4.3 Kg (9.5 lb.)	2.4 Kg (5.3 lb.)

Dimensions of the **Norstar** Modular System



**Note:** Modules may be installed in any order. If possible, leave enough room for expansion as indicated.



## Hanging the modules on mounting brackets

### Top

Leave about 150 mm (6 inches) of space above the screw holes of the mounting bracket. This allows room to lift the KSU, TM and SM ON and OFF the bracket and provides space for venting the heat from the modules.

### Bottom

Ensure there is at least 100 mm (4 inches) of space between the bottom of the cable trough and the floor, or any object that may block the flow of air from the bottom, for cooling.

### Sides

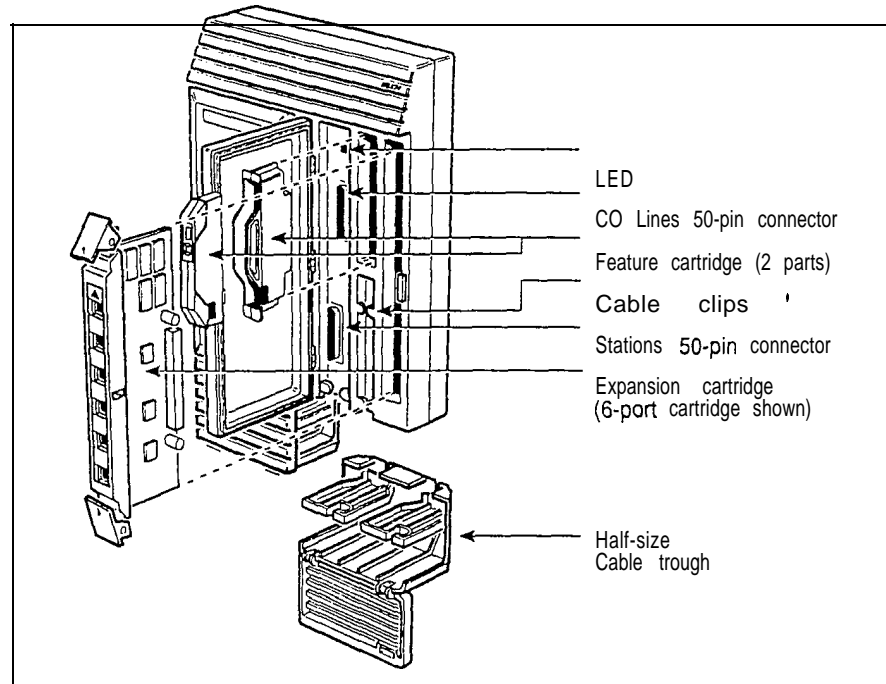
Leave enough room to be able to open the doors of the modules and to run cabling out to the side.

### Between modules

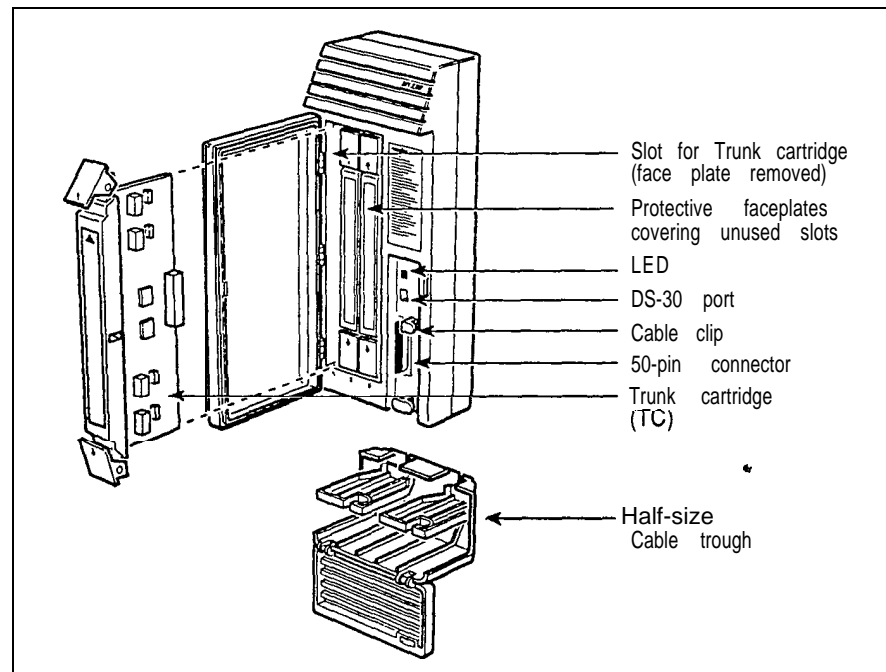
The space between two modules hung on the mounting brackets is approximately 3 mm ( $\frac{1}{8}$  inch).

*Note:* See the illustration showing dimensions of the Norstar Modular system for additional module clearance requirements.

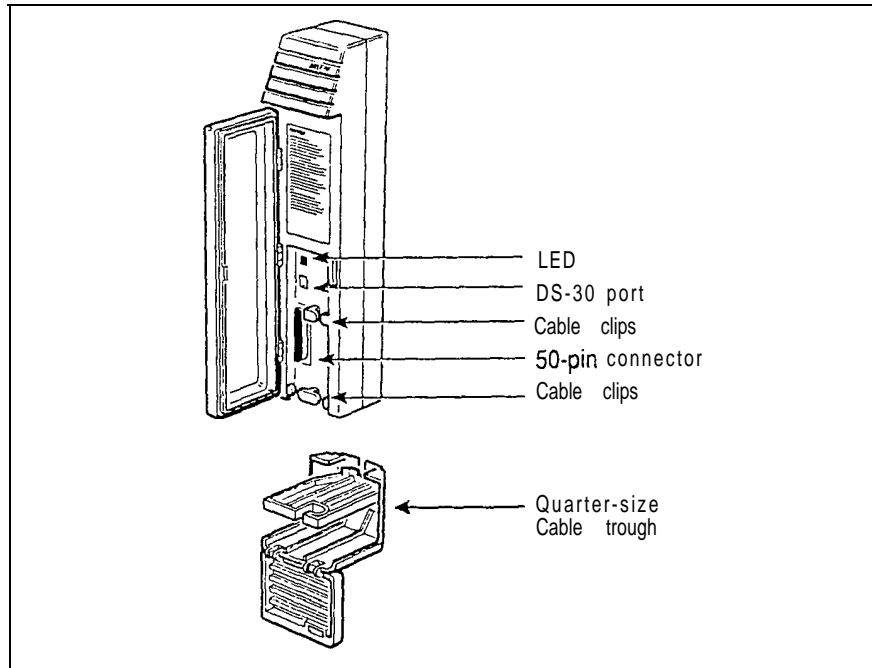
Key Service Unit (KSU)



Trunk Module (TM)



### Station Module (SM)

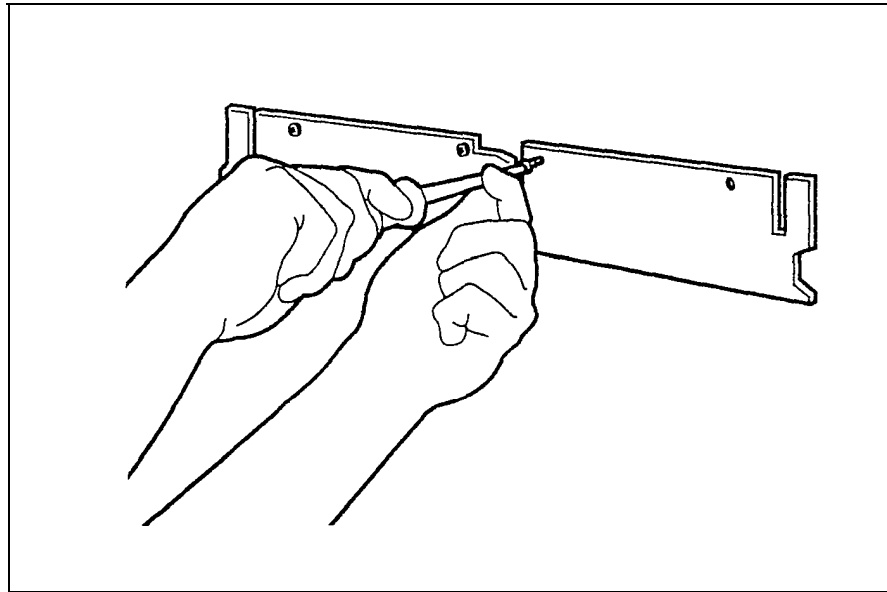


## Mounting the KSU, TM and **SM**

- 1. Position metal mounting bracket(s): Fasten the KSU bracket to the wall using four 19 mm ( $\frac{3}{4}$  in) screws.

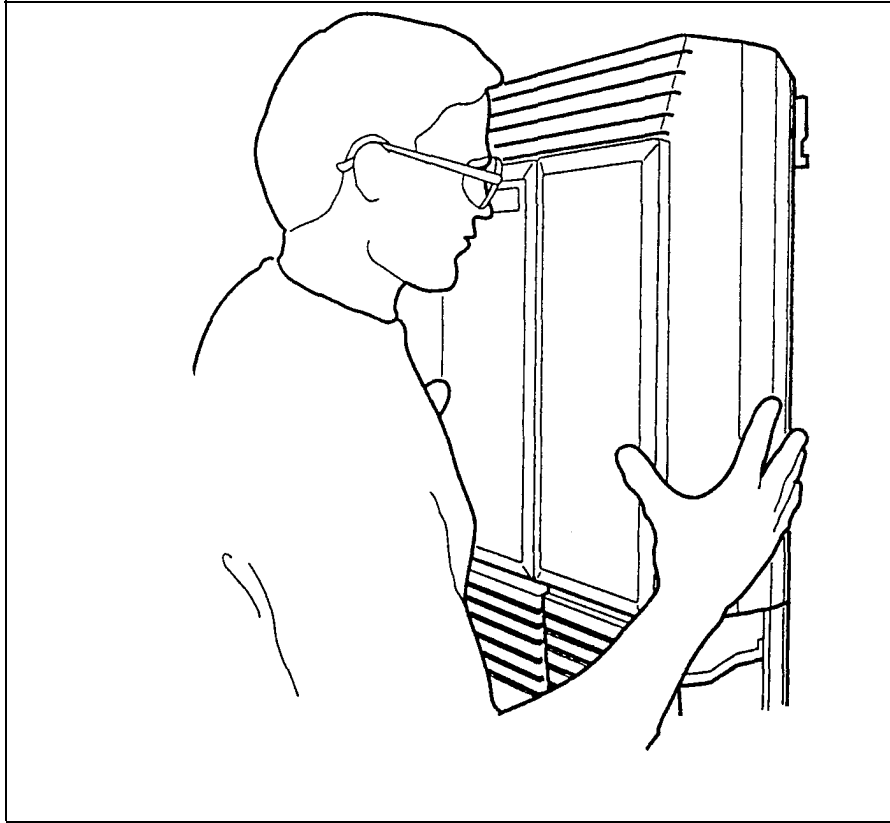
*Hint:* Use a level and draw a pencil line to align the KSU. This will be useful to line up Trunk and Station Modules if they are part of the system.

installing the KSU mounting bracket



2. Slide the KSU, TM or SM down onto the mounting brackets. Line up with the notches on either side of the mounting bracket as you slide the KSU onto the mounting bracket(s). This facilitates accurate hanging.

#### Hanging the KSU

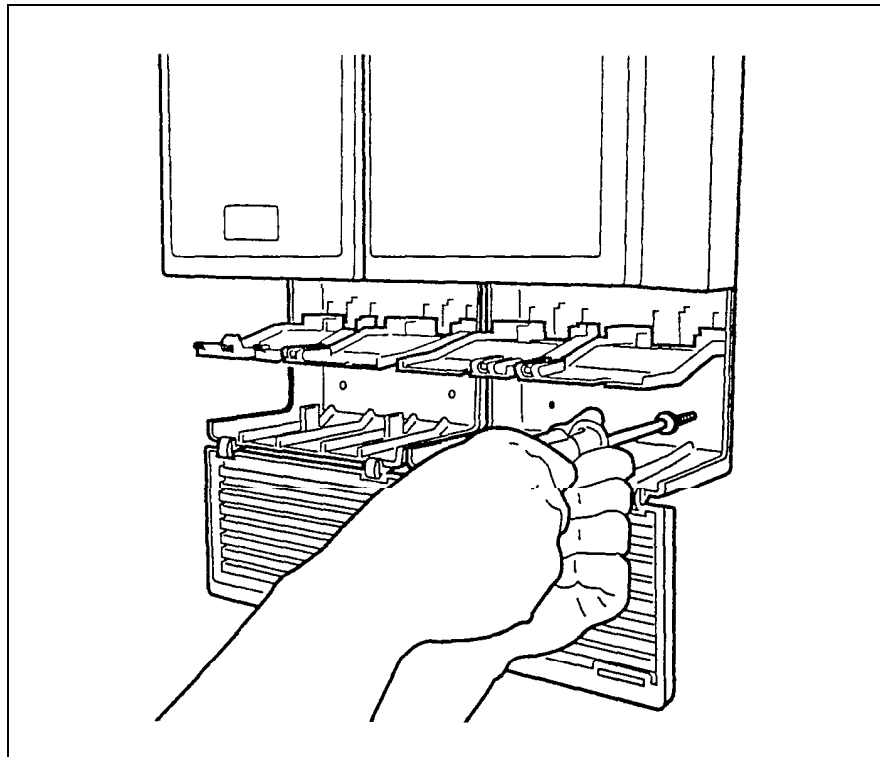


3. Slide the cable trough(s) up under the appropriate module(s). The KSU requires two cable troughs.

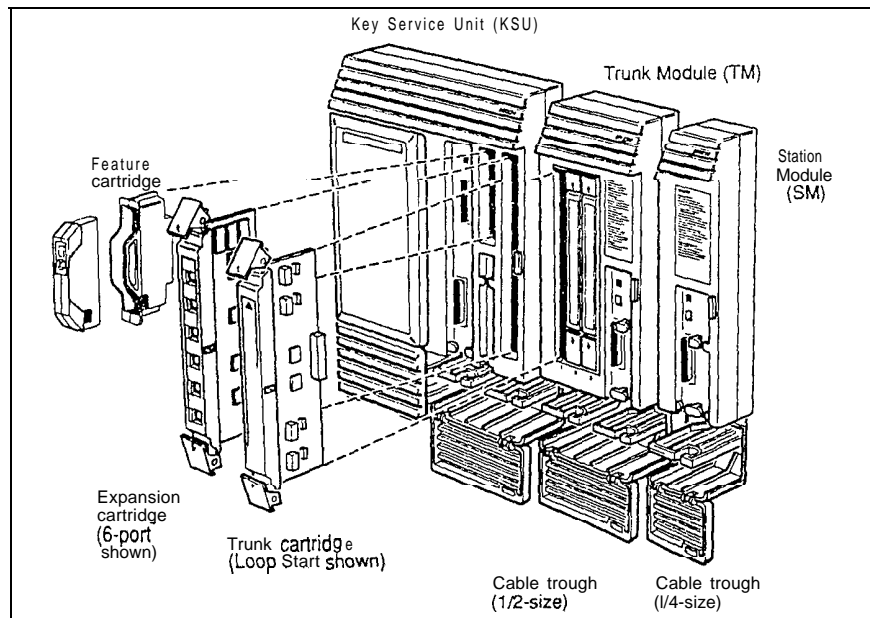


4. Open each cable trough door and allow the door to swing down.
5. Use 38 mm (1 1/2 in) screws to fasten each cable trough to the wall as shown in the cable trough installation illustration. Each cable trough requires two screws through the holes provided in the lower tray of the cable trough.

#### Installing the cable troughs



### KSU, TM and SM installed



*Note:* The illustration shows a KSU, TM and SM without the doors for clarity. The doors should not be removed during installation or operation. Also shown are the Feature, Expansion and Trunk Cartridges which are installed later.

6. Close the door(s) of the cable trough(s).
7. Do not connect power at this point.

## Installing an Expansion Cartridge

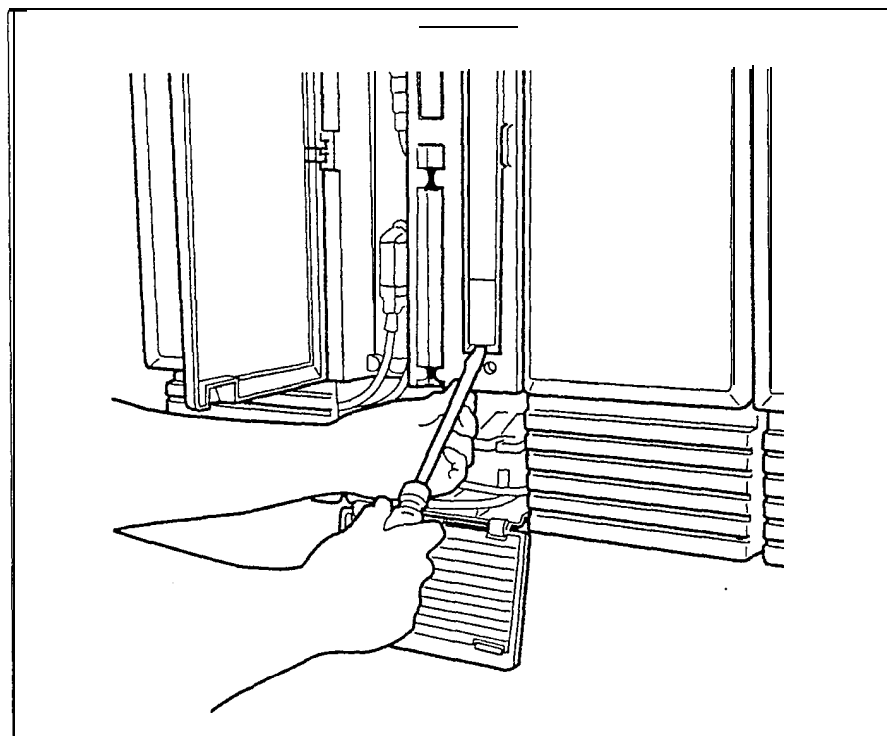
Installation for Two-port and Six-port Expansion Cartridges follow the same procedure. (Refer to the Port Numbering section of the Technical data module for changes to default DN length caused by installing an Expansion Cartridge.)

### CAUTION

Do not touch the printed circuit board. This is an electrostatic-sensitive device.

1. Make sure that the KSU power is OFF before installing or removing an Expansion Cartridge.
2. Remove the cover of the Expansion Cartridge slot in the KSU. Use a screwdriver at the bottom of the cartridge slot cover, as indicated by the icon, to help detach the cartridge slot cover from the slot.

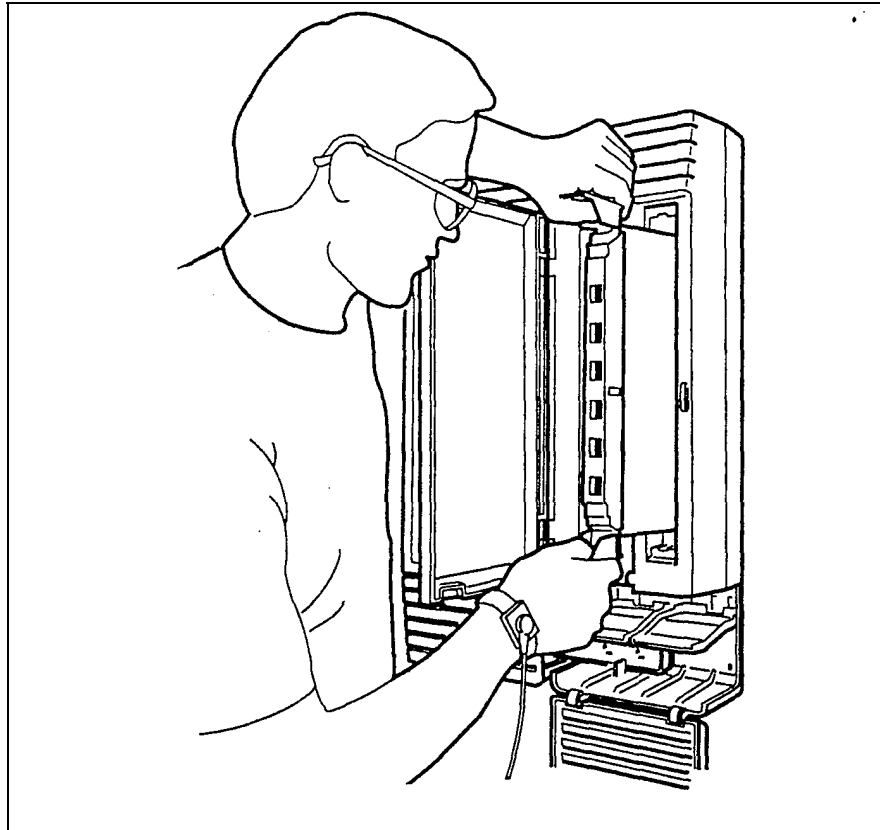
### Removing the cartridge slot cover





3. Make sure you are wearing a grounding strap when handling any cartridge.
4. While holding the latches open, insert the Expansion Cartridge in the appropriate slot as shown and close the latches at the same time to align the cartridge properly.

#### installing a Six-port Expansion Cartridge



## Installing a Trunk Cartridge

The types of Trunk Cartridges available are

- Loop Start Trunk Cartridge (with or without disconnect supervision)
- E&M/DISA Trunk Cartridge
- DID Trunk Cartridge

The procedures for installing the different types of Trunk Cartridges are identical. For wiring charts, see the Technical data chapter.

### Programming Trunk Mode for Trunk Cartridges

It is important, in Configuration programming, to set the Trunk Mode value for Loop Start Trunk Cartridges correctly. All lines on a Trunk Cartridge will be affected by changing the Trunk Mode setting on any one line. See the Configuration chapter to set Trunk Mode.

All three types of Trunk Cartridges can be installed in one Trunk Module if required for a particular installation. When mixing Trunk Cartridges, use a separate distribution block for each type of Trunk Cartridge. This ensures that the proper RJ-21/CA-21 (Loop Start and DID) and RJ2HX/ CA2HA (E&M/DISA) interfaces are obtained (see the examples in the Technical data chapter on how to read the E&M/DISA and the DID wiring charts).

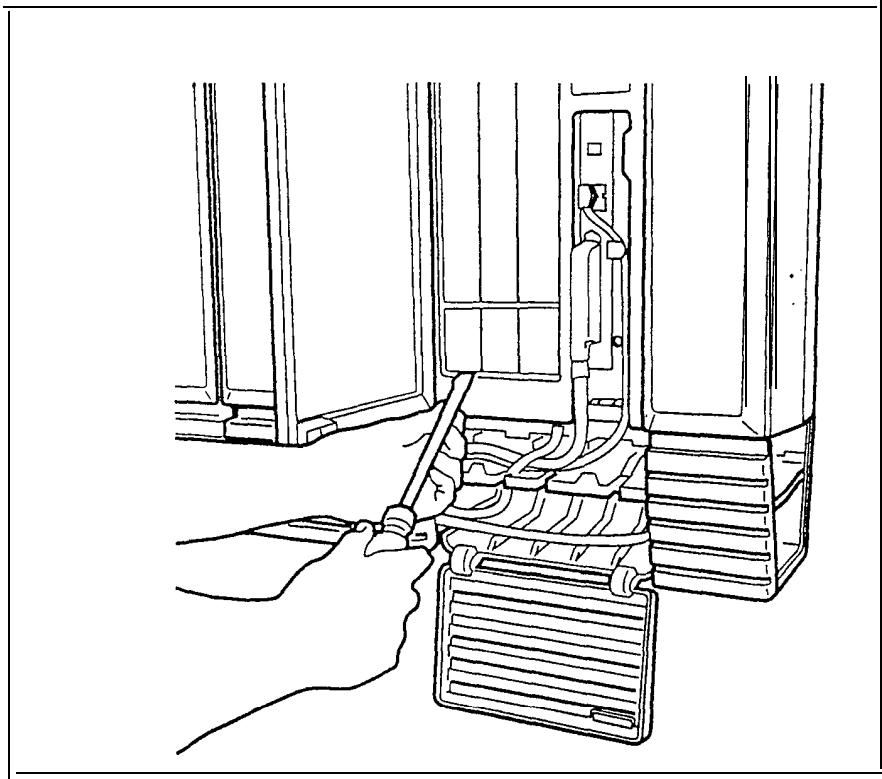
**CAUTION**

Do not touch the printed circuit board. This is an electrostatic-sensitive device.

1. Make sure that the Trunk Module power is OFF before installing or removing a Trunk Cartridge.
2. Remove the appropriate cartridge slot cover of an unused Trunk Cartridge (TC) slot on the TM. Use a screwdriver at the bottom of the cartridge slot cover, as indicated by the icon, to detach the cartridge slot cover from a Trunk Cartridge (TC) slot.

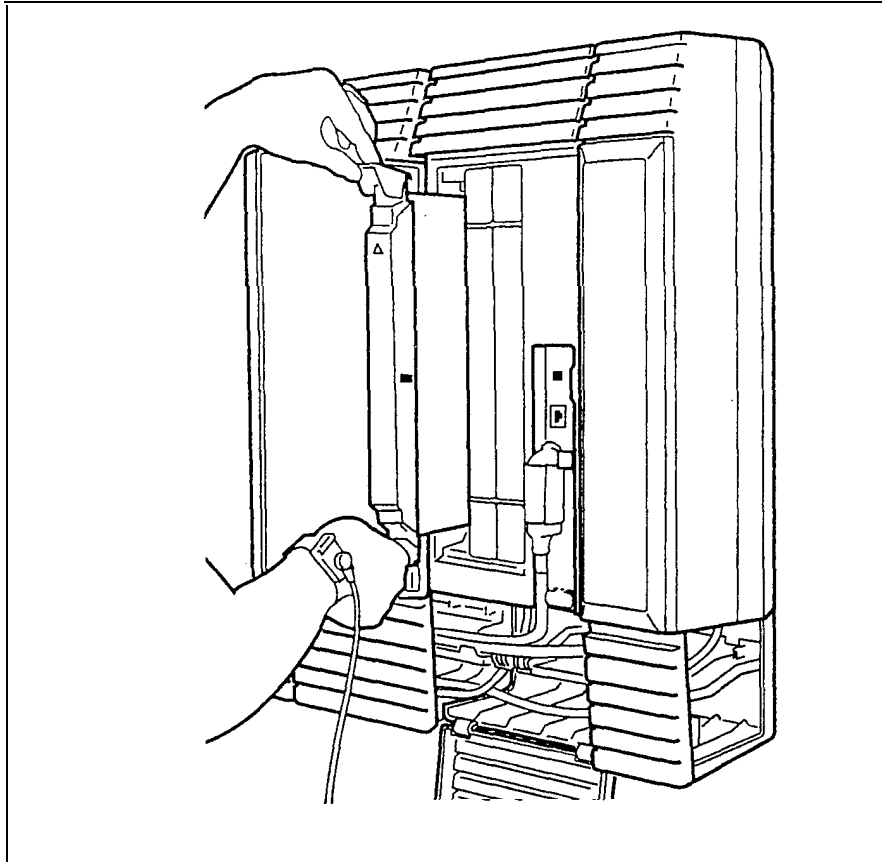
**Note:** The Trunk Cartridges (TC) are installed starting from the left slot to the right slot.

Removing the cartridge slot cover



3. Make sure you are wearing a grounding strap when handling Norstar cartridges.
4. While holding the latches open, insert the Trunk Cartridge (TC) in the appropriate slot as shown and close the latches at the same time to align the cartridge properly.

#### Installing a Trunk Cartridge (TC)



## KSU and TM external lines

### External line cable and wiring material required

- KSU: One 25-pair, 0.5 mm (24 AWG) cable (for the external lines and auxiliary equipment) terminated with a female 50-pin connector on one end.
- TM: One 25-pair, 0.5 mm (24 AWG) cable (for the external lines and auxiliary equipment) terminated with a female 50-pin connector on one end.
- distribution block for each 25-pair cable.

Note: Installers should also check the lightning protectors at the cable entry point to the building with special attention to the grounding. Any problems should be reported to the telephone company in writing.

### Connecting external lines

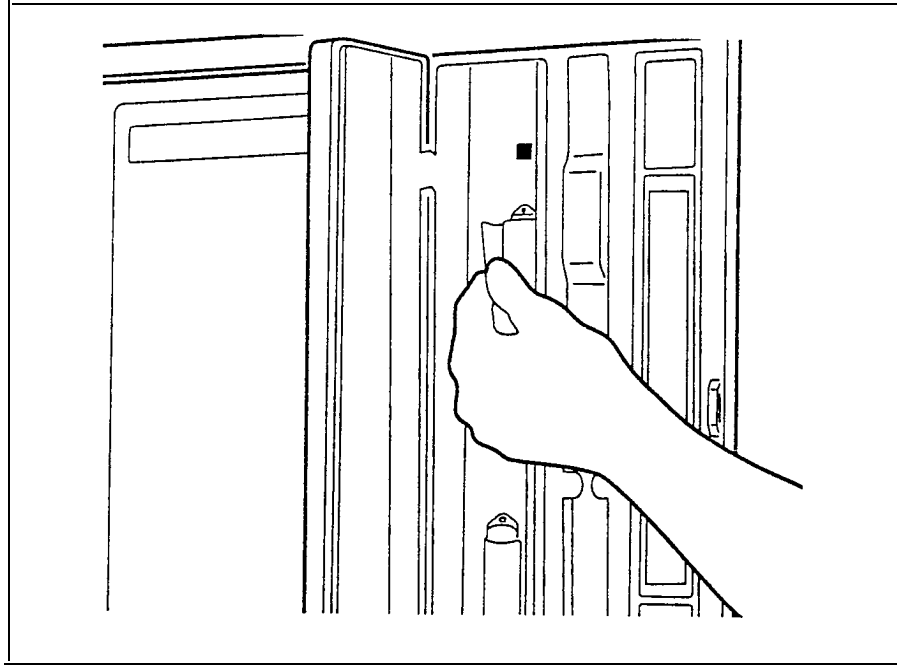
The following procedure is an example of one of several methods for cross-connecting KSU and Trunk Module external lines and for cross-connecting KSU auxiliary equipment lines and the TM emergency telephone.

1. Plug the 50-pin connector of a 25-pair cable into the corresponding external line connector on the KSU.  
(The connector is labeled with an icon which represents telephone poles as shown here.)



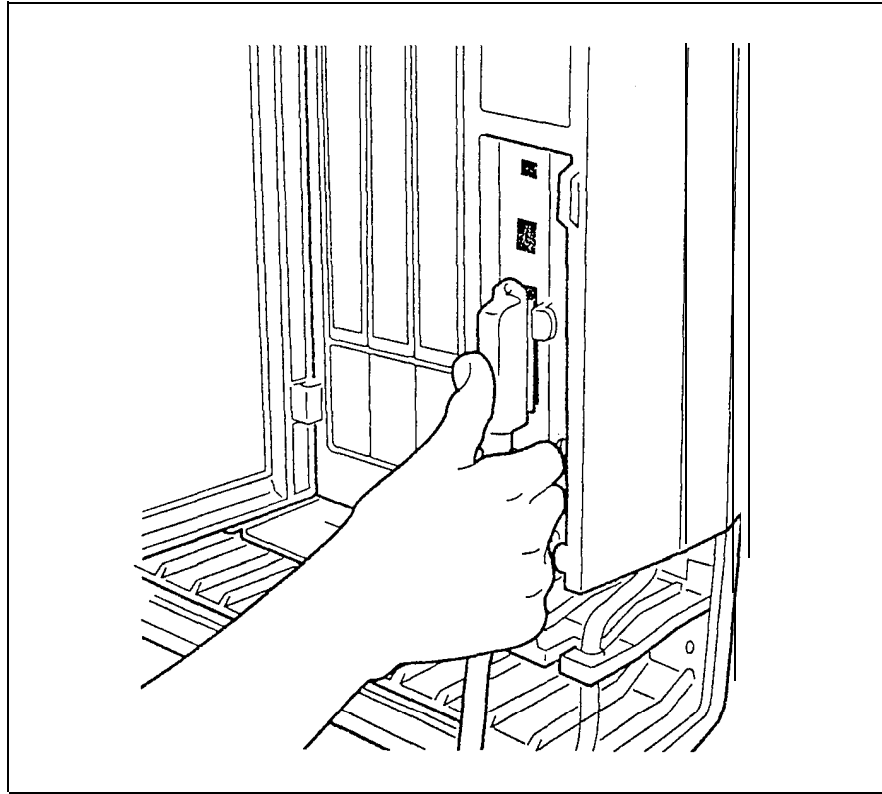
2. Perform the same step for a TM in the installation.

### Connecting the KSU external lines



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### Connecting the **TM** external lines



3. Route the 25-pair cable(s) through the upper shelf of the cable trough to the distribution block.

*Note:* Route the 25-pair cables straight out to one side of the cable trough in a bundle. Use cable ties to secure them to the wall and to support their weight. This prevents undue stress on the cable trough shelf when several 25-pair cables are present.

4. Cross connect the external lines to the distribution block (see KSU and TM external line wiring charts and wiring arrangement diagrams in the Technical data chapter).



5. Connect the auxiliary equipment lines to the distribution block (see KSU and TM external line wiring charts and wiring arrangement diagrams).

Note: Auxiliary equipment must not be connected to the RJ-21/CA-21 interface.

6. To connect external lines to a standard RJ-21/CA-21 interface:

Bring the external cable to the distribution block and use the distribution block to cross-connect to the corresponding KSU and TM external lines according to the KSU and TM external line wiring charts and diagrams. Refer to the following charts and illustrations in Appendix A of the Technical data chapter:

- Wiring arrangement for Norstar KSU
- Wiring arrangement for Norstar TM.
- KSU external lines and auxiliary equipment wiring
- MI 2X0 Trunk Module with Loop Start Trunk Cartridge external line wiring

7. Wire the auxiliary equipment lines separately (see KSU and TM external line wiring charts and diagrams).

Note: For the TM, the auxiliary equipment line is an Emergency Telephone (ET). Also see wiring arrangement illustrations listed above.

## KSU and SM internal wiring

**WARNING**

Norstar telephones must not be used as Off Premises telephones (OPX). Norstar telephones are for use with Norstar equipment only. Connecting a Norstar telephone directly to an external line may result in equipment damage. For OPX applications use the Norstar Analog Terminal Adapter (ATA) with single-line telephones.

### Station telephone cable and wiring material required:

- KSU: one 25-pair, 0.5 mm (24 AWG) cable with a female 50-pin connector installed on one end.
- SM: one 25-pair, 0.5 mm (24 AWG) cable with a female 50-pin connector installed on one end.
- Sufficient 25-pair, 50-pin distribution blocks to accommodate the internal wiring.

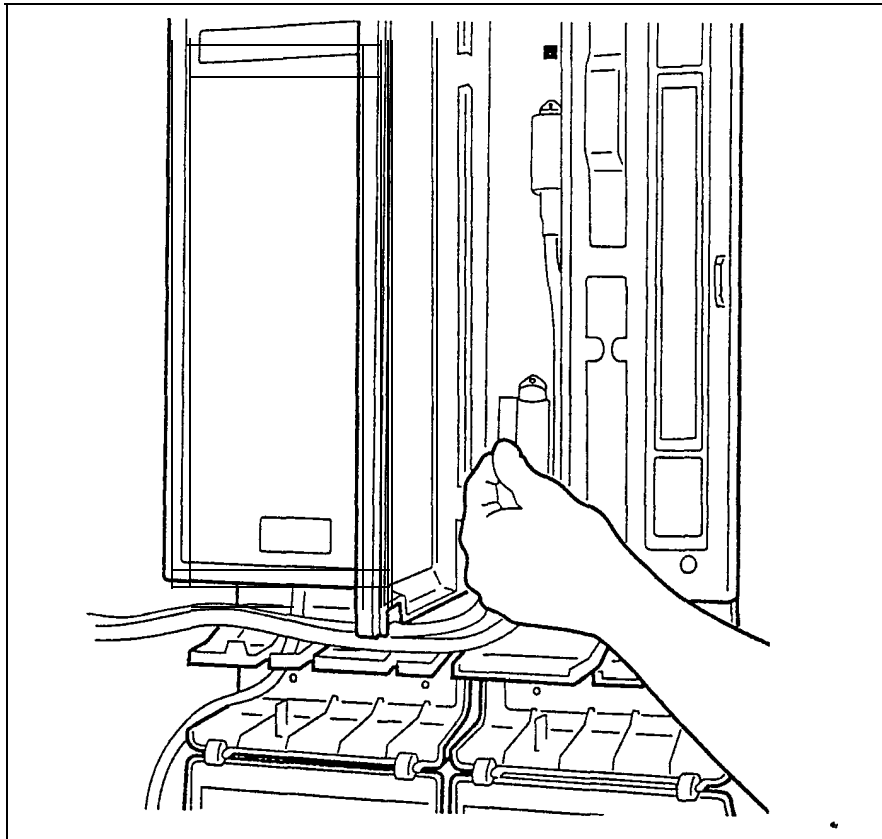
## Connecting KSU and SM internal wiring

The following procedure is an example of one of several methods for cross-connecting KSU and SM internal wiring.

1. Plug a 50-pin connector of a 25-pair cable into the corresponding station connector on the KSU. (The connector is labeled with an icon which represents a Norstar telephone as shown here.)

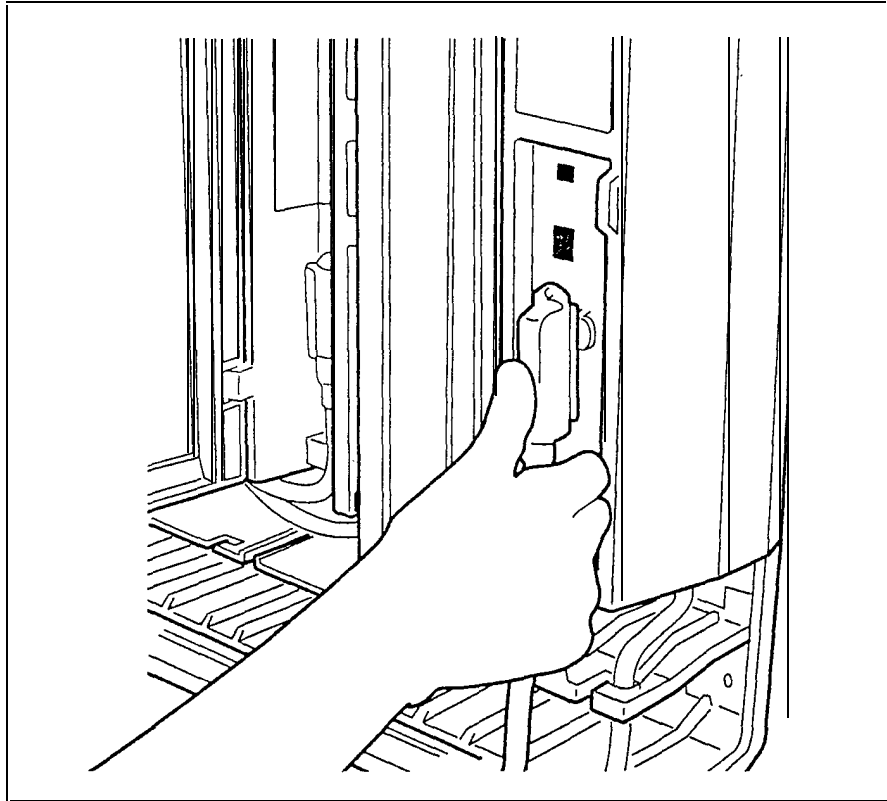


### Connecting to the KSU



2. Perform the same step for an SM in the installation.  
The SM station connector is located at the bottom of the cable channel on the right front of the SM.

#### Connecting to the SM

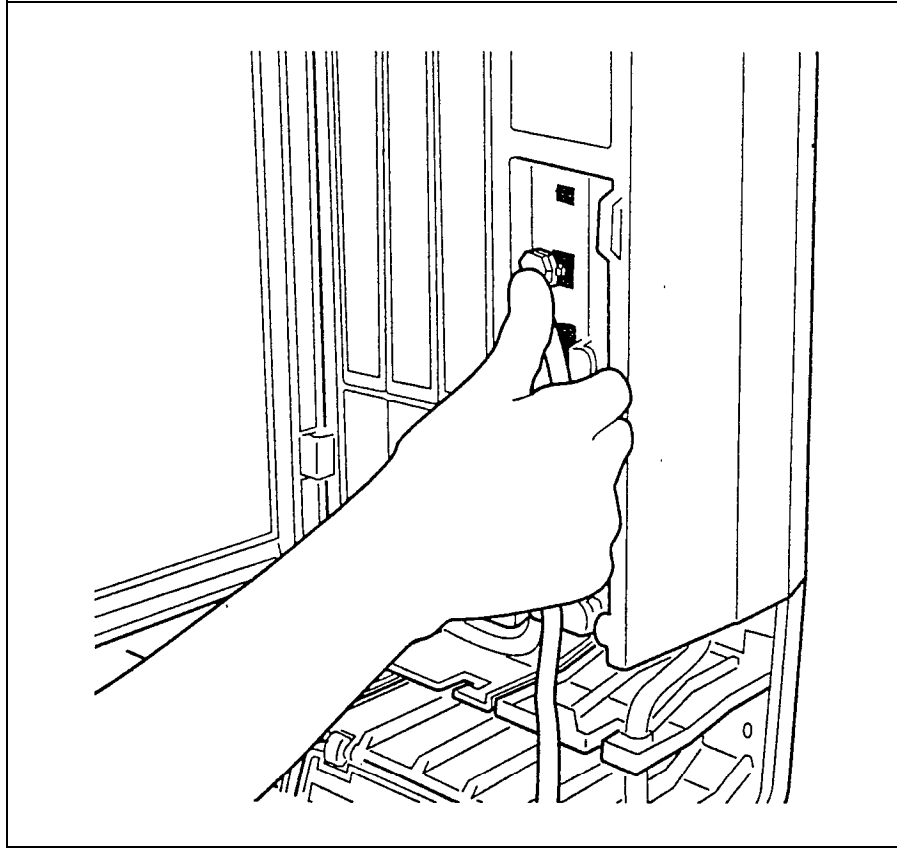


3. Route the 25-pair cable(s) through the upper shelf of the cable troughs underneath the KSU and SM, to the distribution block.  
  
Note: Route the 25-pair cables straight out to one side of the cable trough in a bundle. Use cable ties to secure them to the wall and to support their weight. This prevents undue stress on the cable trough shelf when several 25-pair cables are present.
4. Connect the KSU and SM 25-pair wires to the appropriate pins on the distribution block. Refer to the following charts and illustrations in the Technical data chapter:
  - KSU internal wiring
  - MOX16 Station Module internal wiring
5. Cross-connect the KSU and SM telephone wires to the corresponding station pins on the distribution block for telephone wiring (see KSU and SM internal wiring charts in the Technical data chapter).
6. Using a single pair of wires for each telephone, connect each of the telephones according to the wiring charts (KSU internal wiring and MOX16 Station Module internal wiring).

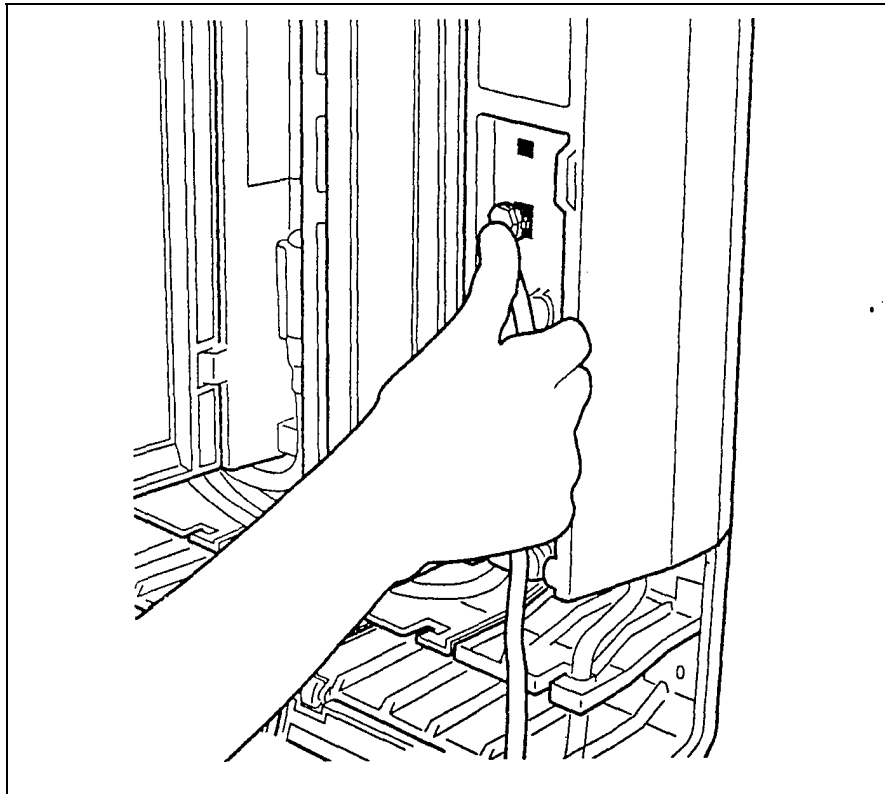
## Connecting DS-30 Cables

1. Plug one end of the DS-30 cable into the DS-30 port on the front of a TM or SM.

Plugging in a TM DS-30 cable



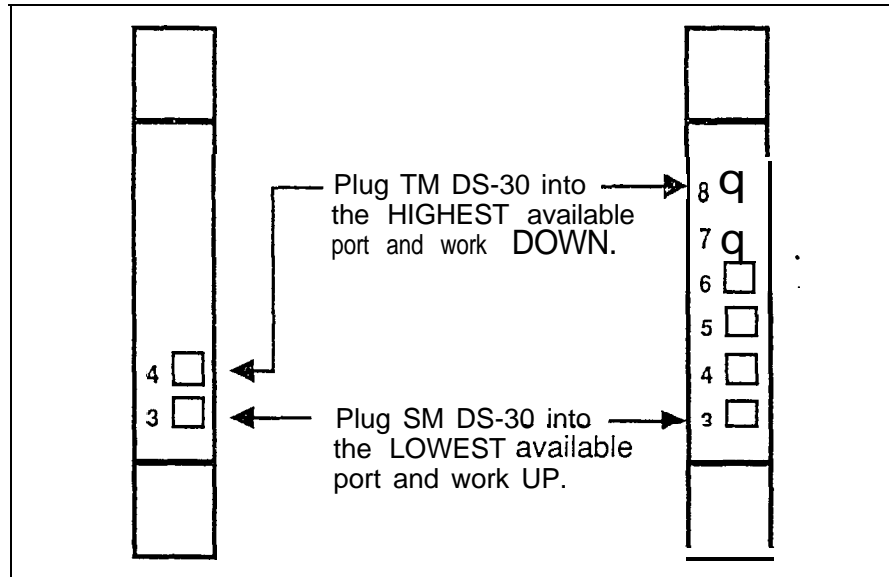
### Plugging in a SM DS-30 cable



2. Route the cable through the cable clips on the right side of the TM or SM.
3. Route the cable through the upper shelf of the cable trough to the KSU and up through the cable clip to the Expansion Cartridge.
4. Trunk Modules: Plug the end of the DS-30 cable of the first TM into the **HIGHEST** available port of the Expansion Cartridge and work **DOWN**.

Station Modules: Plug the end of the DS-30 cable of the first SM into the **LOWEST** available port of the Expansion Cartridge and work **UP**.

Plugging DS-30 cables into a Two-port or Six-port Expansion Cartridge





## Installing the Feature Cartridge

The Feature Cartridge is made up of two parts:

- Software Cartridge
- Data Cartridge

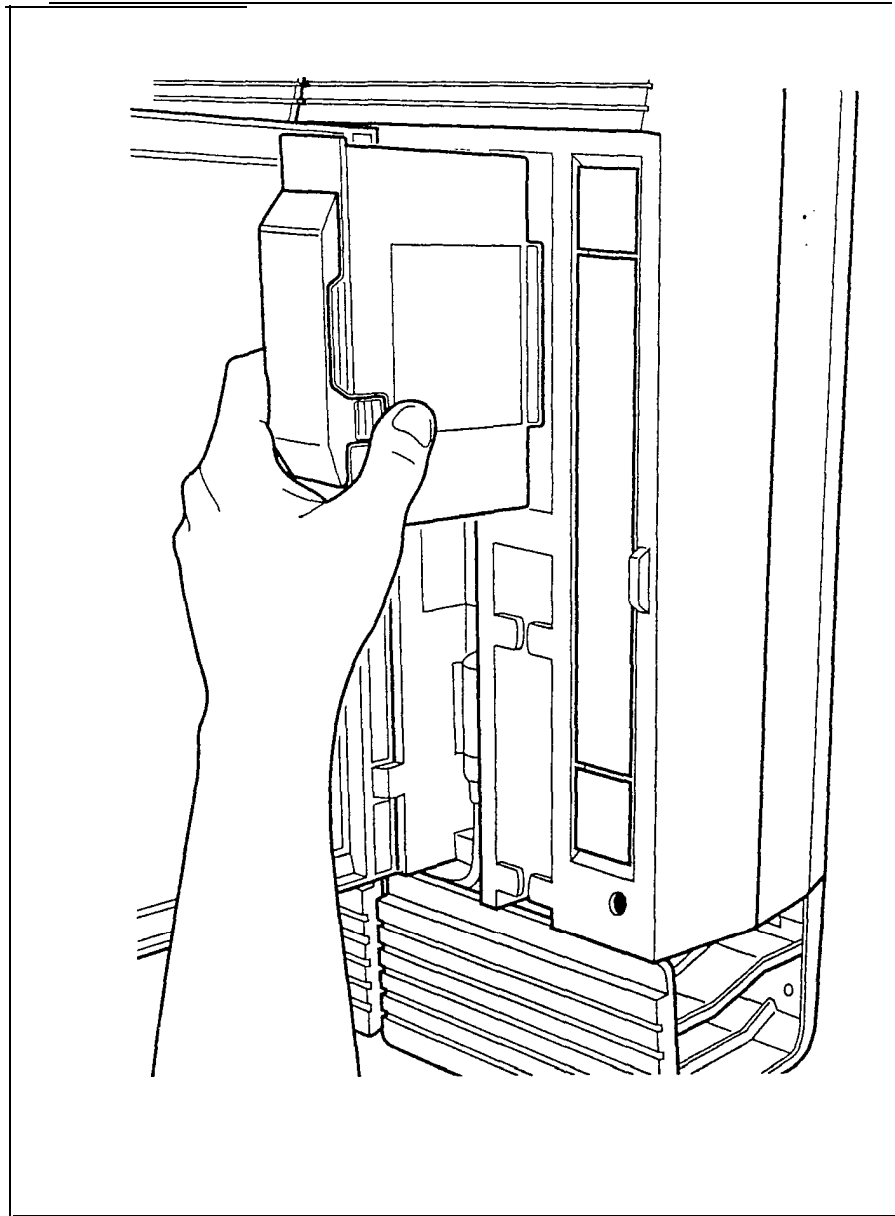
**CAUTION**

Do not touch the printed circuit board. This is an electrostatic-sensitive device.

1. Turn the KSU power OFF before installing or removing a Feature Cartridge.
2. Make sure you are wearing a grounding strap when handling Norstar cartridges.
3. insert the Software Cartridge into the Data Cartridge.

4. Insert the Feature Cartridge assembly into the KSU, as shown in the illustration.

#### Installing the Feature Cartridge



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# Emergency telephones

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Emergency telephones (ET) are standard (500/2500) single-line telephones that provide emergency service in case of power failure or when power to the Norstar system is disconnected.

**Note:** The KSU has two ET connections (ET1 and ET2). Each TM has one ET connection.

## Connecting emergency telephones for a KSU

**Note:** See the wiring chart for the KSU to external lines and auxiliary equipment in the Technical data chapter.

1. Wire a modular jack or equivalent to each set of ET pins on the 50-pin connecting block for KSU external lines.

### ET connections for the KSU

KSU external lines connector				Auxiliary equipment connections	
Pin	Wire color	Line	Service	Pin	Wire color
35	Red-Slate	ET 1	T	35	Red-Slate
10	Slate-Red	ET 1	R	10	Slate-Red
36	Black-Blue	ET 2	T	36	Black-Blue
11	Blue-Black	ET 2	R	11	Blue-Black

2. Connect a single-line telephone to the modular jack,

## Connecting the emergency telephone for a TM

**Note:** See the wiring chart on M12X0 Trunk Module external wiring in the Technical data chapter.

1. Wire a modular jack or equivalent to the set of ET pins on the 50-pin connecting block for TM external lines.

### ET connections for the TM

TM external lines connector		RJ-21 / <b>CA-21</b> external connector	
Pin	Wire color	Line	Service
50	Violet-Slate	ET	T
25	Slate-Violet	ET	R

**Note:** The ET connections will not work if there is an E&M/DISA Trunk Cartridge in the first slot of the TM.

2. Connect a single-line telephone to the modular jack.

## Testing the emergency telephones

1. Ensure that power to the KSU (and modules) is OFF.
2. Pick up the emergency telephone receiver.
3. Listen for the dial tone.

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If the dial tone is present

If there is no dial tone

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- check that the ET is functioning properly.

-check that the external line is connected properly.

- verify that the telephone is working properly by connecting it directly to the external line.

- verify that ac power to the KSU or TM is OFF.

-verify that there is dial tone on lines 1 and 2 of the KSU and on line 1 of the TM.

4. If all previous steps have been verified and there is still no dial tone at the emergency telephone, replace the KSU or TM.
5. Repeat the telephone test if necessary.

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# Optional equipment

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## Installing an auxiliary ringer control

The Norstar KSU provides a control contact to operate an external loud ringer. The auxiliary ringer can be activated by:

- Auxiliary ring for specific external lines
- Auxiliary ring for specific telephones.

Refer to the chapters on programming for more details. Refer specifically to the following headings in Administration and Configuration.

Heading	Programmed in:
Trk/Line Data	Configuration
Capabilities	Administration
Service Modes	Administration

1. Follow the manufacturer's installation instructions.
2. Connect the Auxiliary Ring Generator to the 50-pin distribution block as shown on the next page (from the wiring chart for the KSU to external lines and auxiliary equipment in the Technical data chapter).

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 Auxiliary ringer control
 

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KSU external connector			Aux. equipment connections		
Pin	Wire color	Line	Service	Pin	Wire color
43	Yellow-Green	Auxiliary ring make	T	43	Yellow-Green
18	Green-Yellow	Auxiliary ring common	R	18	Green-Yellow
44	Yellow-Brown	Auxiliary ring break	T	44	Yellow-Brown

The pins in this chart provide a control contact. They do not provide ring current or dc voltage. The ringer must not draw more than 50 mA from a 40 V dc source.

## Installing an external music source

Music for callers on Hold and for Background Music must be enabled through programming. Refer to the Programming chapter for more details. Refer specifically to the following programming headings in Configuration and confirm that the following settings are implemented:

Heading	Setting
Call Handling	On Hold: Music
Miscellaneous	Background Music: Yes

### External music source programming

The music source can be any low-power device such as a radio with a high-impedance earphone jack. The recommended KSU input level is 1 V rms across an input impedance of 3300 ohms.

1. Connect the earphone from the music source (signal and ground) to the 50-pin distribution block, as shown below (from the KSU internal wiring chart in the Technical data chapter).

### External music source wiring

#### KSU internal wiring connector

Pin	Wire color	Port	Station	Telephones (KSU)	Default DN
50	Violet-Slate	----	----	Music-on-hold ground	----
25	Slate-Violet	----	----	Music-on-hold input	----

#### CAUTION

To avoid damage to audio equipment, ensure that the polarity of the audio input is the same as identified in the KSU internal wiring connector chart above for pins 50 (Violet-Slate) and 25 (Slate-Violet).

2. Adjust the volume of the music source to a comfortable level by making a call into the system on an external line and then putting the call on hold.

## Installing an external paging system

The Norstar system allows a customer-supplied external paging system to be connected to and operate in conjunction with the Norstar paging feature. The system allows announcements to be made in offices, warehouses, and buildings. The paging output from the Norstar KSU, is 775 mV across an input impedance of 600 ohms.

1. Follow the manufacturer's installation instructions.



2. Connect the paging system audio input to the 50-pin distribution block (paging output - 775 mV across 600 ohms) as shown below. Refer to wiring chart for KSU to external lines and auxiliary equipment in the Technical data chapter.

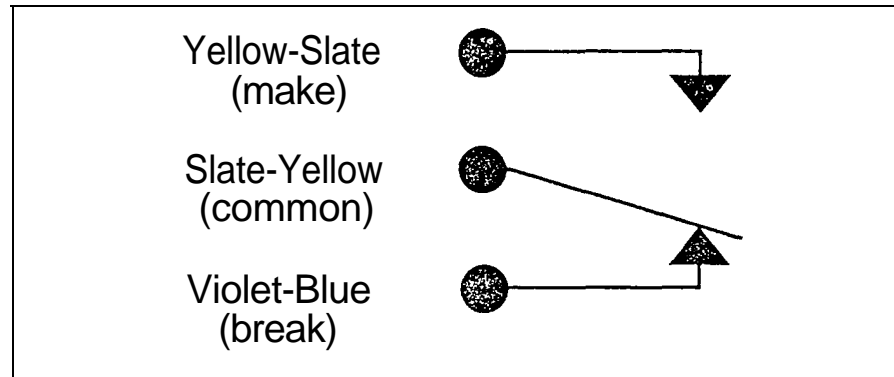
### External paging system wiring

KSU external connector			Aux. equipment connections		
Pin	Wire color	Line	Service	Pin	Wire color
45	Yellow-Slate	Page relay make	T	45	Yellow-Slate
20	Slate-Yellow	Page relay common	R	20	Slate-Yellow
46	Violet-Blue	Page relay break	T	46	Violet-Blue
21	Blue-Violet	No connection	----	21	Blue-Violet
47	Violet-Orange	Page out tip	T	47	Violet-Orange
22	Orange-Violet	Page out ring	R	22	Orange-Violet

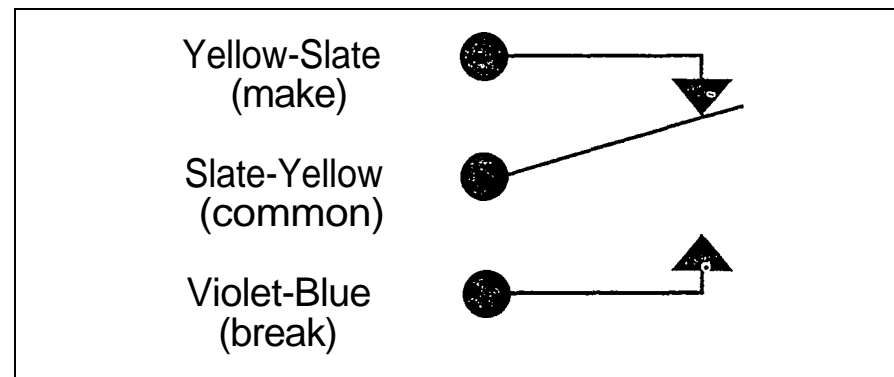
Note: Norstar system external paging supports talk-back paging equipment only when an external line port is used.

In addition, the Norstar KSU provides a relay contact that can be used for other applications (for example, switching music ON or OFF).

## External paging contacts - idle



## External paging contacts - active



The Norstar Modular KSU provides both a “make” (normally open) and a “break” (normally closed) set of contacts that operate in conjunction with the External Page feature. These contacts can be used to control various external devices. The external device being connected through these contacts must not draw more than 50 mA from a 40 V dc source.

# Norstar telephones

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## WARNING

Norstar telephones must not be used as Off Premises telephones (OPX). Norstar telephones are for use with Norstar equipment only. Connecting a Norstar telephone directly to an external line may result in equipment damage. For OPX applications use the Norstar Analog Terminal Adapter (ATA) with single-line telephones. (See the ATA installation card for more information.)

Installers should also check the lightning protectors at the cable entry point to the building with special attention to the grounding. Any problems should be reported to the telephone company in writing. Norstar telephone wiring should not leave the buildings as it is not lightning-protected.

## Hearing aid compatibility

Meridian Norstar telephones are hearing aid-compatible, as defined in Section 68.316 of Part 68 FCC rules.

## Installing **M7324, M7310, M7208, and M7100** Telephones

1. Connect the receiver cord to the receiver jack on the telephone (right-hand jack, when viewed from the rear). Route the cord through the cord guide in the bottom of the telephone.
2. Connect the line cord. Route the cord through the cord guide.
3. Plug the other end of the line cord into the modular jack that was previously wired to the distribution block.

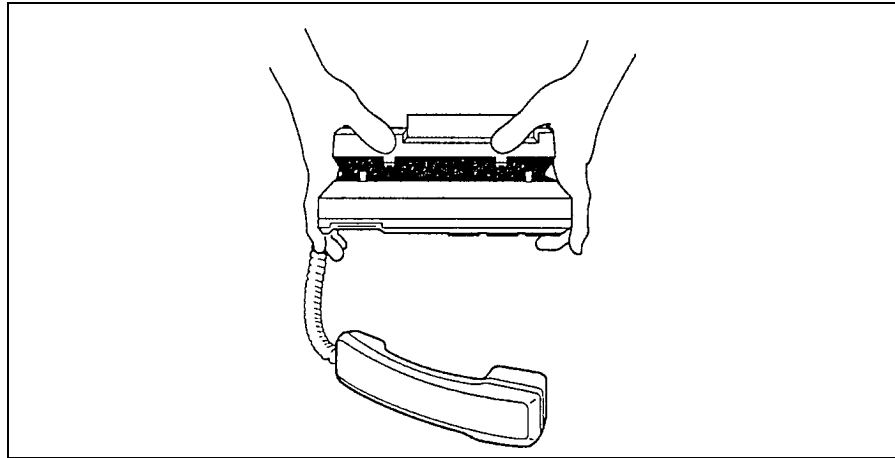
4. Check the Norstar telephone displays; the indicators should flash for up to 20 seconds while the telephone is initializing. The time and date are then displayed. For example, Jan 1 1:00 am.

## Installing a wall-mounted telephone

The M7324, M7310, M7208, and M7100 Telephones can be mounted on the wall.

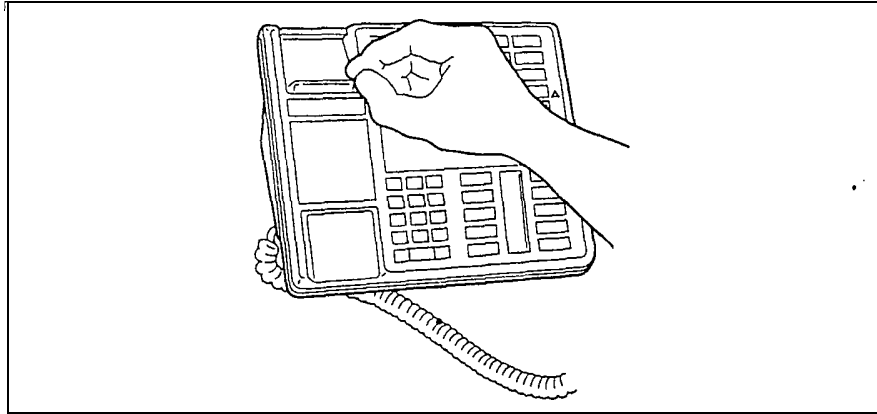
1. Remove the bevelled wall-mounting base from the back of the Norstar telephone. Grip the base, and with both thumbs, push on the top to pop it out.

Removing the wall-mounting telephone base



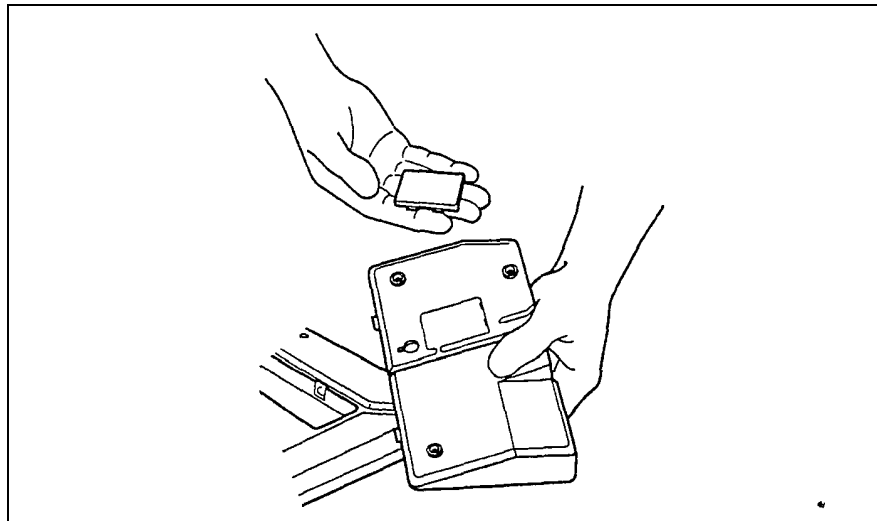
2. Remove the receiver clip from the base. Install the clip in the forward lip of the receiver rest.

#### Installing the telephone receiver clip



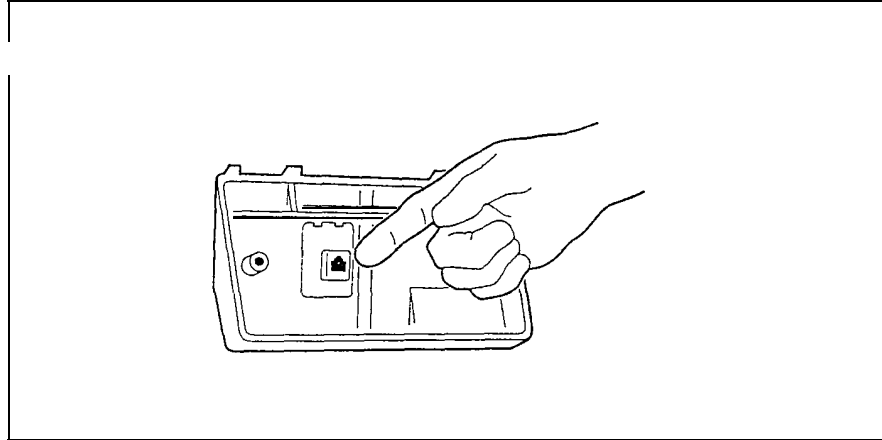
3. Use a screwdriver or similar tool to remove the center knock-out panel.

#### Removing the telephone knock-out panel



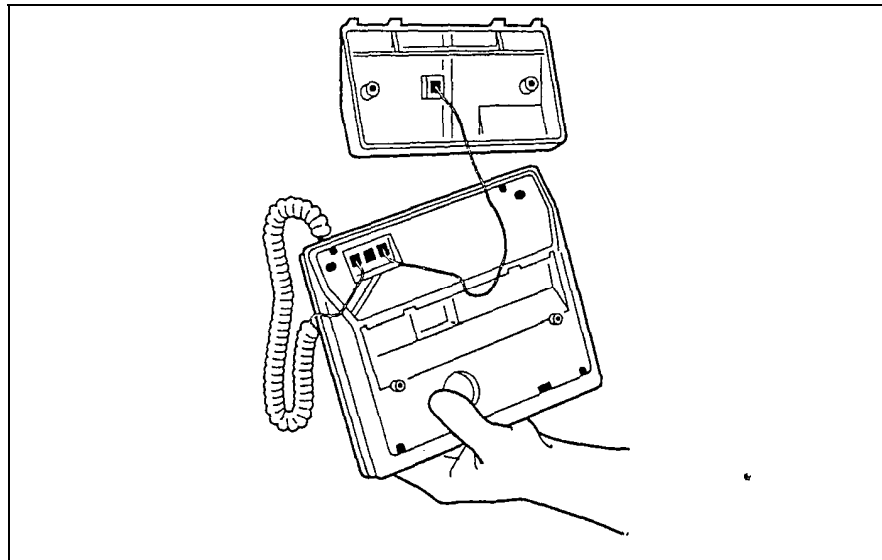
4. Install the wall-mounting base “upside down” so that the modular jack projects through the knockout .

#### Installing the wall-mounting telephone base



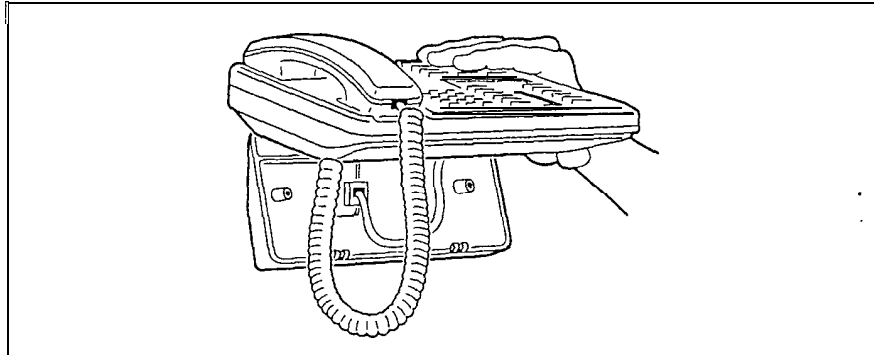
5. Connect the line cord between the modular jack and the telephone jack (right-hand jack on the bottom).

#### Connecting the telephone line cord



6. Mount the telephone on the wall-mounting base. Route the cord through the cord guide.

#### Mounting the telephone



7. Plug the telephone into a modular jack. The indicators should flash for up to 20 seconds while the telephone initializes. The time and date are then displayed.

## Applying the button cap labels

Apply the button labels after you have powered up the system and finished the Configuration and Administration procedures. If the customer is likely to re-program some of the buttons, it is better not to apply the labels until after re-programming.

Use Button Inquiry    to verify that the label agrees with the programming for that button. There are two types of labeled buttons, pre-printed buttons and buttons with blank labels you fill out yourself. Leave the labels and extra button cap kits with the individual Norstar telephones or the System Coordinator.

### Types of button caps

- Unlabeled, clear button caps with appropriate green or grey paper for typing in line numbers, telephone numbers, and features
- Pre-printed, colored button caps in green or grey

#### Some example pre-printed button caps

Green caps	Grey caps
<input type="text" value="Line 1"/>	<input type="text" value="Last No."/>
<input type="text" value="Handsfree"/>	<input type="text" value="Speed Dial"/>

**Note:** To make identification of line types easier, use preprinted green button caps for lines that support incoming and outgoing calls. Use clear button caps for target lines that are incoming only.



### Typing the telephone numbers

1. Type the individual telephone numbers on the labels and attach them to the appropriate Norstar telephones.
2. Type the telephone number and the internal number on the appropriate *Norstar Receiver Card* for each type and color of telephone that is to be installed.
3. Cover the *Norstar Receiver Card* underneath the receiver of each telephone with the plastic lens provided.

## Norstar default button assignments

During the System Startup process, initial default features are assigned automatically to the programmable buttons on Norstar telephones. This is designed to assist the Installer in programming the system.

During Startup, the installer chooses one of four default templates: Square, Centrex, Hybrid, or PBX. The default feature assigned to each button depends on the type of template chosen and on the type of telephone. Unless a button has been assigned as an external line, Intercom, Answer, or Handsfree/Mute button, a default feature is assigned automatically. These defaults are shown on the following pages.

*Note:* Telephones are shipped from the factory with the button caps in place for the Square template.

### Rules of default button assignment

Buttons are assigned in the following order:

#### Handsfree/Mute button

If assigned to the Norstar telephone in programming, this feature appears on the bottom right-hand button (the bottom button on the M7208 Telephone), moving the intercom button(s) up one position. The Handsfree/Mute button does not appear on the M7100 Telephone.

#### Intercom button

A telephone may have up to eight Intercom buttons. Intercom buttons appear above the Handsfree/Mute button (if assigned) on the bottom right-hand buttons (the bottom button on the M7208 Telephone).

### Answer button

Each telephone can have up to four Answer buttons. An Answer button is assigned automatically to a telephone when that telephone is assigned an Answer DN in the Line Access section of Configuration programming. Answer buttons appear above intercom buttons in the right column and continue up from the bottom in the left column replacing the features on those buttons. (On the M7208 Telephone, Answer buttons appear above Intercom buttons and below external line buttons in a single column of buttons.)

### External line buttons

External line buttons appear in ascending line order, starting at the top button in the left column (the top button on the M7208 Telephone). If more than five external lines are assigned to the M7310 Telephone, or more than 12 to the M7324 Telephone, assignment continues down the right column, replacing the features on those buttons. Line buttons have priority over feature access buttons but not Handsfree/Mute, Intercom, or Answer buttons. There are no external line buttons on the M7100 Telephone.

## Telephone button defaults

Defaults shown on the following pages are for a system with three-digit DNs. Other configurations may have two-digit to seven-digit DNs.

*Note:* A telephone cannot have an Internal Autodial button that is programmed to dial its own DN.

Reading the following charts

Button defaults for the Square template are shown in the left column. In the Centrex, Hybrid, and PBX columns, the defaults shown are specific to these templates. Where no default is shown, the default is the same as the Square template. Line numbers in the chart are represented by 'x' (for example,  ).

**M7100 Telephone - Norstar template and defaults**

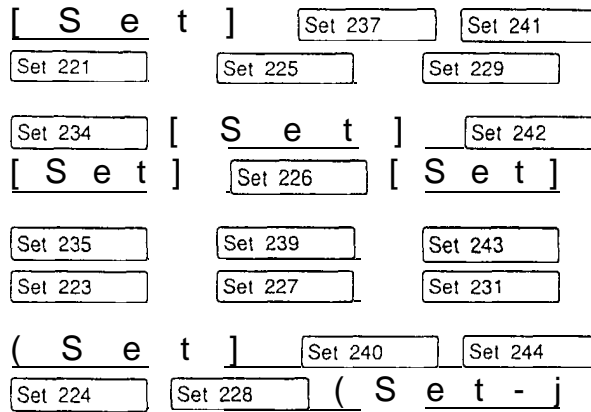
Square	Centrex	Hybrid	PBX
<input type="text" value="Last No."/>			

**M7208 Telephone - Norstar template and defaults**

Square	Centrex	Hybrid	PBX
<input type="text" value="Line 1"/>	<input type="text" value="Line&lt;xx&gt;"/>		<input type="text" value="Pick-Up"/>
<input type="text" value="Line 2"/>	<input type="text" value="Transfer"/>	<input type="text" value="Line pool"/>	<input type="text" value="Transfer"/>
<input type="text" value="Last No."/>			
<input type="text" value="Page"/>	<input type="text" value="Link"/>		
<input type="text" value="Conf/Trans"/>			
<input type="text" value="Speed Dial"/>			
<input type="text" value="Intercom"/>			
<input type="text" value="Intercom I"/>			

### M7310 Telephone - Norstar template and defaults

#### Dual memory buttons for the M7310



#### Left column button assignments for the M7310

Square	Centrex	Hybrid	PBX
Line 1	Line<xx>		DND
[Line]	[Transfer]	Line pool	[Transfer]
Call Fwd			
Pick-Up			
Page	( L i n k ]		

#### Right column button assignments for the M7310

Square	Centrex	Hybrid	PBX
Conf/Trans			
Last No.			
Voice Call			
Intercom			
Intercom			

M7324 Telephone • **Norstar** template and defaults

Left column button assignments for the M7324

Square	Centrex	Hybrid	PBX
Line 1	Line<xx>		Blank
Line 2	Blank	Line pool	Blank

The remaining ten buttons on the left column are blank until lines, features, or Autodial numbers are assigned.

Right column button assignments for M7324

Square	Centrex	Hybrid	PBX
[Call]			
Speed Dial			
Last No.			
Saved No.	Link		
Conf/Trans			
Transfer			
DND			
Pick-Up			
Voice Call			
Page			
Intercom			
Intercom			

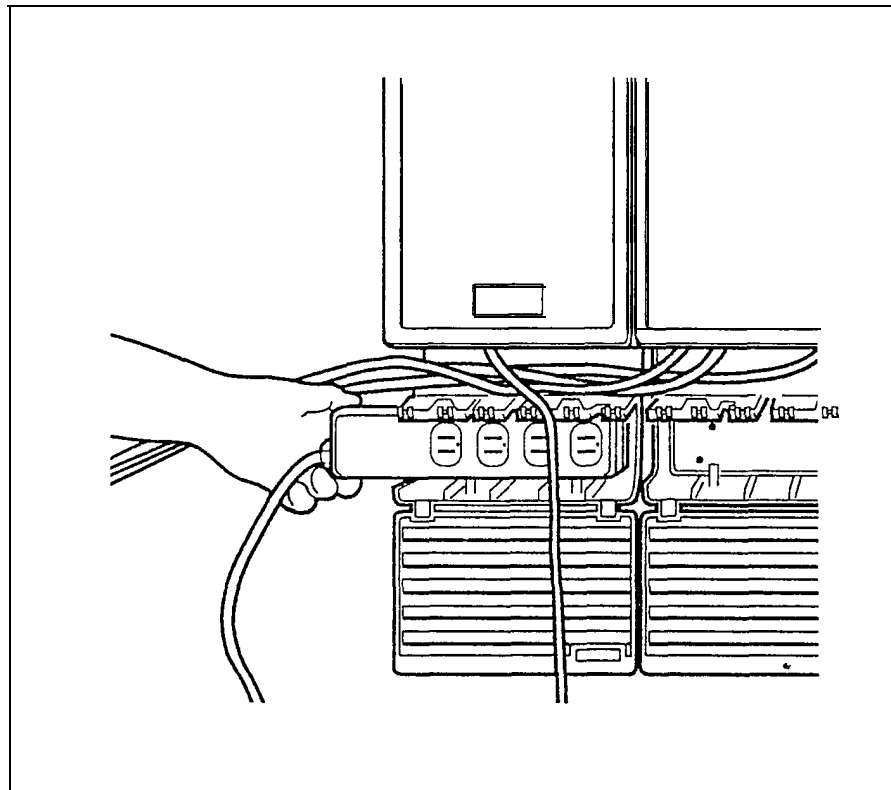
# Power Bar installation

---

## Installing a 110 V Power Bar

1. Slide the 110 V Power Bar into the lower shelf of the cable trough. All power cords must go only in the lower shelf of the cable troughs. Where any combination of four or more Trunk or Station Modules is present, use a second Power Bar to provide additional plugs. The power cord from the second Power Bar must be plugged into the first Power Bar.
2. Route the power cord from the KSU, TM, and SM through the cable clips located in the lower shelf of the cable trough.

## Installing a Power Bar for the 110 V system



3. Plug the ac power cord from the KSU, TM, and SM into the power bar.

**CAUTION**

Use only a CSA certified and UL listed Power Bar having a third wire ground.

4. See the next section for instructions on powering up the system.

## **Installing a 220 V Power Bar**

1. Slide the 220 V Power Bar(s) into the lower shelf of the cable trough. All power cords must go only in the lower shelf of the cable troughs. Where any combination of four or more Trunk or Station Modules is present, use a second Power Bar to provide the additional plugs. Connect two Power Bars with a separate power cord.
2. Route the power cord from the KSU, TM, and SM through the cable clips located in the lower shelf of the cable trough.
3. Plug the KSU, TM, and SM power cords into the Power Bar(s).

**CAUTION**

Use only an approved Norstar 220 V Power Bar having a third wire ground provided by the ac outlet.

4. Plug the ac power cord into the Power Bar.
5. See the next section for instructions on powering up the system.



# Power up Norstar system

---

## Powering up

1. Double check all wiring before turning the power ON for the system.
2. Connect to the ac outlet:

For a KSU alone (having no Power Bar, TMs, or SMs):

110 V system	Plug the KSU power cord into the ac outlet.
220 V system	Plug the KSU power cord into the separate ac power cord supplied for the 220 V system. This ac power cord plugs into the ac outlet. See the chapter on Norstar components.

*OR*

For an installation with a KSU and TMs or SMs (where a Power Bar is required):

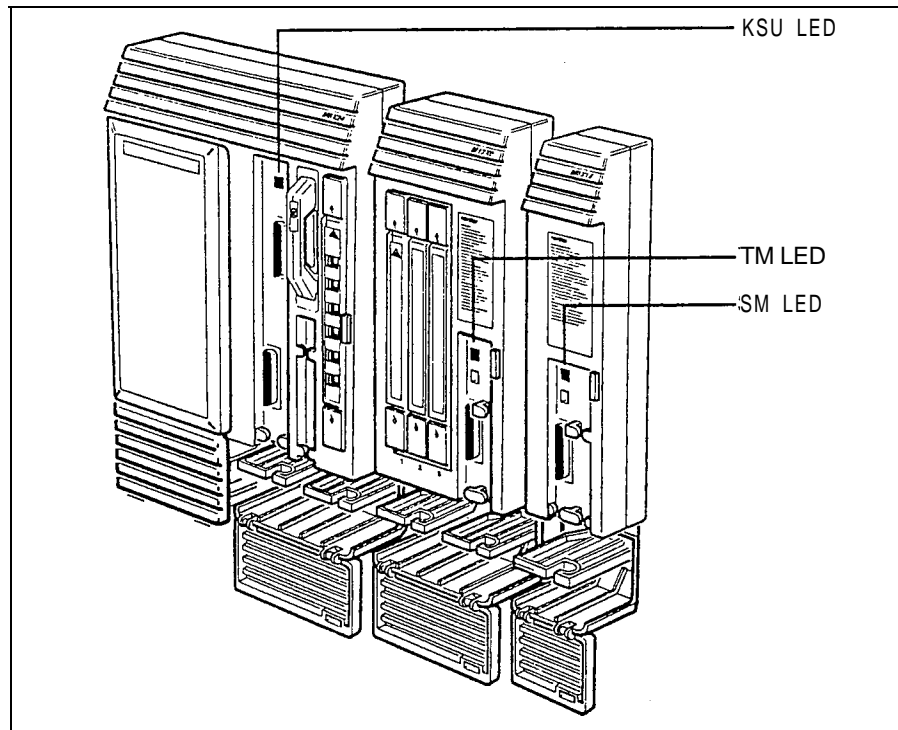
110 V system	Plug the Power Bar into the ac outlet.
220 V system	Plug the Power Bar into the separate ac power cord. This is the same cord described for the KSU alone (220 V).

*Note:* Use a non-switchable, third-wire ground ac outlet.

3. Check to see that the red power LEDs are ON. (The KSU, TM, and SM each have one LED.)

4. If none of the LEDs are ON, check for power at the ac outlet. If there is no power, ask the owner of the system to check with building maintenance.  
OR  
If there is ac power at the outlet, replace the module(s) that do not have a red LED ON.

#### LEDs for KSU, TM, and SM



# Automatic Telephone Relocation and telephone replacement

---

Automatic Telephone Relocation and telephone replacement are features associated with moving and replacing Norstar telephones in the system. The basic difference between them is:

- relocation allows a moved telephone to retain its programming;
- replacement re-assigns or removes programming.

## Automatic Telephone Relocation

Automatic Telephone Relocation is disabled by default. For Automatic Telephone Relocation to work, the system power must be ON and the Automatic Telephone Relocation feature must be activated in the Miscellaneous section of Configuration programming.

### Relocating a telephone

A telephone can be moved to a new location within the Norstar system without losing the settings that are programmed in it. The internal numbers, Autodial settings, and Personal Speed Dial codes remain with the telephone when it is unplugged. To move a telephone, simply unplug it and plug it in again at another location. Norstar retains the information programmed into the telephone. Recognition of the telephone by the KSU may take up to 45 seconds.

Note: All Norstar telephones being moved should be relocated before new telephones are plugged into their place. This allows the moved telephones to retain their programmed settings. If a new telephone is plugged into the Norstar system before the old telephone is reconnected at a new location, Norstar will give the old telephone's information to the new telephone, and the old telephone will no longer be recognized by the system. (See telephone replacement below.)

Note: When changing a telephone's DN (in Configuration programming), wait one minute after Automatic Telephone Relocation.

## Telephone replacement

In a powered-up system, an existing Norstar telephone can be replaced by a new Norstar telephone. A new Norstar telephone is one that was not previously in service within the system.

### Replacing **Norstar telephones** of the same type

(For example, replacing an M7208 with another M7208 Telephone.)

If an existing Norstar telephone is unplugged, and a new Norstar telephone of the same type is then plugged into the same jack, the new telephone acquires the programming and the internal number of the old telephone. This is normally done to replace a defective telephone.

## Replacing **Norstar** telephones of different types

(For example, replacing an M7208 with an M7310 Telephone.)

If an existing Norstar telephone is unplugged, and a new Norstar telephone of a different type is plugged into the same jack, the new telephone keeps the old internal number. The new telephone receives a default profile for a telephone of its type. (See the button defaults listed in the section on Norstar telephones and system defaults listed in the Programming chapter).

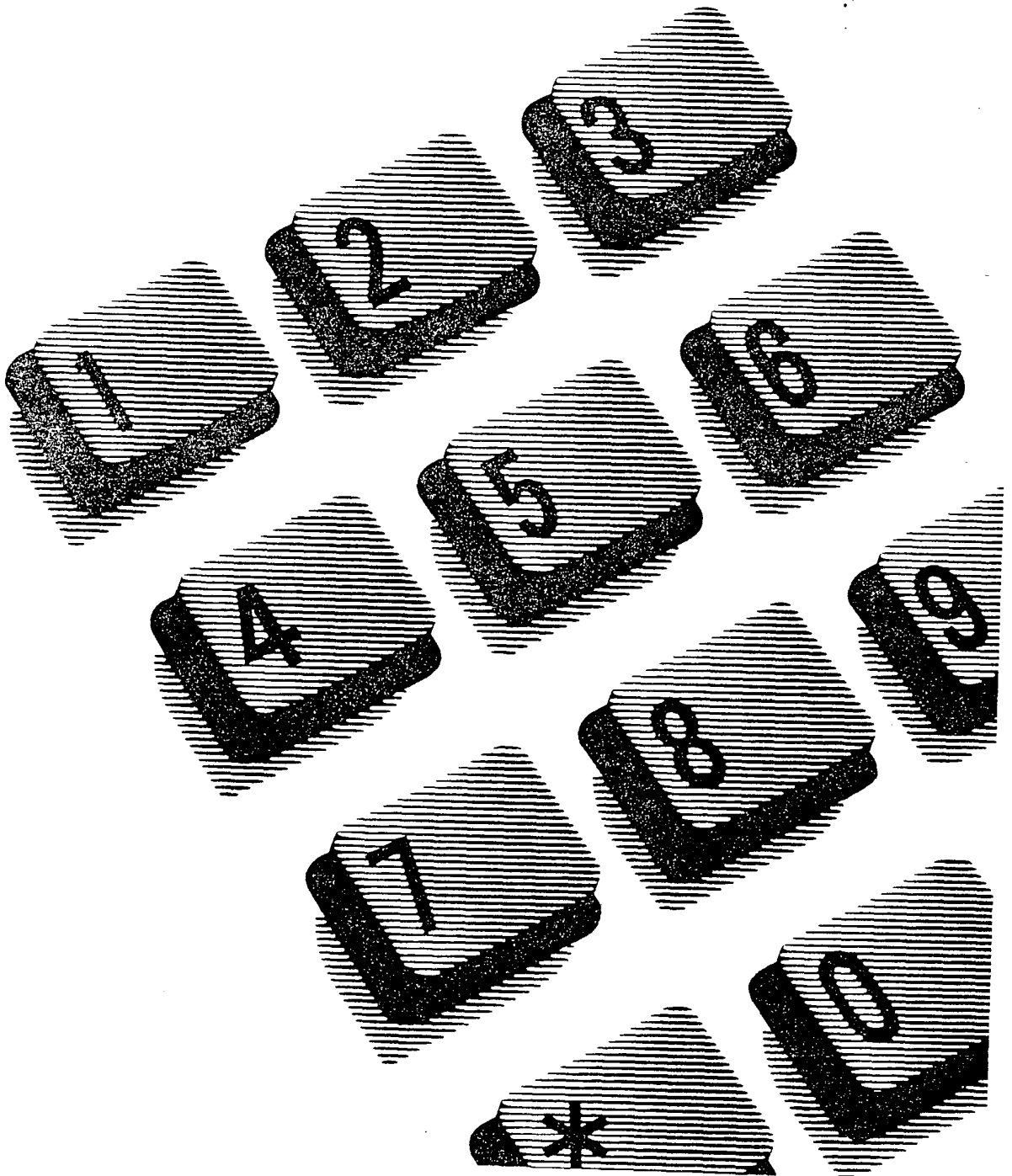
**Note:** If the telephone being replaced has more lines than the new telephone, automatic outgoing line selection may not work with the Handsfree/Mute feature. A line must be selected manually.

## Status of a telephone that was replaced

The old Norstar telephone that was unplugged, and replaced by a new Norstar telephone, loses its programming and internal number (DN). The old telephone's DN has been given to the new telephone and the programming has either been removed or given to the new telephone when it was plugged into the old jack. The replaced telephone (if still functional) is now treated by the system as a telephone not previously in service.

# Introduction to programming

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# Customizing Norstar

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Programming allows you to optimize the use of the Meridian Norstar\* telephone system. Norstar features can be programmed for individual telephones, for specific external lines, or for the system as a whole. This provides you with real flexibility in making your telephones work together.

## Why program the telephones?

Staff turnover, new business contacts, and other changes will make many demands on the Norstar system. Staff names and System Speed Dial numbers are just two examples of programmed settings that must be updated.

The system comes pre-programmed with default settings that may initially be sufficient. Familiarity with Norstar programming will help you determine which settings, default or customized, will be most useful for the installed system.

## How programming is done

Programming is done at an M7324 or M7310 Telephone. You press buttons on the telephone to enter a programmable setting or to request a specific programming action.

Norstar guides you step by step on the telephone display while you enter programming, select and change what you want, and exit programming.

## Programming overview

Norstar provides three types of programming that affect the system as a whole:

- System Startup
- Configuration
- Administration

A diagram illustrating the relationship of the programming types and their related functions is provided at the end of this section.

A fourth type, Personal programming, does not follow the same procedures as the three listed above. Personal programming allows you to assign a particular function to some of the buttons, and is unique to each telephone.

### System Startup

System Startup is done by the Installer only once, when the system is first installed. System Startup resets the Norstar system memory, and allows an Installer to assign a specific arrangement of external lines and feature button assignments to the telephones.

### Configuration

Configuration programming is done by an Installer when the system is first installed and when system upgrades are performed. Otherwise, this programming is not expected to change frequently. Configuration allows an Installer to program a variety of settings for the system as a whole, and for individual external lines and telephones.

## Administration

Administration programming is performed by a System Coordinator on an ongoing basis. It includes settings that will probably have to be updated regularly. Administration lets you change various Norstar system-wide settings, and lets you assign some features to individual external lines and telephones.

## Reviewing programmed settings

The Set Profile (set is another word for telephone) and Line Profile features help you check your programming by allowing you to review the programmed settings.

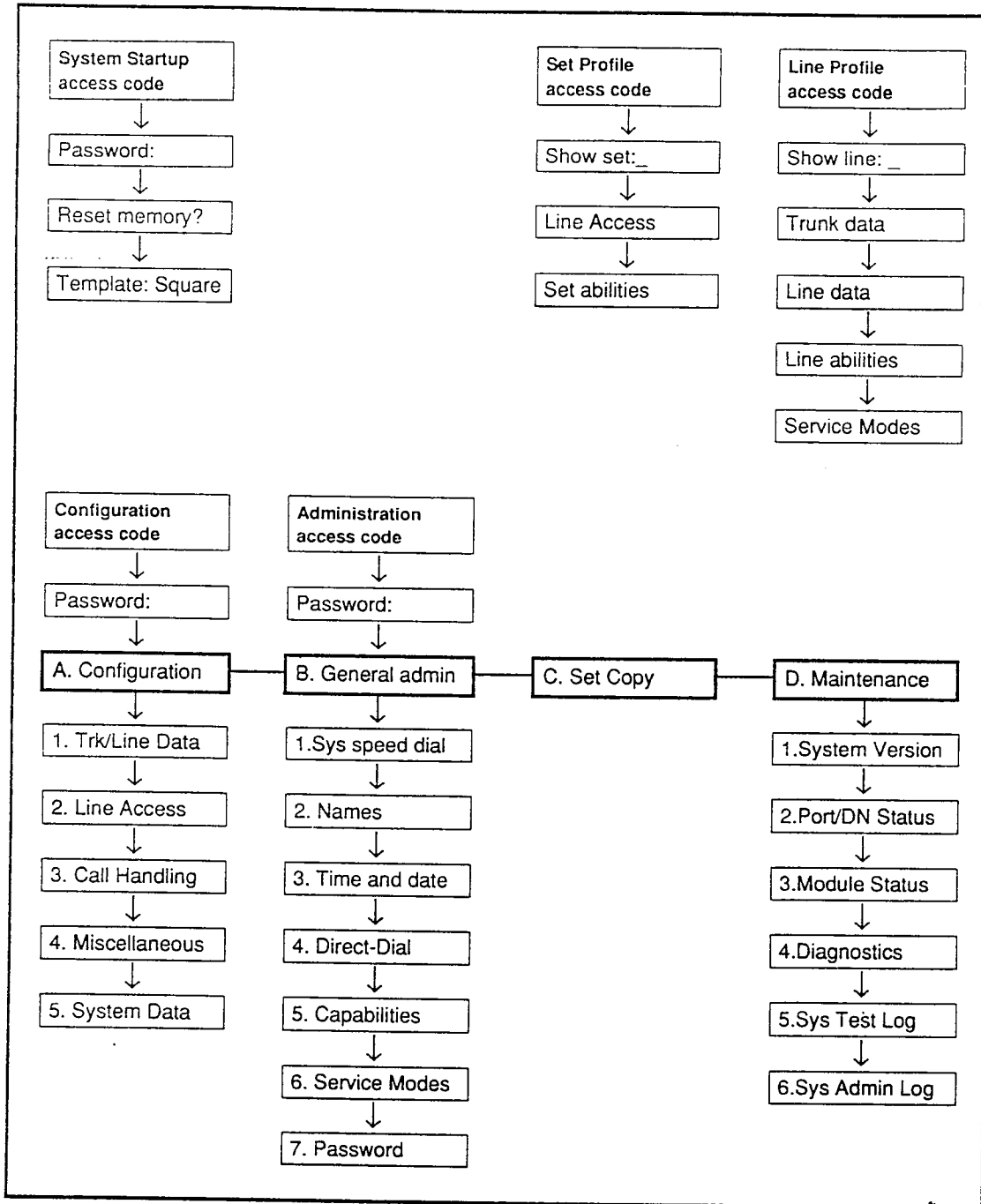
## Helping the Installer

Configuration programming provides the Set Copy and Maintenance functions that make an Installer's job easier.

An Installer can use Set Copy to copy programming from one Norstar telephone to another. This saves time, as it allows the Installer to quickly program many telephones with the same settings.

An Installer can use Maintenance to verify what hardware is installed, and to diagnose problems within the Norstar system.

### Programming overview



**Note:** The Administration Access code and password provide access to Administration programming only, beginning with the 1.Sys speed dial heading.

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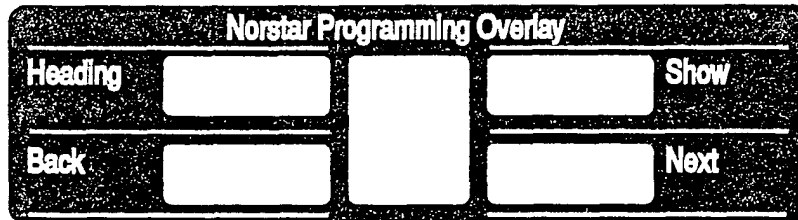
# Programming tools

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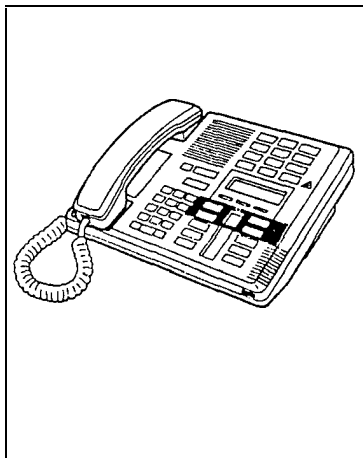
## The Norstar Programming Overlay

The Norstar Programming Overlay is a paper cutout that labels the function of four telephone buttons used during programming. This makes it easier for you to recognize the button you want. The Norstar Programming Overlay is provided at the end of this chapter.

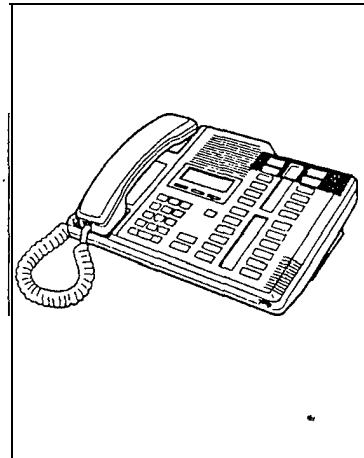
### Norstar Programming Overlay



M7310 Telephone with a  
**Norstar** Programming  
Overlay



M7324 Telephone with a  
**Norstar** Prdgramming  
Overlay



## The **Norstar** Modular Programming Record

The *Norstar Modular Programming Record* provides a convenient way to record the settings you have programmed. The Record also helps you plan your programming. Space is provided for you to write down all the settings in the same order that they appear during programming.

Pages from the Record may be photocopied as necessary for programming many telephones or lines.

## The Programming reminders

The Programming reminders provide a convenient way to record the settings which most Norstar users need on a day to day basis. Refer to Finishing programming in this chapter for more information.

## The **Norstar** Telephone User Cards

Each Norstar telephone has a *Meridian Norstar Telephone User Card* that lists the most commonly used features and operations of the Norstar telephones.

## The **Norstar** Feature Card

The *Norstar Feature Card* lists each of the features available in the Norstar system that may be accessed by using the **Feature t t** o n .

---

# Programming basics

---

## What you can do in programming

In Norstar programming, you can:

- scan the settings to review current programming
- choose or enter a new setting
- erase an existing setting
- copy programming to another external line or Norstar telephone.

Programming changes can be made in two different ways. For some programming settings, you can choose among some predefined options. For other programming settings, you must enter a name or number.

In the majority of cases, programming changes are saved the moment they have been chosen or entered. Exceptions occur when you are changing DN length, Received Number Length, or Trunk cartridge type. In each of these cases you must press “Heading”, “Next” or “Back”, after which an important side-effect of your change is drawn to your attention, and you are prompted for confirmation that you still wish the change to take place.

## Entering programming

To enter programming, you require:

- an access code
- a password.


The access code is a sequence of digits that is entered from the dial pad. To make it easy to remember, the default code “spells out” a word.



The password is entered after the access code. To minimize the possibility of unauthorized changes to programming, you should distribute the password only to a limited number of people.

The procedure for entering programming is described in a programming example, later in this chapter.

## Exiting programming

You can exit programming at any time by pressing the  button.

## Finding your way around

Headings and sub-headings in Norstar programming help you keep track of where you are in programming.

In Administration programming, an example of a main heading is `1.SYS speed dial` for programming System Speed Dial. If you program this feature, one of the sub-headings is `Name` for programming a name to the System Speed Dial number.

Detailed programming procedures are provided in the appropriate programming chapter.

## Learning about Morstar programming buttons

Programming buttons allow you to move through the programming headings and make the required changes to the programmable settings.

### The **Norstar** Programming Overlay buttons

Norstar Programming Overlay buttons allow you to “navigate” through the headings and sub-headings of Norstar programming.

The Overlay is placed over the top four memory buttons of the M7310 or the M7324 Telephone. During programming, indicators (such as ►) will appear next to any buttons that can be used at that programming step.

The buttons labelled by the Overlay work as follows:

**Hide** move “up” in the hierarchy of headings and sub-headings.

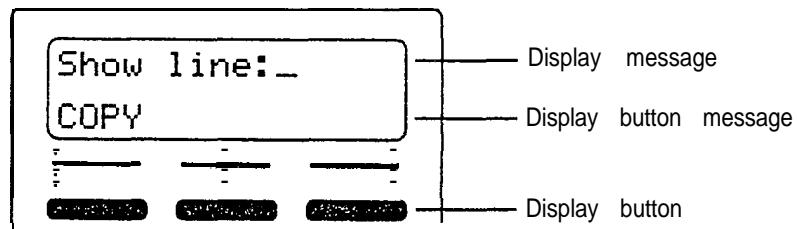
**Show** move “down” in the hierarchy of headings and sub-headings, or to begin programming for a heading or sub-heading.

**Next** move to the next heading, sub-heading or setting.

**Back** move to the previous heading, sub-heading or setting.

## The Norstar display buttons

Display buttons can perform many different operations. Depending on where you are in programming, one, two, or three display buttons may be available at any one time. You press one of the display buttons to select the operation that you want to perform.



The most common display button messages are:

<u>CHANGE</u>	To change a programmable setting.
<u>BKSP</u>	To move the cursor one space backwards (backspace) and delete a character. This allows you to re-enter a number or letter.
<u>COPY</u>	To copy line or telephone programming.
<u>VIEW-&gt;</u>	To view the last part of a displayed message longer than 16 characters.
<u>--&gt;</u>	To move the cursor one position forwards when programming a name.
<u>&lt;-VIEW</u>	To view the first part of a displayed message longer than 16 characters.
<u>&lt;--</u>	To move the cursor one position backwards when programming a name.

## Using **Norstar** telephone buttons

### Entering names

Letters and numbers can be entered as part of a name for various settings. The method of entering a name is always the same.

Begin with a setting that prompts you to enter a name. A cursor (    ) appears on the display to indicate where you can enter the next character. To enter a name:

1. Press the dial pad button with the printed letter or number you want.  
Each time you press the button, a new character appears. For example, the dial pad button for the number 3 has the letters D, E, and F, where:  
D appears after the first press  
E appears after the second press  
F appears after the third press  
3 appears after the fourth press  
D appears again after the fifth press.  
(Letters always appear in upper case.)
2. When the character you want is displayed:  
Press --> to move the cursor to the next character position.  
OR  
If you want to correct a character entered by mistake:  
Press <-- to move the cursor back until it is positioned beneath the character you want to correct.  
OR  
Press BKSP to move the cursor back and delete a character each time the display button is pressed.
3. Repeat step 1.

## Entering numbers

Numbers are entered from the Norstar telephone dial pad. The backspace display button may be used to edit the number.

Line numbers must always be entered as a three-digit number. Line numbers from 10 to 99 must be entered with one preceding zero (line "020", for example). Similarly, line numbers less than 10 must be entered with two preceding zeros (line "002", for example).

Internal telephone numbers, also referred to as Directory Numbers (DNs), can be from two to seven digits long on a non-expanded system, and from three to seven digits long on an expanded system. The default DN length is 2 on a non-expanded system and 3 on an expanded system. The DN length can be changed in Configuration programming.

## Viewing long telephone numbers

External telephone numbers can be up to 24 digits, but the telephone display is only 16 character spaces long. If you wish to see a previously programmed number that is longer than 16 digits, you must do the following:

Begin, for example, with 1234567838 12345...

The display shows only the first 15 digits. The three dots (...) at the end of the display indicate that more digits remain to the external number.

1. Press VIEW-> to see the remaining digits.
2. Press <-VIEW to again see the first 15 digits.

## Copying **Norstar** programmed settings

Programmed settings for external lines, Norstar telephones and certain Norstar Capabilities can be copied to other lines or Norstar telephones. If many lines or telephones require the same settings, there is no need to program each one individually. Instead., program one line or telephone, and then copy those settings.

The Copy Record page in the *Meridian Norstar Modular Programming Record* provides space to record the lines or telephones that are copied.

## Copying line programming

Line programming can be copied only for the following:  
Trk/Line Data of Configuration programming.

OR

Line abilities in the Capabilities section of Administration programming.

OR

Service Modes of Administration programming (only Ringing Telephones may be copied).

Beginwith Show line: \_ .

1. Press `COPY` .  
Source: \_ appears.
2. Enter the number of the line to be copied.  
`COPY to 1 line: _` appears.  
OR  
Press  until you return to the desired heading, if you do not wish to proceed with copying.
3. Enter the number of the line to receive the programming.  
`Copied 001 > 002` appears briefly 'if, for example, programming for line 001 was copied to line 002.

While this brief message is on the display, you can already enter another line number to which the line programming should be copied , or you can wait for the `COPY to line:`, prompt to appear, as in step 2.

## Copying **Norstar** telephone programming

Norstar telephone programming can be copied only for the following headings:

Line Access of Configuration programming.

OR

Set abilities in the Capabilities section of Administration programming.

Begin with Show `set: _` .

1. Press `COPY` .  
`Source: _` appears.
2. Enter the internal number of the telephone to be copied.  
`COPY to set: _` appears.  
OR  
Press `Heading` until you return to the desired heading, if you do not wish to proceed with copying.
3. Enter the internal number of the telephone to receive the programming.  
`222 1> 2225` appears briefly if, for example, programming for telephone 2221 was copied to telephone 2225.

While this brief message is on the display, you can already enter another internal number to which the telephone programming should be copied , or you can wait for the

`COPY to set: _` again to appear, as in step 2.

### Copying **Norstar** Capabilities programming

In addition to Line abilities and Set abilities, Norstar Capabilities programming can be copied for the following headings:

Dialing filters in the Capabilities section of Administration programming.

OR

Rem access pkgs in the Capabilities section of Administration programming.

OR

COS passwords in the Capabilities section of Administration programming.

Begin with `Show filter: _`

OR

`Show package: _`

OR

`Show password: _ .`

Press `COPY`, and proceed by responding to prompts as you would if you were copying line programming or Norstar telephone programming.

## Preparing for programming

### Determining programming requirements

First read about the available programming settings in the Configuration or Administration chapters, and then determine how your co-workers would like the features programmed.

You should gather or define the following information:

#### For System Startup

- the template that will assign the most appropriate defaults

#### For Configuration or Administration

- the numbers of the installed external lines
- internal numbers of each installed Norstar telephone

#### For Configuration

- the appropriate length for internal numbers
- appropriate settings for each external trunk and line
- appropriate settings for each telephone
- appropriate system-wide settings



#### For Administration

- telephone numbers that will be programmed into System Speed Dial
- names for external lines and telephones
- external lines and telephones that will be subject to Line abilities and Set abilities programming
- required Filters and Remote access packages
- Set abilities to be assigned to individual telephones
- how the system should be programmed to make the best use of the Service Modes feature
- whether a new Administration password is required
- whether Class of Service passwords are required

#### Planning when and where you will program

Only one Norstar telephone can access Configuration or Administration programming at a time. The telephone you are using for programming cannot be used to make or receive calls. Other users of the Norstar system will still be able to use their telephones. However, they will not be able to do any Personal programming while you are programming.

# A programming example

---

Once you have learned the programming basics, you can always apply the same rules to guide you through the programming steps. The following example takes you through the programming of System Speed Dial settings in Administration programming.

## Scenario

The taxi company your office normally uses has changed both its telephone number and name. Change the telephone number and name programmed in System Speed Dial of Administration programming, and review the other settings.

## Determining programming requirements

You have determined the following settings:

System Speed Dial code: 12

System Speed Dial telephone number: 5554568

Line Selection: Use prime line

Display Digits: N (No)

Name: Fleet Taxi

Bypass Restrictions: Y (Yes)

## Preparing for programming

1. Choose the Norstar telephone with which you will do the programming changes.
2. Obtain the Norstar Programming Overlay and place it over the buttons of your telephone.
3. Record the changes you make in the appropriate section of the *Norstar Modular Programming Record*.

## Entering programming

1. Enter the Administration access code using the feature button and the dial pad:

Press  \* \* 2 3 6 4 6

which is the same as

Press  \* \* A D M I N

Password: appears.

OR

1. Sys speed dial appears if there is no password.  
Proceed to Programming System Speed Dial.

2. Enter the Administration password from the dial pad.  
Press RETRY if you need to re-enter the password.

The password does not appear on the telephone display.

1. Sys speed dial 1 appears.

## Programming System Speed Dial

Begin with 1. Sys speed dial .

1. Press Show to begin programming System Speed Dial.

Speed dial #: \_ appears.

### Entering the System Speed Dial code

1. Press   on the dial pad.  
Speed dial #: 12 appears.

## Entering the new telephone number

1. Press [Show].  
5553272 (the taxi company's old number) appears.
2. Press CHANGE .  
#12:\_ appears.
3. Enter the new telephone number:  
Press    Q    on the dial pad.  
5554568\_ appears.  
(If required, press the BKSP display button to backspace the cursor for re-entering a number).
4. Press OK when have completed entering the number.

## Programming Line Selection

1. Press  to move on to the Line Selection setting.  
Use prime 1 line appears (the default).  
OR  
Use line: 002 appears (for example, if line 002 was previously assigned).  
OR  
Pool code: 24 appears (for example, if the Line Pool access code 24 was previously assigned).
2. Press CHANGE until Use prime 1 line appears.  
OR  
Program Display Digits if that option is already selected.

## Programming Display Digits

1. Press [Next] to move on to the Display Digits setting.  
Display digits:Y appears.
2. Program Display Digits to "N" for No.  
Press CHANGE. Display digits:N appears.  
OR  
Program Name if that option is already selected.

## Programming Name

1. Press  to move on to the Name setting.  
Name appears.
2. Press [Show] to view the name.  
The old company's name appears (if programmed). If the name was not previously programmed, then the default name appears as follows:  
Sys Spd Dial 12 .
3. Press CHANGE to change the name.  
The cursor (    ) appears at the first character position for the name.
4. Enter the first letter (F) of the new name (Fleet Taxi):  
Press  on the dial pad.  
F appears.
5. Press  two more times.  
E appears.
6. Press --> to move the cursor to the next position.  
F\_ appears.  
Continue entering characters in the same way by pressing the appropriate dial pad buttons until FLEET TAXI\_ appears.  
  
A blank space is created by pressing --> twice.  
  
If you make a mistake in entering the name, use BACKSP , <-- , or --> to move the cursor and re-enter the character.

## Programming Bypass Restrictions

1. Press  to move on to the Bypass Restrictions setting.  
Bypass restr' n: N appears.
2. Program Bypass Restrictions to Yes.  
Press CHANGE until Bypass restr' n: Y appears  
OR  
Go to step 3 if that option is already selected.
3. You have finished System Speed Dial programming.  
Follow the next procedure to exit.

## Exiting programming

1. Press `Heading` three times to return to the main heading.  
1. Sys speed dial appears.  
OR  
Press `Rls` to exit Administration programming.  
End of session appears.

# Finishing programming

---

## Distributing information

You should ensure that programmed settings are recorded and easily available for reference:

- Record settings in the *Norstar Modular Programming Record*.
- Keep any passwords recorded in a safe place.
- Complete the Programming reminders section of the Administration chapter, and distribute copies of the sections that your co-workers will find useful. The Programming reminders that are required will depend on what has been programmed.

The Programming reminders section identifies:

- the names and internal numbers of each Norstar telephone
- the assignment of Prime Telephones, Central Answering Positions, and Direct Dial Telephones
- the locations of programmed Page Zones
- the Line Pool access codes for each Line Pool, and the type of Lines in that Line Pool (Public network or Private network)
- the digit that is dialed first to make an external call
- the digit that is dialed first to retrieve a parked call
- the digit that is dialed to reach Direct-Dial telephones
- the members of each Call Pickup Group
- the DISA DN for use by Remote Access callers to change their Class of Service

- Ensure that your co-workers know of any programmed settings that affect the operation of their telephone. The assignment of Handsfree, which assigns a  button to a telephone, is an example of this.

## Installing button caps

Each Norstar telephone comes with snap-on caps to identify the buttons that you program. The following buttons may be assigned to a telephone as a result of Configuration and Administration programming.

### Buttons assigned in Configuration

- Answer buttons (from Line Access programming)
- external and intercom buttons (from Line Access programming)

### Buttons assigned in Administration

- Handsfree buttons (from Set Abilities programming)

Some of the caps are already printed with a line number or feature name, and some of the caps have a clear top. Write programmed features or telephone numbers on the paper labels supplied, and place the label in the clear button cap.

## Using Button Inquiry

Use the Button Inquiry feature ( ) to check the function or stored number programmed onto each button. You can also use Button Inquiry to deactivate the buttons before you press the button cap on.



# Set Profile and Line Profile

---

Use Set Profile and Line Profile to review the settings programmed in Configuration and Administration programming. Set Profile and Line Profile allow you to browse through, but not change, the programmed settings.

Set Profile allows you to verify settings for each Norstar telephone. Line Profile allows you to verify settings for each external line.

## Using Set Profile and Line Profile

As many as four people in the Norstar system can use Set Profile or Line Profile at the same time. You may access Set Profile and Line Profile while on a call at your telephone.

If someone is using Configuration or Administration programming, you can still access Set Profile and Line Profile from another Norstar telephone. The latest programming changes can therefore be seen as soon as they are made.

Set Profile and Line Profile can be used only from an M7310 or M7324 telephone.

A Norstar Programming Overlay is not required to perform Set Profile or Line Profile.

## Programming you can review

The following table shows the Configuration and Administration programming headings that can be reviewed in Set Profile and Line Profile.

### Programming that can be reviewed

Set Profile	Line Profile
Set name	Line name
Line Access	Trunk data (physical lines only)
Set abilities	Received number (target lines only)
	Line data
	Line abilities
	Service Modes

The following table shows how line names and telephone names appear on the display while you are using Set Profile and Line Profile.

Telephone name	2221: 2221 OR 2221: ☐ WHITE	internal number:internal number or name (if programmed)
Line name	Line00 1: Line00 1 OR Line00 1: WATS	external line number:external line number or name (if programmed)

## To begin Set Profile and Line Profile

### To begin Set Profile

From an M7310 or M7324 Telephone:

1. Press  \* \* 7 3 8  
which is the same as  
Press  \* \* S E T  
Show **set:** \_ appears.
2. Enter the internal number of the telephone to be reviewed.  
OR  
Press FIRST to review programming for the telephone with the first internal number.
3. 222 1: 222 1 appears, for example.  
**OR**  
222 1: C WHITE appears, for example, if that name was programmed for the telephone.

### To begin Line Profile

From an M7310 or M7324 Telephone:

1. Press  \* \* 5 4 6 3  
which is the same as  
Press  \* \* L I N E  
Show **line:** \_ appears.
2. Enter the number of the line to be reviewed.  
OR  
Press FIRST to review programming for the first line number.
3. Line00 1: Line00 1 appears, for example.  
**OR**  
Line00 1: WATS appears, for example, if that name was programmed for the line.

### To exit Set Profile or Line Profile

1. Press .

## Using Set Profile

Begin with:

2221: 2221 .

OR

2221: C WHITE .

1. To see the Name for the next telephone,  
(or to return to Show set: →, if this telephone is the  
telephone with the last internal number),  
Press NEXT .  
OR  
To see the Name for the previous telephone  
(or to return to Show set: ←, if this telephone is the  
telephone with the first internal number),  
Press BACK .  
OR  
Press SHOW to review settings for this telephone.
2. Line Access appears.  
Press SHOW to see programming for Line Access.  
OR  
Press BACK that the Name of the telephone  
appears, as in step 1.  
OR  
Press NEXT to review the next setting.
3. Set abilities appears.  
Press SHOW to see programming for  
Set Abilities.  
OR  
Press BACK so that Line Access appears, as in  
step 2.  
OR  
Press NEXT to return to the Name of the telephone.

•

## Using Line Profile for Loop Start or **E&M** lines

When you begin Line Profile, respond to

Show 1 i ne: \_

with the line number of a Loop Start or E&M line.

You might, for instance, begin with:

Line009: Line009 .

OR

Line009:WATS .

1. To see the Name for the next line,  
(or to return to Show 1 i ne: \_ , if this is the last line  
number),  
Press NEXT .  
OR  
To see the Name for the previous line,  
(or to return to Show 1 i ne: \_ , if this is the first line  
number),  
Press BACK .  
OR  
Press SHOW to review other settings.
2. Trunk data appears.  
Press SHOW to see programming for Trunk data.  
OR  
Press BACK so that the Name of the line appears, as  
in step 1.  
OR  
Press NEXT to review the next setting.
3. Line data appears.  
Press SHOW to see programming for Line data.  
OR  
Press BACK so that Trunk data appears, as in  
step 2.  
OR  
Press NEXT to review the next setting.

4. Line abilities appears.  
Press SHOW to see programming for Line abilities.  
OR  
Press BACK so that Line data appears, as in step 3.  
OR  
Press NEXT to review the next setting.
5. Service Modes appears.  
Press SHOW to see programming for Service Modes.  
OR  
Press BACK so that Line abilities appears, as in step 4.  
OR  
Press NEXT to return to the Name of the line.

## Using Line Profile for **DTMF** lines

When you begin Line Profile, respond to

Show line: \_

with the line number of a DTMF line.

If you entered 0 11, for instance,

Line011:Line011 .

would be displayed.

1. To see the Name for the next line,  
Press NEXT .  
OR  
To see the Name for the previous line,  
Press BACK .  
OR  
Press SHOW to check the DTMF setting.
2. Line0 11: DTMF appears,  
confirming that Line 11 is a DTMF line.

Press NEXT or BACK so that the Name of the line  
appears, as in step 1.

## Using Line Profile for Target lines

When you begin Line Profile, respond to

Show line:   

with the line number of a Target line.

If you entered 081, for instance,

Line081:Line081.

OR

Line081:SALES

would be displayed.

1. To see the Name for the next line,  
(or to return to Show line:   , if this is the last line number),  
Press NEXT .  
OR  
To see the Name for the previous line,  
Press BACK .  
OR  
Press SHOW to review other settings.
2. Rec'd #: 555 1629 appears.  
Press BACK so that the Name of the line appears, as in step 1.  
OR  
Press NEXT to review the next setting.
3. Line data appears.  
Press SHOW to see programming for Line data.  
OR  
Press BACK so that Rec'd #: 555 1629 appears, as in step 2.  
OR  
Press NEXT to review the next setting.
4. Service Modes appears.  
Press SHOW to see programming for Service Modes.  
OR  
Press BACK so that Line data appears, as in step 3.  
OR  
Press NEXT to return to the Name of the line.



# Norstar Programming Overlay

Heading

Show

Back

Next

Processed in the U.S.  
Printed in Canada

# Norstar Programming Overlay

Heading

Show

Back

Next

Processed in the U.S.  
Printed in Canada

# Norstar Programming Overlay

Heading

Show

Back

Next

Processed in the U.S.  
Printed in Canada

# Norstar Programming Overlay

Heading

Show

Back

Next

Processed in the U.S.  
Printed in Canada



# Startup



---

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# Introduction to System Startup

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## When to perform Startup

Startup is to be used for initial installation only. Do not use Startup after Norstar is in operation because the procedure erases all programmed data.

Perform Startup after the system hardware has been installed and powered up.

## The Startup code and Installer password

This code, and a password, are used only by Installers for access to the System Startup process. The System Startup code performs the initialization procedure which erases any existing system memory and resets it to the factory default values. The Startup process lets you select one of four default configuration settings (Square, Centrex, Hybrid and PBX) which makes subsequent programming faster and easier.

## When to enter the Startup code

To be accepted, the correct Startup code must be entered no later than 15 minutes after the Norstar system has been powered up.

A Startup code entered at any time after the 15-minute time out results in the message: `Startup denied`.

If 15 minutes have elapsed since you powered up the system, turn system power OFF and ON, to prepare for the Startup process.

### CAUTION

Wait at least two minutes after System Startup before you attempt Maintenance diagnostic tests or the disabling/enabling of a module. If you do not wait two minutes, ports may be disabled.

## Retention of programming data if power fails

All Configuration and Administration data will be retained for at least three days if the power fails or if the Norstar system is powered OFF. After three days without power, it may be necessary to perform System Startup.

---

# Startup Procedures

---

## Before you begin Startup

Obtain:

- the Norstar Programming Overlay
- the *Norstar Modular DR4 Programming Record*.

Know:

- that the Startup code must be entered within 15 minutes of the KSU power being turned ON.

**Note:** To preserve the integrity of the Configuration and Administration data, do not give the Startup access code or Installer password to anyone.

## Performing Startup

Entering the Startup code **and** Installer password

1. Enter the Startup access code from a Norstar M7324 or M7310 telephone dial pad, by pressing

Feature  \* \* 7 8 2 7 8 8 7

which is the same as:

Feature  \* \* S T A R T U P .

2. Enter the Installer password:

2 6 6 3 4 4

which is the same as:

C O N F I G .

Specified digits for the Installer password are not shown on the display.

**Note:** The Installer password shown is the default normally used for Startup. For a system which has already been programmed, the Installer password might have been changed in Configuration and recorded below.

--	--	--	--	--	--

If the Password has been entered incorrectly, you will still see the prompt `Password: .`

1. Press RETRY and re-enter the password.

To quit from Startup without affecting system memory

If you wish to quit instead of proceeding with Startup, you can do so at this time, without affecting system memory:

1. Press .

## Changing the default template

After entering the Startup access code and Installer password the display shows `Reset memory? ,`

1. Press YES to select a default template.  
`Template:Square` appears on the display.  
OR  
Press CANCEL to exit without choosing a template.
2. Press CHANGE to choose one of four templates (Square, Centrex, Hybrid or PBX).
3. Press  to store the programming.  
`Template awl ied` appears on the display.  
The indicators begin to flash after a few moments. `.  
Jan 1 1:00 am` appears.

---

# System default templates

---

Use System Startup to select an appropriate programming template. The four templates available in the Norstar system are Square, Centrex, Hybrid, and PBX. The following charts show the default settings for each template.

Square defaults are listed in full. Centrex, Hybrid and PBX defaults are listed only when they differ from Square defaults.

Where a DN is specified, it is the three-digit DN that is the default on an Expanded system. (Two-digit DNs are the default on non-expanded systems.)

## Configuration defaults

### Trk/Line Data

#### Trunk data

Parameter	Square	Centrex	Hybrid	PBX
Line <xxx> (Trunk type)	Loop			
Trunk mode	Super			
Ans mode	Manual			
Ans with DISA (presented if Ans mode is Auto)	Yes			
Signal (presented if Line is E&M)	WinkStart			
Gain (presented if Line is E&M)	Normal			
Dial mode	Pulse			
Full AutoHold on idle line (presented if Line is Loop)	No			



Received number (target lines only)

Parameter	Square	Centrex	Hybrid	PBX
Rec'd #	None			

Line data (physical and target lines)

Parameter	Square	Centrex	Hybrid	PBX
Line type	Public	Public	Lines	Pool †
			001 to 008:	Pool A
			009 to 012:	Pool B
			013 to 016:	Pool C
			017 to 020:	Pool D
			021 to 024:	Pool E
			025 to 028:	Pool F
			029 to 032:	Pool G
			033 to 036:	Pool H
			037 to 040:	Pool I
			041 to 044:	Pool J
			045 to 048:	Pool K
			049 to 052:	Pool L
			053 to 056:	Pool M
057 to 060:	Pool N			
061 to 064:	Pool O			
Prime Telephone for each line	DN 221			
Auxiliary ringer for each line	Yes			
Auto privacy	Yes			

† Target lines can not be placed into line pools.

## Line Access

Parameter	Square	Centrex	Hybrid	PBX
Line assignment	Line 001 Line 002	Line <nnn> †	Line 001	No lines assigned
Answer DNs	None			
Ringling lines	Ring for all DNs.  Any lines added will Ring.	Ring for all assigned lines.  Any lines added will Ring.	Ring for DN 221. No ring for other DNs.  Any lines added will Ring.	No lines assigned.  Any lines added will Ring.
Ringling lines for target lines	No target lines are assigned automatically, but any lines added will be Ring			
Line Pool access	No	No	Yes (Pool A)	
Intercom kevs	2			
Prime line	None	Line <nnn> †	Intercom	Intercom

† <nnn> is a three digit line number. The Centrex template automatically performs a sequential assignment of lines to DNs. It assigns Line 001 to DN 221, Line 002 to DN 222, and so on, until all lines in the system have been assigned to DNs. These lines are automatically made the Prime Lines for the DNs.

## Call Handling

Parameter	Square	Centrex	Hybrid	PBX
Held line reminder	No			
Remind delay (s) (presented if Held line reminder is changed to Yes)	60			
DRT to Prime Telephone	Yes			
DRT delay (rings)	3			
Transfer callback (rings)	3			
Park prefix	1			
Park timeout (s)	45			
Camp timeout (s)	45			
Directed pickup	Yes			
On hold	Tones			

(s) is seconds.

### Miscellaneous

Parameter	Square	Centrex	Hybrid	PBX
Background music	No			
Direct-dial #	0			
DISA DN	None			
Auto DN	None			
Alarm Telephone	DN 221			
CAP assignment	None			
Link time (ms)	600			
Telephone relocation	No			
Host Delay (ms)	1000			
Supervision (ms)	460			
External code	9	9	None	None
Line pool codes	None	None	9 for Pool A None for Pools B to 0	9 for Pool A None for Pools B to 0
Installer password	<div style="display: flex; align-items: center; gap: 5px;"> <span style="border: 1px solid black; padding: 2px;">C</span> <span style="border: 1px solid black; padding: 2px;">O</span> <span style="border: 1px solid black; padding: 2px;">N</span> <span style="border: 1px solid black; padding: 2px;">F</span> <span style="border: 1px solid black; padding: 2px;">I</span> <span style="border: 1px solid black; padding: 2px;">G</span> </div> <b>OR</b> <div style="display: flex; align-items: center; gap: 5px;"> <span style="border: 1px solid black; padding: 2px;">2</span> <span style="border: 1px solid black; padding: 2px;">6</span> <span style="border: 1px solid black; padding: 2px;">6</span> <span style="border: 1px solid black; padding: 2px;">3</span> <span style="border: 1px solid black; padding: 2px;">4</span> <span style="border: 1px solid black; padding: 2px;">4</span> </div>			

(ms) is milliseconds.

### System Data

Parameter	Square	Centrex	Hybrid	PBX
Individual DNs	Individual DNs may be changed.			
DN length	2 (non-expanded system) 3 (expanded system)			
Rec'd # length	3 (Received numbers are used only on expanded systems.)			

## General administration defaults

### System Speed Dial

Parameter	Square	Centrex	Hybrid	PBX
Speed dial #	(no defaults assigned)			
Line or Pool	Use prime line			
Display digits	Yes			
Name (presented if Display digits is changed to No)	Sys Spd Dial <#nn>			
Bypass restriction	No			

<#nn> is a two-digit System Speed Dial code (#1 2, for example).

### Names

Parameter	Square	Centrex	Hybrid	PBX
Set names	DN (221, for example)			
Line names	Line number (Line 001, for example)			

### Time and date

The default time and date is: 1:00 a.m., January 1 st, 1991

---

### Direct-Dial

Parameter	Square	Centrex	Hybrid	PBX
Set1	DN 221			
Set2, Set3, Set4, Set5	None			

## Capabilities

### Dialing filters

Parameter	Square	Centrex	Hybrid PBX
Filter 00	No restrictions (can not be changed)		
Filter 01	Restr: 0 Restr: 1 Excpt: 1800 1555 1*1*555 1*0*555  Restr: 911 Excpt: 911  Restr: 411 Restr: 976	Restr: 90 Restr: 91 Excpt: 91800 91555 91'1   555 91   0*555  Restr: 9911 Excpt: 9911  Restr: 9411 Restr: 9976	Hybrid and PBX settings are the same as those for the Square template
Filter 02 to 99	No restrictions		

### Remote access packages (Capabilities cont'd)

Parameter	Square	Centrex	Hybrid	PBX
Package 00	Prohibits access to line pools and Remote Page. Can not be changed.			
Package 01				
Line pool access	Y for Pool A N for Pools B to 0			
Remote Page	No			
Package 02 - 15				
Line pool access	N for Pools A to 0			
Remote Page	No			

## Set abilities (Capabilities cont'd)

Parameter	Square	Centrex	Hybrid	PBX
Set filter	02			
Line/set filter	None			
Telephone lock	None			
Full handsfree	No			
Automatic handsfree (presented if Full handsfree is Yes)	No			
Handsfree Answerback	Yes			
Pickup group	No			
Page zone	1			
Auxiliary Ringer	No			
Direct-Dial	Set1			
Forward on busy	None			
Forward no answer	None			
Forward delay (# of rings • only if Forward no answer is ON)	3			
Redirect ring	Yes			
Hotline	None			
Use prime line (presented for external Hotline)	Yes			
Priority call	No			

## Line abilities (Capabilities cont'd)

Parameter	Square	Centrex	Hybrid	PBX
Dial filter	03			
Remote filter	04			
Remote pkg	00			

## Class of Service (COS) passwords (Capabilities cont'd)

Parameter	Square	Centrex	Hybrid	PBX
COS passwords	None			
User filter	Deflt †			
Line filter	Deflt †			
Remote pkg	Deflt †			

† The 'Deflt' setting means that no COS filter is being programmed here. Any filters programmed elsewhere to apply to the telephone, the line or the user's COS password are still in effect.

## Service Modes

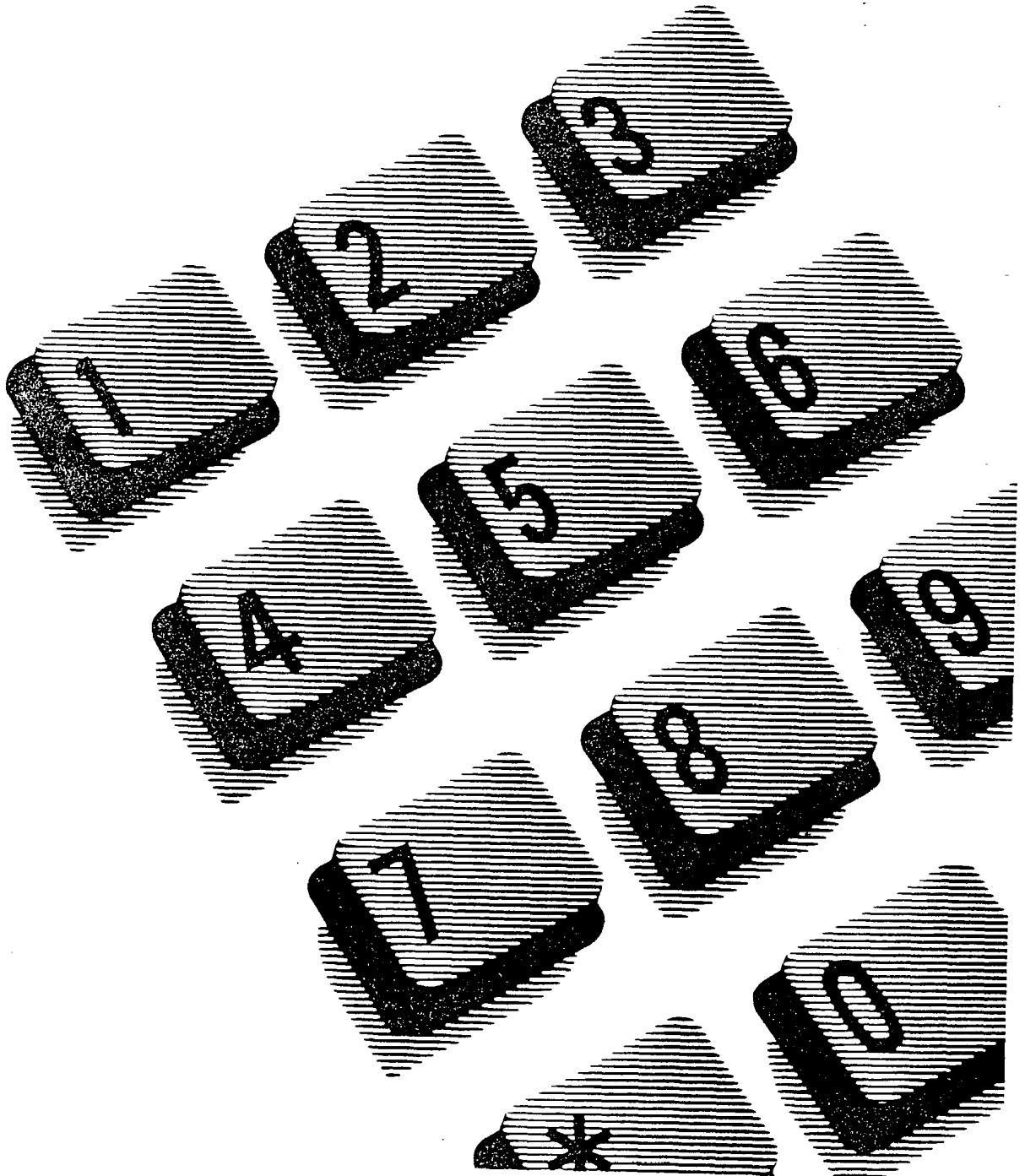
Parameter	Square	Centrex	Hybrid	PBX
Control Telephones	DN 221			
Name1	Night (if Setting is changed from Manual to Auto: Start = 23:00, Stop = 07:00)			
Name2	Evening (if Setting is changed from Manual to Auto: Start = 17:00, Stop = 23:00)			
Name3	Lunch (if Setting is changed from Manual to Auto: Start = 12:00, Stop = 13:00)			
Setting	Manual			
Trunk answer	Yes			
Extra-dial Telephone	221			
Ringing Telephone	221			
Auxiliary Ringer	Yes			



## Password

Parameter	Default
Administration password	A D M q N OR 2 3 6 4 6

# Configuration



---

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# Configuration overview

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Configuration programming lets you change settings for the entire Norstar system, as well as settings for individual telephones and external lines. Configuration programming is the first programming that you do after system installation.

Before you begin Configuration programming, you should use Startup to select one of the four system templates. Although pre-programmed settings in these templates may be sufficient, you should consider whether customized settings may be better suited to your installation.

## Configuration headings

Configuration has five major sections:

- **Trk/Line Data** lets you assign settings to each trunk, external line and incoming target line.
- **Line Access** lets you assign settings to each telephone.
- **Call Handling** lets you assign system-wide settings associated with various call features.
- **Miscellaneous** lets you assign various system-wide settings.
- **System Data** lets you change a telephone's internal number, the length of all internal numbers, and the number of digits received by auto-answer trunks.

## Trunk lines and Target lines

In order to configure a Norstar system, you need to distinguish between trunks and target lines.

A trunk is a physical line numbered from 001 to 080 (in a fully expanded system).

A target line is a 'virtual' communication path between an external caller and a Norstar telephone (or other Norstar device). This path is established on the basis of digits received from an incoming trunk. Target lines number from 081 to 184 (in a fully expanded Norstar system)..

Having target lines, independent of the physical lines, makes it possible to have many target lines for a few physical trunks. Telephones can be configured to have an appearance of any type of line (including target lines). Calls may be placed on all lines except target lines.

**Note:** See the description of Line Pool programming under the `Line type` setting (in `1. Trk/Line Data`, `Line data`) for the recommended assignments to line pools.

### Line numbers for Trunks and Target lines

Type of system	KSU trunks (Loopstart)	Trunk Module trunks	Target lines
Non-expanded system	001 — 008	none	none
2-port Expansion Cartridge	001 — 008	009 — 032	081 -120
6-port Expansion Cartridge	001 — 008	009 — 080	081 — 184

## Trunks

A trunk provides the physical connection between a Norstar system and other systems (Norstar or otherwise) in a private or public network.

Norstar uses three types of trunks:

- Loop start trunks
- E&M trunks
- Direct Inward Dial (DID) trunks

Loop start and E&M trunks can be used for both incoming and outgoing calls. DID trunks, however, are used for incoming calls exclusively.

Loop start and E&M trunks operate in one of two modes for incoming calls: manual-answer or auto-answer. DID trunks operate only in auto-answer mode.

### Manual-answer trunks

Incoming calls on trunks configured for manual-answer alert in the usual manner at all associated line appearances.

### Auto-answer trunks

Trunks configured for auto-answer provide remote access to the system. Any line appearance of such a trunk is normally used only to monitor the incoming call status of the trunk, not to answer calls.

Incoming calls on auto-answer trunks are answered by the system. Typically, digits received from the far end are used to route the call to a specific target line.

If they are idle, auto-answer Loop start and E&M trunks can be used to make outgoing calls.



## Disconnect supervision

Disconnect supervision is required for auto-answer trunks, but not for manual-answer trunks. Note, however, that use of unsupervised trunks (or trunks with disconnect supervision inactive) for incoming calls will result in the inconsistent operation of the Line Redirection feature, the ability to tandem through the Norstar system to other systems in the network, and the ability to disconnect from a conference that involves two external callers.

**Note:** If a Norstar trunk without disconnect supervision is programmed for auto-answer mode, the trunk will operate in manual-answer mode.

## Loop start trunks

Both manual-answer and auto-answer trunks can be used for making outgoing calls or receiving incoming calls. The answer mode (manual-answer and auto-answer) determines how the system handles incoming calls.

By default, auto-answer Loop start trunks are answered by the system DISA (Direct Inward System Access) capability, and are used to provide controlled access to a Norstar system's resources from the public network.

A user makes or receives calls on a manual-answer loop start trunk by having a line appearance of the trunk, or by selecting a line pool containing the trunk to make a call.

**Note:** KSU trunk lines (001 to 008) are Loop start lines.

## E&M trunks

E&M trunks connect two or more systems directly in a private network.

An E&M Trunk Cartridge provides two E&M trunks and two DTMF receivers. These are given consecutive line numbers. For example, an E&M TC in slot 1 of a Trunk Module plugged into the highest numbered DS-30 port will show the E&M trunks as lines 009 and 010, and will show the DTMF receivers as line numbers 011 and 012.

E&M trunks can operate in manual-answer mode, or in auto-answer mode with disconnect supervision. Manual-answer E&M trunks alert directly at any telephone with a line appearance associated with the trunk. By default, auto-answer E&M trunks are answered by the system DISA (Direct Inward System Access) capability, and are used to provide controlled access to a Norstar system's resources from elsewhere in a private network.

Capabilities available to a remote user are determined by a Class of Service associated with the trunk or by the remote user's DISA password.

## Direct **Inward** Diaf (DID) trunks

DID trunks handle only incoming external calls. The digits received from the Central Office are used typically to route calls to a target line. The DID call appears at every telephone configured with an appearance of that target line.

Calls can also be made to the DISA DN or the Auto DN, if the last digits of the DID number are the same as one of these DNs.

Any appearance of a DID trunk can be used only to monitor activity of the trunk, not to answer an incoming call.

Note: The digits provided by the CO need not match the Norstar numbering plan. You can use the Configuration `Rec'd #:` heading to specify the digits that will make a target line ring. You can use the Configuration `DISA DN` or `Auto DN` headings to specify the numbers that will make the system answer a remote call automatically.

## • Target lines

A target line is a specific communication path reached by means of digits received from an incoming trunk. Target lines are used to answer incoming calls but can not be used to make outgoing calls.

Auto-answer Loop start and E&M trunks, and DID trunks, provide automated routing of calls to different destinations depending on the digits dialed. The destination is usually a target line (a virtual line) that can be assigned to telephones in the same way as a physical line. Target lines provide for attendant by-pass (calling directly to a specific department or individual) and line concentration (one trunk can fan out into many target lines).

The digits received on an incoming trunk may be:

- received from a Central Office (in the case of DID)
- received from a PBX (in the case of E&M)
- dialed by a remote user after having received system dial tone (in the case of auto-answer Loop start, auto-answer E&M trunks or DID trunks).

By default, no target lines are assigned. However, if auto-answer trunks are used in the system, you can assign target lines to sets in the same way that other lines are assigned (in 2. Line Access of Configuration).

Target lines are referred to by line numbers in the same way as physical lines.

## Remote system access

The remote access feature allows callers elsewhere on a private network, or on the public network, to get access to a Norstar system by dialing directly without going through an attendant. Once on the system, the remote user can use some of the system's resources.

Norstar systems with at least one Trunk Module support remote system access on the following trunk types which may require the remote caller to enter a password for Direct Inward System Access (DISA):

- auto-answer Loop start trunks
- auto-answer E&M trunks
- DID trunks (by means of the DISA DN).

The system resources (dialing capabilities, Line Pool access and feature access) that a remote user may access depends on the Class of Service assigned to them. You can refer to the description of Class of Service in the Administration chapter for more details.

### Remote access on Loop Start and E&M trunks

Loop start trunks provide remote access to Norstar from the public network; E&M trunks provide remote access from a private network. Each must be configured to be auto-answer (in Trunk data programming) to provide remote system access.

A Loop start trunk must have disconnect supervision if it is to operate in auto-answer mode. E&M trunks always operate in disconnect supervised mode.

### Auto-answer with DISA

When a caller dials in, the system answers with stuttered dial tone. This is the prompt to enter a Class of Service (COS) password which determines which system capabilities are available to the caller.

### Auto-answer without DISA

When a caller dials into the system, the system answers with system dial tone and no COS password is required. In this case, control over the system capabilities available to the caller is provided only by the Class of Service assigned to the incoming line.

## Remote access on E&M trunks connected to a private network

Nodes on the private network deliver the last dialed digits to the destination Norstar node, for interpretation by the destination Norstar node. The destination Norstar node either matches the digits to a target line or interprets the digits as a remote feature request. The call is either routed to the specified target line, or the remote feature is activated.

### Auto-answer E&M trunks connected to a private network

By default, E&M trunks are set to answer with DISA. For auto-answer E&M trunks connected to a private network, change the default so that the trunks are not answered with DISA.

If an auto-answer E&M trunk is configured to answer with DISA, the system will try to interpret any received digits as a COS password.

### Auto-answer with the DISA DN and the Auto DN

The DISA DN and the Auto DN allow auto-answer private network and auto-answer DID calls, in the same way that calls on auto-answer Loop start and auto-answer E&M trunks can be answered, with or without DISA. These DNs are described in 4. Miscellaneous programming.

### Remote access on Direct Inward Dial (DID) trunks

Remote system access on DID trunks is similar to that of E&M trunks connected to a private network. The main differences are:

- a remote caller is on the public network dialing standard local or long-distance telephone numbers
- the digits received are delivered by the Central Office (CO)
- DISA can not be administered to a DID trunk.

As with a private network, the dialed digits may be programmed to match those of a specific target line DN or Remote Feature DNs (the DISA DN and the Auto DN).

# Getting started

---

## Before you begin programming

For new installations:

- make sure that you have chosen the appropriate programming template, as described in Startup

Obtain:

- the Norstar Programming Overlay
- the *Norstar Modular DR4 Programming Record*.
- the *Norstar Modular DR4 Network Configuration Record*.

Know how:

- to enter Configuration programming
- to exit Configuration programming
- to use the buttons associated with the Programming Overlay.

Remember:

- to record the settings you are programming on the *Norstar Modular DR4 Programming Record* and on the *Norstar Modular DR4 Network Configuration Record*.
- that default options are shown in bold type. Most display messages in the procedures show the default option.
- Defaults correspond to those assigned in System Startup. The option you see while programming may be different if that feature has been changed. If a line number or DN appears on the display during programming, an example is shown in the Configuration procedures.

## Entering Configuration

1. Complete all calls on your M7310 or M7324 Telephone. (The receiver should remain on the telephone during programming.)
2. Enter the Configuration access code using the feature button and the dial pad:  
 Press  \* \* C O N F I G .  
 which is the same as:  
 Press  \* \* 2 6 6 3 4 4 .
3. Password: appears.  
 Enter the Configuration password (the password does not appear on the display as you enter it). The default Password is **CONFIG**.  
  
 If the password is correct:  
 A. Configuration appears, and three triangular indicators ► appear on the vertical display next to the rows of buttons.  
  
 If the password is incorrect, the display does not change. Check the password. Press **RETRY** and re-enter the password.
4. Place the Norstar Programming Overlay over the buttons pointed to by the indicators . .
5. Press **[Show]**.  
 1. **Trk/Line Data** appears.

## Exiting Configuration

1. Press **[Rls]**.  
**End of session** appears.

Since Norstar records all changes as you make them, there is no need to worry about leaving the session without “saving” them.



# Trk/Line Data

---

## What is Trk/Line Data?

Trk/Line Data consists of:

- Trunk data for specifying hardware connection characteristics for external lines.
- Line Data for specifying line characteristics for both physical lines and target lines.

Note: Target lines do not have any Trunk data settings. For target lines, the physical connection information consists of the received digit string (Rec'd #:) used to access the target line.

### Trunk data

- Line<nnn>
- Trunk mode
- Answer mode
- Answer with DISA
- Signal
- Gain
- Dial mode
- Full Autohold on idle line

### Received number (target lines only)

#### Line data

- Line type
- Prime Set
- Auxiliary Ringer
- Auto Privacy

Select the feature or features to program, and find the description and programming procedure. The Trk/Line Data settings are listed above in the order that the headings appear during programming.

## To begin Trk/Line Data programming

Begin with 1. Trk/Line Data .

1. Press [Show].  
Show line:      appears.
2. Enter a three digit line number (include leading zeros: for example, 001 or 080).  
Trunk data appears.  
OR  
Press COPY to copy all the Trk/Line Data programming from one line to another.

If you enter a target line number at the Show line:      prompt, all the Trunk Data settings are skipped, and you are presented immediately with the Rec'd #: prompt instead. (Valid target line numbers are 081 to 120 with a Two-port Expansion Cartridge, or 081 to 184 with a Six-port Expansion Cartridge)

3. Continue with Trunk data programming if you entered a line number for a physical trunk  
OR  
Specify the received digits for which the target line should ring if you entered a target line number.

Note: If the number of received digits that will make a target line ring is other than 3, you must change the default received number length under the Configuration System Data heading.

## Copying Trunk and Line data

At the `Show 1 line:` prompt a `COPY` button appears. This allows you to copy programming from one line to other lines.

### Copying data from different types of Trunk Cartridges (TC)

Copying lines between different trunk types (for example, from a Loop start TC to an E&M TC) will trigger the prompt `Reset nnn-mmm?`, along with the display buttons `YES` and `NO`. This is because all trunks on a given TC must be of the same type. Changing the trunk type for one line on a TC will change all lines on the same TC.

*Note:* “nnn-mmm” is the number range for the lines in the Trunk Cartridge to which the data is to be copied.

### Copying limitations

- when copying data for an E&M line to a Loop start line or a DID line, if you reset the new line to E&M (in response to the prompt), the first two lines in the changed TC will be E&M and the last two lines DTMF (see the description of E&M Trunks).
- in copying data from a physical trunk to a target line (or the other way around), only the data in common is copied. For example, copying a target line to an E&M trunk copies only the Line data settings because there are no Trunk data settings for a target line.
- the Received number (`Rec'd #:`) of a target line is a unique number and can not be copied.
- the two lines on E&M TCs reserved for DTMF receivers can not be copied to another line type (see the section on E&M TCs for a description of E&M and DTMF lines).
- You can copy data to KSU lines 001 to 008 only from Loop start lines.

---

# Trunk data

---

Trunk Data settings apply to physical lines (001 to 080), and not to target lines (081 to 184). Some Trunk Data settings may not appear on the display during programming depending on the type of trunk. Those that appear for a given Trunk type are indicated in the table below.

Trunk data prompts that appear for a given Trunk type

Prompt	Loop start	E&M	DID	DTMF
Line<nnn>:	Yes	Yes	Yes	Yes
Trunk mode:	Yes	—	—	—
Ans mode:	Yes	Yes	—	—
Ans with DISA:	Yes	Yes	—	—
Signal:	—	Yes	Yes	—
Gain:	I —	I Yes	I —	—
Dial mode:	Yes	Yes	—	—
Full AutoHold:	Yes	—	—	—

## Line<nnn>

The Line setting specifies the trunk type for a line. A valid line number on a Trunk Cartridge, such as line 010, appears on the display as **Line010: LOOP**.

Note that E&M Trunk Cartridges have two E&M lines and two DTMF receivers (instead of four lines as in a Loop start cartridge). For example, if an E&M Trunk Cartridge has the range of line numbers 009 to 012, numbers 009 and 010 are E&M lines, and numbers 011 and 012 are the DTMF receivers. The display prompt for line 010 appears as Line0 10: E&M and for line 011 appears as Line0 11: DTMF.

After you change a Trunk type setting (or after you use the COPY display button to copy Line programming) you must press one of the Next, Heading, or Back navigational buttons. You will then be prompted to confirm that you want to reset the Trunk type for all trunks supplied by the TC, since all trunks on the same TC must be of the same type.

For instance, Reset 009-012? would appear, along with YES and NO display buttons, if you changed the Trunk setting for one of the lines on the first TC in a system (009-012 refers to the line number range in the Trunk Cartridge).

Only when you press the YES display button, will a changed or copied Trunk setting take effect.

#### Options explained

- Loop: is the default setting used for Loop start trunks and for KSU Loop start lines (001 to 008).
- E&M: is set for the first two line numbers on an E&M Trunk Cartridge.
- DTMF: is set for the two last lines on an E&M cartridge. You must not assign DTMF receiver line numbers to telephones. If you do, the lines will appear at the telephone as out of service.
- DID: is set for a Direct Inward Dialing (DID) Trunk Cartridge.

**Note:** Changing the settings for Trunk Cartridge type (that is, Loop start, E&M or DID) on a system in use, may cause lines to be disabled and calls to be dropped.

### Programming Line

Begin with `Line<nnn>:LOOP.`

1. Press **CHANGE** to change the setting. Options are Loop, E&M (or DTMF) and DID.
2. If you did not change the line setting, do one of the following:

Press button	Next programming heading
<input type="text" value="Heading"/>	Trunk data. OR Rec'd digits (for target lines)
<input type="text" value="Next"/>	Trunk mode (for Loop start trunks)
	Ans mode (for E&M trunks)
	Signal (for DID trunks)

OR

If you did change the line setting, do one of the following:

Press button	Reset?	Next programming heading
<input type="text" value="Heading"/> +	O	Trunk data.
( <input type="text" value="Heading"/> ) +	YES	Trunk data.
<input type="text" value="Next"/> +	O	Line<nnn>: LOOP (or E&M, DTMF or DID)
<input type="text" value="Next"/> +	YES	Trunk mode (for Loop start trunks)
		Ans mode (for E&M trunks)
		Signal (for DID trunks)
		Show line: <u>  </u> (under 1. Trk/Line Data) if Line<nnn>: was set to DTMF

## Trunk mode

The Trunk mode setting is used only for Loop start lines on a Trunk Cartridge or in the KSU.

Trunk mode lets you specify one of two modes of operation for each line: disconnect supervision or unsupervised.

Disconnect supervision, also referred to as loop supervision, releases an external line when an Open Switch Interval (OSI) is detected during a call on that line. This prevents the line from remaining unavailable for other Norstar users.

For example, if an external caller hangs up while on hold, disconnect supervision can detect the OSI and disconnect the call.

### Options explained

- “Super” (the default) assigns supervised mode, if supported by the Norstar hardware; otherwise, unsupervised mode is assigned.
- “Unspr” turns disconnect supervision OFF for the line.

### Programming hints

The “Super” option is suitable for most installations. Assign “Unspr” if disconnect supervision must be turned OFF for a line connected to hardware that supports supervision.

The duration of an OSI before Norstar disconnects a call is programmed in the Supervision setting of Miscellaneous programming.

For Loop start trunks to operate in auto-answer mode, disconnect supervision is required.

## Programming Trunk mode

Begin with Trunk mode: `Super` .

1. Press CHANGE to change the setting. The options are Super and Unspr.
2. Press [Heading] until you return to the desired heading.

OR

Press button	Next programming heading
<input type="text" value="Next"/>	<code>Ans mode</code> (if Super)
	<code>Dial mode</code> (if Unspr)

## Answer mode

The Answer mode prompt appears on the display during programming for Loop start lines if the Trunk mode setting was Super, and for E&M lines. The prompt is suppressed for DID programming.

If the Auto setting is chosen for Answer mode, a secondary prompt appears (`Ans` with `DISA: Y`).

## Programming hints

Remember that disconnect supervision is required if Loop start trunks are to operate in auto-answer mode.

You should change the Answer with DISA setting to 'N', for E&M trunks in a private network operating in auto-answer mode. The default (`Ans` with `DISA: Y`) causes the system to expect a Class of Service password after it automatically answers a trunk.

## Programming Answer mode

Begin with `Ans` mode: Manual.

1. Press CHANGE to change the setting. Options are Manual and Auto.



2. Press **[Heading]** until you return to the desired heading.

OR

Press button	Next programming heading
<b>[Next]</b>	<b>Dial mode</b> (for Loop start trunks set to Manual)
	<b>Ans with DISA</b> (for Loop start trunks set to Auto)
	<b>Signal</b> (for E&M trunks set to Manual)
	<b>Ans with DISA</b> (for E&M trunks set to Auto)

\*

## Answer with DISA

This setting is displayed during the programming of Loop start and E&M lines if Answer mode was set to Auto. The prompt is suppressed during DID programming.

The Answer with DISA setting allows you to specify whether a trunk is answered with stutter dial tone (**Ans with DISA: Y**) or with system dial tone (**Ans with DISA: N**).

## Programming Answer with DISA

Begin with **Ans with DISA: Y**.

1. Press **CHANGE** to change the setting. Options are Y (Yes) and N (No).
2. Press **[Heading]** until you return to the desired heading.

OR

Press button	Next programming heading
<b>[Next]</b>	<b>Dial mode</b> (for Loop start trunks)
	<b>Signal</b> (for E&M trunks)

## Signal

The Signal setting appears on the display only for E&M or DID programming.

### Programming hints

Make sure that this matches the signal type programmed for the trunk at the other switch. Refer to the *Norstar Modular DR4 Network Configuration Record*.

### Programming Signal

Begin with Signal: `WinkStart`.

1. Press **CHANGE** to change the setting. Options are **WinkStart**, **Immediate** and **DelayDial**.
2. Press [**Heading**] until you return to the desired heading.

OR

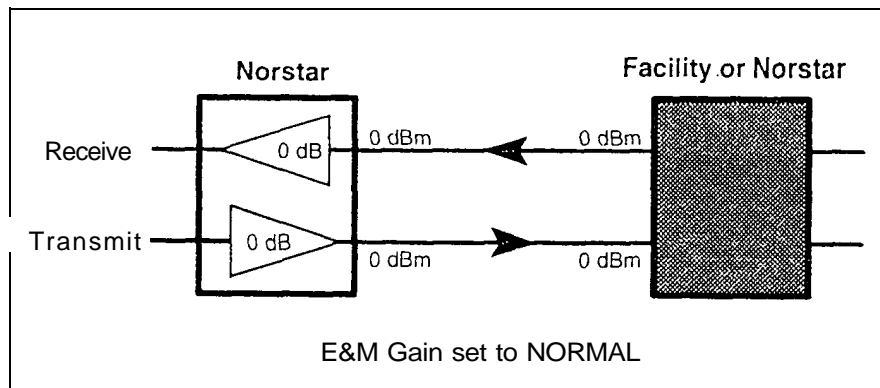
Press button	Next programming heading
Next	Gain (for E&M trunks)
	Dial mode (For Loop start trunks)

## Gain

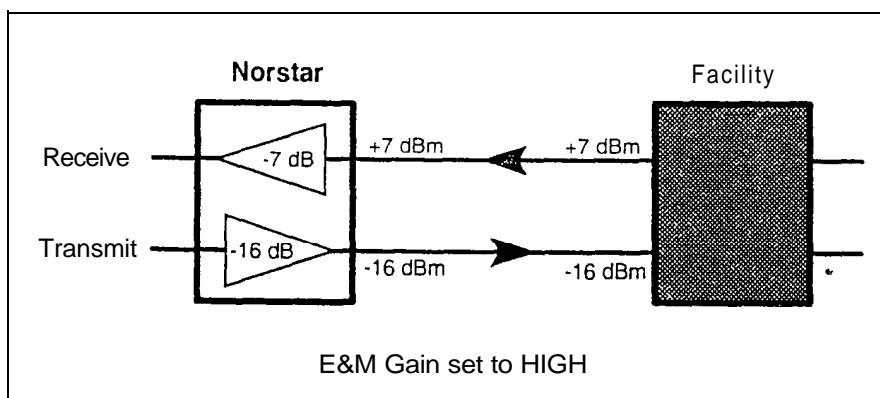
Control over the gain (transmission levels) can be set for E&M trunk programming only.

### Programming hints

The default value `Normal` induces zero loss. Use it when the E&M trunks are connected to facilities that present 0 dBm at the interface, for both the transmit and receive paths.



The value `High` induces 7db of loss in the receive path and 16db of loss in the transmit path. Use it when the E&M trunks are connected to facilities that present +7 dBm in the receive path, and -16 dBm in the transmit path, at the interface.



## Programming Gain

Begin with Gain: Normal.

1. Press CHANGE to change the setting. Options are Normal and High.
2. Press  until you return to the desired heading.  
OR  
Press .[Next] to program Dial mode.

## Dial mode

The Dial mode setting appears on the display only for Loop start and E&M trunk programming. Dial mode lets you specify whether Dual Tone Multi-Frequency (DTMF) or Pulse signalling will be used on the trunk.

## Programming Dial mode

Begin with Dial mode: Pulse .

1. Press CHANGE to change the setting. Options are Pulse or Tone.
2. Press  until you return to the desired heading.  
OR  
Press  to program Full AutoHold.

## Full Autohold on idle line

Full Autohold on idle line is a variation of the Automatic Hold feature. If you select an idle line, but do not dial any digits, that line will automatically be placed on hold if you then select another line.

The line you first selected will be held until you press its button. The line will not be available for use by anyone else.

A prompt for Full AutoHold will appear only during Loop start trunk programming. Full AutoHold is always in place for E&M trunks; it has no meaning for incoming-only DID trunks.

The default setting should be changed only if Full Autohold is required for a specific application.

### Programming Full **Autohold** on idle line

Begin with Full AutoHold: N.

1. Press CHANGE to change the setting. Options are N (No) and Y (Yes).
2. Press  until you return to the desired heading.  
OR  
Press  to program Line data.

---

# Received number

---

The Received number setting applies only to target lines (line numbers 081 and higher). It allows you to specify the digits which make a specific target line ring. The default value is no digits specified.

The length of a Rec'd #: can be one to seven digits . (programmed in System Data); the default is three digits.

Received numbers must be unique among target lines, the Auto DN, the DISA DN and the Line Pool access codes.

## Programming Rec'd #:

Begin with 1. Trk/Line Data.

1. Press [Show].  
Show line: \_ appears.
2. Enter a valid three-digit target line number (from 081 and 120 for a Two-port Expansion Cartridge, from 081 to 184 for a Six-port. You must include leading zeros for lines 081 to 099).  
Rec'd #: None appears.  
OR  
Press COPY to copy all the Trk/Line Data programming (except for received number) from one line to another.
3. Press CHANGE and enter a new set of digits  
OR  
Press CHANGE without entering digits to reset the value to the default of no Received number.
4. Press Heading to return to Show 1 line: \_ .  
OR  
Press (Next] to program Line data. No Trunk data prompts are displayed.

# Line data

---

Line data programming can be applied to all lines, trunks and target lines:

- lines 001 to 032 (trunks) and 081 to 120 (target line) for a Two-port Expansion Cartridge.
- 001 to 080 (trunks) and 081 to 184 (target lines) for a Six-port Expansion Cartridge.

## Line type

This setting specifies how the line is to be used in relation to other lines in the system. The options are Public, Private to:, or Pool (A to 0, representing 15 line pools).

### Options explained

- A Public line can be accessed by more than one telephone:
- A Private line can be assigned only to one telephone and the Prime Telephone for that line.
- Pool assigns the line to one of the fifteen line pools. If a line is assigned to a line pool, but is not assigned to any telephone, that line will be available only for outgoing calls.

### Programming hints

- Line pools must NEVER contain a mixture of Loop start lines and E&M lines.
  - All lines in a given line pool should always go to the same location.

- There are two more programming settings that must be assigned before a line pool can be used:
  - You must assign Line Pool access to telephones in the Line Access section of Configuration programming.
  - You must assign system-wide Line Pool access codes in the Miscellaneous section of Configuration programming.
- A telephone can be administered to search automatically for an idle line from several lines appearing on the telephone. Assign a line pool as the Primeline(in 2. Line Access, Prime line) and all the lines in the line pool must appear on that telephone. When the user lifts the receiver, or presses handsfree, any one of the lines, if idle, can be selected by Automatic Outgoing Line selection.
- Develop a unified dialing plan for line pools where Norstar systems are networked together. It may be appropriate to provide a single line pool with E&M lines for use by all callers on the network.
- If you will be programming the Prime line to the Intercom (I/C) setting later in Line Access programming, you may wish to assign Loop start lines to the first line pools. Remember that when the system searches for an outgoing line, it begins at Line Pool A and chooses the first available line.
- Assigning a single E&M trunk to a line pool will allow features like Ring Again on Busy Line Pool to help manage access to a shared resource.

### Programming Line type

Begin with Line type:Public .

1. Press **CHANGE** to change the setting. Options are Public, Private to, or Pool (A to 0).



Line type	Setting
Line type: Public	(default setting)
Private to: _	Enter the internal number to program a private line to a telephone.
Line type: PoolA	Press <u>CHANGE</u> repeatedly to choose pool settings A to 0 (or back to Line type: Public).

Note: The Pool settings do not appear for target lines.

2. Press  until you return to the desired heading.  
OR  
Press  to program Prime set (Prime Telephone).

## Prime Telephone

This feature allows you to assign a telephone to provide backup answering for calls on the line. Unanswered calls are redirected to the Prime Telephone.

For auto-answer trunks, calls will ring only at the Prime telephone for a trunk, and only when overflow call routing is active.

For example, program a reception desk telephone as the Prime Telephone, so that calls to other telephones will automatically ring at the reception desk if nobody else answers.

## Programming hints

Each line can be assigned only one Prime Telephone.

## Programming the Prime Telephone

Begin with Prime set: 221 .

1. Press CHANGE to change the setting.  
Prime set: \_ appears.

2. Enter an internal number (for example, 234). The default assignment is 221.  
Prime set.: 234 appears.  
OR  
Press  to assign no Prime Telephone.  
Prime set: None appears.
3. Press [Next] to program Auxiliary ringer.  
OR  
Press  until you return to the Line data heading.

## Auxiliary Ringer

This setting allows you to turn the Auxiliary Ringer ON or OFF. When turned ON, the Auxiliary Ringer will ring for any incoming calls that ring on the line. The Auxiliary Ringer is an optional device that must be connected by the Installer.

*Note:* For auto-answer trunks, calls will ring only at the Prime telephone for a trunk, and only when overflow call routing is active.

For example, if a telephone can not be heard in a noisy room, install a wall-mounted bell, and program the bell to ring for the same lines assigned to the telephone.

## Programming hints

An Auxiliary Ringer can be programmed, in the Service Modes section of Administration programming, to ring for a line placed into a Service Mode. An Auxiliary Ringer can also be programmed to ring for calls to a telephone, in Administration programming under Capabilities in the Set abilities section.

## Programming Auxiliary Ringer

Begin with Flux. ringer: Y .

1. Press CHANGE to change the setting. Options are Y (Yes) and N (No).

2. Press **[Heading]** until you return to the desired heading.  
OR  
Press **Next** to program Auto privacy.

## Privacy

This feature controls whether one Norstar user can select a line in use at another telephone to join an existing call. The default setting is Privacy ON, so that nobody with a Norstar telephone can press a line appearance on their telephone to join a call in progress at another telephone.

### For example

Once a week, two managers of the branch office must update head office of their activities. Program Privacy OFF (assigned as "No") to an external line which is shared by the managers' telephones. When it is time to make the weekly call, one manager calls head office, and the other manager joins the call by pressing the line button for the shared external line.

## Programming hints

Privacy can also be turned ON and OFF during a call with the Privacy feature code.

## Programming Privacy

Begin with `Auto Privacy: Y`.

1. Press **CHANGE** to change the setting. Options are Y (ON) and N (OFF).
2. Press **Next** to program Line data settings for another line.  
`Show line: -` appears.  
OR  
Press **Heading** to return to the Line data heading.

# Line Access

---

## What is Line Access?

Line Access allows you to program six characteristics for each telephone.

When you are finished programming Line Access settings for one telephone, you can copy those settings to other telephones.

Line Access programming includes:

- Line assignment
- Answer DN
- Ringing
- Line Pool access
- Intercom buttons
- Prime line

Select the feature or features you wish to program, and find the description and programming procedure. The Line Access settings are listed above in the order that the headings appear during programming.

## To begin Line Access programming

Begin with 2. Line Access .

1. Press [Show].  
Show set:— appears for programming Line Access settings for each telephone.  
OR  
Press COPY to copy all the Line Access programming from one telephone (if one has been programmed already) to another telephone.

2. Enter the internal number of the telephone you want to program.  
Line assignment appears.

## Programming Line Access

### Line assignment

This setting allows you to assign physical trunk lines and target lines to each telephone. Target lines are assigned and removed in the same manner as other lines.

### For example

A Central Answering Position has been installed at the company's reception desk. The telephone attendant may have to answer calls for many lines. Assign, to the attendant's telephone, the five lines used by the Consumer Products division telephones and the two lines used by the Marketing division.

### Programming hints

The default line assignments depend on the system template assigned during System Startup. The line assignment defaults for the default template (Square) are lines 001 and 002 to all telephones.

In general, auto-answer loop start trunks, auto-answer E&M trunks and DID trunks are not assigned to telephones. If assigned, they are used for monitoring incoming call usage, or for making outgoing calls (auto-answer Loop start and E&M trunks).

You can not add a line that is private to another telephone.

Each line assigned to a telephone must appear at a button with an indicator on that telephone. The maximum number of line buttons are:

- 8 for the M7208
- 10 for the M7310
- 24 for the M7324

The M7100 is an exception; it has no line buttons and can be assigned any number of lines.

A Central Answering Position (CAP), with one or two CAP modules, can provide extra line buttons if more than 12 lines are assigned to the M7324. The remaining lines appear at buttons on the first CAP module.

### Programming lines

Begin with Line assignment .

1. Press [Show].  
Line00 1 assigned appears if line 001 is the first line already assigned to this telephone.  
OR  
No lines assigned appears if no lines have yet been assigned.
2. Press ADD to add a line,  
Add 1 line: \_ appears.  
OR  
Press REMOVE to remove the line,  
Line00 1 removed briefly appears.  
Programming continues at step 5.  
OR  
Press [Next].  
Programming continues at step 5.  
OR  
Press [Heading] until you return to the desired heading.

3. Enter the three-digit line number to be added to the telephone. Use EXSP if required.  
Line002 assigned appears (if, for example, line 002 was added). To add more lines return to step 2.
4. Line003 assigned appears if, for example, line 003 is the next line already assigned to this telephone. To add more lines return to step 2.  
OR  
Answer DNs appears if there are no more assigned lines. Programming continues with the assignment of Answer DNs.

## Answer DNs

Calls for other Norstar telephones can appear and be answered at the telephone being programmed. The DNs of the other telephones are referred to as Answer DNs. One to four Answer DNs may be assigned to the telephone being programmed.

## Programming hints

Every Answer DN assigned to the telephone will automatically assign an Answer button with an indicator to the telephone. These buttons should be labeled accordingly, identifying the telephone with its name or DN.

More than one telephone can have an Answer button for the same DN. In this way, more than one telephone can provide call alerting and call answering for any calls directed to that DN.

A Private line does not generate alerting at an Answer button.

## Programming Answer DNs

Begin with Answer DNs .

1. Press  .  
 228 assigned appears if DN 228 is the first Answer DN already assigned to this telephone.  
 OR  
 No Answer DNs appears if no Answer DNs have yet been assigned.
2. Press **ADD** to add an Answer DN,  
 Add DN: \_ appears.  
 OR  
 Press **REMOVE** to remove the Answer DN,  
 228 removed briefly appears.  
 Programming continues at step 5.  
 OR  
 Press  .  
 Programming continues at step 5.  
 OR  
 Press  until you return to the desired heading.
3. Enter the internal number. Use **BKSP** if required.  
 229 assigned appears (if, for example, Answer DN 229 was added). Programming continues at step 2.
4. 238 assigned appears, for example, if DN 230 is the next assigned Answer DN. Programming continues at step 2.  
 OR  
 Ringing appears if there are no more assigned Answer DNs. Programming continues with Ringing assignments.

## Ringing

This setting allows you to choose:

- which lines (including target lines), on the telephone being programmed, will ring for an incoming call.
- which Answer DNs, on the telephone being programmed, will ring for an incoming call.



If auto-answer Loop start trunks, auto-answer E&M trunks or DID trunks are assigned to a telephone, the ringing preference has an effect only when overflow call routing or callbacks associated with overflow call routing occur. The ring/no ring setting has no effect on incoming calls on the trunks that are being routed to target lines.

### For example

A secretary answers calls for the sales office. The calls are then transferred to the appropriate person. Each telephone has four lines assigned, but only the secretary needs to answer calls on two of the lines (the customer general information number and the number for the business office).

Program those two lines as “Ring” only on the secretary’s telephone. If necessary, the secretary can still transfer the call to a sales person because they have the line assigned to their telephone. However, the sales people are not expected to answer every call that arrives on those two lines. If those two lines on their telephones are programmed as “No ring”, they will not hear that a call has come in unless it is a transferred call.

### Programming hints

Refer to Startup for default line ringing assignments in the the Square, Centrex, Hybrid and PBX system templates.

Ensure that lines assigned to an M7100 will Ring; otherwise incoming calls on the lines can not alert at the telephone.

You can not program Ringing if there are no lines or Answer DNs assigned to the telephone.

## Programming Ringing

Begin with Ringing .

1. Press **[Show]**.  
 Line00 1: Ring appears, for example, if line 001 is the first line assigned to the telephone, and that line is assigned to ring.  
 OR  
 222: Ring if DN 222 is an assigned Answer DN, and the telephone has no assigned lines.
2. Press **CHANGE** to change the setting. Options are Ring and No ring.  
 OR  
 Go to step 3.
3. Press **[Next]**  
 Line002: Ring appears (if the next line is 002).  
 Programming continues at step 2.  
 OR  
 223: Ring appears if there are no more assigned lines but there are assigned Answer DNs (example shows DN 223). Programming continues at step 2.  
 OR  
 Line Pool 1 access appears if there are no more assigned lines or Answer DNs. Programming continues with Line Pool access.

## Line Pool access

This setting allows a telephone to access one or more of the fifteen line pools available (A to O). When you assign “yes” for a given line pool, the telephone being programmed will be able to access any lines in that line pool.

## Programming Line Pool access

Begin with Line Pool access .

1. Press **Show** .  
 Line Pool A: N appears.

2. Press CHANGE to change the setting. Options are N (No) and Y(Yes).
3. Press [Next] to assign Line Pool access for the next line pool:  
Line Pool B: N appears.  
OR  
Intercom keys: 2 appears, if Line Pool 0 was the last line pool shown. Programming continues with Intercom buttons.

## Intercom buttons

This setting assigns the number of intercom buttons to a telephone. Intercom buttons provide a telephone with access to internal lines.

### For example

Everyone in the office except for the accountant has a need to make a conference call with two other employees in the office. Program the accountant's telephone with one Intercom button, and all of the other telephones with two.

### Programming hints

Each Intercom button assigned during programming will automatically appear on the telephone. The buttons start with the lower right-hand button, or one button above if the Handsfree/Mute feature was assigned to the telephone.

Two Intercom buttons are required for establishing a conference call with two other Norstar telephones.

Only one Intercom button is required if internal calls are to be made or received on the telephone, and line pools are to be accessed.

The M7100 default assignment of two Intercom buttons can not be changed. These buttons do not appear on the telephone.

## Programming intercom buttons

Begin with Intercom keys: 2 .

1. Press CHANGE to change the setting. Options are 0, 1, 2, 3, 4, 5, 6, 7, and 8.
2. Press  until you return to the desired heading.  
OR  
Press [Next] to program Prime line.

## Prime line

This setting assigns a Prime line to the telephone. A Prime line is the first line that is automatically selected when a call is made from a Norstar telephone.

The options are an external line, a line pool, an internal line, or None.

For example

The company has both an office and workshop with Norstar telephones. The workshop staff usually need to call only the office, but the office staff usually need to call outside of the company. Program the telephones of the office staff with an external line as the Prime line. Select the line that they most often use. Program an internal line as the Prime line for the workshop telephones.

## Options explained

- Each assigned line appears as an available Prime line.
- If any line pools are assigned to the telephone, each line pool appears, with the word "Pool", as an available Prime line.
- The internal line option appears as "I/C" (Intercom).

### Programming hints

An assigned Prime line is not associated with the assignment of a Prime telephone.

An external line must be assigned to the telephone in Line assignment before it can be assigned as the Prime line to the telephone.

A line pool must be assigned to the telephone in Line Pool access before a line pool can be assigned as the Prime line to the telephone.

A target line can not be a prime line for a telephone because it is incoming-only.

A DID line should not be assigned as the prime line for a telephone. If assigned, it is treated as if no prime line has been assigned. The message `Select a line` will appear when the receiver is lifted.

Remember that if you set Prime line to Intercom (I/C), you may wish to assign Loop start lines to the first line pools. Remember that when the system searches for an outgoing line, it begins at Line Pool A and chooses the first available line.

By assigning a line pool as a Prime line, a telephone can be made to search automatically for an idle line in a pool. This is described in the section on programming Line type (1. `Trk/Line Data, Line data`)

## Programming the Prime line

Begin with:

Prime line:None if no Prime line is assigned (the default).

OR

Prime line:001 if the Prime line is an external line (the default). Line 001 is shown as an example.

OR

Prime line:PoolA if the Prime line is a line pool. Line Pool A is shown as an example.

1. Press CHANGE to change the setting. Options are None, a line number, Pool (A to 0), and I/C. Only assigned lines and line pools will appear.
2. Press  until you return to the desired heading.  
OR  
Press  to program Line Access settings for another telephone.  
Show set: \_ appears.

# Call Handling

---

## What is Call Handling?

Call Handling allows you to program any combination of up to ten different system-wide characteristics for certain Norstar features. These characteristics are not associated in programming with any specific line or telephone.

Call Handling allows you to program:

- Held Line Reminder
- Held Line Reminder delay
- Delayed Ring Transfer
- Delayed Ring Transfer delay
- Transfer Callback delay
- Park prefix
- Park timeout delay
- Camp timeout delay
- Directed Pickup
- On hold

Select the feature or features you wish to program, and find the description and programming procedure. The Call Handling settings are listed above in the order that the headings appear during programming.

## To begin Call Handling programming

Begin with 3. Call Handling .

1. Press  .  
Held reminder: N appears for programming Held Line Reminder.
2. Press  until the feature you want appears on the display.

## Programming Call Handling

### Held Line Reminder

This feature reminds you that a call at your telephone is still on hold. You will periodically hear two tones from your telephone until you return to the call on hold.

### Programming Held Line Reminder

Begin with Held reminder: N .

1. Press  to change the setting. Options are N (No) and Y (Yes).
2. Press  until you return to the desired heading.  
OR  
Press  .  
If you chose No, DRT to Prime: Y appears for programming the Delayed Ring Transfer to Prime Telephone.  
If you chose Yes, Remind delay: 60 appears for programming the Held Line Reminder delay.

### Held Line Reminder delay

This feature allows you to choose the number of seconds before the Held Line Reminder feature begins at a telephone that has an external call on hold.

### Programming hints

The Held Line Reminder delay can be programmed only if Held Line Reminder was turned ON.



### Programming Held Line Reminder delay

Begin with Remind delay: 60 .

1. Press CHANGE to change the setting. Options are 30, 60, 90, 120, 150, and 180 seconds.
2. Press  until you return to the desired heading.  
OR  
Press  to program Delayed Ring Transfer.

### Delayed Ring Transfer

This feature automatically forwards unanswered external calls to a Prime Telephone, after a certain period of time. This helps ensure that no external call goes unanswered.

#### Programming hints

An operational Prime Telephone must be assigned before this feature can operate. A Prime Telephone is assigned to one or more external lines in the Line Data section of Configuration programming.

### Programming Delayed Ring Transfer

Begin with DRT to Prime: Y .

1. Press CHANGE to change the setting. Options are Y (Yes) and N (No).
2. Press  until you return to the desired heading.  
OR  
Press .

If you chose No, Transfer call bk : 3 appears for programming the Transfer Callback delay.

If you chose Yes, DRT delay: 3 appears for programming the Delayed Ring Transfer delay.

## Delayed Ring Transfer delay

This feature allows you to specify the number of rings before Delayed Ring Transfer transfers a call to a Norstar Prime Telephone.

### For example

The company training room has a Norstar telephone. Program a delay of two rings so that the telephone will quickly be answered at the Prime Telephone, and not continue to disturb a class.

### Programming hints

The Delayed Ring Transfer delay can be programmed only if Delayed Ring Transfer was turned ON.

You can estimate the delay in seconds if you multiply the number of rings by six.

### Programming Delayed Ring Transfer delay

Begin with `DRT delay: 3`.

1. Press **CHANGE** to change the setting. Options are 1, 2, 3, 4, and 6 rings.
2. Press  until you return to the desired heading.  
OR  
Press  to program the Transfer Callback delay.

## Transfer Callback delay

This delay allows you to specify the number of rings before a Callback occurs on a transferred call.

### For example

The company receptionist must often transfer calls to the print shop. However, it is difficult to hear the telephone ring there because of noise. Allow six rings at the telephone before the callback to ensure that the print shop workers have a chance to hear the telephone.

### Programming hints

You can estimate the delay in seconds if you multiply the number of rings by six.

## Programming Transfer Callback delay

Begin with `Trnsfr cal lbk:3` .

1. Press **CHANGE** to change the setting. Options are 3, 4, 5, 6, and 12 rings.
2. Press  until you return to the desired heading.  
OR  
Press  to program Park prefix.

## Park prefix

The Park prefix is the first digit of the call park retrieval code that must be entered to retrieve a parked call. If the Park prefix is set to None, calls can not be parked.

### Programming hints

The Park prefix can not be the same as:

- the Direct-dial digit
- the External Line access code
- the first digit of a DN

— the first digit of a Line Pool access code.

If DN length is changed, and the changed DNs conflict with the Park prefix, the setting changes to None.

Other programmable settings may affect which numbers appear on the display during programming. Although the numbers 0 to 9 are valid Park prefix settings, some may have been already assigned elsewhere by default or by programming changes. (To avoid a conflict, refer to the table of default settings in the description of External code.)

### Programming Park prefix

Begin with Park prefix: 1.

1. Press **CHANGE** to change the setting. Options are 1 to 9, None or 0.
2. Press **[Heading)** until you return to the desired heading.  
OR  
Press **Next** to program Park timeout.

### Park timeout delay

This feature lets you assign the number of seconds before a parked call on an external line will callback to the originating telephone.

For example

In the store, customer's orders are brought from the adjacent warehouse and picked up at the front desk. For telephone orders, the receptionist parks the call, and announces the order to the warehouse. If the warehouse staff do not answer the parked call after a specific delay, the receptionist will prepare the order. Program the delay as two minutes, or 120 seconds.

### Programming Park timeout delay

Begin with Park timeout: 45 .

1. Press CHANGE to change the setting. Options are 30, 45, 60, 90, 120, 150, and 180 seconds.
2. Press [Heading] until you return to the desired heading.  
OR  
Press [Next] to program Camp timeout delay.

### Camp timeout delay

This feature allows you to assign the number of seconds before an unanswered camped call is returned to the telephone which camped the call.

For example

When senior managers in the company are busy in a meeting, they prefer having important calls camped on the conference room telephone. They do not always want to be disturbed by the telephone ring, but they still want to hear the Camp-On tone. Program a short 30 second Camp timeout delay to allow the managers to decide if they wish to take the call.

### Programming Camp timeout delay

Begin with Camp timeout: 45 .

1. Press CHANGE to change the setting. Options are 30, 45, 60, 90, 120, 150, and 180.
2. Press [Heading] until you return to the desired heading.  
OR  
Press [Next] to program Directed Pickup.

## Directed pickup

This feature allows you to answer any calls by specifying the ringing telephone's internal number.

### For example

Two departments located next to each other in an open concept office space want to answer each others' telephones in order to provide excellent customer service, even though they are not in the same Call Pickup Group. Program Directed pickup to improve the chances that anyone can use the nearest telephone to answer a ringing call.

### Programming hints

This feature is not to be confused with the Call Pickup Group feature in Administration programming, which allows you to answer a call at any telephone within a specific group without specifying the internal number of the ringing telephone.

Like Call Pickup Group, this feature is useful when not all the telephones have been assigned the same lines, but you still want to allow your co-workers to answer a call on any external line from their telephones.

### Programming Directed pickup

Begin with `Directed Pickup:Y`.

1. Press CHANGE to change the setting. Options are Y (Yes) and N (No).
2. Press  until you return to the desired heading.  
OR  
Press  to program On hold.

## On hold

This feature lets you choose what a caller will hear on an external line when the line has been put on hold.

For example

In the travel agency, customers have to wait on the telephone until a travel agent is available. Program Music On Hold so customers can hear music while they are waiting.

Options explained

- Tones provides a periodic tone.
- Music provides any signal from a source such as a radio connected to the Norstar Key Service Unit.
- Silence.

Programming On Hold

Begin with On hold: Tones .

1. Press **CHANGE** to change the setting. The options are Tones, Music, and Silence.
2. Press  until you return to the desired heading.  
OH  
Press  to program the Miscellaneous section of Configuration programming.

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# Miscellaneous

---

## What is Miscellaneous?

Miscellaneous allows you to program any of the following system-wide characteristics:

- Background Music
- Direct-dial digit
- DISA D N
- Auto DN
- Alarm telephone
- CAP assignment
- Link Time
- Telephone Relocation
- Host delay
- Disconnect Supervision delay
- External code
- Line Pool access codes
- Installer password

Select the feature or features you wish to program, and find the description and programming procedure. The Miscellaneous settings are listed above in the order that the headings appear during programming.

## To begin Miscellaneous programming

Begin with 4. Miscellaneous .

1. Press  .  
Back ground music: N appears for programming  
Background Music.



2. Press [Next] until the feature you want appears on the display.

## Programming Miscellaneous

### Background Music

This feature allows you to listen to music through your telephone speaker. A music source must be connected to the Key Service Unit.

### Programming Background Music

Begin with `Backgrnd music:N`.

1. Press CHANGE to change the setting. Options are N (No) and Y (Yes).
2. Press [Heading] until you return to the desired heading.  
OR  
Press  to program Direct-dial telephone(s).

### Direct-dial digit

This feature allows you to dial a single system-wide digit that can be used to call a specific telephone called a Direct-dial telephone. There can be as many as five Direct-dial telephones in a system. The Direct-dial telephone to which specific telephones will connect is assigned in Administration (4. Direct-Dial and 5. Capabilities).

People with common interests should be in the same Direct-Dial group. For instance, the secretary who can best handle calls or questions for a group could have a telephone assigned as the Direct-Dial telephone for that group.

### Programming hints

Another Direct-dial telephone, an Extra-dial telephone, can be assigned for each Service Mode in Service Modes programming.

Possible settings for the Direct-dial digit are: N (None), 0 (the default) to 9. The Direct-dial digit can not be the same as: .

- the first digit of a DN
- the first digit of a Line Pool access code
- the External Line Access code
- the Park prefix

If DN length is changed, and the changed DN<sub>s</sub> conflict with the Direct-dial digit, the setting changes to None.

To avoid a conflict, refer to the table of default settings in the description of External code.

### Programming Direct-dial #

Begin with Direct-dial #: 0 .

1. Press CHANGE to change the setting.
2. Press (Heading) until you return to the desired heading.  
OR  
Press  to program the DISA DN.

### Direct Inward System Access Directory Number (DISA DN)

For calls answered with DISA, the system presents a stuttered dial tone to prompt a caller to enter a valid password. The Class of Service (COS) that applies to the call is determined by this COS password.

Once a remote user is on the Norstar system, the DISA DN can be used to change the existing Class of Service and select another one.

The length of the DISA DN is the same as the Rec'd # length specified in 5. System Data. The DISA DN will be cleared if the Received number length is changed.

### Programming hints

The DISA DN can not conflict with any target line DNs, and can not have a first digit that conflicts with the first digit of a Line Pool access code or with the External Line access code.

### Programming DISA DN

Begin with DISA DN:None .

1. Press CHANGE to change the setting.  
DISA DN: \_ appears.
2. Enter the digits to be received from the auto-answer trunk.  
OR  
Press  if no DISA DN is to be assigned.  
DISA DN: None appears.
3. Press [Heading] until you return to the desired heading.  
OR  
Press  to program the Auto DN.

### Auto Directory Number (Auto DN)

For calls answered without DISA, no password is required to access the Norstar system. The Class of Service (COS) that applies to the call is determined by the COS for the trunk on which the user is calling.

The length of the Auto DN is the same as the Rec'd # length specified in 5. System Data. The Auto DN will be cleared if the Received number length is changed.

### Programming hints

The Auto DN can not conflict with any target line DNs, and . can not have a first digit that conflicts with the first digit of a Line Pool access code or with the External Line access code.

### Programming Auto DN

Begin with Auto DN: None .

1. Press **CHANGE** to change the setting.  
Auto DN: \_ appears.
- 2 . Enter the digits to be received from the auto-answer trunk.  
OR  
Press  if no Auto DN is to be assigned.  
Auto DN: None appears.
3. Press  until you return to the desired heading.  
OR  
Press  to program the Alarm telephone.

### Alarm telephone

This feature allows you to assign a telephone on which Alarm messages will appear when a problem has been detected in the system.

For example

The System Coordinator is the person in the office most familiar with **Norstar**. Assign this person's telephone as the Alarm telephone so that an appropriate action can be decided if an Alarm message appears on the telephone's display.

## Programming Alarm telephone

Beginwith Alarm set: 221 .

1. Press CHANGE to change the setting. The default is 221.  
Alarm set: \_ appears.
2. Enter the internal number.  
OR  
Press  if no Alarm telephone is to be assigned,  
Alarm set: None appears.
3. Press [Heading] until you return to the desired heading.  
OR  
Press  to program CAP assignment.

## CAP (Central Answering Position) assignment

This setting designates a telephone as a CAP. The CAP must be an M7324 telephone, and may have one or two CAP modules attached. The DN used is the DN of the M7324. A maximum of five CAPs can be installed in a Norstar system.

The CAP may be used to:

- monitor the busy/not busy and Do Not Disturb status of Norstar telephones
- answer external calls on up to 120 lines, and extend calls to other Norstar telephones
- send up to 30 messages to other Norstar telephones
- provide up to 96 extra memory buttons for the M7324 Telephone.

For example

An increase in the number of calls that must be handled by the company's receptionist has resulted in the need for a Central Answering Position (CAP). A Central Answering Position module has therefore been installed on an M7324. Assign 226, the internal number of that M7324, to "CAP1".

### Programming hints

If CAP modules are attached to an M7324 that has not been programmed as a CAP, then no CAP settings are assigned.

If a CAP module (or modules) is relocated with the M7324, the settings are retained.

### Programming CAP assignment

Begin with CAP assignment .

1. Press  .  
If CAPs have been previously defined:  
CAP 1: 225 (for example) appears.  
OR  
if a CAP has not been assigned:  
CAP 1: None appears (the default).
2. Press  until the desired CAP appears on the display.
3. Press CHANGE .
4. Enter the internal number of the CAP.
5. Press (Heading) until you return to the desired heading.  
OR  
Press  to assign the next CAP.  
After the fifth CAP assignment, programming continues with Link Time.

## Link Time

This feature allows you to specify the duration of a signal required to access a feature through a remote system.

For example

External dialing must reach through a Centrex system. The Centrex system requires a Link Time of 400 ms. Program a Link Time of 400.

## Programming hints

The Link Time required will depend on the requirements of the host switching system that must be accessed.

Link is another name for recall or flash.

## Programming Link Time

Begin with Link time: 600 .

1. Press CHANGE to change the setting. Options are 100, 200, 300, 400, 500, **600**, 700, 800, 900, and 1000 milliseconds.
2. Press  until you return to the desired heading.  
OR  
Press  to program Telephone Relocation.

## Telephone Relocation

This feature allows you to move any telephone to a new location within the Norstar system without losing the settings which were originally programmed on the telephone.

These settings include Personal programming, and any Configuration and Administration programming for that telephone.

### For example

The company is relocating the sales department to a new location in the office. Turn Telephone Relocation ON during the move so that the relocated telephones retain their programmed settings.

### Programming hints

It is advisable to turn Telephone Relocation ON after the telephone installation and programming has been done. This provides you with more flexibility in testing equipment.

If this feature is OFF while a telephone is moved, that telephone's DN and Administration data remain with the physical port on the KSU, and the telephone will not receive the original programming when it is reconnected elsewhere.

### Programming Telephone Relocation

Begin with `Set relocation:N`.

1. Press `CHANGE` to change the setting. Options are N (No) and Y (Yes).
2. Press  until you return to the desired heading.  
OR  
Press  to program Host delay.

### Host delay

This feature lets you assign the delay between the moment an outgoing line is selected to make an external call (by lifting the receiver off the telephone, for example) and the moment that Norstar sends dialed digits or codes on the line.

### For example

The telephone company informs you that dial tone is heard within .5 seconds after an idle line is selected. Program a Host delay time of 600 milliseconds.



### Programming hints

Host delay is provided to ensure that a dial tone is present before the dialing sequence is sent. Minimizing this delay provides faster access to the requested features.

### Programming Host delay

Begin with `Host delay : 1000` .

1. Press CHANGE to change the setting. Options are 200, 400, 600, 800, **1000**, 1200, 1400, 1600, 1800, and 2000 milliseconds.
2. Press  until you return to the desired heading.  
OR  
Press [Next] to program Disconnect Supervision delay.

### Disconnect Supervision delay

This setting allows you to specify the duration of an Open Switch Interval (OSI) before the Disconnect (or loop) Supervision feature disconnects a call on a supervised external line.

For example

On occasion, a supervised line was unavailable because the telephone network switch disconnected a line, but the disconnection was not recognized by the Norstar system. The telephone company suggests that the Supervision delay be decreased to 50 milliseconds. Program a delay of 60 milliseconds (the shortest setting available).

### Programming hints

Disconnect Supervision is assigned to each line with the Trunk mode setting in the Line Data section of Configuration programming.

### Programming Disconnect Supervision delay

Begin with `Supervision:460` .

1. Press `CHANGE` to change the setting. Options are 60, 100, 260, 460, and 600 milliseconds.
2. Press `[Heading]` until you return to the desired heading.  
OR  
Press `Next` to program the External Line access code.

### External code

This setting allows you to assign the External Line access code. This code is used:

- to allow an M7100 telephone to access external lines
- to allow an Analog Terminal Adapter (ATA) to access external lines

For example

Program an external line access code of "8" to allow the newly installed M7100 telephones to access external lines.

### Programming hints

The External Line access code can not conflict with:

- the Park prefix
- the Direct-dial digit
- the first digit of a Line Pool access code
- the first digit of a DN

If DN length is changed, and the changed DNs conflict with the External Line access code, the setting changes to `None`.

The default external line access code is 9.

---

 Digits assigned by default to Configuration settings

Digit	Use	Heading
0	Direct-dial #	4. Miscellaneous
1	Park prefix	3. Call handling
2	the first digit of B1DNs	5. System Data
3	the first digit of B1DNs in an expanded system	5. System Data
9	External Line access code	4. Miscellaneous
- -	Line Pool access code (Not assigned by default, but takes precedence over the External Line access code if there is a conflict.)	4. Miscellaneous

### Programming External code

Begin with External code: 9.

1. Press CHANGE .
2. Enter the one digit code.  
OR  
Press OK .
3. Press  to program Line Pool access codes.

### Line Pool access codes

This setting allows you to assign a Line Pool access code for each of the fifteen line pools (A to 0). These codes are used to specify the line pool you wish to use for making an outgoing external call.

#### For example

Program the Line Pool access codes "700" and "701" to the two assigned line pools in the Norstar system.

## Programming hints

The code can be one to four digits in length. Line Pool access codes starting with the same digit must be the same length.

A Line Pool access code can be the same as an external line access code. In this case, the Line Pool access code takes priority over the external line access code, and a line from the line pool is selected.

A Line Pool access code can not conflict with:

- the Park prefix
- the Direct-dial digit
- the first digit of any Received number
- the first digit of any DN (including the Auto DN or the DISA DN).

To avoid a conflict, refer to the table of default settings in the description of External code.

## Programming Line Pool access codes

Begin with Line Pool codes .

1. Press  .  
Line Pool A: appears.  
OR  
Line Pool A: 8 1 appears if Line Pool access code 81, for example, was previously assigned.
2. Press  until the desired line pool appears if you do not wish to program the first code.
3. Press CHANGE .  
Line Pool A: \_ appears on the display.

4. Enter the digits for the Line Pool access code (maximum of four digits).  
OR  
Go to step 5 to reset the Line Pool access code to none.
5. Press **OK** .  
If you reset the code, the code for the next line pool appears.  
OR  
Installer **Pswd.** appears for programming the Installer password if Line Pool 0 was the last code.
6. Press **[Heading]** until you return to the desired heading.  
OR  
Press **Next**  to program the next code.  
OR  
Installer **Pswd.** appears for programming the Installer password if Line Pool 0 was the last code.

### Installer password

This setting allows you to change the Installer password that allows access to Configuration programming.

### Programming hints

You can choose any combination of one to six digits. You will find it easier to remember the password if the digits spell a word. Provide this password only to selected personnel to prevent unauthorized access to Configuration programming. The implications of such access may include the rearrangement of line assignments, which could affect the operation of the Norstar system.

The default Installer password is 266344 (CONFIG).

## Programming Installer password

Begin with Installer Pswd.

1. Press CHANGE .  
New Pswd: \_ appears.
2. Enter the new one to six digit Installer password (for example, 2287 which spells "cats"). Use BKSP if required.
3. Press OK .  
Re-enter: \_ appears.
4. Re-enter the digits and press OK .
5. If you re-entered the same digits:  
Password changed briefly appears.  
5. System Data appears for programming  
Change DNS.  
OR  
If you re-entered different digits:  
Pswd not changed briefly appears and an error tone is heard.  
Installer Pswd. again appears.

---

# System Data

---

## What is System Data?

System Data allows you to specify system-wide settings which include:

- Individual DNs
- DN length
- Rec'd number length

Select the feature or features you wish to program, and find the description and programming procedure. The System Data settings are listed above in the order that the headings appear during programming.

## To begin System Data programming

Begin with 5. `System Data` .

1. Press `Show` .  
`Individual DNs` appears for programming individual DNs.
2. Press `[Next)` to program DN length.  
`DN length: 2` appears for a non-expanded system, or `DN length: 3` appears for an expanded system.

Note that if any future expansion is planned, the DN length should be set to three, even on non-expanded systems. Refer to the description of DN length, later in this section, before you change the length of DNs in a system.



## Programming System Data

### Individual DNs

This feature allows you to change the Directory Number (DN) of a telephone.

Changing an individual DN locks the configuration session into the System Data programming mode. When the System Data session ends, re-enter the Configuration access code and the Installer password to continue with other Configuration or General Administration programming. Do not perform Startup again, or all previous programming **will** be erased.

#### For example

Each lawyer in the office has a legal secretary, and everyone has a Norstar telephone. Rearrange the DNs so that each of these pairs of telephones have a consecutive DN. This will help all the office staff to remember who is the secretary for each lawyer. Begin with programming the first lawyer's DN as 30, and the secretary's DN as 31.

#### Programming hints

No DN changes occur until the Configuration session ends.

If the "new DN" already existed for another telephone, that other telephone will be given the "old DN".

All DNs must be the same length.



The first digit of a new DN can not be the same as the first digit of:

- an External Line access code
- a Line Pool access code
- the Park prefix
- the Direct-dial digit

To avoid a conflict, refer to the table of default settings in the description of External code.

The lowest default DN for a non-expanded system is 21, and the lowest default DN for an expanded system is 221.

### Programming Individual DNs

Begin with Individual DNs .

1. Press  .  
Old DN:  appears.  
OR  
If no DNs were changed,  
Press  until you return to the desired heading.  
OR  
If DNs were changed,  
Press  .  
Configuration programming is terminated, and you are returned to an idle telephone.
2. Enter the old DN you wish to change.  
Press **BKSP** if necessary to correct an entered digit.
3. Press **OK** when you are finished entering the DN:  
New DN:  appears.
4. Enter the new DN.  
Press **BKSP** if necessary to correct an entered digit.

5. Press OK when you are finished entering the DN:  
224 > 245 briefly appears (if, for example, the old DN was 224, and the new DN is 245).

Old DN: \_ appears, and programming returns to step 1.

OR

If the old DN does not exist or can not be used:

Invalid old DN briefly appears.

Old DN: \_ appears in step 1.

OR

If the new DN can not be used:

Invalid new DN briefly appears.

Old DN: \_ appears in step 1.

## DN length

This feature allows you to change the number of digits for all internal DNs. The maximum length is seven. The default and minimum length is three for an expanded (with Expansion Cartridge) Norstar system, and two for a non-expanded Norstar system.

If any future expansion is planned, the DN length should be set to three, even on non-expanded systems.

A DN length change, if required, should be the first programming change on a newly installed Norstar system.

### CAUTION

You must wait for at least two minutes after a system startup before you change the DN length.

## Programming hints

### CAUTION

Data devices will drop calls if the length is changed.

Data devices use the B2 channel. The M7100, M7208, M7310, and M7324 Telephones use the B1 channel. Calls are not dropped for these telephones.

Each increase in length will place the digit 2 in front of any existing DN. For example, if DN 3444 was increased to a length of 6, the new DN would be 223444.

**Note:** If the DN length is changed so that a conflict is created with the Park prefix, External Line access code, Direct-dial digit, or any Line Pool access code, the setting for the prefix or code will be changed to None, and the corresponding feature will be disabled.

A non-expanded system (with a default DN length of two) is automatically changed to a DN length of three after an expansion cartridge is installed and power is restored to the KSU.

For example

The company is expanding and the DNs must be re-assigned to accommodate the branch office, which has a DN length of four. Change the three digit length to a four digit length.

### Programming DN Length

Begin with **DN length: 2** or **DN length: 3**.

1. Press **CHANGE** to change the setting. Options are 2, 3, 4, 5, 6, and 7 for a non-expanded system; and **3**, 4, 5, 6, and 7 for an expanded system ('2' is not available for an expanded system).

2. Press (Next].  
If the DN length was not changed,  
Rec'd # length: 3. appears for programming the .  
length of Received numbers.  
OR  
If the DN length was changed:  
Drop data calls? appears.
3. Press N0 if you do not wish to continue with the length  
change.  
OR  
Press YES to make the change.  
End of session briefly appears.  
Norstar exits from Configuration programming, and the  
telephone returns to an idle state.

The DN length change is completed within two minutes,  
depending on the size of the installed Norstar system.  
System response may briefly slow down during this  
time.

You can not re-enter Configuration programming during this  
time. If you enter the Configuration access code, the  
message In use: SYSTEM appears on the display.

## Received number length

This feature allows you to change the number of digits  
received on auto-answer trunks. These digits are used to  
identify target lines, Auto DNs, and DISA DNs.

Note that target line number ( for example, line 081) and the  
Received number for the target line (for example,  
Rec'd #: 1234 for line 081) are two different numbers.

Note as well, that the Received number length maybe the  
same as the system DN length, or may, because of network  
or CO constraints, be set to some other value.

A received number may be one to seven digits in length. The  
default length is three.

Target lines are supported only on expanded Norstar systems (with an Expansion Cartridge). The **Rec'd #:** prompt does not appear when programming non-expanded Norstar systems (without an Expansion Cartridge).

### Programming hints

Changing the Received number length will cause all programmed received digits to be cleared.

### Programming Rec'd # Length

Begin with **Rec'd # length:3**.

1. Press **CHANGE** to change the setting.  
Options are 1, 2, 3, 4, 5, 6, and 7.
2. Press .  
If the Rec'd # length was not changed,
  1. **Trk/Line Data** appears for programming the Trunk and Line Data sections of Configuration programming.OR  
If the DN length was changed:  
**Clear rec'd #'s?** appears.
3. Press **NO** if you do not wish to continue with the length change.  
OR  
Press **YES** to make the change. All programmed received digits will be cleared
  1. **Trk/Line Data** appears.



---

# Set copy

---

## What is set copy?

Set copy allows you to copy programmed data from one telephone to another. You have two choices when deciding which data to copy:

- you can copy System data only;
- you can copy System data and User administration data.

System data is programmed in Configuration and Administration. User administration data is programmed by people at their own telephones, in order to customize their telephones to their own needs.

### Remember:

- Set copy operates only from the Norstar M7310 or M7324 Telephones.
- Do not confuse Set copy with the COPY display button. COPY is more selective than Set copy. It allows you to copy specific groups of data from one telephone to another telephone or from one external line to another external line. You can copy more selective groups of System data listed in the table below by pressing COPY when it appears.
- If you are copying both System data and User administration data, the source and destination telephones must each be the same **Norstar** model. If you are copying System data only, the telephones can be different Norstar models.
- Copying data to a telephone overrides any of that telephone's previous programming.
- Know which data can and can not be copied. These are shown in the following two charts.

System data		
System data which CAN NOT be copied	System data which CAN be copied	
Alarm Telephone designation	Answer button assignments	Line assignment
CAP assignment	Automatic Handsfree	Line Pool access
Direct-dial Telephone designation	Auxiliary ringer	Line / Telephone Filter
Directory Number (DN)	Call Forward No Answer	Number of intercom or extension buttons
Extra-dial Telephone designation	Call Forward No Answer Delay	Page Zone
Night Control Telephone designation for a line	Call Forward On Busy	Pickup Group
Night Ringing Telephone designation for a line	Call Overrides applied to the telephone	Prime line designation
Prime Telephone designation for a line	Call Restrictions applied to the telephone	Priority Call permission
Private line appearances	Direct-dial Group	Redirect Ring
Telephone Name	Full Handsfree	Ringling line preference
	Handsfree Answerback	Telephone Administration Lock
	Hotline	Telephone Filter

---

User administration data	
User administration data which CAN NOT be copied	User administration data which CAN be copied
CAP module memory button assignments	Dialing modes (Automatic Dial, Pre-Dial, Standard Dial)
Contrast adjustment	Language Choice
Ring Type	Line button positions
Ring Volume	Personal Speed Dial entries
	Telephone memory button assignments (Internal Autodial, External Autodial, and feature access)

---



## Accessing Set copy

From any Norstar M7310 Telephone or M7324 Telephone:

1. Place the Overlay on the telephone.
2. Press  
 \* \* 2 6 6 3 4 4  
which is the same as  
 \* \* C O N F I G .
3. Enter the existing Installer password. The Password: prompt appears. The default password is CONFIG, which you can use if this is the first time that Configuration programming has been entered.
4. if the password is entered correctly,  
A. Conf igration appears.  
OR  
If the password has been incorrectly entered, the Password: prompt remains on display. In this case, press RETRY, and again enter the password.  
  
*Note:* To preserve the integrity of Configuration and Administration data, do not give the Installer password to anyone.
5. Press  twice.  
C. Set copy appears.

## Applying Set copy

From C. Set copy :

1. Press [Show].
2. If you want to copy System data only, go to step 3.  
OR  
If you want to copy both System data and User administration data, press CHANGE.
3. Press (Next).
4. Enter the DN of the telephone from which you want to copy data.
5. Enter the DN of the telephone to which you wish to copy data.
6. Repeat step 5 if you wish to copy the same data to another telephone.  
OR  
Press [Heading] to return to C. Set copy.  
OR  
Press  to end the session.



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# Administration overview

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Administration programming lets you change settings for the entire Norstar system, as well as settings for individual telephones and external lines.

Pre-programmed default settings may initially be sufficient for your needs. You can use Administration programming, however, to customize your Norstar System by changing these default settings.

## Administration headings

Administration programming has seven major sections:

- System Speed Dial assigns a two-digit code (01-70) for fast dialing of up to 70 telephone numbers from any Norstar telephone.
- Names identifies external lines and telephones by name (for example, LAURA or ROOM 6). When you call a co-worker, your name appears on the display of your co-worker's Norstar telephone.
- Time and Date adjusts the time and date displayed on each Norstar telephone.
- Direct-Dial designates the telephones that can be reached by dialing a single digit. There can be five Direct-Dial telephones, each with a group of telephones from which it will receive Direct-Dial calls.
- Capabilities defines dialing filters, remote access packages, line abilities and telephone abilities. It assigns restrictions and capabilities to Class of Service (COS) passwords, to telephones, to lines and to line/telephone combinations. Dialing filters, remote access packages and COS passwords control access to the system's resources by internal and remote users.

- Service Modes controls how the Norstar system will respond to calls, depending on the time of day. For example, incoming calls during lunch can be made to ring both at their normal destination, and at a receptionist's desk.
- Password changes the password that controls access to Administration programming.



---

# Getting started

---

## Before you begin programming

### Obtain

- the Norstar Programming Overlay
- the *Nor-star Modular DR4 Programming Record*

### Know how

- to enter and exit Administration programming
- to use the buttons associated with the Programming Overlay.

### Remember

- to record programming changes on the *Norstar Modular DR4 Programming Record*. Photocopy the appropriate pages, and distribute them to everyone who uses the Norstar system. You can also record information for distribution on the Programming reminders charts at the end of this chapter.
- that default options are shown in bold type. Most display messages in procedures show a default option.
- that defaults correspond to those assigned during Norstar installation. The option you see while programming may be different if that feature has been changed. If a line number or internal number appears on the display during programming, an example is shown in the Administration procedures.
- that the default Norstar internal numbers depend on the installed Norstar system. The defaults are:-
  - \* two-digit internal numbers (beginning at 21) for non-expanded Norstar systems
  - three-digit internal numbers (beginning at 221) for expanded Norstar systems.

## Entering Administration

1. Complete all calls on your M7310 or M7324 Telephone. (The receiver should remain on the telephone during programming.)
2. Enter the Administration access code, using the feature button and the dial pad:  
Press (Feature)         
which is the same as:  
Press
3. Password: appears.  
Enter the Administration password from the dial pad. (The password does not appear on the display as you enter it.)  
  
If the password is correct, 1. `SYS speed` dial appears, and three triangular indicators ► appear on the vertical display next to the rows of buttons.  
  
If the password is incorrect, the display does not change. Check the password. Press `RETRY` and re-enter the password.
4. Place the Norstar Programming Overlay over the buttons pointed to by the indicators ►.

## Exiting Administration

1. Press   
End of `session` appears.

Since Norstar records all changes as you make them, there is no need to worry about leaving the session without “saving” them.

---

# System Speed Dial

---

## What is System Speed Dial?

System Speed Dial allows you to program up to 70 telephone numbers that can be dialed, using a two-digit code (01 to 70), from any Norstar telephone.

System Speed Dial includes the following five settings:

- System Speed Dial number
- Line Selection
- Display Digits
- System Speed Dial Name
- Bypass Restrictions.

Select the setting or settings you wish to program, and find the description and programming procedure. The System Speed Dial settings are listed above in the order that they appear during programming.

## To begin System Speed Dial programming

Begin with 1. Sys speed dial .

1. Press    
Speed dial #: \_ appears.
2. Enter the two-digit System Speed Dial code (from 01 to 70) from the dial pad.   
Speed dial #: 12 , for example, appears if 12 was entered.   
OR   
Press  to program the first System Speed Dial number.   
Speed dial #: 01 appears.

## Programming System Speed Dial

### System Speed Dial number

This setting lets you assign a System Speed Dial telephone number to a two-digit code. The System Speed Dial number may contain 24 characters.

You may first view a previously programmed number before changing it, or directly proceed to change the number.

### Programming hints

A Host System Signaling feature code may be inserted into the System Speed Dial number. Pause and Run/Stop each use one character position; and Link, Timed Release, and Programmed Release each use two positions.

### Programming the System Speed Dial number

Begin with `Speed dial #: 0 1` , for example.

1. Press `DEFAULT` only if settings for this System Speed Dial code were already assigned, and you wish now to assign default settings.  
Go to step 6.
2. Press `[Show]` :  
No number stored appears if no number was previously assigned.  
OR  
5552466 , for example, appears if a number was previously programmed. `VIEW->` and `<-VIEW` appear if the number is longer than 16 digits.
3. Press `CHANGE` .  
`#01:_` appears.

4. Enter the new telephone number from the dial pad (maximum of 24 digits), including all digits such as an initial **9** or an area code that must be dialed to call the number manually.  
99975823, appears, for example.  
If the number is more than 16 digits long, the left-most digits disappear from the display as you continue to enter the System Speed Dial number.  
Press the **BKSP** display button if required to backspace the cursor.
5. Press **OK** when the number has been entered.
6. Press **Back** to program another System Speed Dial number.  
Speed dial #:01 appears on the display to allow you to continue programming at step 1.  
OR  
Press **Next** to program Line Selection.

## Line Selection

This setting allows you to specify the external line that will be used for a System Speed Dial number. The options are the Prime line (the default), an external line, or a line pool.

### Programming Line Selection

Begin with:

Use **PRIME 1** line (the default).

OR

Use **line: 002**, for example, if a line is already assigned.

OR

Use **Pool code: 42**, for example, if a Line Pool access code is already assigned.

1. If you wish to change the setting,  
Press **CHANGE** until the required setting appears.
2. If you have chosen a line number or a Line Pool access code, enter the digits from the dial pad. A Line Pool access code can be from one to four digits long.

3. Press  when the digits have all been entered, to program Display Digits.

### Display Digits

This setting determines whether the telephone number will be displayed when a System Speed Dial number is used, or whether a name associated with that number will be displayed.

### Programming Display Digits

Begin with `Display digits:Y`.

1. Press CHANGE to change the setting. Options are Y (Yes), and N (No).
2. Press  :  
If you chose No, program System Speed Dial Name.  
OR  
If you chose Yes, program Bypass Restrictions.

### System Speed Dial Name

This setting allows you to assign a name to the stored System Speed Dial number. The name can be up to the full length of the display (16 characters).

When the Display Digits setting is “No”, this name will be displayed on the Norstar display when someone uses the System Speed Dial feature.

This option appears only if the Display Digits setting is “No”.

If no name is specified, only the System Speed Dial number appears. The display shows, for example,  
`Sys Spd Dial 02` for System Speed Dial code 02.

## Programming the System Speed Dial Name

Begin with Name .

1. Press [Show].  
Sys Spd Dial 02 appears, for example.  
OR  
COURIER appears if, for example, the name "Courier" was assigned.
2. Press CHANGE to enter the new name.  
OR  
Press  to program Bypass Restrictions.
3. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press  to restore the default name and proceed to program Bypass Restrictions.
4. Press --> to move the cursor to the next position.  
Continue entering characters (remember the 16 character limit).
5. Press  to program Bypass Restrictions.

## Bypass Restrictions

This setting allows the System Speed Dial number to bypass any previously programmed restrictions.

Restrictions prohibiting calls are programmed in the Capabilities section of Administration programming.

## Programming Bypass Restrictions

Begin with `BYPASS RESTRICTIONS`.

1. Press `CHANGE` to change the setting. Options are N (No), and Y (Yes).
2. Press `[Heading]` until you return to the desired programming heading.  
OR  
Press `Next` to program the next System Speed Dial number.



---

# Names

---

## What is Names?

Names allows you to assign names to identify external lines, target lines and your co-workers' Norstar telephones. During a Norstar call, the name (if programmed) appears on each Norstar telephone's display instead of the external line number or internal telephone number of the caller.:

Names includes the following settings:

- Telephone Names
- Line Names

Select the setting or settings you wish to program, and find the description and programming procedure. The Names settings are listed above in the order that they appear during programming.

## To begin Names programming

Begin with 2. Names .

1. Press **[Show]**.  
*Set names* appears for programming telephone names.
2. Press  .  
*Line names* appears for programming line names.

## Programming Names

### Telephone Names

You personalize your office communication by assigning names to the telephones in the Norstar system. A telephone's internal number is its default name (for example, "227: 227").

## Programming hints

Telephone names can contain both letters and numbers, but cannot be longer than seven characters. The # and \* symbols cannot be used.

If Automatic Telephone Relocation is turned ON, the name and internal number of a telephone are saved if the telephone is moved within your system.

You can give the same name to two or more telephones; or to a telephone and a line in your system. To avoid confusion, however, you should avoid such duplication. Use initials, abbreviations, or even nicknames to give each telephone a unique name.

## Programming a Telephone Name

Begin with `Set names`.

1. Press `Show`.  
`Show set: _` appears.
2. Enter the internal number of the telephone.  
OR  
Press `Next` for the name of the telephone with the first internal number.  
  
22 1: JOHN appears, for example, if the name John is already assigned; or,  
221: 22 1 appears, for example, if a name has not yet been assigned.
3. Press `CHANGE`.  
A cursor appears, and the name disappears from the display.

4. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press  to restore the default name and proceed to program the name for the next internal number.
5. Press `-->` to move the cursor to the next position. Continue entering all of the required characters (remember the seven-character limit) for the name.
6. To enter the name for another telephone:  
Press `[Back]` to return to `Show set: - .`  
OR  
Press  to show the name for the next internal number.

## Line Names

This setting allows you to assign a name to an external line. The line number is the default name (for example, "Line046").

For example

One external line in your company is assigned to calls to the main warehouse only. Name the line "WAREHSE".

### Programming hints

Line names can contain both letters and numbers but cannot be longer than seven characters. The # and . symbols cannot be used.

You can name a line by its seven-digit telephone number. Two lines cannot have the same name. If you enter a line name which has already been used, you will hear an-error tone, and `Use unique name` appears on your telephone's display. You can, however, give the same name to a telephone and a line in your system.

## Programming a Line Name

Begin with Lit-e names .

1. Press **[Show]**.  
Show 1 line: \_ appears.
2. Enter the line number from the dial pad.  
OR  
Press **[Next]** to program the name of the first line (001).  
  
Line001: WATS appears, for example, if the name WATS is already assigned; or,  
Line001:Line001 appears, for example, if a name has not been assigned.
3. Press **[CHANGE]** . A cursor appears, and the name disappears from the display.
4. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press **[Next]** to restore the default name and proceed to program the name for the next external line.
5. Press **[-->]** to move the cursor to the next position.  
Continue entering all of the required characters (remember the seven-character limit) for the name.
6. To enter the name for another external line:  
Press **[Back]** to return to Show 1 line: \_ .  
OR  
Press **[Next]** to show the name for the next external line.

# Time and Date

---

## What is Time and Date?

When a Norstar telephone is in its normal idle state, the current time and date appear on the display (Mar 3 1 3: 45 PM, for example). When active, some Norstar features cause a different message to appear.

Time and Date adjusts the following settings:

- Time
- Date

Select the setting or settings you wish to program, and find the description and programming procedure. The Time and Date settings are listed above in the order that the headings appear during programming.

## To begin Time and Date programming

Begin with 3. Time and date .

1. Press **[Show]**.  
Time 15: 45 , for example, appears for programming the time.
2. Press **Next** .  
Date 31 Mar 9 1 , for example, appears for programming the date.

## Programming Time and Date

### Time

This feature allows you to assign the time.

#### Programming hints

During normal service, the time display in English is in 12-hour format showing am or PM . In the Alternate Language, the time is always displayed in 24-hour format as follows:

English Mar 31 3:45 PM

French 3 1 mar 15h45

Spanish 31 Mar 15:45

If the display on a telephone is blank, the telephone may be disconnected, or there may be no power to the Key Service Unit (KSU). If power is out for more than three consecutive days, or if you reset the system, the display will show Jan 1 1: 00 am when the system is restarted. When power is restored, the clock will begin to run again, but the time will be incorrect.

All entries must consist of either one or two digits. If the system is being administered in English and the hour entry is less than 13, the display prompts you to specify am or PM .

#### Programming Time

Begin with Time 15: 45 .

1. Press CHANGE .  
Hour: 15 appears.
2. Press CHANGE to program the hour. The hour is .  
erased.  
OR  
If you do not wish to change the hour, go to step 4.

3. Enter the digit(s) for the hour in 12 or 24-hour format from the dial pad.
4. Press [Next].  
Minutes: 45 appears.  
If you do not wish to change the minutes, go to step 7.
5. Press CHANGE.
6. Enter the digit(s) for the minutes from the dial pad.
7. Press .  
If AM or PM appears, and you wish to change the setting, go to step 8.  
OR  
Go to step 9 if you do not wish to change AM/PM.  
OR  
Programming continues at step 10.
8. Press CHANGE.
9. Press [Next].
10. Date 3 1 Mar 9 1 appears.  
Proceed to program the date.  
OR  
Press (Heading) until you return to the desired programming heading.  
OR  
Press  to program Direct-Dial.

## Date

This feature allows you to assign the date.

### Programming hints

All entries must consist of either one or two digits. The month is entered as a one or two-digit number between 1 and 12. For example, March is entered as either "3" or "03". Only the last two digits of the year are entered.

### Programming Date

Begin with Date 3 1 Mar 9 1 .

1. Press CHANGE .  
Year: 9 1 appears.
2. Press CHANGE to program the year.  
OR  
If you do not wish to change the year, go to step 4.
3. Enter the last two digits of the year from the dial pad.
4. Press  .  
Month : 03 appears.  
If you do not wish to change the month, go to step 7.
5. Press CHANGE .
6. Enter the digit(s) for the month from the dial pad.
7. Press [N e x t].  
D a y : 3 1 appears.  
If you do not wish to change the day, go to step 10.
8. Press CHANGE .
9. Enter the digits from the dial pad.
10. Press (Heading) until you return to the desired programming heading.  
OR  
Press (Next) to program Direct-Dial.



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# Direct-Dial

---

## What is Direct-Dial?

This feature allows Norstar users to call a Direct-Dial telephone assigned to their telephone, by dialing a single digit. Up to five Direct-Dial telephones can be designated to handle calls from five groups of telephones.

Use this Administration heading to specify which telephone directory numbers (DNs) will be designated as Direct-Dial telephones.

### Programming hints

You must select the Direct-Dial digit in Configuration (4. Miscellaneous). You must also specify which telephones can call a Direct-Dial telephone, and which one they will call, in Administration (5. Capabilities).

## Programming Direct-Dial

Begin with 4. Direct-Dial .

1. Press [Show].

Set 1: 22 1, for example, appears as the default DN assigned as the first Direct-Dial telephone.

OR

Press  to program Capabilities.

2. You can assign a new DN as a Direct-Dial telephone by pressing CHANGE and entering the digits of the new DN.

OR

You can change the value to None by pressing CHANGE , and pressing [Next].

3. Press  until you return to the programming heading 4. Direct-Dial .  
OR  
Press  to continue programming up to a total of five Direct-Dial telephones.

After the fifth Direct-Dial programming heading, pressing  displays the programming heading for Capabilities.

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# Capabilities

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## What is Capabilities?

Capabilities programming assigns limitations, permissions, and remote access capabilities to Class of Service (COS) passwords, telephones, and lines.

The main sections of Capabilities programming are:

- Dialing Filters
- Remote access packages
- Telephone (set) abilities
- Line abilities
- Class of Service (COS) passwords

Dialing filters allows you to group restrictions on dialed-digit sequences into “filters”. These filters can later be applied to specific telephones or external lines.

Remote access packages allows you to define the types of access to Page and line pools that you will permit remote users.

Telephone abilities applies Dialing filters to telephones.

Line abilities applies Dialing filters, Remote access dialing filters, and Remote access packages to lines for remote access.

Class of Service (COS) passwords use Dialing filters and Remote Access packages to control remote users' access to the system's resources. COS password programming defines passwords, their associated filters, and their remote access packages.

## To begin Capabilities programming

Begin with 5. Capabilities .

1. Press [Show].  
Dialing filters appears for programming the first level of Capabilities.
2. Press  .  
Show filter: \_ appears for selecting a filter to be programmed.  
OR  
Press [Next] .  
Rem access pkgs appears for programming the remote access packages.  
OR  
Press  twice.  
Set abilities appears on the display for programming the telephone characteristics.  
OR  
Press  three times.  
Line abilities appears for programming line characteristics.  
OR  
Press  four times  
COS Passwords appears for programming Class of Service passwords.

## Dialing filters

A dialing filter is made up of restrictions and exceptions. These specify the external numbers which can or cannot be dialed from a telephone or on a line.

Filters are defined under the programming heading `Dialingfilters`. A dialing filter can be applied later to one or more telephones, or lines, in programming `Setabilities`, `Lineabilities` and `COSpasswords`. They may be used as telephone (set) filters, line filters and line/set filters to manage outgoing calls, and as remote filters applied to lines. Remote filters control the numbers that can be dialed by remote users when they are calling into Norstar to use a Norstar line for placing calls.

### Internal users

Dialing filters restrict the numbers that an internal user can dial on external lines.

If a line/set filter has been defined for the line selected at the user's telephone, it completely replaces any line filters or telephone filters which might otherwise apply.

If no line/set filters have been defined then dialed digits are filtered through (and may be rejected by either of) the telephone filter (if defined) and the line filter (if defined).

### External users

For a remote user, who has dialed into Norstar on an auto-answer line (or a DID line), and passed through any DISA security, there are no restrictions on the numbers the user can dial.

For remote users trying to tandem through the Norstar system, the Line filters and Remote filters assigned in Lineabilities apply.

For a remote user entering the system through DISA, the filters and Remote access packages associated with their COS password replace the Remote filter, the Line filter, and the Remote access package assigned to the incoming line.

### Programming hints for Filters with Restrictions and Exceptions

- Norstar can have up to 100 dialing filters (00 to 99).
- Filter 00 permits unrestricted dialing. Unlike filters 01 to 99, the restrictions and exceptions for filter 00 cannot be changed.
- Filter 01 is pre-programmed with five restrictions and some associated exceptions. See the Dialing filter default templates.

#### Dialing filter default templates

Filter	Sauare	Centrex	Hybrid PBX
00	Unrestricted dialing		
01	Restr'n 0 Restr'n 1 Excpt'n: 1800 1555 1*1*555 1   0*555	Restr'n 90 Restr'n 91 Excpt'n: 91800 91555 91*1*555 91*0*555	Hybrid and PBX settings are the same as the Square template
02 - 99	None		

- The asterisk \* is a “wild card” character that stands for any digit.
- Each filter (01 to 99) can have as many as 48 restrictions; there is no specific limit on the number of exceptions that can be allocated to any restriction.

Note: The total number of restrictions and exceptions allocated to the 99 programmable filters cannot exceed 400.

- Filters 02, 03, and 04, although not pre-set with restrictions and exceptions, are the default filter settings used later in programming:

Filter	Where the filter appears as a default setting in Capabilities programming
02	Set abilities-- Set filter:
03	Line abilities-- Line filter:
04	Line abilities-- Remote filter:

- The maximum length for a restriction is 15 digits; for an exception, the maximum is 16 digits.
- Any restriction or exception can be used in one or more filters. Each time it is used, it counts as one entry. For example, if restriction 411 appears in filters 01, 02 and 03 it has used up three entries of the 400 entries available.
- Removing a restriction also removes the exceptions associated with it. This also changes the identifying number of the restriction. For example, removal of restriction 01 causes restrictions 01 to 48 to be re-numbered and displayed as 01 to 47.

Note: The removal of a restriction and its exceptions from one dialing filter has no effect on the contents of another filter into which the restriction and exceptions were copied.

- Deleting a filter is not possible. Removing the restrictions programmed on a filter makes it an unrestricted filter but the filter is not removed (for example, filter 08 remains filter 08 despite any changes to it or to other filters).

For example

You may need filters for three different types of users:

- Managers may require unrestricted dialing.
- Secretaries may need to be limited to calls on line 003 to the west coast office only.
- Clerks may need to be limited to calling specific area codes and the west coast office.

In the table below, notice the reduction in the number of available restrictions and exceptions after each filter has been programmed.

Filter #	User type	#of Restr'n	#of Excpt'n	# of restr'n & exca't'n remaining (400 max.)
00	manager	—	—	400
01	secretary	5	5	390
02	clerk	7	12	371
<b>Total</b>		12	17	(400 - 12 - 17 = 371)

Note: Record restrictions and exceptions for each filter on the *Norstar Modular DR4 Programming Record*.





## Programming Dialing filters with Restrictions and Exceptions

### Restrictions

Begin with Dialing filters .

1. Press **[Show]**.  
 Show filter: \_ appears on the display for entering a filter number to be programmed.
2. Enter a two-digit filter number (for example, 05).  
 The prompt No restrictions appears on the display if this filter has not been programmed before.
3. Press **ADD** to program a restriction.  
 Restr'n 01: \_ appears on the display.
4. Enter the digits for the restriction.
5. Press **OK** to program the restriction.  
 Restr'n 01: 1234, for example, appears on the display.
6. Press **ADD** to program another restriction for the filter.  
 Restr'n 02: \_ appears on the display.  
 OR  
 Press **[Show]** to program any exceptions to this restriction.  
 No exceptions appears.  
 OR  
 Press **(Heading)** or **Next** to program another filter.  
 Show filter: \_ appears on the display.
7. At the Show filter: \_ prompt, press **[Heading]**, then press **Next** to continue programming with Remote Access Packages.

### Exceptions

Exceptions, if required, are entered for individual restrictions as soon as the restriction is programmed.

Begin, for example, at Restr'n 0 1: 1234 (continuing from step 5 above).

1. Press **[show]**.  
No **EXCEPT IONS** appears on the display.
2. Press **ADD** to program an exception.  
**EXCEPT'n 00 1: \_** appears on the display.
3. Enter the digits for the exception (for example 12345).
4. Press **OK** to program the exception.  
**EXCEPT'n 00 1: 12345** appears on the display.
5. Press **ADD** to program another exception to the restriction.  
**EXCEPT'n 002: \_** appears on the display.  
OR  
Press **Next** or **[Back]** to return to programming restrictions.  
**Restr'n 0 1: 1234** appears on the display.  
OR  
Press **Heading**  
**Show filter: \_** appears on the display.
6. At the **Show filter: \_** prompt, press **Heading**, to return to the **Dialing filters** heading, then press **Next** to continue programming with Remote Access Packages.

## Remote access packages

Remote access packages allow you to control the remote use of Norstar line pools and the Remote Page feature.

Remote access packages are associated with COS passwords and the auto-answer lines used by remote users.

### Programming hints

Norstar systems can have up to 16 Remote access packages (00 to 15). The limitations are:

- Package 00 permits no access to line pools or to remote paging. Unlike packages 01 to 15, package 00 cannot be changed.
- For remote users calling into the Norstar system to use Norstar lines for calling out, for example, the Remote dialing filters and the outgoing Line dialing filters (in *Line abilities*) still apply.

### Remote access packages default template

Parameter	Square	Centrex	Hybrid	PBX
<b>Package 00 †</b>	Prohibits access to line pools and Remote Page. Can not be changed.			
Package 01 Line Pool access Remote Page	Y for Pool A N for Pools B to 0 No			
Packages 02 • 15 Line Pool access Remote Page	N for Pools A to 0 No			

† Remote package 00 appears later in programming *Line abilities* as the default setting for the Remote package setting.

## Programming Remote access packages

Begin with `Rem access pkgs`.

1. Press `[Show]`.  
`Show package: _` appears on the display.  
OR  
Press `[Next]` to program Telephone (Set) abilities.
2. Enter a two-digit package number.  
The heading `Line pool access` appears on the display.
3. Press `[Show]`.  
`PoolA(9): N`, for instance, appears on the display.  
Note: This display shows an alphabetic line pool identifier, followed by a numeric line pool access code between brackets (defined in 4. Miscellaneous of Configuration). If no access code has been identified, the brackets appear empty (for example `PoolA(): N`).  
OR  
Press `[Next]` to program Remote paging.
4. Press `CHANGE` to allow Line Pool access.
5. Press `[Next]` or `[Back]` to display the settings for the next or previous line pools.  
`Remote page: N` appears on the display after the last line pool.
6. Press `CHANGE` to allow Remote paging.  
OR  
Press `[Next]` to return to the heading  
`Show package: _` to program another Remote access package.
7. Program another Remote access package.  
OR  
Press `[Heading]` to return to `Rem access pkgs`, and then press `[Next]` to continue programming with Telephone (Set) abilities.

## Telephone (Set) abilities

Telephone (Set) abilities programming applies dialing filters and permissions to telephones. Telephone abilities include the following settings:

- Telephone (set) filters
- Line/telephone filters
- Telephone Administration Lock
- Full Handsfree
  - Automatic Handsfree
- Handsfree Answerback
- Call Pickup Group
- Page zone
- Auxiliary Ringer
- Direct-dial telephones
- Call Forward On Busy
- Call Forward No Answer
- Redirect ring
- Hotline
- Priority Call.

## Programming Telephone (Set) abilities

Begin with Set abilities.

1. Press .  
Show set: \_ appears on the display
2. Enter the digits for a telephone's DN to begin programming Set abilities.  
Set filter: 02 appears on the display.  
OR  
Press  to copy Set abilities programming from one telephone to another.  
OR  
Press  to return to the heading  
Set abilities .
3. Press  to program the Line/telephone filters.  
OR  
Press  until you return to the desired programming heading.

## Telephone (Set) filter

A telephone filter is a collection of restrictions and exceptions defined in Dialing filters. These filters are applied to telephones through Set filter programming.

### Programming hints

Filters are most commonly used to prevent unauthorized long-distance calls, without restricting local calls.

Telephone filters do not apply to calls dialed out on E&M trunks. Someone could dial out to a destination on the private network that is restricted on the public network.

To restrict calling on E&M lines, apply a restriction to the line rather than to the telephone.

## Programming Telephone filters

Beginwith Set filter:02 .

1. Press CHANGE to change the filter number.
2. Enter a new two-digit filter number.  
OR  
Press (Next) without entering any digits to set the filter to the 00 filter which permits unrestricted dialing.
3. Press  to program the Line/telephone filter.  
OR  
Press [Heading] until you return to the desired programming heading.

## Line/telephone (Line/set) filter

A Line/telephone dialing filter is applied to a line at a telephone. This type of filter replaces any line or telephone filters which might otherwise apply.

As with dialing filters applied to telephones, or to lines, line/set filters control the numbers that may be dialed on specific external lines.

For example, a Line/set filter can permit a specific telephone to call a specific long-distance number on line 003, but no other long-distance numbers, and on no other line.

## Programming hints

- Remember that up to 100 filters may be defined in the system (filters 00 to 99). Line/set filters fall under this limitation.
- A maximum of 255 Line/set dialing filters may be applied to lines at telephones. \*

## Programming Line/telephone filters

Beginwith Line/set filters .

1. Press **[Show]**.  
Show line: \_ appears on the display to allow entry of a three-digit line number.
2. Enter a three-digit line number.  
Filter: None appears on the display for assigning a filter.
3. Press **CHANGE** to be able to enter a filter number.  
OR  
Press **Next** to retain the default of None.  
Show line: \_ appears on the display.
4. Enter an appropriate two-digit filter number.
5. Press **Next** or **[Heading]** to program a Line/set filter on another line.  
Show line: \_ appears on the display.
6. Enter a three-digit number to program a filter for another line  
OR  
Press **[Heading]** to return to Line/set filters , and then press **Next** to continue programming with Telephone Administration Lock.

## Telephone Administration Lock

Telephone Administration Lock limits the types of features that may be used or programmed at a telephone.

There are three options: None, Full and Partial.

### Options explained

- None allows you to access any feature on your . telephone.



- Partial Telephone Administration Lock prevents the following at a telephone:
  - programming Autodial buttons
  - programming Personal Speed Dial numbers
  - programming feature buttons
  - changing the display language
  - changing Dialing Modes (Automatic Dial, Pre-Dial, and Standard Dial)
  - using Voice Call Deny
  - using Administration programming
  - moving line buttons
  - saving a number for Saved Number Redial
- Full Telephone Administration Lock prevents the following at a telephone:
  - programming Autodial buttons
  - programming Personal Speed Dial numbers
  - programming feature buttons
  - changing Background Music
  - changing Do Not Disturb
  - changing the display language
  - changing Dialing Modes (Automatic Dial, Pre-Dial, and Standard Dial)
  - changing Privacy
  - using Ring Again
  - using Call Forward all calls
  - using Send Message
  - using Trunk Answer

- . using Voice Call Deny
- . using Administration programming
- . moving line buttons
- . activating Service Modes
- . saving a number with Saved Number Redial

### Programming Telephone Administration Lock

Begin with Set lock : None .

1. Press CHANGE to change the setting. Options are None, Full and Partial.
2. Press  until you return to the desired programming heading.  
OR  
Press  to program the Full Handsfree feature.

### Full Handsfree

This feature allows you to make or receive calls without picking up the receiver, and allows a headset to be used with the Norstar telephone.

#### Programming hints

A  button is automatically assigned to a telephone that is programmed with Full Handsfree.

Full Handsfree is disabled for an M7100 Telephone.

### Programming Full Handsfree

Begin with Full handsfree: N .

1. Press CHANGE to change the setting. Options are N (No), and Y (Yes).

2. Press  until you return to the desired programming heading.  
OR  
Press .  
If you chose No, programming continues with the Handsfree Answerback feature.  
If you chose Yes, programming continues with the Automatic Handsfree feature.

## Automatic Handsfree

This feature activates the Handsfree microphone and speaker when you make or receive calls by pressing a line button.

### Programming hints

You can program this feature only if the telephone has Full Handsfree programmed.

### Programming Automatic Handsfree

Begin with `Auto handsfree: N` .

1. Press CHANGE to change the setting. Options are N (No), and Y (Yes).
2. Press  until you return to the desired programming heading.  
OR  
Press  to program the Handsfree Answerback feature.

## Handsfree Answerback

This feature allows you to answer a Voice Call without lifting the receiver.

### Programming hints

Regardless of the setting that you program, Handsfree Answerback is always disabled for an M7100 Telephone.

## Programming Handsfree Answerback

Begin with HF answerback: Y .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).
2. Press  until you return to the desired programming heading.  
OR  
Press  to program the Call Pickup (Group) feature.

## Call Pickup (Group)

You can assign each telephone to one of up to nine Call Pickup groups. Members of a Call Pickup group can answer any calls ringing at another telephone in the group.

### Programming hints

Each telephone in a Call Pickup Group does not have to be assigned the same external lines (programmed by the Installer in Configuration programming).

A call on a Private line in a Call Pickup Group cannot be picked up.

You cannot pick up a call that is ringing only the Auxiliary Ringer.

## Programming Call Pickup Group

Begin with Pickup group: NO .

1. Press **CHANGE** to change the setting. Options are NO, 1, 2, 3, 4, 5, 6, 7, 8, and 9.
2. Press  until you return to the desired programming heading.  
OR  
Press  to program the Page zone feature.

## Page zone

You can assign each telephone to one of six zones for receiving Page messages. A zone is any selection of Norstar telephones you want to group together, regardless of location.

### Programming Page zone

Begin with **Page zone**: 1 .

1. Press **CHANGE** to change the setting. Options are 1, 2, 3, 4, 5, 6, and NO.
2. Press (**Heading**) until you return to the desired programming heading.  
OR  
Press  to program the Auxiliary Ringer feature.

## Auxiliary Ringer

This feature rings the Auxiliary Ringer (if installed) when the telephone rings. An Auxiliary Ringer is important in noisy environments where a Norstar telephone might otherwise not be heard.

### Programming Auxiliary Ringer

Begin with **Aux. ringer**: N .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).
2. Press  until you return to the desired programming heading.  
OR  
Press  to specify a Direct-dial telephone.

## Direct-dial telephones

A telephone can be assigned to call a Direct-dial telephone when the user dials the single digit defined in Configuration (4. Miscellaneous, Direct-dial).

Each telephone can call only one Direct-dial telephone, although up to five Direct-dial telephones can be designated in Administration (4. Direct-Dial). There is no limit to the number of telephones that can be assigned to call a particular Direct-dial telephone.

### Programming Direct-dial telephones

Begin with `Direct-dial:Set 1`.

1. Press **CHANGE** to change the setting. Options are **Set1**, **Set2**, **Set3**, **Set4**, **Set5** and **None**.
2. Press  until you return to the desired programming heading.  
OR  
Press  to program the Call Forward on Busy feature.

### Call Forward On Busy

This feature always redirects an incoming call to another telephone on your Norstar system when you are busy on a call, or when you have Do Not Disturb activated at your telephone.

Exceptions to this occur as follows:

- If you are busy on a target line call, another call to that target line will be redirected to the Prime telephone for the trunk that received the second target line call.
- If Line Redirection is in effect, it will take precedence.

### Programming Call Forward On Busy

Begin with `Forward on busy`.

1. Press .  
Forward to: **None** appears.

2. Press CHANGE to enter an internal number.  
OR  
Press  to program the Call Forward No Answer feature.
3. Enter the internal number from the dial pad.
4. Press (Heading) until you return to the desired programming heading.  
OR  
Press  to program the Call Forward No Answer feature.

## Call Forward No Answer

This feature lets you redirect an incoming call to another telephone on your Norstar system when the call is not answered at your Norstar telephone. Note, however, that Line Redirection will take precedence over this setting.

### Options explained

If you assign another telephone to receive your calls, you can also assign the number of times that the incoming call will ring before the call is forwarded (the Call Forward No Answer delay). To estimate the delay time in seconds, multiply the number of rings by six.

## Programming Call Forward No Answer

Begin with `Forward no answer`.

1. Press .  
`Forward to: None` or `Forward to: 223`  
appears (for example).

2. Press CHANGE to enter the internal number.  
OR  
If a number is already assigned, press  to program the Forward No Answer delay.  
OR  
If you wish to delete an assigned number, press CHANGE, followed by . The number will be deleted, and you can move on to program the Redirect ring feature.  
OR  
If None, press  to program the Redirect ring feature.
3. Enter the internal number from the dial pad.  
OR  
Press  to assign none. Programming continues with Redirect ring.
4. Press  to program the Forward No Answer delay.

#### Programming Forward No Answer delay

Begin with `Forward delay: 3` .

1. Press CHANGE to select the delay. Options are 2, **3**, 4, 6, and 10 rings.
2. Press [Heading] until you return to the desired programming heading.  
OR  
Press [Next] to program Redirect ring.

#### Redirect ring

The Redirect ring setting causes a telephone to ring briefly (a 200 millisecond burst) when a call is redirected on one of its lines. Each telephone with a ringing appearance of that line will also ring briefly for the redirected call if the Redirectring setting for them is 'Y' (the default).



A user enters the Line Redirection feature code to redirect calls. See the explanation of Line Redirection in the Telephone Features chapter for more information on redirecting lines.

### Programming Redirect ring

Begin with `Redirect ring: Y`.

1. Press `CHANGE` to change the setting. Options are `Y` (Yes) and `N` (No).
2. Press `[Heading]` until you return to the desired programming heading.

OR

Press `Next` to program the Hotline feature.

### Hotline

This feature automatically calls a pre-assigned number when you lift the receiver or press `Handsfree` at your telephone. Hotline has three options: None, internal (Intrnl), and external (Extrnl).

#### Options explained

- Intrnl assigns an internal number.
- Extrnl assigns an external number.
- If you select an external number, you can also select the line on which the call is made:
  - Use `Prime 1 line` selects the telephone's Prime line.
  - Use `line: _` assigns an external line number.
  - Use `Pool code: _` assigns the Line Pool access code of a line pool.

### Programming hints

The telephone should be labeled to inform anyone using it that this feature is active.

A telephone's Prime line, Line Pool access codes, and access to a line pool are assigned by the Installer in Configuration programming.

### Programming Hotline

Begin with `Hotline: None`.

1. Press `CHANGE` to change the setting. Options are None, Intrnl, and Extrnl.
2. If you chose None,  
Press `[Next]`.  
`Priority call: N` appears for programming the Priority Call feature.  
OR  
If you chose Intrnl,  
Press `[Show]`.  
`Intrnl #: None` appears (an internal number appears if previously programmed).  
OR  
If you chose Extrnl,  
Press `[show]`.  
`Extrnl #: None` appears (an external number appears if previously programmed).
3. Refer to the following procedures for each of the above options.  
OR  
Press `[Heading]` until you return to the desired heading.  
OR  
Press `[Next]` to program the Priority Call feature.

### Programming the internal number

Begin with:

Intrnl #:None .

OR

Intrnl #: 222, for example, if a number was previously entered.

1. To specify an internal number, press CHANGE, and enter an internal number from the dial pad.

OR

To erase an internal number and return the setting to None, press CHANGE followed by .

2. Press  until you return to the desired programming heading.

OR

Press  to program the Priority Call feature.

### Programming the external number

Begin with:

Extrnl #:None .

OR

Extrnl #: 9 123456 , for example, if a number of seven digits or less was previously entered.

OR

If a previously entered number is more than seven digits, the entire number will be displayed. VIEW-> and <-VIEW appear if a previously programmed number is greater than 16 digits.

1. Press CHANGE to enter the external number.
2. Enter the digits from the dial pad.  
Press BACKSP to move the cursor back one space to edit a number.
3. Press OK after the complete number is entered.
4. Press (Next] to program Line Selection.

## Programming Line Selection

Begin with:

Use `Prime line` .

OR

Use `line: 00 1` (example shows external line 01).

OR

Pool `code: 1234` (example shows Line Pool access code 1234).

1. Press `CHANGE` to select the option you wish.
2. Press `[Heading]` until you return to the desired programming heading.  
OR  
If you selected the Prime line,  
Press `[Next]` to program the Priority Call feature.  
OR  
If you selected an external line or a line pool,  
Go to step 3.
3. Enter from the dial pad the three digits of the line or the one to four digits of the Line Pool access code for the desired line pool.
4. Press `(Heading)` until you return to the desired programming heading.  
OR  
Press `[Next]` to program the Priority Call feature.

## Priority Call

This feature lets you call from your Norstar telephone and interrupt calls or override Do Not Disturb on another Norstar telephone.

### Programming hints

Apply this feature only to telephones from which such interruptions can be justified.

### Programming Priority Call

Begin with `Priority call: N`.

1. Press `CHANGE` to change the setting. Options are N (No), and Y (Yes).
2. Press `Next` to return to program Set abilities for another telephone.  
`Show set: _` appears.  
OR  
Press `Heading` until you return to the beginning of Set abilities programming.  
`Set abilities` appears on the display.
3. If you returned to `Set abilities`, press `Next` to program Line abilities.

## Line abilities

Line abilities programming applies dialing filters, remote access dialing filters and remote access packages to lines. Line abilities includes the following settings:

- Line filter
- Remote filter
- Remote package

### Programming Line abilities

Begin with Line abilities.

1. Press **[Show]**.  
Show line: **\_** appears on the display.
2. Enter a three-digit line number to begin programming Line abilities.  
Line filter: **03** appears on the display.  
OR  
Press **COPY** to copy Line abilities programming from one line to another.  
OR  
Press **[Heading]** to return to the heading  
Line abilities

### Line filter

A Line filter is a collection of restrictions and exceptions defined in the Dialing filters and applied to an outgoing line. Filter 03 is the default Line filter.

A Line filter on an outgoing line may be used to limit the capabilities of that line to carry calls made to specific area codes or destinations.

### Programming Line filters

Begin with `Line filter:03` .

1. Press CHANGE .  
`Line filter:_` appears on the display.
2. Enter a two-digit filter number.  
OR  
Press  to set the line filter to 00
3. Press  to program a Remote filter.  
OR  
Press  until you return to the desired programming heading.

### Remote filter

A remote access dialing filter can control dialing on incoming auto-answer trunks used for making tandem calls (that is, calling into Norstar to use one of its lines for placing calls). Filter 04 is the default Remote filter.

Employees can be allowed to telephone into a Norstar system on auto-answer lines, and call out on a line designated for long-distance calls to specific area codes.

### Programming Remote filters

Begin with `Remote filter: 84` .

1. Press CHANGE .  
`Remote filter:_` appears on the display .
2. Enter a two-digit filter number.  
OR  
Press (Next] to set the line filter to 00
3. Press [Next] to program a Remote package.  
OR  
Press  until you return to the desired programming heading.

## Remote package

Remote access packages control access to line pools and the Remote Page capability, for calls on incoming auto-answer trunks.

Package 00 is the default Remote package, which gives no access to line pools or to Remote page.

## Programming Remote packages

Begin with Remote pkg: 00 .

1. Press CHANGE .  
Remote pkg:    appears on the display.
2. Enter a two-digit remote access package number.  
OR  
Press  to set the line filter to 00.
3. Press  or [Heading].  
Show line:    appears on the display.
4. Enter another three-digit line number to program line abilities on another line.  
OR  
Press  or [Heading]  
Line abilities appears on the display.
5. At the Line abilities heading, Press  to program Class of Service passwords.



## Class of Service (COS) passwords

Class of Service (COS) passwords permit controlled access to a system's resources by remote users. Class of Service programming defines passwords, their associated dialing filters, user filters and remote-user access packages.

The three programming sections of COS passwords are:

- User filter
- Line filter
- Remote access package

A Class of Service can be associated with a telephone, a line or a COS password. Class of Service determines whether a remote user can or can not access lines in line pools and remote paging. It also determines the dialing capabilities that apply to outgoing lines from line pools (in the case of remote users), or to internal telephones and any lines used for external calls (in the case of internal users).

The capabilities to which a remote user has access depend on:

- the COS associated with the auto-answer trunk on which the user is calling
- a COS password, if entered.

Depending on the COS in effect, remote users may be able to access all, or some of the system's resources available to remote users. Typically, each user has a separate password. Several users can share a password or one user can have several passwords.

Entry of a DISA DN ( if one has been programmed) allows a remote user to change the COS applied for the duration of the call.

## COS passwords for internal users

internal users have a Class of Service associated with their telephones, in the sense that there are dialing filters associated with telephones, as well as line pool assignments. Internal use of a COS password affects only the telephone's dialing capabilities.

The ability to change the COS internally means that someone using another person's telephone can temporarily change the restrictions that would normally be applied.

## Password security

- Class of Service passwords for a system should be determined randomly, and should be changed on a regular basis.
- System users should memorize their COS passwords instead of writing them down.
- Employees' COS passwords should be deleted when they leave the company.

You can block tandem calls that would use expensive routes by using Class of Service to restrict access to line pools, and you can control the external destinations dialed through the use of dialing filters.

You can use Class of Service to prevent remote access to line pools and remote paging. Remote calls will then be limited to target lines in the system.

Groups of users can be restricted, or permitted, to access remote paging through the Class of Service applied to their password.

## Programming hints

- A system can have a maximum of 100 six-digit COS passwords (00 to 99).
- You can copy the data from one COS password to another COS password number using the **COPY** display button in the same way that telephone and line data can be copied.
- When a DR3 system is upgraded to DR4, the system extends existing four-digit restriction override passwords to six-digits by adding two zeros to the end of the old password. For example, `Pswd 0 1: 1576` changes to `Pswd 0 1: 157600`. The passwords are assigned filter 00, to provide no restrictions.
- DR4 passwords must be unique. In DR3, different password identifiers (for example, `Pswd 0 1: _` and `Pswd 0 2: _`) could be administered with the same sequence of digits (for instance, both could be 2345). When upgrading from DR3 to DR4, if there are two or more COS passwords with the same digits, the digits for the first password are kept (with that addition of two zeros) and any others are changed to the value "None".

## Programming COS passwords

Begin with COS passwords .

1. Press  .  
Show password: \_ appears on the display
2. Enter a two-digit password number. For example, enter the numbers 01 and `Pswd 0 1: None` appears on the display.  
OR  
Press  for password 00.
3. Press **CHANGE** to enter a new password code.  
OR  
Press  to return to the heading  
Show password: \_ .

4. Enter the digits for the new password. When the sixth digit is entered BACK and the cursor disappears and CHANGE re-appears.  
OR  
Press  or  to set the password to the value None .
5. Press  to program COS user filters for the password appearing on the display.  
User f1tr:Deflt appears on the display.  
OR  
Press  or [Back] to see other passwords' that have been programmed (if any).  
OR  
Press  to return to the heading  
Show Password: \_ .

### User filter

The COS User filter replaces the telephone (set) filter, the line/set filter or the remote filter, that would otherwise apply to a specific call. The default setting for this feature (Def 1 t), means that any other filters in place (telephone (set) filter, line/set filter, or remote filter) will still apply.

### Programming User filters

Beginwith User f1tr:Deflt .

1. Press CHANGE .  
User f1tr:\_ appears on the display.
2. Enter a two-digit filter number.  
OR  
Press   
User f1tr:Def 1 t appears on the display.
3. Press  to program the COS line filter.  
Line f1tr:Deflt appearson thedisplay. \*  
OR  
Press (Heading).  
Show Password: \_ appears on the display to program another password.

## Line filter

The COS Line filter replaces the line filter that would otherwise apply to a specific call. The default setting for this feature (Deflt), means that any line filter in place will still apply.

### Programming Line filters

Begin with `Line fltr:Deflt` .

1. Press `CHANGE` .  
`Line fltr:_` appears on the display.
2. Enter a two-digit filter number.  
OR  
Press `Next`   
`Line fltr:Deflt` appears on the display.
3. Press `Next`  to program the COS remote package.  
`Remote Pkg:Deflt` appears on the display.  
OR  
Press `Heading`  .  
`Show password: _` appears on the display to program another password.

4

## Remote package

The COS Remote package replaces the remote access package that would otherwise apply to a specific call. The default setting for this feature (Def 1 t) means that any remote access package in place will still apply.

### Programming Remote packages

Begin with Remote Pkg: Def 1 t .

1. Press **CHANGE** .  
Remote Pkg: \_ appears on the display.
2. Enter a two-digit package number.  
OR  
Press   
Remote Pkg: Def 1 t appears on the display.
3. Press  to go to the next highest password number.  
For example, Pswd 82: 123456 appears on the display or if the current password is the highest, then Show Password: \_ appears.  
OR  
Press **(Heading)**.  
Show Password:, appears on the display to program another password.
4. Press  at the Show password: \_ prompt.  
COS Passwords appears on the display.
5. Press  at the COS Passwords prompt to continue programming with Service modes.

# Service Modes

---

## What is Service Modes?

Service Modes controls how the Norstar system will respond to calls, depending on the time of day. You can program up to three different Service Modes, each with unique ringing arrangements.

Service Modes include the following six settings:

- Control telephones
- Service Mode name
- Service Mode control
- Trunk Answer
- Extra-dial telephone
- Ringing telephones and Auxiliary Ringer.

Select the setting or settings you wish to program, and find the description and programming procedure. The Service Modes settings are listed above in the order that the headings appear during programming.

## To begin Service Modes programming

Begin with 6. Service Modes .

1. Press [Show].  
Control sets appears for programming Control telephones.
2. Press (Next].  
Name 1: Night appears on the display for programming the first Service Mode.  
OR  
Press (Next] twice .  
Name2: Evening appears for programming the second Service Mode.  
OR  
Press (Next] three times.  
Name3: Lunch appears for programming the third Service Mode.

## Programming Service Modes

### Control telephones

This setting allows you to assign a telephone to each external line. That telephone can be used to control the Service Mode by allowing you to turn the Service Mode ON or OFF for that line.

### Programming hints

Only the external lines programmed with a Control telephone can be placed into a Service Mode.

You can assign a Control telephone to more than one external line, but a line cannot be assigned to more than one Control telephone.

Only one Service Mode applies at any one time to all external lines controlled by a given Control telephone.



By default, telephone 221 is assigned as the Control telephone and as a Ringing telephone, for all lines. This means that all lines will ring at Control telephone 221, when it (221) activates a Service Mode. Therefore, when programming Control telephones you must remember to remove the default assignment of 221 for each line that should not ring when Control telephone 221 activates a Service Mode.

### Programming Control telephones

Begin with Control sets .

1. Press **[Show]**.  
Show line: **\_** appears.
2. Enter a line number from the dial pad.  
OR  
Press  to assign the Control telephone for the first line (001).  
Line00 1: 22 1 , for example, appears if that Control telephone has been previously assigned to line 001 (default is 221).  
Line00 1: None appears if no Control telephone is assigned for the line
3. Press **CHANGE** to assign a Control telephone to the line.  
Line001: **\_** appears.  
OR  
Go to step 5.
4. Enter an internal number from the dial pad.
5. Press  to assign a Control telephone to the next line.  
Name 1: Night appears after the last line has been assigned a Control telephone.  
OR  
Press  to return to Show 1 line: **\_** of step 1.

## Service Mode 1

You can assign all Service Mode settings except the Control telephones.

### Beginning Service Mode 1 programming

Begin with Name 1: Night .

1. Press **CHANGE** to change the Service Mode name.  
Name 1: \_ appears.  
OR  
Press  to program the Service Mode control.  
Setting: Manual appears.  
OR  
Press  to program the second Service Mode.

### Service Mode name

The Service Mode name identifies the active Service Mode, and appears on the display of the Control telephone when the Service Mode is turned ON.

### Programming hints

The default names of the three possible Service Modes are only suggestions, and may be changed to any other name.

A Service Mode name can be one to seven characters.

### Programming Service Mode name

Begin with Name 1: \_ .

1. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.
2. Press **-->** to move the cursor to the next position.  
Continue entering characters (maximum of seven).
3. Press  to program Service Mode control.

## Service Mode setting

This setting allows you to control how the Service Mode can be turned ON and OFF.

### Options explained

- “Manual” allows you to turn the Service Mode ON and OFF at any time from a Control telephone. The Service Modes feature code must be entered at the telephone to access this feature.
- “Automatic” allows you to pre-assign a stop and start time during which the Service Mode will be active. You will still be able to start and stop the Service Mode by entering the Service Modes feature code at a Control telephone.
- You can also turn the Service Mode OFF, so that it can not be activated.

### Programming hints

Default stop and start times correspond to typical hours which may be required for a night Service Mode.

### Default Service Mode times

Service Mode	Start time	Stop time
Service Mode 1: Night	23:00	07:00
Service Mode 2: Evening	17:00	23:00
Service Mode 3: Lunch	12:00	13:00

Overlapping times may be assigned. For example, if Service Mode 1 is assigned from 9:00 am to 4:00 pm and Service Mode 2 is assigned from 1:00 pm to 5:00 pm, then the start time of the second Service Mode is treated as a stop time for the first Service Mode. This is also true if two Service Modes have the same start time but different stop times.

If one Service Mode starts and stops within the times of another Service Mode, the first service temporarily ends when the second service starts. The first service then resumes when the second service has ended.

### Programming Service Mode setting

Begin with **Setting: Manual** .

1. Press **CHANGE** to change the setting. Options are Manual, Off and Auto.
2. Press  .  
If you chose Manual,  
Trunk answer: **Y** appears for programming the Trunk Answer feature.  
OR  
If you chose Off,  
**Name2: Evening** appears for programming the next Service Mode.  
OR  
If you chose Automatic,  
**Start time: 23: 00** appears for programming the start and stop time.

### Programming the Automatic start time

Begin with **Start time: 23: 00** .

1. Press **CHANGE** to change the start time.  
**Hour: 23** appears.
2. Press **CHANGE** to program the hour.
3. Enter the digit(s) for the hour in 12- or 24-hour format from the dial pad.
4. Press  to program the minutes.  
**Minutes: 00** appears.
5. Press **CHANGE** .
6. Enter the digit(s) for the minutes from the dial pad.

7. Press  .  
If AM or PM appears, go to step 8.  
OR  
Programming continues with the Automatic stop time.
8. Press CHANGE to choose the AM or PM setting.
9. Press [Next] to program Automatic stop time.  
OR  
Press (Heading) until you return to the desired programming heading.

#### Programming the Automatic stop time

Begin with STOP time: 07: 00 .

1. Press CHANGE to change the stop time.  
Hour: 07 appears.
2. Press CHANGE to change the hour.
3. Enter the digit(s) for the hour in 12- or 24-hour format from the dial pad.
4. Press  to program the minutes.  
Minutes: 00 appears.
5. Press CHANGE .
6. Enter the digit(s) for the minutes from the dial pad.
7. Press  .  
If AM or PM appears, go to Step 8.  
OR  
Programming continues with the Trunk Answer feature.
8. Press CHANGE to choose the AM or PM setting.
9. Press  to program Trunk Answer.  
OR  
Press  until you return to the desired programming heading.

## Trunk Answer

This feature allows you to answer, from any telephone, an external call which is ringing at another telephone in your office.

This feature is useful if the other telephones have not been assigned the same lines as the telephone you are using to answer the call.

### Programming Trunk Answer

Begin with Trunk answer: Y .

1. Press CHANGE to change the setting. Options are Y(Yes) and N(No).
2. Press  to program the Extra-dial telephone.

## Extra-dial telephone

A telephone normally in service as a Direct-Dial telephone, can be programmed in Service Modes to extend its ringing to an Extra-Dial telephone.

When this is programmed, internal calls to the Direct-Dial telephone also ring at the Extra-dial telephone.

### Programming hints

Up to five Direct-Dial telephones can be assigned in the Direct-Dial section of Configuration programming. The Extra-dial telephone provides the option of assigning one more Direct-Dial telephone in the Norstar system for each operational Service Mode.

## Programming the Extra-dial telephone

Begin with Extra-dial : 22 1 .

1. Press CHANGE to change the Extra-dial telephone.
2. Enter an internal number from the dial pad. Default is 221.  
OR  
Press  for None.
3. Press  to program Ringing.  
Show 1 it-e:  appears.

## Ringing

You can assign additional telephones to ring for incoming calls on each external line. Ringing can also be assigned to target lines.

You can also indicate that the Auxiliary Ringer (if installed) will also ring for those calls.

## Programming hints

A Ringing telephone can be assigned to more than one Service Mode.

## Programming Ringing

Begin with Show line:  .

1. Enter an external line number from the dial pad.  
Ringing Sets appears.  
OR  
Press COPY to copy the Ringing telephone assignments from one line to another.  
OR  
Press  to program the next Service Mode.

2. Press  to program Auxiliary Ringer in step 6 (Aux. ringer: Y appears).  
OR  
Press  to assign ringing telephones.  
Set: 221 appears, or No ringing sets if none are assigned. Default is 221.
3. Press ADD to add a new ringing telephone for the line.  
Go to step 4.  
OR  
Press REMOVE to remove the ringing telephone from the line. Repeat step 3.  
OR  
Go to step 5.
4. To add a new ringing telephone:  
Enter the internal number from the dial pad.  
Repeat step 3 to assign more ringing telephones.
5. Press (Next) to program the Auxiliary Ringer.  
Aux. ringer: Y appears.
6. Press CHANGE to change the setting. Options are **Y(Yes)** and **N(No)**.
7. Press  to program Ringing for another line.  
Show line: \_ appears.  
OR  
Press  until you return to the desired programming heading.



## Service Mode 2

The second Service Mode is programmed in the same way as Service Mode 1.

Beginning Service Mode 2 programming

Begin with Name2: Evening .

1. Press CHANGE to change the Service Mode name.,  
Name2: \_ appears.  
OR  
Press  to program the Service Mode control.  
Setting: Manual appears.  
OR  
Press  to program the third Service Mode.

## Service Mode 3

The third Service Mode is programmed in the same way as Service Mode 1.

Beginning Service Mode 3 programming

Begin with Name3: Lunch .

1. Press CHANGE to change the Service Mode name.  
Name3: \_ appears.  
OR  
Press Show to program the Service Mode control.  
Setting: Manual appears.  
OR  
Press  to program the Passwords feature.

# Password

---

## What is Password?

The Administration password helps prevent misuse of the Norstar telephone system. To ensure security, limit the distribution of the passwords to selected personnel.

The password is a one to six-digit number that allows access to Administration programming. This prevents unauthorized or unintentional changes to settings.

The default value of the Administration password is :

9     which is the same as:

.

The digits you enter for the password are not shown on the display.

### Programming hints

Keep a record of your password in a secure place.

The password will be easier to remember if the digits correspond to the letters in a word.

If you forget the Administration password, you will not be able to access Administration programming. Call your Service Representative to re-assign a new Administration password through Configuration programming.

For security reasons, it is a good idea to change the password periodically.

---

## Programming the Administration password

Begin with 7. Password .

1. Press  .  
Admin. Password appears for programming the Administration password.
2. Press CHANGE .  
New Pswd: \_ appears.
3. Enter the digits of the new password (maximum six digits) from the dial pad. Use the BKSP display button if required.  
OR  
Press OK to erase the password.  
Password erased briefly appears.  
Admin. Password appears.  
Press  to go to step 6.
4. Press OK to confirm the new password.  
Re-enter: \_ appears.
5. Enter the new password again.
6. Press OK :  
Password changed briefly appears.  
OR  
Pswd not changed briefly appears if you did not enter the same password again. The display returns to Admin. Password at the beginning of Administration programming.
7. Press (Heading) until you return to the desired programming heading.

# Programming reminders

---

The Programming reminders are a record of programmable settings which Norstar users may need to know on a day-to-day basis.

Fill out whatever sections are programmed and must be known. If more space is required to record the information, first photocopy the page before you begin. Not all of the programmable features may be required information.

Programmable settings can be determined from a review of the *Norstar Modular DR4 Programming Record* and use of the Set and Line Profile feature.

Distribute the Programming reminders to each desk that has a Norstar telephone, or post them on the wall next to the telephone.



---

### Prime telephones

---

Prime Telephone operator

---

Internal number

---

- - - - -

Lines answered at the Prime telephone

---

\_\_\_\_\_ - - -

- - -

---

Prime Telephone operator

---

Internal number

---

- - - - -

Lines answered at the Prime telephone

---

- - - - -

- - -

---

Prime Telephone operator

---

Internal number

---

- - \_\_\_\_\_

Lines answered at the Prime telephone

---

- - - - -

- - -

---

Prime Telephone operator

---

Internal number

---

\_\_\_\_\_

Lines answered at the Prime telephone

---

\_\_\_\_\_ - - -

- - -

---

### Central Answering Position

---

CAP operator

---

Internal number

---

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

---

Administration

### Page zones

Page zone	Location
2	
3	
4	
5	
6	

### Line Pools

Pool	Access code	Use
A	- - - -	
B	- - - -	
C	- - - -	
D	_____	
E	- - - -	
F	_____	
G	_____	
H	- - - -	
I	_____	
J	_____	
K	- - - -	
L	- - - -	
M	_____	
N	- - - -	
O	- - - -	

### Miscellaneous programming

Direct-dial telephone	- - - - - - -
DISA DN (used to change COS)	_____
Direct-dial digit	_____
Call Park Prefix digit	_____
Dial first to make external calls	_____

---

## Call Pickup Groups

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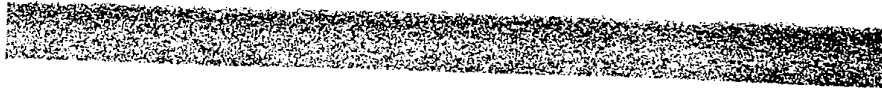
Pickup Group	Names of members in the group
—	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
—	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
—	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>



Service Modes

Service Mode 1	Service Mode 2	Service Mode 3
Name -----	Name -----	Name -----
Start Time      stop Time -----	Start Time      Stop Time -----	Start Time      Stop Time -----
Control telephone -----	Control telephone -----	Control telephone -----
Ringing telephones -----	Ringing telephones -----	Ringing telephones -----
Extra-dial telephone -----	Extra-dial telephone -----	Extra-dial telephone -----

C



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# Maintenance



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---

# Introduction

---

## What is a Maintenance session?

A Maintenance session is a Norstar software feature which helps you quickly diagnose problems that may occasionally arise within the Norstar system.

During a Maintenance session, six sub-headings appear:

1. System Version

2. Port/DN Status

3. Module Status

4. Diagnostics

5. Sys Test Log

6. Sys Admin Log.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to use the Overlay buttons.

### Remember

You may run a Maintenance session from any working Norstar M7310 or M7324 Telephone. Keep a pencil handy to record important information on photocopies of the Maintenance records. The Maintenance records are found at the end of this chapter.

## Beginning a Maintenance session

1. Place the Overlay on the telephone.
2. From the Norstar M7310 or M7324 Telephone dial pad, Press

\* \* 2 6 6 3 4 4

Which is the same as:

\* \* C O N F I G

The display prompts you to enter the password.

3. Enter the existing Installer password. The default password is CONFIG, which you will have to use if this is the first time that Configuration programming has been accessed.
4. if the password is entered correctly,  
A. Configuration appears.  
OR  
If the password is entered incorrectly, you will still see the Password: prompt. In this case, press RETRY, and again enter the password.
5. Press  three times until  
D. Maintenance appears.

**Note:** Only one person at a time can access a Maintenance session.

# System Version

---

## What is System Version?

System Version allows you to note the version numbers of the software in the two processors in the Modular system:

- System Processor (SP)
- Real Time Processor (RTP)

The SP and RTP each use different software. The SP software resides in the Feature Cartridge, while the RTP software resides in the Key Service Unit (KSU).

Write down the SP and RTP version numbers in the Maintenance records.

## How can it help me?

When you report version numbers to the Norstar distributor, they can be used to determine whether you have the latest software release, and to trace a software fault if one occurs. For instance:

- SP and RTP version numbers can indicate a Software Cartridge incompatibility.
- Trunk Cartridge and RTP version numbers can indicate a Trunk Cartridge incompatibility.
- SP and telephone version numbers can indicate a telephone version incompatibility.
- SP and functional terminal version numbers can indicate a functional terminal incompatibility.



## Before you begin

### Obtain

- the Not-star Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

## Checking the version numbers

From D. Maintenance:

1. Press (Show).  
The display shows 1. System Version.
2. Press [Show].  
The display shows the version number of the SP.
3. Write down the SP version number on the appropriate Maintenance record.
4. Press RTP.  
The version number of the RTP appears.
5. Write down the RTP version number on the appropriate Maintenance record.
6. Press (Heading).  
The display returns to 1. System Version.

# Port/DN Status

---

## What is Port/DN Status?

Port/DN Status allows you to:

- identify any device or line connected to the Modular system.
- check the version number of a device (an Analog Terminal Adapter, for example) for compatibility with the system.
- check the state of a device or line (for example, idle or busy).
- disable or enable a device or line.

## How can it help me?

Use Port/DN Status to:

- determine which port number corresponds to each DN.
- determine the port number of a malfunctioning device.
- determine if a malfunctioning device is incompatible with the Norstar system.
- disable a device before replacing it. This generates Norstar telephone display messages informing device users of what you are doing.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

### Remember

You should not disable devices or lines when many people are using the Norstar system.

You cannot disable the Norstar telephone from which you are accessing the Maintenance session. If you try to do this, a message appears on the display and you hear an error tone. Therefore, if you wish to disable that particular telephone, you will have to conduct the Maintenance session from another Norstar telephone.

Do not enable or disable ports at the following times:

- during the first two minutes after a System Startup
- before DS-30 cables are connected.

If you do so, incorrect ports may be enabled or disabled. To recover from this, disable then enable the affected modules using Module Status.

Note: Port/DN Status allows you to check lines and devices on the Modular system. Although the following procedures describe how to check devices, you can use the same procedures to check lines.

---

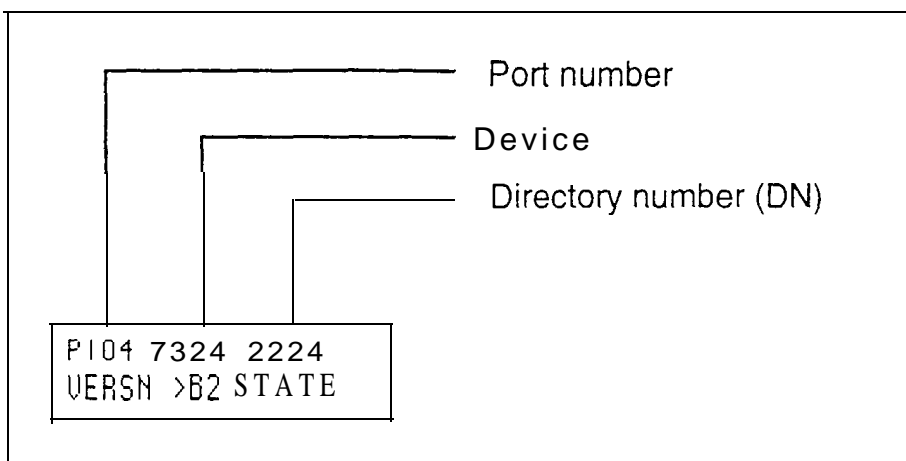
## Examining Port/DN Status

### Identifying any device connected to the system

From 1. System Version:

1. Press .
2. Port/DN Status appears.
2. Press [Show].  
The display shows Show Port:   .
3. Enter, on the dial pad, the port number of the device.  
OR  
Press [DN] then enter the directory number of the device.  
Device information appears (see the sample device identification display in the following figure). This identifies the device connected to the B1 channel.
4. if there is an add-on device attached to a Norstar telephone such as a Central Answering Position (CAP) module or a Busy Lamp Field (BLF):  
Press  to view the add-on devices.  
OR  
If you want to identify the device connected to the B2 channel:  
Press >B2.
5. Press  twice to return to 2. Port/DN Status.

## Sample device identification display



*Note:* The sample display above associates DN 2224 with port 104.

The following chart lists some of the device types which may appear on the Norstar device identification display.

## Explanation of device type

Display	Explanation
7100	M7100 Telephone
7208	M7208 Telephone
7310	M7310 Telephone
7324	M7324 Telephone
1 : MODULE1	First add-on CAP module attached to an M7324
2 : MODULE2	Second add-on CAP module attached to an M7324
BLF	Busy Lamp Field
ATA	Analog Terminal Adapter

## Checking the version number of the device

From the Norstar device identification display:

1. Press V E R S I O N (if it is available).  
The display shows the version number of the device.  
OR  
Not available appears briefly and then the previous display re-appears. In this case, you cannot record the version number.
2. If the display showed a device version number, write down this number on the appropriate Maintenance record.

To return to the Norstar device identification display from the display showing the version number:

1. If you want to retain the same port number:  
Press OK.  
OR  
If you want to see information about the next higher port number (or DN if that is how you entered):  
Press (Next).  
OR  
If you want to see information about the next lower port number (or DN if that is how you entered):  
Press .

## Checking the state of the device

From the Norstar device identification display:

1. Press S T A T E.  
The display shows one of the states listed in the following chart.
2. If you want, you can disable or enable the device (see Disabling the device or Enabling the device in this section).  
OR  
Press OK, if you want to return to the device identification display.

## How the device state is shown on the display

Display	State of device
Busy DISABLE           OK	The device is in use.
Disabling... OK	The device is being disabled.
Enabling... OK	The device is being enabled.
Idle DISABLE           OK	The device is not in use.
Waiting for idle DISABLE           OK	The device will be disabled as soon as it becomes idle.
Unequipped DISABLE           OK	There is no device connected to that port.
Disabled by user ENABLE            OK	The device has been disabled by someone running a Maintenance session.
Disabled by sys. ENABLE            OK	The device has been disabled by the system because it is faulty or because a test is running.
Not available DISABLE            OK	There is no state available.

## Disabling the device when it becomes idle

When the display shows you that the device is busy:

1. Press DISABLE.  
The display shows `Disable at idle?`
2. Press YES.  
The device is disabled immediately after the user hangs up.

*Note:* If you disable a line on a Trunk Cartridge, the remaining three lines on that Trunk Cartridge are also disabled.

*Note:* If you choose the `Disable at idle?` option, but the device remains in use, you can disable the device immediately.

## Disabling the device immediately

*Note:* Make sure you inform people that you are going to disable their devices (or lines). A device becomes disabled one minute after you press YES from `Disable at once?`. The next two charts show examples of the sequence of messages that might appear on a telephone that you are disabling.

### Examples of display messages if you are disabling the device

Sequence of messages before disabling	Message after disabling
<pre> Please hang UP (twice) Maintenance test </pre>	
<pre> 45 seconds until disconnect Please hang UP </pre>	<pre> In maintenance </pre>



Examples of display messages if you are disabling the line

Sequence of messages before disabling	Message after disabling
Please hang up (twice) Testing Line016	
45 seconds until disconnect Please hang up	Not in service

To disable immediately when the display shows you that the device is busy:

1. Press DISABLE.  
The display shows `Disable at idle?`
2. Press CHANGE.  
The display changes to `Disable at once?`
3. Press YES.

The device prompts its user (described previously) and is disabled in one minute (or immediately, if the device is idle).

## Enabling the device

When the display shows you that the device is disabled:

1. Press ENABLE.

Enabling... appears briefly. The device is immediately enabled and Idle appears.

Note: The display may briefly show Enabling..., then either Disabled by sys. or Disabled by user. In this case, the system is waiting to disable the module. This may occur after someone has run a Maintenance session and used either Module Status or Diagnostics. You cannot enable the device until its module has been disabled.

## Returning to the beginning

From the display showing the state of the device:

1. Press OK.
2. Press [Heading].
3. Press  again.

The display shows 2. Port/DN Status.

# Module Status

---

## What is Module Status?

Module Status allows you to:

- look at the inventory of Station Modules (SMs), Trunk Modules (TMs), and modules inside the Key Service Unit (KSU).
- check the number of Trunk Cartridges (TCs) attached to each Trunk Module.
- check the state of the module or its cartridges.
- disable or enable the module or its cartridges.

## How can it help me?

You may use Module Status to:

- isolate any malfunctioning modules.
- disable a module before replacing it.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

## Examining Module Status

### Looking at the module inventory

From 2.Port/DN Status:

1. Press .  
3. Module Status appears.
2. Press .  
Show module:  appears.
3. Enter the module number. Modules 1 and 2 are located inside the KSU. Refer to the two figures entitled Module numbering scheme for a Two-port Expansion Cartridge and Module numbering scheme for a Six-port Expansion Cartridge.

OR

Press  if you want to check the first module.

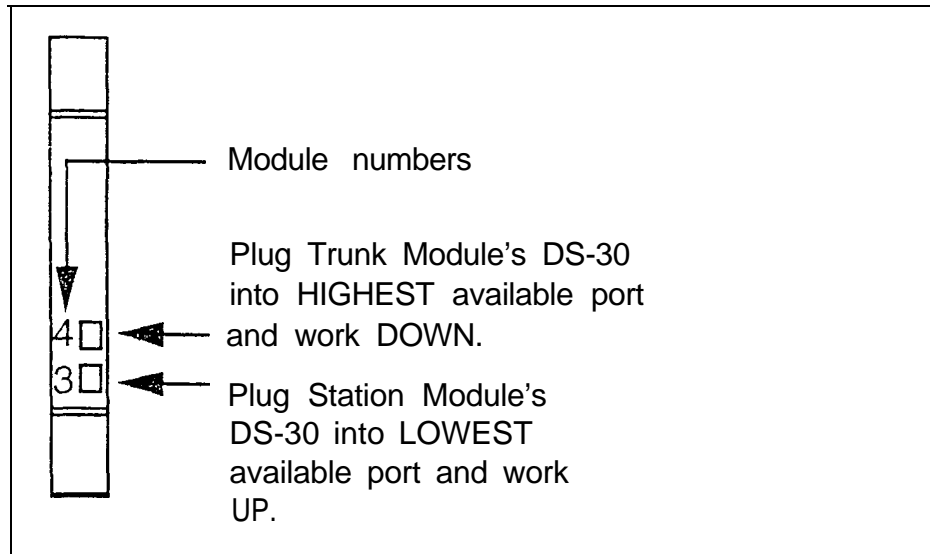
The display which you see after step 3 is called the module inventory display.

If you choose module 1 or 2, the display shows how many telephones or lines are connected to the KSU.

If you are checking a Trunk or Station Module, the display either shows how many Trunk Cartridges are connected to the Trunk Module or how many devices are connected to the Station Module.

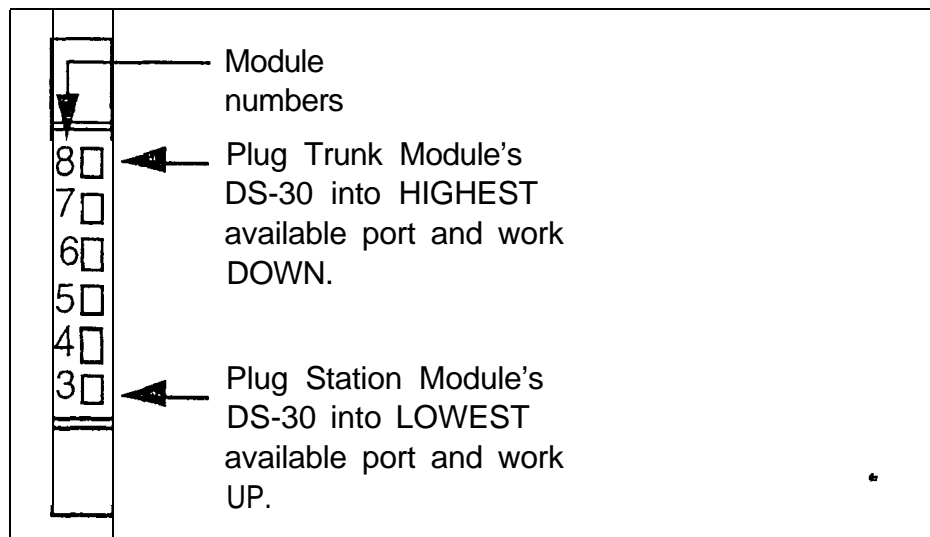
*Note:* Norstar devices may occupy both the B1 and B2 channels. This may increase the number of devices indicated on the module inventory display.

### Module numbering scheme for a Two-port Expansion Cartridge



*Note:* Modules 1 and 2 are located inside the KSU.

### Module numbering scheme for a Six-port Expansion Cartridge



---

## Checking the number of Trunk Cartridges attached to a TM

Start from the module inventory display, which shows the number of Trunk Cartridges connected to the module you chose (for example, 3 TCs on TM 4).

1. Press TC.

The display shows that zero lines are connected if there is no Trunk Cartridge in a slot. If there is a Trunk Cartridge in a slot, the display shows that four lines are connected (for example, 4 lines on TC 1).

*Note:* If there is no Trunk Cartridge in slot number one (the left-most slot), the display shows that the module is empty.

2. If you want to check if there are Trunk Cartridges present in the other two slots:  
Press  or (Back].
3. Press MODULE to return to the module inventory display.

## Checking the state of a TM

Start from the module inventory display, which shows the number of Trunk Cartridges connected to the module you chose (for example, 3 TCs on TM 4).

1. Press STATE.

The state of the module is shown on the display. Some examples of this display are shown on the following page.

2. If you want, you can disable or enable the module. (See Disabling the module or its cartridges or Enabling the module or its cartridges later in this section.)

OR

If you want to return to the module inventory display:  
Press OK.

---

**How the module or cartridge state is shown on the display**

3 sets busy DISABLE      OK	State of module or cartridge
2 ports busy DISABLE      OK	There are three devices in use which are connected to the module or cartridge.
4 lines busy DISABLE      OK	There are two ports in use which are connected to the module or cartridge.
Disabling... OK	There are four lines in use which are connected to the module or cartridge.
Enabling... OK	The module or cartridge is being disabled.
Waiting for idle DISABLE      OK	The module or cartridge is being enabled.
Unequipped DISABLE      OK	The module or cartridge will be disabled as soon as it becomes idle.
Disabled by user ENABLE      OK	There is no module or cartridge connected to that DS-30 port.
Disabled by sys. ENABLE      OK	The module or cartridge has been disabled from a Maintenance session.
	The module or cartridge has been disabled by the system because it is faulty or because there is a test running.

## Checking the state of a cartridge

Start from the display that shows the number of lines connected to the Trunk Cartridge you chose (for example, 4 lines on TC 1).

1. Press STATE.  
The state of the cartridge is shown on the display. Some examples of this display are shown on the previous page.
2. If you want to check the state of a Trunk Cartridge present in one of the other two slots:  
Press (Next] or (Back].
3. If you want, you can disable or enable the cartridge. (See the next two sections entitled Disabling the module or its cartridges and Enabling the module or its cartridges.)  
OR  
if you want to return to the display showing how many lines are connected to the Trunk Cartridge:  
Press OK.

## Disabling the module or its cartridges

**Note:** If you want to disable a module while people are using the Norstar system, first inform them by using the Page feature. Mention that they may experience delays in the performance of their devices.

From the display showing the state of the module or cartridge:

1. Press DISABLE.
2. If the module or cartridge is not idle and you want to disable it when it becomes idle:  
Press YES  
O R - -  
If you want to disable the module or cartridge immediately:  
Press CHANGE, then press YES.



## Enabling the module or its cartridges

From the display showing the state of the module or cartridge:

1. Press ENABLE.  
Enabling... appears briefly. The module or cartridge is immediately enabled. The display then shows the state of the module or cartridge.

## Returning to the beginning

From any display showing the state of the module or cartridge:

1. Press OK.
2. Press [Heading] twice.

The display returns to show 3. Module Status.

# Diagnostics

---

## What is Diagnostics?

Diagnostics allows you to:

- select the connectivity test (test #100).
- identify which ports you wish to test.
- begin the test.
- check the test results.

## I-how can it help me?

If you suspect that a voice connection may be broken, you can use Diagnostics to run the connectivity test. This test runs in three stages, stopping when any stage fails.

1. Stage 1 initializes any empty ports and runs a sanity test to all devices on that port.
2. Stage 2 disables the specified port and runs a write and read test.
3. Stage 3 disables both modules associated with the specified port and runs a write and read test.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

## Remember

Do not run the connectivity test at the following times:

- while ports or modules are being disabled
- during the first two minutes after a System Startup.

If you do so, the test may stop running with ports still disabled. To recover from this, power down, then power up the KSU.

### CAUTION

The connectivity test may disrupt service as modules are disabled. Do not run this test when many people are using the Norstar system.

## Running Diagnostics

### Selecting the connectivity test

*Note:* If you want to run the connectivity test while others are using the Norstar system, you should first inform them by using the Page feature. Mention that they may experience delays in the performance of their devices.

#From 3.Module Status:

1. Press .
4. Diagnostics appears.
2. Press .
- The display shows Enter test#: \_.
3. Enter  from the dial pad.
- Test Port: \_ appears.

### Identifying which ports you want to test

*Note:* You can perform the connectivity test on a maximum of 16 ports.

From Test Port.: -:

1. Enter all the port numbers from the dial pad, pressing OK after each entry.
2. Press [N e x t].
- The display shows you how many modules may be disabled when you run the test.
- The display then changes to Begin test 100?

### Beginning the connectivity test

From Begin test 100?:

1. Press YES.
- The display shows Disp 1 a y r e s u l t s ?

## Checking the test results

From the `Display results?` display:

If you do not want to see the test results from the display:

1. Press NO.  
The display momentarily shows:  
`For results see  
Sys. Test Log.`

If you want to see the test results from the display:

1. Press YES.  
`Running test 100` appears.  
When the test is finished, the display shows the test results, for example, `F 110 100-04`. In this case, port number 110 was the first port tested, and "04" is the result code of test 100. The result codes are explained in the following chart.
2. Press MORE appears as a display button. The test results for the next port number are shown.
3. Repeat step 2 if applicable.
4. Press EXIT.  
You are returned to `4. Diagnostic`.

*Note:* If you press NO at `Display results?`, then change your mind, you can still follow the previous procedure to see the results. If your Nor-star telephone is connected to the module you test, it will be disabled. Run a new Maintenance session to see the results.

## Connectivity test results

Result code	Test results
00	You entered an invalid port number.
01	Stage 1 passed: the KSU device port is receiving signals properly. If the device has no voice connection, the problem is with the device.
02	Stage 1 passed: the KSU trunk port is receiving signals properly. If the trunk has no voice connection, the problem is likely with the external line, the 25-pair cable or the cross-connect.
03	Stage 1 passed: the Trunk Cartridge is receiving signals properly. If the trunk has no voice connection, the problem is likely with the TC, the external line, the 25-pair cable, or the cross-connect.
04	Stage 1 failed: there is no signaling to this KSU-based device, but other devices on the KSU work. The problem is likely with the TCM line, the device, the 25-pair cable to the KSU, or the cross-connect.
05	Stage 1 failed: there is no signaling to this SM-based device, but other devices on this SM work. The problem is likely in the TCM line, the device, the 25-pair cable to the SM, the cross-connect, or the SM.
06	Stage 1 failed: there is no signaling to any KSU-based device. The problem is likely with the 25-pair cable to the KSU or with the cross-connect.
07	Stage 1 failed: there is no signaling to any device on this Norstar bus. The problem is likely with the 25-pair cable to the module, the module, the DS-30 cable, or the Expansion Cartridge.
08	Stage 3 failed: a KSU-based fault was detected. Replace the KSU.
09	Stage 3 failed: a fault was detected in the Expansion Cartridge. Replace the Expansion Cartridge.

# System Test Log

---

## What is the System Test Log?

The System Test Log shows you a list of diagnostic test results, audits, event messages, and alarm codes. By using this feature you can:

- check the items in the log.
- check the current alarm (if there is one).
- check when each item in the log occurred.
- check the number of consecutive occurrences of an event or an alarm.
- erase the log.

Note: The System Test Log holds a maximum of 20 items. You should check and record these items at regular intervals. Erase the log after dealing with all the items.

## How can it help me?

You may use the System Test Log to find out which tests, events or alarms have occurred.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

## Examining the System Test Log

### Checking the items in the log

From 4. Diagnostics:

1. Press (Next).  
5. Sys Test Log appears.
2. Press (Show).  
The display shows Start of new log or Start of log.
3. Press  or   
A log item is displayed.
4. Write down the item on the appropriate Maintenance record.
5. If the log item is an event message or an alarm code, refer to the Event messages section or the Alarm codes section in this chapter.
6. Repeat steps 3, 4, and 5 until you have recorded all the items.

### Checking the current alarm

If you want to check quickly the highest severity alarm before viewing all the log items, from Start of new log or Start of log:

1. Press ALARM.  
The display shows an alarm code if there is a current alarm.
2. Press EXIT to return to Start of log.  
OR  
The display shows No current alarm and returns to show Start of new log or Start of log.

Note: All alarms are recorded as items in the System Test Log.



## Checking when each item in the log occurred

From any display showing a log item:

1. Press T I N E.  
The date and time momentarily appear on the display.
2. Write down the date and time on the appropriate Maintenance record.

## Checking the number of consecutive repetitions of an event or alarm

If R E P E A T appears under a display showing a log item:

1. Press R E P E A T.  
The display shows the number of consecutive times the event or alarm occurred.

## Erasing the log

If you want to erase the System Test Log,  
at Start of new log or Start of log:

1. Press E R A S E.  
Erase log? appears.
2. Press Y E S.  
If no new items have been added since the list was entered, the log is erased and Los is empty appears.  
OR  
If new items have been added since the list was entered, Log has changed is shown.
3. If Los has changed appears,  
Press (Show) to show the new log.  
OR  
Press E X I T to return to 5. Sys Test Log.

# System Administration Log

---

## What is the System Administration Log?

The System Administration Log keeps a record of administrative events such as system initializations, Configuration sessions in which a change was made, invalid password attempts, and password changes. By using this feature you can:

- check the items in the log.
- erase the log.
- check when each item in the log occurred.

Note: The System Administration Log holds a maximum of ten items. Erase the log after dealing with all the items.

## How can it help me?

The System Administration Log helps you find out about administrative events performed on the system.

## Before you begin

### Obtain

- the Norstar Programming Overlay.

### Know how

- to enter a Maintenance session
- to exit from a Maintenance session
- to use the Overlay buttons.

## Examining the System Administration Log

### Checking the items in the log

From 5. Sys Test Log:

1. Press .  
6. Sys Adm i-t Los appears.
2. Press .  
The display shows Start of new 104 or  
Start of log.
3. Press  or .  
A log item is displayed.
4. Write down the item on the appropriate Maintenance  
record.
5. Repeat steps 3 and 4 until you have recorded all the  
items.

### Checking the current alarm

From Start of new log or Start of log:

1. Press ALARM.  
The display shows an alarm code if there is a current  
alarm.
2. Press EXIT to return to Start of log.  
OR  
The display shows No current alarm and returns  
to show Start of log.

## Erasing the log

If you want to erase the System Administration Log, begin .  
with `Start of log`:

1. Press ERASE.  
`Erase log?` appears.
2. Press YES.  
If no new items have been added since the list was entered, `Log is empty` appears.  
OR  
If new items have been added since the list was entered, `Log has changed` is shown.
3. If `Log has changed` appears:  
Press (Show) to show the new log.  
OR  
Press EXIT to return to `6. Sys Admin Log`.

## Checking when each item in the log occurred

From any display showing a log item:

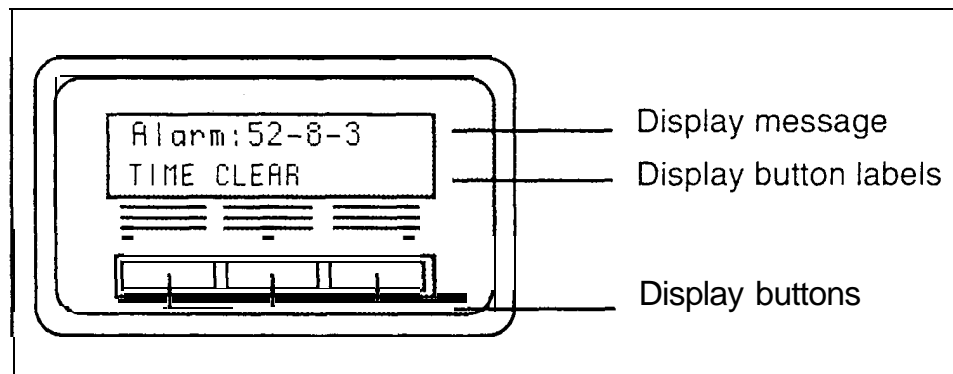
1. Press TIME.  
The date and time momentarily appear on the display.
2. Write down the date and time on the appropriate Maintenance record.

# Alarm codes

---

## What are alarm codes?

The Norstar Modular KSU generates alarm codes after system disconnections or after certain anomalies in system operation. All alarm codes appear at the Alarm Telephone and in the System Test Log of a Maintenance session. The following figure shows an alarm code appearing on a Norstar Alarm Telephone display.



Note: Alarms have a higher severity than events. Attend to alarm codes before event messages.

## If you see an alarm code

1. Write the alarm code on the appropriate Maintenance record.
2. Determine the cause of the alarm from the chart below.
3. Follow Alarm troubleshooting in this chapter.
4. Press TIME to see when the alarm occurred.
5. Press CLEAR to clear the alarm.

An alarm code may not be displayed until two minutes after it has been triggered. If the KSU is powered OFF when the alarm is triggered, the alarm code is not displayed until two minutes after the KSU is powered ON.

## Causes of alarm code

Example display	Meaning	Possible causes
Alarm: 10	All KSU devices disconnected.	<ul style="list-style-type: none"> <li>• The last device on Norstar bus 1 (port numbers 101-124) has been removed.</li> <li>• The 25-pair cable was disconnected from the KSU.</li> <li>• There is an internal KSU fault.</li> </ul>
Alarm: 11	Internal KSU failure.	<ul style="list-style-type: none"> <li>• The KSU is defective.</li> </ul>
Alarm: 50-X	All devices on SM disconnected.	<ul style="list-style-type: none"> <li>• The last device on Norstar bus X (port numbers X01-X16) has been removed.</li> <li>• The 25-pair cable was disconnected from the SM.</li> <li>• The DS-30 cable from the SM to the KSU has been disconnected.</li> <li>• The SM was powered down.</li> </ul>
Alarm: 51-X	Trunk Module disconnected.	<ul style="list-style-type: none"> <li>• All Trunk Cartridges have been disconnected from the TM on DS-30 port X.</li> <li>• The TM was powered down.</li> <li>• The DS-30 cable from the TM to the KSU has been disconnected.</li> </ul>

"X" = DS-30 port number (1-8)

## Causes of alarm codes (continued)

Example display	Meaning	Possible causes
Alarm:52-X-Y	TC disconnected from TM	<ul style="list-style-type: none"> <li>Trunk Cartridge Y on DS-30 port X has been disconnected from the TM.</li> </ul>
Alarm:61-X-Y	Incompatible Trunk Cartridge	<ul style="list-style-type: none"> <li>Trunk Cartridge Y on DS-30 port X cannot operate with the Trunk type assigned to it in Configuration.</li> </ul>
Alarm:62-Y-Z	Unsupported Auto-answer setting (Loop Start TC only)	<ul style="list-style-type: none"> <li>Trunk Cartridge Y on Trunk port Z does not support the auto-answer setting.</li> </ul>
Alarm:63-Z	No available DTMF receivers	<ul style="list-style-type: none"> <li>DTMF receivers are busy, not working properly, or have not been installed.</li> </ul>

"X" = DS-30 port number (1-8)

"Y" = Trunk Cartridge number (numbered from left to right)

"Z" = Trunk port number

## Alarm troubleshooting

Note: Refer to the previous chart before following these procedures.

### Alarm:10

1. Check to see if there is a device connected to the KSU (that has a port number beginning with the number "1").
2. If there are no devices connected to the KSU, connect one and then press CLEAR.
3. If there are any devices connected to the KSU, check all the wiring associated with the devices.

4. Refer to the section entitled KSU down in the Troubleshooting chapter.

**Alarm: I 1**

1. Power down the KSU and then power it up.
2. If the alarm persists, replace the KSU.

**Alarm:50-X**

1. Check to see if there is a device connected to the Station Module (that has a port number beginning with a number from three to eight).
2. If there are no devices connected to the Station Module, connect one and then press CLEAR.
3. If there are any devices connected to the Station Module, check all the wiring associated with the devices.
4. Refer to the section entitled Station Module down in the Troubleshooting chapter.

**Alarm:51 -X**

1. Check the wiring from the KSU to the TM.
2. Follow the procedure in the section Checking the Trunk Cartridge in the Troubleshooting chapter.
3. Refer to the section entitled Trunk Module down in the Troubleshooting chapter.

**Alarm:52-X-Y**

1. Follow the procedure in the section entitled Checking the Trunk Cartridge in the Troubleshooting chapter.
2. If the problem persists, replace Trunk Cartridge Y on DS-30 port X. (Refer to the previous chart for the definition of "X" and "Y").



**Alarm:61-X-Y**

1. Check that the proper Trunk Cartridges are inserted in the proper slots of the Trunk Module.
2. Run a Configuration session and look under the Trk/Line Data heading. Check that the Trunk type and Trunk mode settings are the same for every Loop Start line connected to Trunk Cartridge Y.

**Alarm:62-Y-Z**

1. Check that the proper Trunk Cartridges are inserted in the proper slots of the Trunk Module.
2. Run a Configuration session and look under the Trk/Line Data heading. Check that the Trunk mode and Answer mode settings do not conflict for every line connected to Trunk Cartridge Y. If Trunk mode is unsupervised, Answer mode must be manual.

**Alarm:63-Z**

1. Check that you have the required E&M/DISA Trunk Cartridges (one for every two auto-answer Loop Start lines).
2. Run a Configuration session and look under the Trk/Line Data heading. Check that the Answer mode is correct for all the Loop Start lines.
3. If the problem persists, an E&M/DISA Trunk Cartridge may be malfunctioning. Replace one E&M/DISA Trunk Cartridge at a time until the problem is resolved.

# Event messages

---

## What are event messages?

Event messages appear as items in the System Administration Log or the System Test Log of the Maintenance session. Most of these event messages can only be caused by an unusual combination of events, and should rarely occur.

Each event is assigned a severity number. An "S" preceding this number, "S4" for example, may appear in the event message. If the Log is full, new event messages with a higher severity number replace existing event messages of a lower severity. For this reason, you should check event messages at regular intervals. You can then deal with all messages before they are replaced.

## Dealing with event messages

For every event message that you see, do the following:

1. Record the event on the appropriate Maintenance record.
2. Consult the next section entitled Significant event messages.
3. Consult the subsequent section entitled Complete list of event numbers to see if the event caused the Norstar system to automatically restart.

## Significant event messages

The chart on the next page lists event messages which are relevant to Maintenance activities. The time that the message is recorded is also provided.

## Significant event messages

Example of event message	Time that the event message is recorded
Test 100 started	When diagnostic test number 100 starts
Test 100 passed Test 100 failed	When diagnostic test number 100 has been completed
Evt:220-3546 54	When the System Administration Log has been cleared by the DN (3546 in this case)
Evt:221-3546 54	When the System Test Log has been cleared by the DN (3546 in this case)
Evt:222-3546 55	When the DN (3546 in this case) enters the debugging facility which is password protected
Evt:263-302 58	When the KSU takes the E&M line on port 302 out of service because the far end did not respond to a disconnect signal
Evt:264-302 51	When the E&M line on port 302 is returned to service after the far end finally responded to a disconnect signal (see Evt : 263)
Evt:265-302 57	When the E&M line on port 302 did not receive an expected wink signal or delay dial signal from the far end
Evt:268-07 58	When Dialing filter 07 has lost data due to a fault in the system memory
Evt:269-3546 58	When the Line/set filter for the DN (3546 in this case) has lost data due to a fault in the system memory
Evt:299 51	When the system powers up after a power failure
Evt:400 59	When a System Startup is performed using the dial pad digits [Feature) * * S T A R T U P

Maintenance session

## Significant event messages (continued)

Example of event message	Time that the event message is recorded
Evt:407	S2
When there are no more codes for Speed Dial numbers	
Evt:408	S2
When there is no more memory for Speed Dial codes	
Evt:412-3546	S5
When the Installer password has been changed by the DN (3546 in this case)	
Evt:413-3546	S3
When the Administration password has been changed by the DN (3546 in this case)	
Evt:414-3546	S5
When an invalid Installer password has been entered by the DN (3546 in this case)	
Evt:415-3546	S3
When an invalid customer password has been entered by the DN (3546 in this case)	
Evt:416-3546	S4
When system Configuration is performed using the dial pad digits <div style="border: 1px solid black; padding: 2px; display: inline-block;">           Feature <input type="text"/> * * C O N F I G         </div>	
Evt:417-3546	S2
When system Administration is performed using the dial pad digits <div style="border: 1px solid black; padding: 2px; display: inline-block;">           Feature <input type="text"/> * * A D M I N         </div>	
Evt:418	S7
When a DN change is successful	
Evt:419	S2
When the time setting has been changed	
Evt:421	S8
When a DN change failed	
Evt:422-3546	S6
When a length change by the DN (3546 in this case) has been requested	
Evt:423-3546	S6
When an individual DN change has been requested by the DN (3546 in this case)	
Evt:822	S8
When Alarm code 63 is sent because there are no DTMF receivers for an incoming call	

## Complete list of event numbers

You should rarely see any event messages that are not described in the section entitled Significant event messages. If you do see one of these event messages, the Norstar system has followed its normal recovery from an unusual combination of system events. Although the problem is not a serious one, repeated occurrences of the event number should be reported to the Central Support Center as soon as possible.

As a result of some events, the Norstar system automatically restarts itself. The chart on the next two pages lists all the event numbers and tells you which of these events are associated with Norstar system restarts ("Y"=yes, "N"=no).

Most of these events are recorded in the System Test Log. The few exceptions to this are recorded in the System Administration Log, as indicated.

## Event numbers

Event Number(s)	System Restart	Event Number(s)	System Restart
101-106	Y	229 (Admin log)	Y
107	N	230-235	N
108-112	Y	245-248	N
113	N	250-256	N
114-116	Y	260-271	N
117	N	280-283	N
118-120	Y	285-298	Y
121-123	N	299	N
124-125	Y	400 (Admin log)	Y
126-129	N	401-403	N
130	Y	405-411	N
131-132	N	412-419 (Admin log)	N
133-134	Y	421-423 (Admin log)	N
135-136	N	424-425	N
137	Y	426-430	Y
138-150	N	431	N
151	Y	432	Y
152	N	433	N
160-164	N	600-602	Y
170-173	N	603-613	N
200-211	N	614	Y
220 (Admin log)	N	615-629	N
221-222	N	630	Y
223 (Admin log)	Y	631-646	N
224	Y	800-802	N
225-228	N	803	Y

Event numbers (continued)

Event Number(s)	System Restart	Event Number(s)	System Restart
804-807	N	823	Y
808	Y	824-825	N
809	N	900	N
810	Y	940-943	N
811-820	N	950-989	N

# Maintenance records

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## What are Maintenance records?

Maintenance records are charts on which you can record information you have obtained while running a Maintenance session.

## Before you begin

### Obtain

- photocopies of the three charts in this section.

## Recording information on the Maintenance records

To use the following records, do the following:

1. Write on your photocopied charts information that you obtain while running a Maintenance session.
2. Return the completed charts to the Norstar distributor.



## Version number record

The Maintenance session tells you the software versions of the Real Time Processor (RTP), the System Processor (SP), and devices connected to the Norstar system. Use the following chart to record these version numbers when you run a Maintenance session. You can check the RTP and SP version numbers under the heading 1 .System Version. Device version numbers are found under the heading 2.Port/DN Status.

### Version Numbers

1.System Version	2.Port/DN Status
SP:	Device:
RTP:	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:
	Device:

## System Test Log record

You can check under the heading 5.Sys Test Log to find a list of diagnostic test results, audits, event messages, and alarm codes. Use the following chart to record these log items when you run a Maintenance session.

### System Test Log

---

5.Sys Test Log		
Log Item	Time of log item	Number of repetitions
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
	:	
Time and date that log was checked	:	/ /

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Maintenance session

## System Administration Log record

You can check under the heading 6.Sys Admin Log to find a list of administrative events performed on the Norstar system. Use the following chart to record these log items when you run a Maintenance session.

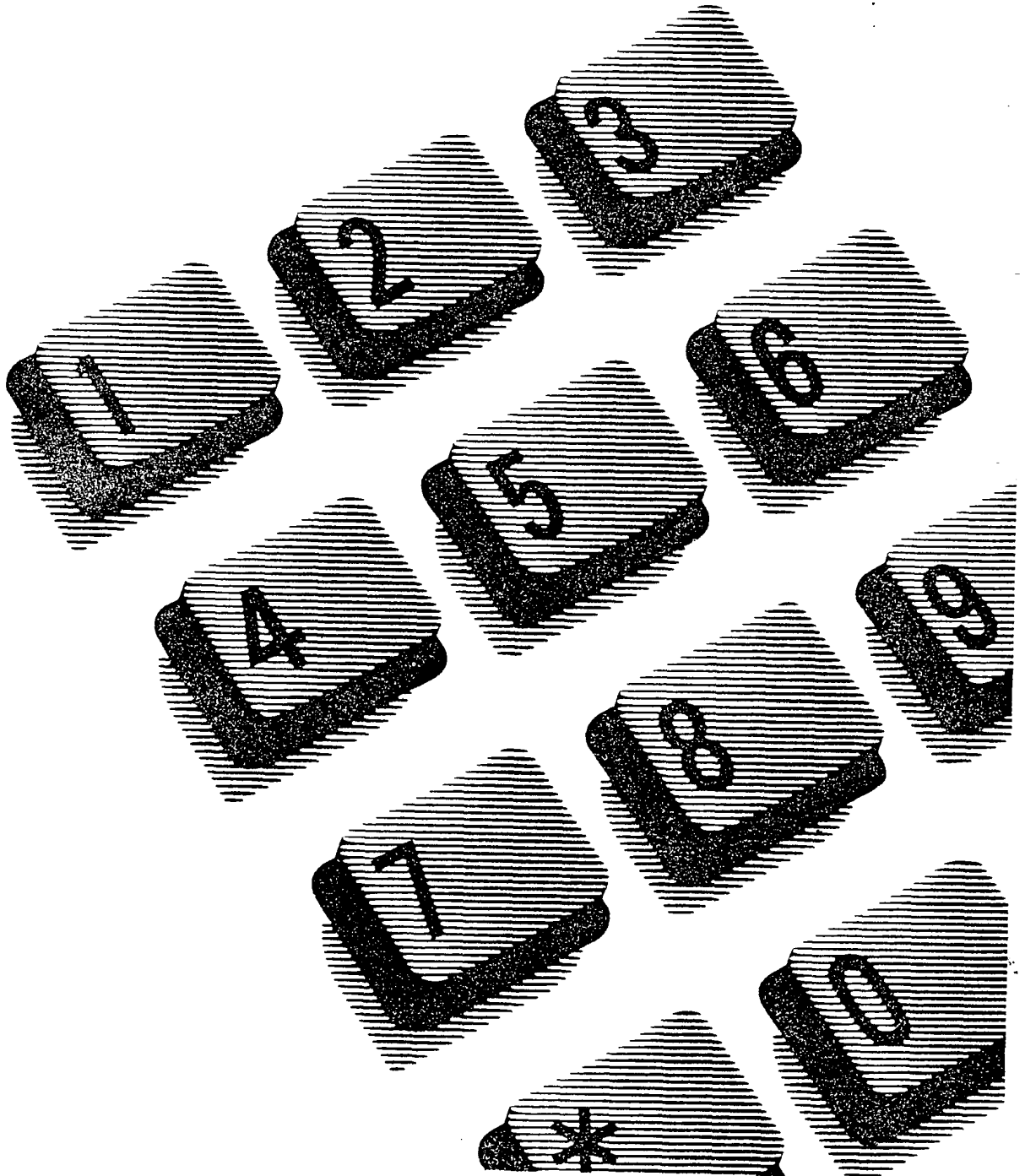
### System Administration Log

6.Sys Admin Log		
Log Item	Time of log item	Number of repetitions
	:	
	:	
	:	
	.	
	:	
	:	
	:	
	:	
Time and date that log was checked	:	/ /
Log Item	Time of log item	Number of repetitions
	:	
	:	
	.	
	:	
	:	
	:	
Time and date that log was checked	:	/ /

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Maintenance session

# Hardware upgrades



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# Introduction to upgrading the Norstar system

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Upgrading a Norstar system may involve installing the following hardware:

- Two-port or Six-port Expansion Cartridge
- Trunk Cartridges (TC) • Loop Start, E&M/DISA, or DID
- Trunk Module (TM)
- Station Module (SM)
- DS-30 cables for each module
- Power Bar(s)

## Flexible Numbering Plan and DS-30 cables

To avoid gaps in the numbering plan, use the rule described in the installation chapter under Connect DS-30 cables:

- plug Trunk Module DS-30s in the top port and work down,
- plug Station Module DS-30s in the bottom port and work up.

## Replacing components

To replace components on a system that is in operation, see the section on Replacing components which covers:

- replacing the Key Service Unit (KSU), TM or SM
- replacing the Trunk Cartridges • Loop Start, E&M/DISA, and DID
- replacing the Expansion Cartridge
- replacing the Feature Cartridge

# Adding an Expansion Cartridge to a non-expanded system

---

A non-expanded system consists of a KSU alone (without an Expansion Cartridge, TM, or SM). To expand the Norstar system with TM(s) or SM(s), install a Two-port or Six-port Expansion Cartridge in the existing system. Installing an Expansion Cartridge causes the default length of DNs to change from two digits to three digits.

Note: To verify the actual Directory Numbers (DN) assigned, which may have been altered by previous programming or by this upgrade, use Button Inquiry [Feature] \* 0.

## Mounting the new modules

1. Install mounting brackets for any additional TMs or SMs and hang these modules.
2. Unplug the KSU ac power cable from the ac outlet.
3. Install the appropriate Expansion Cartridge (the Two-port or the Six-port) for the upgrade. This is described in the Installation chapter in Expansion Cartridge Installation.
4. Plug one end of the DS-30 cables into the appropriate connector(s) on the new TM(s) and/or SM(s) as described in the Installation chapter in Connect DS-30 cables.
5. Plug the other ends of the DS-30 cables into the Expansion Cartridge.

## Installing the Expansion Cartridge

1. install the Power Bar(s) as described in the section on Power Bar installation and plug the ac power cords from the KSU and the modules into the Power Bar(s).
2. Power up the system again by plugging the ac power cord from the appropriate Power Bar into the ac outlet.



# Upgrading from a Two-port to a Six-port Expansion Cartridge

---

An expanded system consists of a KSU with an Expansion Cartridge. The cartridge is connected to one or more TMs or SMs by the DS-30 cable(s).

*Note:* To verify the actual Directory Numbers (DN) assigned, which may have been altered by previous programming or by this upgrade, use Button Inquiry [Feature] \* 0 .

## Mounting the new modules

1. Install mounting brackets for any additional TM(s) or SM(s) and hang these modules.
2. Unplug the Power Bar ac power cable from the ac outlet.
3. Unplug DS-30 cables from Two-port Expansion Cartridge.

*Note:* Label the DS-30 cables to identify the Expansion port numbers and modules they plug into if you have not already done so.

4. Remove the Two-port Expansion Cartridge while wearing a ground strap.

## Installing the Expansion Cartridge

1. Install a Six-port Expansion Cartridge. This is described in the section on Expansion Cartridge Installation.

### Re-connecting the cabling

1. Re-connect the original SM DS-30 cable(s) from the Two-port Expansion Cartridge into the Six-port Cartridge starting from the BOTTOM port (port #3) and working UP. This maintains the numbering plan sequence of DNs.
2. Plug any new SM DS-30 cable(s) into the Six-port Expansion Cartridge starting at the next highest port available on the Expansion Cartridge and working, UP.
3. Plug the original TM DS-30 cable(s) from the Two-port Expansion Cartridge into the Six-port Cartridge, starting from the TOP port (port #8) and working DOWN.
4. Plug any new TM DS-30 cable(s) into the Six-port Expansion Cartridge, starting at the next highest port available on the Expansion Cartridge and working DOWN.

*Note:* Remember to re-label the DS-30s at both ends with the new port number on the Six-port Expansion Cartridge.

### Connecting the Power Bar(s)

1. Plug the ac power cords from the new TM(s) and SM(s) into the ac Power Bar.

*Note:* Refer to the Power Bar installation chapter for Power Bar procedures and for information on using a second Power Bar.

2. Power up the system again by plugging the power cord from the Power Bar into the ac outlet.

# Adding a new M12X0 Trunk Module

---

M12X0 Trunk Modules (TM) can be connected to an existing KSU without having to power down the KSU if enough ports on the Expansion Cartridge are available to plug in the new Trunk Module(s).

However, if a new Expansion Cartridge is needed, the KSU must be powered down to allow installation of the cartridge. See Upgrading from a Two-port Expansion Cartridge to a Six-port Expansion Cartridge for the procedure or see the Installation chapter under Expansion Cartridge installation.

**Note:** Installing a TM where the KSU has not been powered down often results in a delay before the system recognizes the new TM. The delay may be a maximum of two minutes.

**Note:** Loop Start, E&M/DISA, and DID Trunk Cartridges can be installed in the same TM.

## Installing a new Trunk Module (TM)

1. Unpack the TM and the Trunk Cartridges (TC) for the TM.
2. Mount the TM according to the procedures shown in the Installation chapter: Mounting Procedure for KSU, TM and SM.

3. install Trunk Cartridge(s) according to the procedures shown in the Installation chapter: Trunk Cartridge (TC) installation.

**CAUTION**

To avoid possible equipment damage ensure that TM power is OFF when installing a Trunk Cartridge (TC).

4. Connect the TM external wiring according to the procedures shown in the Installation chapter: Connect KSU and TM external lines. Refer to the Technical data chapter for the M12X0 Trunk Module external lines wiring chart.
5. Connect the DS-30 cables according to the procedures shown in the Installation chapter: Connect DS-30 Cables.
6. Power up the TM by plugging the ac power cord into the Power Bar.  
*Note:* Refer to the Power Bar installation chapter for Power Bar procedures and for information on using a second Power Bar.
7. Do the Configuration and Administration programming for the additional lines following the procedures and charts provided in the programming chapters.

*Note:* It is important to program Trunk mode correctly. See Trunk Cartridge installation in the installation chapter and Trunk mode programming in the Trk/Line Data section of the Configuration chapter.

# Adding a new MOX16 Station Module

---

MOX16 Station Modules (SM) can be connected to an existing KSU without having to power down the KSU if enough ports on the Expansion Cartridge are available to plug in the new module(s). However, if a new Expansion Cartridge is needed, the KSU must be powered down to allow installation of the cartridge. See Upgrading from a Two-port Expansion Cartridge to a Six-port Expansion Cartridge for the procedure or see the Installation chapter under Expansion Cartridge installation.

1. Unpack the SM.
2. Install the SM according to the procedures shown in the Installation chapter:
  - Mounting Procedure for KSU, TM and SM
  - Connect KSU and SM wiring procedure. Refer to the Technical data chapter for the wiring chart: MOX16 SM station internal wiring.

Connect DS-30 Cables

3. Power up the SM by plugging the ac power cord into the Power Bar.

Note: Refer to the Power Bar installation chapter for Power Bar procedures and for information on using a second Power Bar.
4. Do the Configuration and Administration programming for the additional telephones following the procedures and charts provided in the Programming chapters. \*

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# Replacing components

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## Introduction

In a Norstar system, you replace components to upgrade the system or to replace faulty components. In either case, you should disable the components before replacing them. The Maintenance session chapter shows how to disable Norstar components. The following sections tell you how to replace these components.

### WARNING

To avoid electrical shock, do the following:

1. Unplug the power to any module before servicing.
2. Do not remove the cover of a module.
3. Refer to the Installation chapter or to this chapter when re-installing components.

## Replacing the KSU, TM or SM

You can replace the KSU, a TM or a SM without having to remove other components. Replacing a TM or a SM with a new module of the same type does not affect the system's programming. If you replace the KSU and you do not retain the Data Cartridge, you must reprogram the system.

*Note:* Removing a module without first disabling it causes an alarm to appear on the Alarm Telephone (if available). See the section on Alarms in the Maintenance session chapter.

To replace the module do the following:

### Disabling the module

1. Disable the module by running a Maintenance session (see the Maintenance session chapter).

## Unplugging the cabling

1. Unplug the module's ac power cord from the ac Power Bar. Detach the cord from the cable clip in the cable trough shelf.
2. Unplug the DS-30 cables and detach them from the cable clip on the front of the module.
3. Unplug the 50-pin connector(s) and detach the cable from the cable clip on the front of the module.

*Note:* To replace the Trunk Cartridge, see the following section on Replacing the Trunk Cartridge.

## Removing the module

1. Lift the module gently from underneath to free it from the cable trough and from the mounting bracket. Both the cable trough and the mounting bracket remain attached to the wall.

## installing the new module

1. To replace the module with a new one, simply slide the new module onto the mounting bracket, taking care that the prongs on the bottom of the module fit back into the cable trough properly.
2. Re-connect the 50-pin connector(s), DS-30 cables and ac power cord to the same connectors from where they were removed. (The DS-30 cables should have been labeled with the port number previously during initial installation.)
3. If the KSU was replaced and the Data Cartridge was not retained, re-program the system.
4. Enable the new module by running a Maintenance session.

## Replacing the Trunk Cartridge

### CAUTION

Do not touch the printed circuit board. This is an electrostatic-sensitive device.

**Note:** It is important to program Trunk mode correctly. See Trunk Cartridge installation in the Installation chapter and Trunk mode programming in the Trk/Line.Data section of the Configuration chapter.

### Disabling the Trunk Module

1. Turn OFF the power to the TM before unplugging or removing the cartridge(s).

### Removing the TC(s)

1. Open the latches on the Trunk Cartridge with a screwdriver or similar tool.
2. While holding the latches open, remove the defective cartridge from the slot.

### Installing the new TC

1. While wearing a grounding strap, remove the replacement cartridge from its anti-static package.
2. While holding the latches open, insert the new cartridge into the appropriate slot and close the latches at the same time to align the cartridge properly.

**Note:** The Trunk Cartridges are installed starting from the left slot to the right.



## Replacing the Expansion Cartridge

### CAUTION

If you replace a Six-port Expansion Cartridge with a Two-port Expansion Cartridge, the system will lose all Configuration and Administration programming. No programming is lost, however, if you upgrade from a Two-port to a Six-port Expansion Cartridge.

1. To replace the Expansion Cartridge, follow the same procedure as in Replacing the Trunk Cartridge.

## Replacing the Feature Cartridge

One or both parts of the Feature Cartridge can be replaced.

### Replacing a faulty component

If the Feature Cartridge is faulty, replace both the Software Cartridge and the Data Cartridge.

1. Ensure that there is no call activity by informing all Norstar users that the system will briefly be out of operation.
2. Turn OFF the KSU power (unplug the power cord).
3. While wearing a grounding strap, remove the Feature Cartridge from the KSU.
4. Insert the new Software Cartridge into the new Data Cartridge.
5. Insert the new Feature Cartridge into the KSU.
6. Turn ON the KSU power (plug in the power cord).

## Upgrading the system

For system upgrades, replace the Software Cartridge only. ◦

1. Ensure that there is no call activity by informing all Norstar users that the system will briefly be out of operation.
2. Turn OFF the KSU power (unplug the power cord).
3. While wearing a grounding strap, remove the Feature Cartridge from the KSU.
4. Remove the Software Cartridge from the Data Cartridge.
5. Insert the new Software Cartridge into the Data Cartridge.
6. insert the new Feature Cartridge into the KSU.
7. Turn ON the KSU power (plug in the power cord).

# Troubleshooting



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# Introduction to troubleshooting

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These troubleshooting procedures allow you to solve many problems in the Norstar system. Follow these procedures before replacing any components.

If you are experiencing difficulties with remote use of Norstar, or with network capabilities, refer to the Network troubleshooting chapter.

Norstar system troubleshooting procedures are divided into two main sections and several sub-sections as shown below.

## General troubleshooting

- Types of problems
- General troubleshooting procedure
- Testing the Norstar system
- Checking the hardware

## Specific troubleshooting

- Telephone operation trouble
- Norstar equipment trouble
- Optional equipment trouble

### WARNING

Replacement of components and servicing of hardware are to be performed by qualified personnel only.

# General troubleshooting

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## Types of problems

The problems you encounter will likely fall into one of the following categories:

### Misunderstanding of a feature

A problem may be reported because a Norstar user is unfamiliar with the operation of a given feature. You may be able to solve the problem simply by demonstrating how to use the feature correctly.

### Programming errors

You may encounter problems caused by errors in programming. A feature may have been programmed incorrectly or may not have been programmed at all.

### Wiring connections

Wiring problems are caused by loose, unconnected, or incorrectly connected wires. Use the procedures in the section on Checking the hardware as a guide.

### Equipment defects

You may encounter problems caused by Norstar equipment defects. See the section in this chapter on Specific troubleshooting problems for problems related to the system hardware.

## General troubleshooting procedure

### Diagnose the trouble

1. Ask the users for information on:
  - the types of problems they have experienced (related to placing or retrieving calls, to a feature, or to a specific line)
  - how frequently the problems have occurred
  - how many telephones are affected.
2. Test system features and functions. Use the tests described here in the section on Testing the system.

### Check how a feature is being used

1. A problem may have been reported because of a misunderstanding about how a feature works. You should confirm that the person who reported a problem understands the intended use and operation of any feature in question.

### Check for programming errors

1. Check that the programming recorded in the Programming Record is correct for the intended operation of the system, and verify that this Configuration and Administration programming has been correctly entered. In this Troubleshooting chapter, see the sections Testing the system and Specific troubleshooting problems.

### Check wiring or hardware connections

1. Check the wiring and hardware connections next. Refer to procedures in the section on Checking the hardware.

### Run a Maintenance session

1. If the problem persists, run a Maintenance session as described in the Maintenance chapter.

### Check equipment defects

1. If hardware is shown to be defective, replace it.
2. If the trouble requires expert advice, follow your company's procedure for obtaining assistance.



## Testing the **Norstar** system

Verify Norstar system functions and programming options by working through the user cards for Norstar telephones and optional equipment, as described below:

### Testing the **Norstar** telephone operations

1. Make and receive calls.
2. Make notes on any problems”
3. Check calls that have been put on hold.

### Programmable buttons

Use the following feature codes to check what is programmed on the programmable buttons.

Button Inquiry code      Feature \* 0

#### Personal programming

External Autodial code      Feature \* 1

Internal Autodial code      Feature \* 2

Program features      Feature \* 3

Personal Speed Dial entries      Feature \* 4

#### Language Choice

English      Feature \* 5 0 1

Alternate language      Feature \* 5 0 2

#### Ring and display settings

Ring Type      Feature \* 6

Ring Volume      Feature \* 8 0

Contrast Adjustment      Feature \* 7

## Checking Line and Telephone programming

You can use the Line and Telephone profile inquiry features-

(Feature  \* \* L I N E) and

(Feature  \* \* S E T) to verify the programming applied to a specific line or telephone. Refer to Introduction to Programming for a description of how the Line and Telephone profile features operate.

## Testing the optional equipment

1. Follow the procedures in the user cards or installation documentation for the following equipment:

- Analog Terminal Adapter (ATA)
- Auxiliary ringer (customer-supplied)
- Busy Lamp Field (BLF)
- Central Answering Position (CAP) modules
- Headset (customer-supplied)
- Music source (customer-supplied)
- Paging (customer-supplied)
- Station Auxiliary Power Supply (SAPS)

## Testing the **Norstar** system programming features

1. Try out some of the features such as System Speed Dial, Telephone/Line filters, and Class of Service.

## Testing Automatic Telephone Relocation

1. Check that Telephone Relocation is set to Y for yes in the Miscellaneous section of Configuration programming.
2. Move the telephone to another location to verify that a telephone can be re-located without re-wiring or re-programming.

## Checking the hardware

### WARNING

To avoid electrical shock, do the following:

1. Unplug the power to any module before servicing.
2. Do not remove the covers of a module.
3. Refer to the Installation chapter when re-installing components.

Follow this procedure in the sequence below for checking apparent hardware faults.

### **KSU** and module ac power cords check

1. Check if the LED on the KSU or module (if included in the installation) is ON.
2. If the LED is OFF, check that the ac power cords for the KSU and module are plugged into the ac Power Bar.

### Power Bar ac power cords check

1. Check that the ac power cord from the Power Bar is plugged into a working ac outlet.

**Note:** Two Power Bars are required if there are four or more modules. Make sure that the power cord from the second Power Bar is plugged into the first Power Bar.

### Feature Cartridge check

### CAUTION

Always power down before removing or inserting the Feature Cartridge.

1. Make sure that the Feature Cartridge is firmly seated in its slot.

### Expansion Cartridge check

**CAUTION**

Always power down before removing or inserting an Expansion Cartridge.

1. If the installation requires an Expansion Cartridge in the KSU, make sure it is inserted properly.

**Note:** If power is re-applied when the cartridge has been removed, the system programming will return to default settings.

### Trunk Cartridge check

**CAUTION**

Always power down the Trunk Module before removing or inserting a Trunk Cartridge.

1. If the installation requires a Trunk Module, make sure the Trunk Cartridge (TC) is inserted properly.

### DS-30 cables check

1. Make sure that both ends of the DS-30 cables (if included in the installation) are plugged into the KSU Expansion Cartridge and the module connectors.

### 50-pin connectors check

1. Make sure the 50-pin connectors for the external lines and for the internal wiring are plugged in and fastened securely. Refer to the wiring charts in the Technical data chapter.

### 25-pair wiring check

1. Ensure that the wires are terminated on the distribution block and connected to the correct pins. See the Technical data chapter for wiring charts.

### Internal wiring check

1. Check that the station loop resistance does not exceed 59 ohms on 0.5 mm or 24-American wire gauge.
2. If the loop length is greater than 305 m (1000 ft), ensure that the Norstar Station Auxiliary Power Supply (SAPS) is in place and functional.
3. Follow the *Norstar Station Auxiliary Power Supply Installation Card* for instructions.

### Cross-connections check

1. Check that both ends of cross-connect wires are attached.

# Specific troubleshooting

---

These troubleshooting procedures are designed for the Norstar system. Follow the procedures here before replacing any components.

Specific troubleshooting procedures cover the following main sections:

- Telephone operation trouble
- Norstar equipment trouble
- Optional equipment trouble

## Telephone operation trouble

The troubleshooting problems listed here focus on trouble with making calls or using Norstar features. Included here is a list of common telephone operation problems.

### Autodial button cannot be programmed

1. Refer to the Telephone features chapter.
2. If the message `Autodial full` appears, there is no memory left for Autodial buttons.
3. If the message `Access denied` appears, someone may be programming changes. Wait five minutes, then try again to program the buttons.
4. Run a Maintenance session and look at the events shown under `5.Sys Test Log`.

### Calls cannot be made

1. Refer to the section on General troubleshooting.

OR

If the telephone is dead, refer to the procedure under Telephone dead in this section.

2. Press `Feature` `*` `0`.
3. Select a line button.
4. If an incorrect line number or name appears (or if neither appears) on the Norstar telephone display, check the Configuration settings.

OR

If the correct line number or name appears on the Norstar telephone display, make sure the external lines are properly cross-connected.

5. If Trunk Modules or Trunk Cartridges are installed, refer to Trunk Cartridges and Trunk Module down, in the section on Norstar equipment trouble.

*Note:* To check for other Norstar related problems (for example, no dial tone or a dead module) refer to the appropriate procedures in this section.

6. Check the external lines by terminating a test telephone directly on the distribution block, or equivalent, which connects to the Trunk Module.
7. Ensure that the 25-pair cable is properly connected to the modules or the KSU.

#### Running a Maintenance session to check the external line

1. Run a Maintenance session to ensure that the line (and the Trunk Cartridge) is not disabled or unequipped. (See Port/DN Status in the Maintenance session chapter.)

2. Disable the appropriate ports using the subheading 2. Port/DN Status.

*Note:* For charts showing external line port number defaults, refer to the Technical data chapter in the section on Norstar system numbering plan.

3. Enable the appropriate ports using the subheading 2. Port/DN Status.
4. If you still cannot make external calls, power down, then power up the KSU. This should be done after business hours to avoid losing calls.

*Note:* To check the line, contact the telephone company.



### Dial tone absent (on external lines)

1. Use Button Inquiry (Feature) [\*][0] to display the number of the external line you are testing.
2. Check for a dial tone by using a test telephone at the connections for the external line on the distribution block.
3. If applicable, make sure that a Trunk Cartridge for the line is properly installed in the Trunk Module.
4. Make sure that the Trunk Module DS-30 cable is properly connected to the Expansion Cartridge on the KSU.
5. Refer to the sections Trunk Cartridges and Trunk Module down, in this chapter.
6. Run a Maintenance session to ensure that the line is not disabled. (See Port/DN Status in the Maintenance session chapter.)
7. While you are in the Maintenance session, run a connectivity test on the external line that has no dial tone. This should be done after business hours to avoid losing calls.

## Hung lines at a telephone

Line indicators that have been solid for a long time are the only visible indication that lines are hung.

A line that has been redirected using Line Redirection may, under some circumstances, remain busy after a call is over. If this happens, the outgoing line for the redirection will also remain busy. You can clear such a hung line only at the telephone that was used to redirect the line.

1. Select Button Inquiry ((Feature) \* 0) at the telephone that was used to redirect the line.
2. Press the button of the redirected line.
3. Press SHOW or # .
4. Press DEF or Q ,

Both the redirected line and the outgoing line for the redirection should now be cleared.

For lines that are hung for any other reason you will have to run a Maintenance session.

1. Run a Maintenance session and go to the subheading 3. Module Status.
2. If the hung line is on the KSU, disable and enable Module 2.  
OR  
If the hung line is on a Trunk Cartridge, disable and enable only that Trunk Cartridge.

## Music on Hold/Background Music trouble

*Note:* Although Music on Hold and Background Music are separate features, they share the same wiring and customer-supplied music source.

1. Ensure that the proper feature access code [Feature] 8 6 is turned ON. Adjust the volume using the volume control bar.
2. Use the Button inquiry feature [Feature] \* 0 to verify the feature on a programmable memory button.
3. If there is trouble with Music on Hold, check Call Handling in Configuration.  
OR  
If there is trouble with Background Music, check Miscellaneous in Configuration.
4. Check the wiring between the music source and the 50-pin connector.

## No Music on Hold/Background Music

Service	Pin
Music on Hold (Ground)	50 (Violet-Slate)
Music on Hold (Input)	25 (Slate-Violet)

*Note:* Also check the polarity of the connections between the music source and the distribution block.

5. Ensure that the music source is turned ON, is operational, and the volume control is set properly.

*Note:* Any music source with a low-output impedance (for example, less than 3,300 ohms) can be connected. Nominal output level should be less than one volt.

## Personal Speed Dial cannot be programmed

1. See the procedure Autodial buttons cannot be programmed, described earlier in this section.

## Telephone dead

1. If more than one telephone is affected, refer to the section in this chapter entitled Station Module down.
2. Check for the dial tone.
3. Check the display.
4. If the problem persists, replace the telephone with a known working Norstar telephone of the same type so that the programming is retained.
5. Check the internal wiring at both the modular jack and the distribution cross-connect.

6. Check the line cord.

Note: A TCM port should have between 15 and 20 V dc across the Tip and Ring when the telephone is disconnected.

## Running a Maintenance session to test a dead telephone

1. Run a Maintenance session to ensure that the telephone is not disabled. (See Port/DN Status in the Maintenance session chapter.)
2. While you are in the Maintenance session, run a connectivity test on the port connected to the telephone: This should be done after business hours to avoid losing calls.
3. Disable the port connected to the telephone using the subheading: **2.Port/DN Status.**
4. Enable the port connected to the telephone using the subheading: **2.Port/DN Status.**

## Morstar equipment trouble

This section concerns Norstar system equipment faults. Check first for user problems, then wiring and programming errors (as described in the General troubleshooting section) before replacing Norstar equipment.

### KSU down

1. See the section on General troubleshooting procedure.
2. If ac power is present and the LED indicator on the KSU is OFF, replace the KSU. (The location of the LED indicators is described in the installation chapter.)

### Morstar telephone display unreadable

If the trouble is with an M7310 Telephone or an M7324 Telephone:

1. Press  \* .
2. Press the Up or  display button to adjust the display to the desired level.
3. Press the  display button.

If the trouble is with an M7100 Telephone or M7208 Telephone:

1. Press  \* .
2. Press a number on the dial pad to adjust the display to the desired level.
3. Press .

If the display is still unreadable:

1. Disable the problem telephone.
2. Replace the problem telephone with a known working one.
3. Enable the working telephone.

### Trunk Cartridge trouble

1. Check that the cartridge is properly inserted in the Trunk Module.
2. Run a Maintenance session to ensure that the cartridge is not disabled.
3. While you are in the Maintenance session, run a connectivity test on the appropriate ports.

If the problem persists, follow as many of the next steps as required to solve the problem:

1. If ac power is present and the LED indicator on the Trunk Module is OFF, replace the Trunk Module.
2. Replace the DS-30 cable.  
*Note:* Refer to the Hardware upgrades and replacing components chapter for information on replacing components.
3. Replace the Trunk Cartridge.
4. Replace the Expansion Cartridge.
5. Replace the KSU.

## Trunk Module down

1. See the section on General troubleshooting procedure.
2. Run a Maintenance session to ensure that the Trunk Module is not disabled. (See the Maintenance session chapter.)
3. Disable the module using the Maintenance subheading `3. Module Status`.
4. Enable the module using the Maintenance subheading `3. Module Status`.
5. While you are in the Maintenance session, run a connectivity test on the appropriate ports.
6. Check the external line by terminating a single line telephone directly on the distribution block, or equivalent, which connects to the Trunk Module.

If the problem persists, follow only as many of the next steps as required to solve the problem:

1. If ac power is present and the LED indicator on the Trunk Module is OFF, replace the Trunk Module.
2. Replace the DS-30 cable .  
Note: Refer to the Hardware upgrades and replacing components chapter for information on replacing components.
3. Replace the Trunk Cartridge.
4. Replace the Expansion Cartridge.
5. Replace the KSU.

### Station Module down

1. See the section on General troubleshooting procedure.
2. Run a Maintenance session to ensure that the module is not disabled. (See Module Status in the Maintenance session chapter.)
3. Disable the Station Module using the subheading `3.Module Status`.
4. Enable the Station Module using the subheading `3.Module Status`.
5. If the Station Module is still down, power down, then power up the KSU.

If the problem persists, follow as many of the next steps as required to solve the problem:

1. If ac power is present and the LED indicator on the Station Module is OFF, replace the Station Module.
2. Replace the DS-30 cable.  
Note: Refer to the Hardware upgrades and replacing components chapter for information on replacing components.
3. Replace the Expansion Cartridge.
4. Replace the KSU.



## Optional equipment trouble

Other equipment trouble for the Analog Terminal Adapter (ATA), auxiliary ringer, and external paging are described here.

### Analog Terminal Adapter (ATA) trouble

1. Check the single line telephone by using a known working test Norstar telephone.
2. Check the connections to the jack.
3. Check the connections to the ATA.
4. Disconnect the ATA and replace it with a working Norstar telephone. If the telephone still works properly, the KSU and/or the SM are operating properly.
5. Verify that the programming has been done as described in the *Norstar Modular DR4 Programming Record* and the *Norstar Analog Terminal Adapter Installation Card*.
6. If the trouble seems to be in the KSU or SM, double-check all wiring and programming options. If this does not help, refer to the sections on KSU down or Station Module down.

OR

If the trouble seems to be with the ATA, disable the ATA and replace it with a known working one.

### Running a Maintenance session to test an **ATA**

1. Run a Maintenance session to ensure that the ATA is not disabled. (See Port/DN Status in the Maintenance session chapter.)
2. While you are in the Maintenance session, run a connectivity test on the port connected to the telephone. This should be done after business hours to avoid losing calls.
3. Disable the port connected to the ATA using the subheading: 2.Port/DN Status.
4. Enable the port connected to the ATA using the subheading: 2.Port/DN Status.

## Auxiliary ringer trouble

1. If the auxiliary ringer is used for Service Modes (Night, Evening, or Lunch service), ensure that Service Modes is activated from the Control Telephone.
2. Check the wiring between the auxiliary ringer generator and the ringing device. Refer to the auxiliary ringer wiring chart.
3. Check the wiring between the auxiliary ringer generator and the distribution block:

### Auxiliary ringer wiring

---

Feature	Pin
Auxiliary ring (Make)	43 (Yellow-Green)
Auxiliary ring (Common)	18 (Green-Yellow)

---

4. Ensure that the auxiliary ringer contacts are operating properly by checking for contact operation with an ohmmeter across the auxiliary ringer pin contacts listed above.
5. Check that the auxiliary ringer pin contacts are programmed to operate in conjunction with any or all of the features in the auxiliary ringer programming chart.

## Auxiliary ringer programming

Feature	Programmed in	
Auxiliary ringer: Lines	Configuration:	Line Data
Auxiliary ringer: Sets	Administration:	Telephone abilities
Service Modes (Night, Evening, Lunch)	Administration:	Service Modes

Note: The current capacity of the Norstar relay contacts is 50 mA dc. They are designed to operate with the auxiliary ringer generator, or equivalent.

## External paging trouble

1. Use the Button Inquiry feature [Feature] [\*] [0] to verify the feature of a programmable memory button.
2. Check the wiring between the 50-pin connector and the paging amplifier or between the connections shown in the external paging wiring chart.

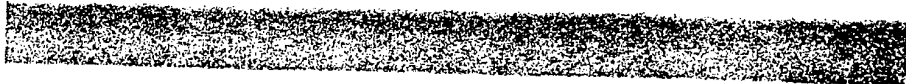
### External paging wiring

---

Feature	Pin
Page out (Tip)	47 (Violet-Orange)
Page out (Ring)	22 (Orange-Violet)

---

3. Test external paging [Feature] [6] [2] to ensure that it is working. The output signal from the Norstar KSU is 775 mV across 600 ohms.



# Network troubleshooting

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# Introduction

---

The troubleshooting procedures in this chapter will help you solve problems specific to the operation of your Norstar system in a network. Try these procedures and suggested solutions before replacing any components.

**WARNING**

Only qualified personnel can replace components and service hardware.

The procedures and suggested solutions are grouped by their symptom. Where a symptom may have more than one cause, each cause is followed by a brief paragraph describing the procedure.

Where more than one procedure is given, the procedures represent different options from which you should select just one.

## Getting ready

Before you begin troubleshooting, gather all the information that is relevant to your network configuration:

- the *Norstar Modular DR4 Programming Record*
- the *Norstar Modular DR4 Network Configuration Record*
- records from people who use the network
- information about other hardware and non-Norstar features within the public or private network

## Other troubleshooting tools

Remember that you can check many of the system parameters without having to go into a Configuration or Administration session.

- From an M7310 or M7324 telephone, check line data by entering the feature code for Line profile:

Feature  \* \* L I N E .

- From an M7310 or M7324 telephone, check telephone data by entering the feature code for Set profile:

Feature  \* \* S E T .

- To check the buttons on a particular telephone, use the feature code for Button inquiry: Feature  \* 0 .

---

# Symptoms to Norstar users

---

Certain symptoms, although they can occur in many situations, may mean that there is a problem with the network configuration.

This section describes symptoms that a local caller in the Norstar system might encounter.

## Symptoms at the alarm telephone

The troubleshooting procedures in this section focus on alarm codes specific to network configuration.

### Alarm telephone shows **Alarm: 6 1-X-V**

You have configured one or more lines as one trunk type, but the Trunk Cartridge in slot Y of Trunk Module X is not that type.

- Reconfigure the Trunk type to match the type of Trunk Cartridge that has been installed in slot Y of Trunk Module X.

OR

- Install a Trunk Cartridge in slot Y that matches the type of Trunk you have configured.

### Alarm telephone shows **A 1 arm: 62-V-Z**

You have configured one or more Loop Start trunks as auto-answer, but the hardware on trunk port Z does not provide disconnect supervision.

- Reconfigure your auto-answer Loop Start trunk or trunks as manual-answer.

OR

- If the line number of your auto-answer Loop Start trunk is 009 or greater, install a Loop Start Trunk Cartridge with disconnect supervision in slot Y, trunk port Z.

OR

- If the line number of your auto-answer Loop Start trunk is between 001 and 008, install a Version 2 or higher KSU.

### Alarm telephone shows **A 1 arm: 63-Z**

The trunk of port Z has tried, unsuccessfully, to access a DTMF receiver. You have configured more auto-answer Loop Start trunks than you have DTMF receivers.

- Increase your ratio of E&M/DISA Trunk Cartridges to Loop Start trunks. The maximum is one E&M/DISA Trunk Cartridge for every two Loop Start trunks that you have configured as auto-answer.
- Make sure that all of your E&M/DISA trunks are configured as E&M or DTMF (whichever applies) so that the system knows the receivers are there.

The DTMF receivers are not working properly.

- Check the DTMF receivers on every E&M/DISA Trunk Cartridge.

## Symptoms at other **Norstar** telephones

This section deals with messages or calls at any telephone within the Norstar system.

### Auto-answer line rings at a **Norstar** telephone

You configured a Loop Start trunk as auto-answer but the installed hardware does not support disconnect supervision. (In this case, the symptom would be accompanied by the Alarm 62 code symptom.)

— Reconfigure the trunk as manual-answer.

OR

— If the line number of your auto-answer Loop Start trunk is 009 or greater, install a Loop Start Trunk Cartridge with disconnect supervision in slot Y, trunk port Z.

OR

— If the line number of your auto-answer Loop Start trunk is between 001 and 008, install a Version 2 or higher KSU.

You configured the line as auto-answer and supervised, and then reconfigured the line as unsupervised.

— Reconfigure the line as manual-answer.

OR

— Reconfigure the line as supervised.

## Prime telephone gets misdialed calls

The digits sent by a switch at a Central Office or in the private network did not match any Rec'd #, the Auto DN, or the DISA DN. The call has been routed to the Prime telephone for the incoming trunk.

- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- Verify all the digit strings that the switch should be sending.
- Check that you have defined the corresponding Rec'd # for every target line in your system.
- Make sure that the published telephone numbers for your network are correct.

## Selected line shows **Not** in service

You have configured a DTMF line to appear at the telephone.

- Reconfigure the line so that it does not appear at any telephone and configure another line to replace it at the telephone.
- OR
- Reconfigure the line as a different type and install trunk hardware to support the new type of line.

The Norstar system has taken an E&M line out of service because the far end did not respond to a disconnect signal from the Norstar system. The symptom would be accompanied by Event code 263 in the System Test Log.

- Check with the operators of the system at the far end and find out if their system is operating.
- Check that your system hardware is receiving signals properly.
- Check the trunk between your system and the far end system for a break.

The Norstar system has detected no response on an E&M line from the system at the far end. The symptom will be accompanied by Event code 265 in the System Test Log.

- Check with the operators of the system at the far end and get them to troubleshoot their system.

The line has been disabled for maintenance purposes.

- Enable the line.
- OR
- If the line will be out of service for some time, configure another line to replace it on the telephone.

### Selected line pool shows No free lines

If this happens often, there are not enough lines in the line pool to serve the number of line pool users.

- If the line pool contains Loop Start trunks, enter Configuration and move under-used Loop Start trunks from other line pools into the deficient line pool.

OR

- If the line pool contains E&M trunks, order more trunks from the telephone company or private network vendor. install additional Trunk Cartridges of the appropriate type. In Configuration programming, add the new trunks to the deficient line pool.

### Dialed number shows Restricted call

If this happens often, the Norstar telephone or user has an inappropriate set of dialing restrictions.

- In Administration programming, check the Set filter and the Line/set filter for the telephone. Assign restrictions and exceptions that will permit access to the required destinations.

OR

- Give the Norstar user a Line Pool access code to a line pool that permits access to the required destinations.

OR

- If this happens to a number of people who share a line, check the Line filter. Assign restrictions and exceptions that will permit access to the required destinations.

OR

- If the caller used the changed Class of Service, check the User filter for the Class of Service. Ensure that the restrictions and exceptions are appropriate for the user.



## Remote feature code gets no response

A Norstar user has called into another Norstar system and is trying to activate a remote feature but gets no response after dialing the feature code. The Norstar user may have pressed the Feature button to activate the remote feature.

- Ensure that remote callers are dialing the feature code correctly. Only the asterisk (\*) character, followed by the feature code, can activate a remote feature.

# Symptoms to remote callers

---

Symptoms described in this section are those which appear to a remote caller attempting to use Norstar system resources. The remote caller may be calling from the public network or the private network.

## Calling directly to Norstar

A remote caller is trying to reach a Norstar telephone or device and reports one of these symptoms,

### Dialed number gets ringback and the wrong person

The digits sent by a switch at a Central Office or in the private network did not match any Rec'd #, the Auto DN, or the DISA DN. The call has been routed to the Prime telephone for the incoming trunk.

- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- Verify all the digit strings that the switch should be sending.
- Check that you have defined the corresponding Rec'd # for every target line in your system.
- Make sure that the published telephone numbers for your network are correct.

### Dialed number gets stuttered dial tone instead of ringback

The remote caller has tried to reach a Norstar target line, but has reached a trunk with DISA instead. Alternatively, the Norstar system has mapped incoming digits onto the DISA DN.

- Verify all the digit strings that the switch should be sending.
- Check that you have defined a corresponding Rec'd # for every target line in your system.
- Check that you have defined the correct DISA DN for your system.
- Make sure that the published telephone numbers for your network are correct.

### Dialed number gets dial tone instead of ringback

The remote caller has tried to reach a Norstar target line, but has reached the Norstar system instead.

The Norstar system has mapped the incoming digits onto the Auto DN.

- Verify all the digit strings that the switch should be sending.
- Check that you have defined the corresponding Rec'd # for every target line in your system.
- Check that you have defined the correct Auto DN for YOUR system.  
Make sure that the published telephone numbers for your network are correct.

### Dialed number gets busy tone

The target line that the incoming digits map onto is busy, and there is no Prime telephone for the incoming trunk.

- For maximum call coverage, make sure that you configure a Prime telephone for every incoming trunk.

## Dialed number does not get through

The digits sent by a switch at a Central Office or in the private network did not match any Rec'd #, the Auto DN, or the DISA DN. There is also no Prime telephone assigned for the incoming trunk. In this case, the caller may hear overflow tone from the Norstar system or a recorded message from the originating switch.

- Configure a Prime telephone for every incoming trunk.
- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- Verify all the digit strings that the switch should be sending.
- Check that you have defined a Rec'd # for every target line in your system.
- Make sure that the published telephone numbers for your network are correct.

The Norstar system did not receive some or all of the incoming digits.

- Check that the system hardware is receiving signals properly.
- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- If the switch at the far end is sending pulse signals, make sure they are being sent at the proper rate. (Pulse digits must be 300 ms or more apart for Norstar to receive them.)

If remote callers are having difficulty getting through from the public network, there may be a problem with your DID TC:

- Connect a single-line telephone with DTMF tones to a DID trunk input on the DID TC.

- Use the single-line telephone to enter a Rec'd # that has been programmed for a target line in your system. Listen for ringback.
- If the Rec'd # does not result in ringback, check that the target line is assigned to a telephone and that there is a Prime telephone assigned for the DID trunk.
- If you are still unable to achieve ringback after the programming for the Rec'd # is verified, check the cross-connections. If all the cross-connections are correct replace the Trunk Cartridge.

If remote callers are having difficulty getting through from the private network, there may be a problem with your E&M TC.

- Check the cross-connections for the E&M/DISA TC.
- If the E&M trunks are connected to another Norstar system, ensure that connections have been made as indicated in the chart below:

#### Back-to-back cross connections

1st distribution block	T	R	TI	RI	E	SG	M	SB
Next distribution block	T1	R1	T	R	SB	M	S G	E

- Use the table below to check for correct voltage on the E&M/DISA leads:

#### Voltages on E&M leads

Leads	Voltage: active	Voltage: inactive
$V_{T-R}$	125 mV ac on steady dial tone	0 V ac
$V_{T1-R1}$	125 mV ac on steady dial tone	0 V ac
$V_{E-SG}$	0 V dc to -5 V dc	-48 V dc
$V_{M-SB}$	0 V dc to + 2 V dc	-48 V dc

## Calling Norstar through DISA

A remote caller expects to hear two different kinds of tones when calling a DISA number. The caller expects stuttered dial tone first to indicate that the system is ready for a COS password. Once the password is entered, the caller expects to hear dial tone.

### Dialed number gets **ringback** instead of stuttered dial tone

The remote caller has dialed a DISA number, but has instead reached a target line, or has been routed to the Prime telephone for the auto-answer trunk. The Norstar system has mapped the incoming digits from a switch onto a target line, or has been unable to map the digits anywhere.

- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- Verify all the digit strings that the switch should be sending.
- Check that you have defined the correct DISA DN for your system.
- Make sure that the published telephone numbers for your network are correct.

## Dialed number gets dial tone instead of stuttered dial tone

The remote caller has dialed a DISA number, but has reached the Norstar system instead. The Norstar system has mapped the incoming digits from a switch onto the Auto DN.

- Verify that the switch is sending the correct number of digits for the Rec'd # length defined in your system.
- Verify all the digit strings that the switch should be sending.
- Check that you have defined the correct DISA DN for your system.
- Make sure that the DISA DN and Auto DN are different enough to prevent misdialing.
- Make sure that the published telephone numbers for your network are correct.

## COS password gets overflow tone

The remote caller may have entered an invalid password.

- Check the Administration programming under COS passwords and verify that the caller has a valid password.

Note: Make sure that all users are informed of password changes.

The remote caller may have entered an asterisk (\*) as one of the 6 digits.

- Instruct remote callers to enter their COS password correctly: enter 6 digits that are numeric characters. The number sign (#) may be entered after the 6th digit, but is not required.

The remote caller may have entered a number sign (#) as one of the 6 digits.

- Instruct remote callers to enter their COS password correctly: enter 6 digits that are numeric characters. The number sign (#) may be entered after the 6th digit, but is not required.

The remote caller may have waited more than 15 seconds between entering digits.

- Instruct remote callers to enter their COS password correctly: enter 6 digits that are numeric characters. and do not pause too long between digits The number sign (#) may be entered after the 6th digit, but is not required.

The caller may be dialing from a rotary-dial telephone or from a push-button telephone that has the dial-mode set to 'pulse'.

- Inform remote callers that they must dial from a push-button telephone that has the dial-mode set to 'tone'.



## Using Norstar remote features

A remote caller has received dial tone for the Norstar system but then encounters this symptom when trying to enter the remote feature code.

### Dialed feature code gets overflow tone

The remote caller does not have access to that feature.

- If the call came in on a trunk with DISA, check the Class of Service that is associated with the remote caller's COS password. If it is too restrictive, assign another COS password that is more suitable.
- If the call came in on a trunk without DISA, check the Class of Service that you assigned to the incoming trunk. Make sure that it gives the appropriate access to the remote caller.

The feature code is not valid.

- Ensure that remote callers have a correct listing of the features that are programmed for remote access.
- Ensure that remote callers are dialing the feature code correctly. Only the asterisk (\*) character, followed by the feature code, can activate a remote feature.

The caller may be dialing on a rotary-dial telephone or on a push-button telephone that has the dial-mode set to 'pulse'.

- inform remote callers that they must dial from a push-button telephone that has the dial-mode set to 'tone'.

## Dialed feature code gets busy tone

A resource that the remote feature uses may currently be in use. For example, a remote caller trying to use the paging feature would get a busy tone if the auxiliary speaker were being used at the time.

- If repeated attempts to use the remote feature get busy tone, there may be a malfunction in a resource that the feature uses. Check that the remote feature hardware is functioning normally.

## Calling through **Norstar** to another system

A remote caller is trying to use your Norstar trunks to reach another system and reports one of these symptoms.

### Line Pool access code gets overflow tone

If the published Line Pool access code is valid, the remote caller does not have access to that line pool.

- If the incoming trunk answers with DISA, give the remote caller a COS password that permits access to that line pool.  
  
OR
- Change the Class of Service for the incoming trunk so that it permits access to that line pool.  
  
OR
- Give the remote caller a Line Pool access code that is permitted within the Class of Service on the incoming trunk.

If the published Line Pool access code is invalid, the system has attempted, without success, to match the invalid code to a Norstar target line DN, and there is no Prime telephone for the auto-answer trunk.

- Make sure that the published Line Pool access codes are correct.
- Check that the Line Pool access codes have been entered correctly under 4. Miscellaneous in Configuration programming.

The caller may be dialing from the network on a rotary-dial telephone or on a push-button telephone that has the dial-mode set to 'pulse'.

- Inform remote callers in the public network that they must dial from a push-button telephone that has the dial-mode set to 'tone'.

### Line Pool access code gets **ringback**

The published Line Pool access code is invalid, and the system has routed the call to the Prime telephone for the incoming trunk.

- Make sure that the published Line Pool access codes are correct.
- Check that the Line Pool codes have been entered correctly under 4. Miscellaneous in Configuration programming.

### Line pool access code gets busy tone

There are not enough lines in the line pool to serve the number of users.

- If the line pool contains Loop Start trunks, enter Configuration and move under-used Loop Start trunks from other line pools into the deficient line pool.

OR

- If the line pool contains E&M trunks, order more trunks from the telephone company or private network vendor. Install additional E&M Trunk Cartridges. In Configuration programming, add the new trunks to the deficient line pool.

OR

- Create a separate line pool for remote users only.

There are DID lines in the line pool.

- In Configuration programming, make sure that there are no DID lines in any of the line pools.

## Dialed number gets no response

The remote caller, after accessing a line in a line pool, may have started dialing before the far end was ready to receive digits.

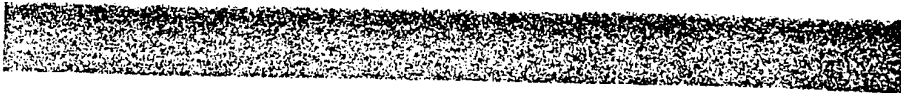
- Instruct remote callers to wait until they hear feedback before entering any digits.

There may be a malfunction in the line that the remote caller accessed.

- If the problem is persistent, check that all lines in the affected line pool are functioning normally.

There may be a malfunction in the system that the caller is trying to reach.

- Inform the operators of the system at the far end that the dialed number is not getting through.



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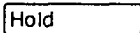






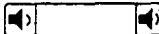
## Using a feature

To use a Norstar feature, enter the feature code and watch your telephone display for instructions. Different displays come up, at different times, depending on how you invoke the feature and the choices you make while using the feature. If you want more information about a display, look it up in the Display section of each feature listing.

Note that some features only work in certain circumstances. For instance, to use Conference you must have two calls at your telephone, one active and one on hold.

## One line and two line displays

All Norstar telephones have LCD displays that give you information about your calls and guide you through Norstar features. The M7100 and M7208 telephones have a one-line display. The M7310 and M7324 telephones have a two-line display. The second line of a two-line display shows the functions of the three buttons directly below it. If you have a telephone with a two-line display, you can use these display buttons. Some display buttons, such as TRANSFER and ALL, are simply shortcuts. If you have a telephone with a one line display, these shortcuts are not available. Other display buttons, such as OK and SHOW, perform essential functions. If your telephone has a one line display, you can use the following buttons in place of these display buttons:

<u>OK</u>		<u>CANCEL</u>	
<u>QUIT</u>		<u>VIEW</u>	
<u>ADD</u>		<u>OVERRIDE</u>	
<u>SHOW</u>		<u>BKSP</u>	

All displays listed in this book are shown as they appear on the two line display, except those that appear only on telephones with a single line display. If you are using a telephone with a single line display, ignore the second line of the display shown in this book, and the instructions for using display buttons.

### Common feature displays

You may see the following displays when you use a feature.

Access denied

Someone is in Configuration or Administration programming. You cannot use programming features. Try again later.

Feature timeout

You have taken more than 15 seconds to press a button in response to a display.

Invalid code

You have entered an invalid feature code.

Not available

You have tried to use a feature that is not available in the present set-up of your Norstar system.

Set locked

You cannot use the feature you have chosen because your telephone is locked. See Telephone Administration Lock in Customizing your telephone.

### Dialing and Answering the telephone

Many Norstar features require you to dial telephone numbers. The displays associated with dialing are listed in the Dialing section. If you see a display that is not listed with the feature you are using, look for it in the Dialing section. All the displays that appear when you are receiving a call are listed in the Answering the telephone section.

### One button access

You can program most Norstar feature codes onto telephone memory buttons so that you can use the feature by pressing a single button. See Feature programming for instructions.

Whenever this chapter tells you to enter a feature code, you can do so either by pressing the buttons shown in the feature description or by pressing a memory button on which the feature code has been programmed. Similarly, you can enter a telephone number by pressing an Autodial button.

### Canceling a feature

Some features change the way your telephone works. To make your telephone work normally again you must cancel the feature. To cancel a feature, press **[Feature]**, then **#** and the feature code. Thus, to cancel Call Forward, which you activate by pressing **[Feature]** **4**, press **[Feature]** **#** **4**.

If a feature code is programmed onto a memory button, you can cancel the feature by pressing the memory button.

If you change your mind in the middle of using a feature, you can back out by pressing **[Feature]** or **[Rls]**. Be aware that pressing **[Rls]** will disconnect your current call.

### M7100 telephone

Because the M7100 telephone does not have any line buttons it sometimes works slightly differently from other Norstar telephones. Where other telephones may require you to select a line button to answer a call, on the M7100 you simply pick up the receiver. Where other telephones require you to select a line button to take a call off hold, you press **[Hold]** on the M7100. The M7100 cannot have a **[Handsfree]** button. You will find special instructions for the M7100 in some feature descriptions.

---

# Answering the telephone

---

## Answering

Your Norstar telephone can receive many different types of calls. Your telephone's display tells you what sort of call you are receiving. The usual way to answer a call is to pick up the receiver, but there are several other possible methods, depending on how your system is set up and what kind of call is ringing.

## Callback

When you direct a call you have answered to another telephone, the system monitors the call to make sure someone answers it. If no one answers a call within a set time, the system directs it back to you. Callback generates a variety of displays. Most occur after a programmable delay and are listed in this section. Some occur immediately, if the telephone to which you are directing a call is out of service or otherwise unavailable. These are listed with the descriptions of the features in which they occur.

## Call Queuing

Feature

When you have more than one call ringing at your telephone, you can choose the call that has the highest priority.

1. Enter the Call Queuing feature code (   ). The system connects you to the call that has the highest priority.

Call Queuing answers incoming calls before callback and camped calls.

## Delayed Ring Transfer (DRT)

If no one answers a call within a set time, the system transfers the call to the Prime telephone.



## Related features

### Call Pickup

Call pickup lets you use your telephone to answer a call that is ringing at someone else's telephone. See Call Pickup.

### Do Not Disturb

Feature 8 5

If you do not wish to receive calls, turn on Do Not Disturb. See Do Not Disturb.

### Handsfree/Mute

Handsfree

You can answer calls without picking up the receiver using Handsfree/Mute. See Handsfree/Mute.

### Prime telephone

A Prime telephone receives calls that go unanswered at other telephones. See Special Telephones.

### Retrieving a Parked Call

You can retrieve a parked call at any telephone in the system. See Call Park.

### Voice Call Deny

Feature 8 8

If you do not wish to receive voice calls, turn on Voice Call Deny. See Voice Call.

## What line indicators mean

- |   |   |
|---|---|
| ▶ Flashing on and off for equal lengths of time | There is an incoming call on the line.            |
| ▶ Flashing on and off more quickly              | You have placed a call on hold.                   |
| ▶ Flashing on for longer than off               | Someone else has put a call on hold on that line. |

▶ On, not flashing	You are connected to the call on that line or the line is in use elsewhere.
Off	The line is free.

## Rings you may hear

A double beep every ten seconds	A call has been camped to your telephone.
A long single ring	There is an external call on the line for you.
A shorter double ring	There is an internal call on the line for you or a call is being transferred to you.
A brief single ring	A call is being redirected on one of your redirected lines. You cannot answer this call. See Line Redirection.
Three beeps descending in tone.	You are receiving a priority call.

## Displays

You will see one or more of the following displays when you receive a call on your telephone and while you are answering that call. See Message for a full explanation of the Message feature. See Dialing for a full explanation of Ring Again.

221 TRANSFER
-----------------

You are connected to an internal call. You can press TRANSFER to transfer the call.

4302>4321
-----------

Either you are receiving an internal call from telephone 4302 forwarded by telephone 4321 or you have an Answer button for telephone 4321 and an internal call from 4302 is ringing on 4321.

4321 Calling

You are receiving a call from telephone 4321.

Call 4321?  
YES NO

You have received a Ring Again offer for a call to an internal telephone. To call the number again, press YES or the flashing internal line button. On the M7100, just lift the receiver. Otherwise, press NO or wait 30 seconds for the Ring Again offer to expire. For an explanation-of Ring Again, see Dialing.

Camped 4321  
CALLBACK

The person to whom you camped the call did not answer it. The call has come back to you. Press the CALLBACK button or the line button to reconnect to the call.

TRANSFER

You are connected to an external call. You can press TRANSFER to transfer the call.

Line001 transfer

The call on line 001 is being transferred to you by someone else in your Norstar system.

Line001 waiting

A camped call is waiting. Press the line button or use Call Queuing to answer the call. If you have an M7100 telephone, press  .

Line001>4321

Either you are receiving an external call forwarded from telephone 4321 or you have an Answer button for telephone 4321 and an external call is ringing on that telephone.

No calls waiting

You tried to use Call Queuing but no call was ringing at your telephone.

No line selected

There is no call ringing at your telephone. If you have a flashing line button but your telephone is not ringing, you must press the line button to answer the call on that line.

Parked call  
CALLBACK

Nobody answered the call you parked. The call has come back to you.

Pick up receiver

You have used the Call Queuing feature without picking up the receiver. Auto Handsfree has not been assigned to your telephone. You must use the receiver or  to answer a ringing or camped call.

Priority>4321  
BLOCK

You are receiving a Priority Call. If you are on another call, inform the person you are speaking to that the call is about to be put on hold. Press the flashing line indicator of the Priority Call or wait till the call connects automatically (in eight seconds).  
The Priority Call goes through when you hear the next beep.  
Your active call is placed on Exclusive Hold. It will be reconnected automatically when the priority call ends (unless you transfer the Priority Call, in which case you must press the line button of your original call to reconnect).  
To reject a Priority Call, use DND ([Feature]  ) or press BLOCK.

Release a call

You have no free line buttons on which to receive a call. Release one of your current calls and try again to answer the incoming call.

```
Use line pool?  
YES  NO
```

You have received a Ring Again offer for a line pool. To use the line pool, press YES or the flashing internal line button. On the M7100, just lift the receiver. Otherwise, press NO or wait 30 seconds for the Ring Again offer to expire. For an explanation of Ring Again, see Dialing.

## Prime telephone displays

If yours is a Prime telephone, you may see the following displays.

```
DND from 4321
```

The person at telephone 4321 has forwarded a call to you using Do Not Disturb.

```
DND transfer
```

The system has transferred a call to you from a telephone in Do Not Disturb mode.

```
DRT Line 001
```

Nobody answered this call so the system transferred it to you.

```
Line001 callback  
CALLBACK
```

Someone has camped, parked, or transferred a call on line 001, but no one has answered it. Press the CALLBACK button or the line button to connect to the call.

```
Line001 to prime
```

There is no telephone that can receive a call on line 001 so the System has transferred it to you.

```
Line015>Line087
```

The call coming in on line 015 was intended for target line 087. Line 087 is busy so the call has come to you.

## Notes

There are three indications of an incoming call: ringing, a line button flashing, and a message on the display. You will not necessarily receive all three indications for any particular call. You may have a line that has been set up not to ring at your telephone. If so, you will see only a flashing line button. If there is no button free for a camped call to appear, you will get a special ring and a message on your display, but no line button will flash. If someone makes a voice call to you, you will hear a beep followed by their voice. There are many possible combinations, depending on how your system is set up. See Lines in the System features section for more information on the behavior of lines.

There are many ways to answer a call. Many of them depend on settings in Administration programming. Depending on various settings and the type of call you are receiving, you may be able to answer a call by: picking up the receiver, picking up the receiver and pressing a line button, pressing  , pressing  and pressing a line button, pressing a line button, or simply speaking.

If you receive a Priority Call and your telephone has no free internal line buttons, you cannot transfer the call or do anything else with it, except release it.

On M7100 telephones, you may answer a second call by pressing . Your active call is put on hold and you are connected to the waiting call. You can have no more than two calls at a time.

# Autodial

You can program memory buttons for one-touch dialing of internal or external telephone numbers.

## External Autodial

Feature \* 1

1. Enter the external autodial feature code (Feature \* 1).
2. Select the button you want to program.
3. If you want this autodialer to use a particular line or line pool, select that line or line pool.
4. Enter the number.

## Internal Autodial



Feature \* 2

1. Enter the internal autodial feature code (Feature \* 2).
2. Select the button you want to program.
3. Enter the number.

## Displays

You will see some of the following displays while programming an Autodial button. See Dialing for displays that may occur while using an Autodial button.

987\_  
QUIT BKSP OK

Continue to enter digits until the number is complete. Press **BKSP** or  (volume down) to erase an incorrect digit. Press **OK** or  when you are finished.

Autodial full

The memory allotted to Autodial numbers in your Norstar system is full.

Button erased

While programming External Autodial, you pressed **OK** before entering any digits. This erases the button.

Enter digits  
QUIT OK

Enter the number you wish to program exactly as you would if you were dialing it yourself.

Hold or release

You cannot program an Autodial button while you are on a call. Finish your call or place it on hold before programming an Autodial button.

Intercom#: \_

Enter the internal telephone number you wish to program.

Press a button  
QUIT

Press the memory button you want to program.

Program and HOLD/

Enter the number you want to program onto the button, then press (Hold]. You may include a line or line pool selection in an autodial sequence by selecting the line before entering any digits.

Program and OK  
QUIT OK

Enter the number you want to program onto the button, then press (Hold] or OK. You may include a line or line pool selection in an autodial sequence by selecting the line before entering any digits.

Programmed

The number is stored on the button.

## Notes

If the power to your Norstar system is off for more than three days, Autodial numbers may be lost from the memory.

Autodial numbers must be programmed onto memory buttons. They can not be programmed onto line buttons, the Handsfree/Mute button, or Answer buttons.



You can program Host System Signaling codes as part of a number on an External Autodial button. See Host System Signaling.

If you do not include a line selection in an autodialer, the call will use your prime line, if you have one. If you select a line before pressing the Autodial button, any line selection programmed onto the button will be ignored.

You can copy the telephone number from a Last Number Redial button or Saved Number Redial button onto an Autodial button. Simply enter the Last Number Redial feature code or Saved Number Redial feature code when the Autodial feature asks you to enter a number.

---

# Call Forward

---

Feature  4

## Forward your calls

4 Feature

You can have all your calls forwarded to another telephone in the Norstar system.

1. Enter the Call Forward feature code (  Feature  4 ).
2. Enter the number of the internal telephone to which you want your calls forwarded.

Forwarding remains in effect until you enter the Cancel Call Forward feature code.

## Cancel Call Forward

Feature  #  4

You can start to receive calls again.

1. Enter the Cancel Call Forward feature code ( Feature  #  4 ).

## Call Forward on Busy

Call Forward on Busy redirects calls to another telephone when you are busy with a call. The System Coordinator sets up Call Forward on Busy in Administration programming.

## Call Forward (No Answer)

Call Forward (No Answer) forwards unanswered calls to another telephone. The System Coordinator sets up Call Forward (No Answer) in Administration programming.

## Call Forward Override

You can call someone and ask them to stop forwarding their calls to you.

1. Dial that person's number and ask them to cancel call forwarding. Your call will ring at that person's telephone even though they are forwarding their calls.

## Related features

### Do Not Disturb

Feature 8 5

You can use the Do Not Disturb feature to forward your calls to the Prime telephone. See Do Not Disturb.

### Line Redirection

Feature 8 4

Note the differences between Line Redirection and Call Forward. Call Forward forwards all calls that arrive at a particular telephone to another telephone within the Norstar system. Line redirection redirects only the lines you specify, no matter which telephones they appear on, to a telephone outside the Norstar system.

## Displays

You will see some of the following displays while forwarding your calls. See Do Not Disturb for a full explanation of that feature. See Answering the telephone for displays that occur when a telephone receives a call forwarded by another telephone.

Forward denied

You cannot forward calls to the number you have chosen. There are several reasons why this can happen. For instance, you cannot forward your calls to a telephone that has been forwarded to your telephone.

Forward to:

Dial the internal number or press the Internal Autodial button of the telephone to which you want your calls to be forwarded.

Forward>4321  
CANCEL

Your calls are being forwarded to telephone 4321. Press the CANCEL button or Feature pl# n4 if you want to stop forwarding your calls.

Not in service
----------------

Two or more telephones are linked in a forwarding chain, and one of them is out of service or is being used to program the system.

## Notes

When a call is forwarded, it does not ring but its line indicator still flashes on your telephone. You can answer the call by pressing the button next to the flashing indicator.

If the telephone to which you forwarded your calls does not have the same external lines as your telephone, the forwarded calls appear on internal line buttons.

Telephones that have Call Forward on Busy active can still receive Priority calls. Call Forward on Busy does not forward camped calls.

When Call Forward is active, all calls go to the call forward destination, regardless of the Call Forward on Busy and Call Forward no Answer settings.

If you are one of a group of people who regularly forward their calls to one another, be aware that it is possible to set up forward loops in which a call is forwarded from one telephone to another in a circle, and is never answered anywhere.

Calls that are redirected by Line Redirection are not affected by any of the Call Forward features.

---

# Call Park

---

Feature  7  4

## Park a call

Feature  7  4

You can suspend a call so that it can be retrieved from any telephone in your system.

1. Enter the Call Park feature code (  Feature  7  4 ).
2. Use the Page feature to announce the retrieval code displayed by your telephone.

## Retrieving a parked call

1. Select an internal line on any Norstar telephone.
2. Dial the call park retrieval code.

## Displays

You will see some of these displays while parking a call. You may see some of these displays while retrieving a parked call.

Already parked

The person you were talking to has already parked your call. You cannot park the same call.

Get call first

You have attempted to park a call with no active call on your telephone. If the call you wish to park is on hold, you must reconnect to it before you can park it.

Invalid number

You have entered an invalid retrieval code.

No call on: 101

There was no call on the retrieval code you entered.

No call to park

You have attempted to park a call, but there are no calls at your telephone.

Park denied

You have tried to park a conference call. Split the conference and park the calls separately. The person who retrieves the calls can reconnect the conference.

Parked on: 302  
PAGE EXIT

Record the code shown. Use Page ((Feature) 6 0) or press PAGE o announce the call and its retrieval code.

Parking full

All available retrieval codes are in use. Transfer the call or take a message instead.

## Notes

When you park a call, the system assigns one of nine codes for the retrieval of the call. These codes consist of the Call Park prefix, which may be any digit from 0 to 9, and a two digit call number between 01 and 09. Thus, if the Call Park prefix is 3, parked calls are assigned Retrieve Park codes 301, 302, etc.

Your Installer sets the Call Park prefix in Configuration programming. If the Call Park Prefix is set to NONE, parking is disabled.

# Call Pickup

---

You can pick up a call that is ringing at another telephone.

## Directed Pickup

Feature

You can answer any telephone that is ringing in your Norstar system

1. Enter the Directed Pickup feature code ([Feature]  ).
2. Enter the internal number of the ringing telephone.

## Group Pickup

Feature

Your Norstar system can be divided into as many as nine pickup groups. If you are a member of a pickup group, you can pick up a call that is ringing at any telephone in your pickup group.

1. Enter the Group Pickup feature code.

## Trunk Answer

Feature

The Trunk Answer feature allows you to answer an external call that is ringing at any other telephone in your office.

Trunk Answer works only with calls that are ringing on lines for which a Service Mode is active and Trunk Answer is ON in Administration programming.

1. Enter the Trunk Answer feature code ([Feature]   ).

## Displays

You may see some of these displays while using a Call Pickup feature.

Already joined

You are already connected to the telephone that made the call you are trying to pick up. This can happen if you are on a call to a co-worker, your co-worker dials the number of a telephone in your Pickup Group, and you attempt to pick up that call.

Denied in admin

Your telephone is not a member of a Pickup Group.

Line denied

You have attempted to pick up a call on someone else's private line.

No button free

You have tried to pick up a call when you have no line button available.

Pickup denied

(Pickup) There is no call that you can pick up or the call that was ringing has already been answered.

(Trunk Answer) The call that is ringing is on a line that is not in a Service Mode.

Pickup:

Enter the internal number of the telephone that is ringing. (You may use an Internal Autodial button to do this.)

If you decide not to answer a ringing call once you have activated Directed Pickup, press  . The call will continue to ring.



## Notes

Call Pickup cannot be used on private lines. Group Pickup can not be used to retrieve a camped call.

To use Directed Pickup, the telephone must be ringing. If, for example, the auxiliary ringer is ringing, but the call is not ringing at a telephone, the call cannot be answered using Directed Pickup. It must be answered normally at a telephone that has a flashing indicator for the call, or by using Trunk Answer.

If a call is ringing on an Answer button, you can use Directed Pickup to answer the call by entering the internal number of any member of the Answer group.

If there is more than one incoming call at a telephone in a pickup group, a call ringing on the Prime line is answered first followed by calls on external lines and, finally, calls on internal lines.

If there is more than one incoming call on lines in a Service Mode, the Trunk Answer feature picks up the external call that has been ringing the longest. See Service Modes.

The System Coordinator can assign telephones to one of nine Pickup Groups in Administration programming.

# Camp On

Feature 8 2

## Camp a call

Feature 8 2

You can send an external call to another telephone, even if all its lines are busy.

1. Enter the Camp On feature code (Feature 8 2).
2. Dial the number of the telephone you want to camp the call to.

## Related features

### Transfer

Feature 7 0

Camp On is a variation of the Transfer feature. See Transfer.

## Displays

You will see some of the following prompts while Camping a call.

4321 CAMP max  
CALLBACK

You tried to camp a call to a telephone that already has a camped call. The call has come back to you. Press the **CALLBACK** button or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.

4321 DND  
CALLBACK

The person to whom you redirected a call has Do Not Disturb active on the telephone. The call has come back to you. Press the **CALLBACK** button or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.

Camp denied

You have tried to camp an internal call. You can only camp external calls.

Camp to: CANCEL	Dial the number of the internal telephone to which the call will be sent.
Camped: 4321 CALLBACK	The telephone to which you camped a call did not answer the call. The call has come back to you. Press <u>CALLBACK</u> or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver:
Line001 hung up	A call you camped has come back to you, but the caller hung up before you could reconnect.
Make call first	You have no call to camp. If the call you want to camp is on hold, take it off hold and then camp it.
Not in service CALLBACK	The telephone to which you have camped a call is out of service or is being used for Configuration or Administration programming. The call has come back to you. Press <u>CALLBACK</u> or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.
Release a call	The line that the camped call is on is in use or that line does not appear at your telephone. Release the line or release an internal line.

## Notes

If you use Call Queuing to answer a camped call, external calls are answered before the camped call.

Camped calls appear on a line button on the receiving telephone, if one is available. If not, there is just a message on the display and Camp tones.

---

# Conference

---

[Feature] 3

## Create a conference

Feature 3

You can talk to two people at once.

1. Make sure you have two calls, one active and one on hold.
2. Enter the Conference feature code (Feature 3).
3. Take the held call off hold (this is automatic on the M7100 telephone).

## Conference using Privacy

Feature 8 3

Normally your calls are private; no one else can pick up your line and join in your conversation. You can turn privacy off for a call allowing another person with the same line to press the line button and join in your conversation, forming a conference.

1. Enter the privacy feature code ((Feature) 8 3).
2. Tell the other person to press the line button and join your conversation.

## Disconnect one party

You can disconnect one party from a conference and continue talking to the other.

1. Press the line button of the call that you want to disconnect. The call that you want to keep is automatically put on hold.
2. Press [Ris]. The call is disconnected.
3. Press the line button of the held call.

## Independently hold two calls

You can put the two people on hold independently so that they cannot talk to each other.

1. Press the line button of one person. The other person is automatically put on hold.
2. Press [Hold]. The second person is put on hold.

You can reestablish the conference.

1. Take one call off hold.
2. Enter the Conference feature code.
3. Take the other call off hold.

### Put a conference on hold

Hold

You can put a conference on hold, allowing the other two people to continue speaking to each other.

1. Press . The conference is on hold.

You can reconnect to the conference.

1. Press either of the held line buttons. You are reconnected.

### Split a conference

You can talk with one person while the other person is on hold.

1. Press the line button of the person you want to speak to. The other person is automatically put on hold.

You can reestablish the conference.

1. Enter the Conference feature code ( 3).
2. Take the held call off hold.

## Related Features

### Unsupervised Conference

7 0

You can disconnect yourself from the conference and leave the other two people talking by entering the Transfer feature code ( 7 0). However, if both of the other people are outside the system there are some restrictions: At least one of the outside callers must have called you and that call must be on a disconnect supervised line.

## Displays

You will see some of these displays while using the Conference feature.

3 parties only

You are trying to add a fourth party to your conference call, or to join two conferences together. Release one call from the conference before adding another, or keep the two conferences separate.

Access denied

Privacy control cannot be used on internal or conference calls.

Conf. on hold

You have put a conference call on hold from your M7100 telephone, then tried to get another line. Your M7100 can handle only two lines at a time, and your conference call is using both of them.

Conference busy

You have tried to make a conference call, but your system is already handling its maximum number of conference calls.

Line001 4321  
TRANSFER

You are on a conference with the two lines or telephones shown. You can drop out of the conference and leave the other two parties connected (Unsupervised Conference) by pressing TRANSFER or entering the Transfer feature code.

Make calls first

You have tried to set up a conference call, without having made the calls that are to be connected. Make both calls first.

Make call first

You have tried to use Privacy Control when you are not on a call.

Make second call

You have tried to set up a conference call while connected to only one caller. Put your first call on hold, make a second call, and enter the Conference feature code again.

Press held line

You have activated the Conference feature with one call active and another on hold. Press the line of the call on hold to bring that person into the conference.

## Notes

Only the person who established the conference can process the conference in any of the ways described above.

The Conference feature supports only three people.

If you are using an M7100 telephone:

- Your conference is connected as soon as you enter the Conference feature code. There is no need to take the second call off hold.
- To split a conference, enter  # .
- You cannot independently hold two calls.
- You cannot join an existing two-party call to establish a Privacy conference although you can use the Privacy feature for calls at your telephone.

When a third person joins a conversation on a line that has privacy turned off, the call becomes a conference. All the rules applicable to a conference apply except that there is only one line in use, instead of the normal two. This means that you cannot split a conference set up using Privacy.

---

# COS Password

## Change your Class of Service

A Class of Service password is a six digit code that lets you switch from your current Class of Service to one that lets you dial numbers prohibited by your current Class of Service.

1. Enter the COS Password feature code  
(  ).
2. Enter your COS password.

## Displays

You will see the first of these displays when entering a COS password, you may also see the second.

(Blank display) Enter your password. It will not be shown on the display.

You have entered a password that is not programmed into your system.

## Notes

If you use your Norstar system from outside the office, you may have to enter a Class of Service password to gain access to the system. Class of Service passwords can give you access to features not available with the regular Class of Service. See Using Norstar remotely.

You must enter a Class of Service password each time you wish to make a call using a Class of Service not normally available on your line or telephone.

Norstar allows up to 100 Class of Service Passwords.

The System Coordinator defines Class of Service passwords in Administration programming.



# Customizing your telephone

---

You can change the way a telephone works in several ways. Some of the features described below are assigned to telephones in Administration programming. You can turn others on and off at individual telephones.

## Automatic Handsfree

Automatic Handsfree lets you make or answer a call without having to pick up the receiver or press the  button. The telephone's internal microphone and speaker turn on automatically when you make or answer a call.

The System Coordinator assigns Automatic Handsfree capability to a telephone in Administration programming. Full Handsfree capability must be assigned to a telephone before Automatic Handsfree capability can be assigned to it. This is also done in Administration programming.

This feature is not available on M7100 telephones.

## Contrast Adjustment

\*

You can set the contrast level of your telephone display.

1. Enter the Contrast Adjustment feature code.
2. Choose the contrast level you like best. The number of contrast levels available varies from one Norstar telephone to another.

This is the display you will see in Contrast adjustment.

```
Contrast level 2
DOWN  UP  OK
```

Press a number for the contrast level you want or press UP or DOWN. Press  or OK to set the new contrast level.

## Dialing Modes

Feature \* 8 2

You can set the dialing mode of your telephone.

1. Enter the Dialing Modes feature code.
2. Choose the dialing mode you want.

Norstar supports three dialing modes; Automatic Dial, Pre-Dial, and Standard Dial. All three modes support on-hook dialing. (On-hook dialing means dialing a call without picking up the receiver.) The special features of the Automatic and Pre-Dial modes are available only when you dial on-hook.

The Dialing Modes feature code cannot be programmed onto a memory button.

### Standard Dial

In Standard Dial mode you make a call by selecting a line and dialing the number. If you have a prime line, it is selected automatically when you lift the receiver or press

Handsfree.

Standard Dial does not support on-hook dialing on an M7100 telephone. If you have an M7100, use the Automatic Dial or Pre-Dial feature for on-hook dialing.

### Automatic Dial

If you have a prime line assigned to your telephone, Automatic Dial allows you to dial a number without selecting a line. Your prime line is selected as soon as you start dialing a number. Automatic Dial does not work if your prime line is in use.

Telephones connected to an Analog Terminal Adapter (ATA) cannot use Automatic Dialing.

## Pre-Dial

Pre-Dial allows you to enter a telephone number, check it, then change it before actually making the call. The call is not dialed until you select a line or line pool or pick up the receiver.

You can pre-dial both external and internal numbers. You must, however, select the correct type of line (external or internal) for the type of number you have entered.

If all the lines on your telephone are busy, you will not be able to enter a telephone number.

If your telephone starts ringing while you are pre-dialing a number, you can stop the ringing by turning on Do Not Disturb ([Feature] [8] [5]). This does not affect numbers you are entering.

This is the display you will see when selecting a Dial mode.

```
Standard dial
NEXT          OK
```

The current dial mode is shown. Press [#] or NEXT until the dial mode you want appears. Press [Hold] or OK to select the displayed dial mode. If Automatic dial is not available it is because you have no prime line.

## Language Choice

English

[Feature] [\*] [5] [0] [1]

You can select English as the language of your telephone display.

1. Enter the English language choice feature code ([Feature] [\*] [5] [0] [1]).

Alternate Language

[Feature] [\*] [5] [0] [2]

You can select the alternate language as the language of your telephone display.

1. Enter the alternate language choice feature code ([Feature] \* 5 0 2).

Each Norstar system supports English and one alternate language. Norstar systems are available with either French or Spanish as the alternate language. Button caps are available in both alternate languages.

You can select either English or the alternate language at each telephone. When your system is first installed, all telephones will use English.

You can program a memory button for one-touch switching between languages. Program [Feature] \* 5 0 1 onto the button. Pressing the button will switch you back and forth between English and the alternate language.

[Feature] \* 5 0 2 cannot be programmed onto a memory button.

One of the following displays will appear when you enter a language choice feature code.

En français...	Telephone display messages will be in French.
En español...	Telephone display messages will be in Spanish
In English...	Telephone display messages will be in English.

### Move Line buttons

[Feature] \* 8 1

You can move external lines to different buttons on your telephone. You can use this feature to arrange your lines in the way that makes the most sense to you.

1. Enter the Move Lines feature code ([Feature] \* 8 1).
2. Press the button you want to move the line from.
3. Press the button you want to move the line to.

You will see some of these displays while moving lines.

Invalid location

You have tried to move a line to a button that cannot be used as a line button, such as a Handsfree/Mute button, or an Answer button.

Move line from:  
QUIT

Press the button of the line you want to move. Press **QUIT** or **Feature** when you have finished moving lines.

Move line to:  
QUIT

Press the button you want to move the line to. Neither of the buttons is erased. The lines, or the line and feature, simply switch places.

Press a line

The button you are trying to move is not a line button. If you are trying to switch a line and a feature, move the line to the feature button and not vice versa.

## Pulse/Tone Dialing

Each external line is set to either pulse or tone dialing. Pulse dialing is the traditional method of dialing used by rotary dial or push button single-line telephones. Tone dialing allows telephones to communicate with other devices such as answering machines. Tone dialing is required to access the features that PBX systems may offer or to use another Norstar system remotely (see Using Norstar remotely).

Your Installer sets your lines to pulse or tone dialing in Configuration programming.

To switch from pulse to tone dialing **EI**

If your external lines are programmed for pulse dialing, you can switch your telephone temporarily to tone dialing.

1. Press **Q** while on a call. Once you hang up, your telephone returns to pulse dialing.

## Ring Type

Feature  \*  6

You can choose one of four distinctive rings for your telephone. This makes it easier to identify your telephone in an open office.

1. Enter the Ring Type feature code.
2. Choose the ring type you want.

This is the display you will see when choosing a ring type.

Ring type 1  
NEXT  OK

Press  1,  2,  3,  4 or NEXT. You hear the selected ring for two seconds. Repeat until you hear the ring you prefer, then press  Hold or OK.

## Ring Volume

Feature  \*  8  0

You can set the volume at which your telephone rings.

1. Enter the Ring Volume feature code. The telephone will ring.
2. Press   to adjust the volume.

This is the display you will see while setting Ring volume.

Press VOLUME bar

Press either side of the volume bar ( ) to adjust the volume.

## Telephone Administration Lock

Telephone Administration Lock limits the ways in which you can customize your telephone. There are three types of Telephone Administration Lock: Full, Partial, and None.

Full Administration Lock lets you change the contrast of your telephone's display, use Ring Type, Ring Volume and Button Inquiry, and control the volume of your speaker.

Partial Administration Lock allows you to forward your calls, turn on Do Not Disturb and Service Modes, and use the Background Music, Send Message, Ring Again, Privacy, and Trunk Answer features

No Administration Lock allows you to access all features that are programmed for your telephone. The System Coordinator assigns Administration Lock to each telephone in Administration programming.

Telephone Administration Lock does not affect call handling features.

## Related Features

**Autodial** [Feature] \* 1 / [Feature] \* 2

You can program your telephone's memory buttons to dial frequently used numbers with the Autodial feature. See Autodial.

**Feature programming** [Feature] \* 3

You can program feature codes onto your telephone's memory buttons using the Feature programming feature. See Feature programming.

**Speed Dial programming** [Feature] \* 4

You can program personal speed dial numbers onto speed dial codes 71 to 94 using the Personal Speed Dial programming feature. See Speed Dial.

---

# Dialing

---

One of the most important features of your telephone system is the ability to dial telephone numbers. Many features require you to dial telephone numbers. The displays associated with dialing are listed here.

## Direct Dial

You can dial a Direct Dial telephone with a single digit. The Direct Dial telephone is usually in a central location, such as a receptionist's or secretary's desk. It is usually a Prime telephone and a Central Answering Position (CAP).

## External line access code

The external line access code is the number you dial to get an external line. You will need to use an external line access code if your prime line is an internal line. The code will connect you to a line pool through your internal line.

If your prime line is an external line, or if you select an outgoing external line on your telephone, you will not need an external line access code. You will always need an external line access code on an M7100 telephone.

Your Installer assigns the external line access code in Configuration programming.

## Last Number Redial

[5] [Feature]

You can redial the last external number you dialed.

1. Enter the Last Number Redial feature code ([Feature] [5]).



## Ring Again

2 Feature

If you can't get through to someone on your Norstar system because their telephone is busy or there is no answer, you can have the Norstar system tell you when they hang up or next use their phone.

1. Enter the Ring Again feature code ( Feature 2 ) before you hang up.

You can also use Ring Again to tell you when a busy line pool becomes available.

Using Ring Again cancels any previous Ring Again requests at your telephone.

## Cancel Ring Again

Feature # 2

You can cancel a ring again request by entering the Cancel Ring Again feature code.

## Saved Number Redial

Feature 6 7

You can save the number of the external call you are on (providing you dialed the call) so that you can call it again later.

1. Enter the Saved Number Redial feature code while you are still on the call.

You can dial a saved number.

1. Enter the Saved Number Redial feature code when you are not on a call.

## Related Features

### Autodial

Feature \* 1 / Feature \* 2

The autodial feature lets you program telephone numbers onto memory buttons for one-touch dialing. See the Autodial section.

## Dialing modes

Feature \* 8 2

Norstar supports three different methods of dialing. They are described in the Customizing your telephone section under the heading Dialing Modes.

## Line Pools

Line pools give you access to many external lines. See Line Pools.

## Priority Call

9 ture 6

If you get a busy signal when you call someone in your office, you can interrupt them using Priority Call. See Priority Call.

## Speed Dial


0 ture

The Speed Dial feature lets you dial programmed numbers by entering speed dial codes. See Speed Dial.

## Displays

You will see some of these displays while selecting lines and dialing telephone numbers and in response to the numbers you dial.

9\_  
QUIT BKSP

You are dialing using Pre-Dial. To erase an incorrect digit, press BKSP or  (volume down). When the number is complete, select a line or lift the receiver.

4321 busy

The telephone you have called has no internal lines available.

9555 1234  
TRANSFER

This prompt remains on your display as long as you are on a call you have dialed. You may transfer the call by pressing TRANSFER.

Already joined

Your telephone is already connected to the telephone you are trying to call. Check your active line buttons, and return to that call.

Calling 4321  
LATER

Wait for the telephone to be answered, or press LATER to use the Ring Again or Message features.

Calling 4321  
PRIORITY LATER

Wait for the telephone to be answered. If no one answers, you may press LATER to use the Ring Again or Message features or press PRIORITY to make a priority call.

Can't ring again

You cannot use Ring Again on your current call. You can only use Ring Again while you have a busy signal on an internal call or line pool request or while an internal call is ringing.

Do not disturb  
LATER

The telephone you are calling is in Do Not Disturb mode. Press LATER to use the Ring Again or Message features.

In use: 4321

The line you have chosen is in use at another telephone. Use a different line, or wait until the line is free.

In use: Line001

You have tried to use a line that is active on an external call.

Invalid number

You have entered a number that does not exist.

Line in use

The line you have chosen is in use. Try another. If the line remains in use and never seems to clear, it may be hung. See Lines in the System Features section for information on hung lines.

---

Line00 1 TRANSFER	Enter the digits of the number you want to dial.
No button free	You have tried to make or receive a call when no line button was available.
No last number	You have not dialed an external telephone number since the last power interruption or system reset.
No line selected	Either you have no prime line or your prime line is busy. Select a line manually before dialing.
No number saved	You have tried to save the number of an incoming call. You can only save numbers that you have dialed yourself.
No saved number	You have tried to use Saved Number Redial, but have not first saved a telephone number. The Saved Number Redial memory is empty.
Not in service	You have entered the number of a telephone that is not in service.
On another call LATER	The telephone you have called is on another call. Press <b>LATER</b> to use the Ring Again or Message features.
Release a call	You have Pre-Dial assigned to your telephone but you have no free line buttons. Release one of your calls and try Pre-Dial again.
Restricted call	The call you are trying to make is not allowed for your Class of Service. Make your call on a line or telephone that is not restricted, or use a Class of Service password to bypass the restriction.

Ring Again?  
YES NO EXIT

Press YES to use Ring Again. Press NO if you prefer to send a message. See Message and Ring Again.

Select a line

Either you have no prime line, or the prime line is in use, or the line programmed onto an Autodialer, Speed Dialer, Last Number Redial, Saved Number Redial or Hotline is in use. Select a line and dial again.

Send message?  
YES NO

Press YES to send a message. See Messages.

Your number

You have dialed your own number.

## Notes

The maximum number of digits that Last Number Redial or Saved Number Redial records is 24.

You can copy the telephone number from a Last Number Redial or Saved Number Redial button onto an Autodial button. Simply enter the Last Number Redial or Saved Number Redial feature code when the autodial feature asks you to enter a number.

Each telephone can save only one number at a time with Saved Number Redial, not one number for each line.

# Do Not Disturb

Feature  8  5

## Do Not Disturb

Feature  8  5

You can stop calls from ringing at your telephone.

1. Enter the Do Not Disturb feature code  
(  ).

Only Priority Calls will ring at your telephone. A line button will flash when you receive a call, but the call will not ring.

You can refuse to answer a particular call (including a Priority Call).

1. Enter the Do Not Disturb feature code  
(  ) while your telephone is ringing.

## Cancel Do Not Disturb

Feature  #  8  5

You can cancel Do Not Disturb.

1. Enter the Cancel Do Not Disturb feature code  
( #   ) .

## Displays

Do not disturb

Your telephone is in Do Not Disturb mode. To cancel Do Not Disturb, press  #  .

Allow calls

Your telephone is receiving calls normally.

## Notes

If you use Do Not Disturb while an external call is ringing, the call will be forwarded to the Prime Telephone. It may also be answered by anyone whose telephone shares the line it is on. Once you turn Do Not Disturb on, calls will be forwarded to the Prime telephone only if there is no other telephone on which the line appears. (The Delayed Ring Transfer feature transfers all unanswered calls to the Prime telephone after a set time.)

# Feature Programming

Feature \* 3

## Program a button

Feature \* 3

You can program a feature code onto a memory button.

1. Enter the Feature Programming feature code ([Feature] \* 3).
2. Select the button you want to program.
3. Enter the feature code you want to program onto the button.

## Erase a button

Feature \* 1

You can erase a memory button.

1. Enter the Erase Button feature code ([Feature] \* 1). This is actually the External Autodial feature code.
2. Erase the button by programming it with no number.

You cannot erase Answer, Handsfree/Mute, Intercom, or line buttons.

## Button Inquiry

Feature \* 0

You can check the function of any line, intercom, or memory button on your Norstar telephone.

1. Enter the Button Inquiry feature code ([Feature] \* 0).
2. Press the button you want to know about.
3. Read the display.

When you are labeling or replacing a button cap, activate Button Inquiry so that you won't accidentally activate a feature.



## Displays

You will see some of the following displays while programming, erasing, or checking buttons. A variety of displays appear in Button Inquiry. See the display <Feature name> for information applicable to these displays.

```
123456789012345...
  VIEW→  OK
```

Press **Q** to move either right or left, or press **VIEW→** or **←VIEW** to view a number that is too long to fit on the display. Press **(Hold)** or **OK** when you are finished.

```
<Feature name>
  SHOW  OK
```

The name of the feature assigned to a button is displayed when you press the button. **SHOW** appears when there is more information available. Press **#** or **SHOW** for additional information.

```
Enter code:
```

If you are checking a Speed Dial button, enter the two-digit Speed Dial code that you want to check.

```
Enter Digits
```

To erase a button, press **(Hold)**.

```
F_
QUIT CLEAR
```

While entering a feature code you can press **(Feature)** or **QUIT** to quit programming or **CLEAR** to clear out the characters you have entered. The system will accept the entry as soon as you enter a valid feature code.

```
Feature code:
QUIT
```

Press **(Feature)** and enter the feature code you want to program onto the button. Invalid codes cannot be entered.

Feature moved

You have programmed a button with a feature that was already programmed onto another button. The feature has moved to the button you just programmed. Its original button is blank.

Hold or release

You cannot program an autodialer or feature button while you are on a call.

Press a button  
EXIT

Press the button you want to check. Press  or EXIT when you are finished.

Program and HOLD

To erase a button, press .

Program and OK  
QUIT OK

To erase a button, press  or press OK.

Release calls

You have tried to use Button Inquiry while you were on a call or had calls on hold.

## Notes

When this book tells you to enter a feature code, you can do so by pressing a memory button programmed with that feature code. In some cases, pressing the button a second time cancels the feature.

On the M7100 telephone, Button inquiry shows your internal number followed by the function assigned to your single memory button.

Any memory button not programmed as an external or internal line, target line, Answer button, or Handsfree/Mute button, is available for programming features.

The following feature codes cannot be programmed onto a memory button: Long Tones and any code beginning with **Q** except Language Choice and Contrast Adjustment.

# Group Listen

Feature  8  0  2

## Group Listen

Feature  8  0  2

You can let people in your office listen in on a call.

1. Enter the Group Listen feature code ([Feature]  8  0  2). You will hear the caller's voice through your telephone's speaker.
2. Continue to speak to the caller through the telephone receiver. The caller will not hear people in your office.

## Cancel Group Listen

Feature  #  8  0  2

You can cancel Group Listen for the current call.

1. Enter the Cancel Group Listen feature code (Feature  #  8  0  2).

Group Listen is cancelled automatically when you hang up the Group Listen call.

## Displays

You may see one of these displays with Group Listen.

Make call first

You have tried to use Group Listen when you are not on a call.

Pickcu e i v e r

You have tried to use Group Listen without picking up the receiver.

## Notes

Keep the receiver away from the speaker, or you may hear feedback. The higher the volume, the more the feedback. Press the  Ris  button to prevent feedback when hanging up.

You can switch a Group Listen call to Handsfree by pressing  Handsfree . To switch back to Group Listen, enter the Group Listen feature code again.

---

# Handsfree/Mute

---

Handsfree

## Make calls without lifting the receiver

You can make calls without lifting the receiver.

1. Press **Handsfree**. The telephone's internal microphone and speaker are automatically turned on.
2. Dial your call.
3. Speak normally.

## Answer calls without lifting the receiver

You can answer calls without lifting the receiver.

1. When your telephone rings, press **Handsfree**. The telephone's internal microphone and speaker are automatically turned on.
2. Speak normally.'

## Mute Handsfree

You can switch off the telephone microphone so that you can speak privately to someone in your office while you are on a handsfree call.

1. Press **Handsfree**. The microphone is turned off.

You can turn the microphone back on again and continue your handsfree call.

1. Press **Handsfree**.

## Regular call to Handsfree

You can turn any regular call into a handsfree call.

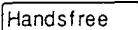
1. Press **Handsfree** and hang up the receiver.

## Handsfree to regular call

You can turn a handsfree call into a regular call.

1. Lift the receiver.


## Notes

The indicator next to  is solid when you are in handsfree mode. It flashes when you mute the microphone.

Always tell the person you are speaking to that you are using Handsfree, and let them know who else is listening to the conversation.

Direct your voice toward the telephone. The closer you are to the telephone, the easier it is for the microphone to transmit your voice clearly to your listener.

Wait for your caller to finish speaking before you speak. The microphone and speaker cannot both be on at once. Your caller's voice may be cut off if you both speak at the same time. Noises such as a tapping pencil could be loud enough to turn on your microphone and cut off your caller's speech.

To prevent a possible echo, keep the area around your telephone free of paper and other objects that might screen your microphone. Turning down the microphone's volume (using ) also prevents echo.

Handsfree calls may be heard in nearby offices. In open-concept environments, use the receiver or a headset when Handsfree communication is not necessary, or when you need privacy during a call.

Place the telephone so that any unavoidable local noise (such as an air conditioner) is behind it. This limits the amount of disruptive background noise.

A Handsfree button is assigned to a telephone by the System Coordinator in Administration programming.

The Handsfree/Mute feature is not available on M7100 Telephones.

---

# Hold



---

## Put a call on hold

You can temporarily suspend a call.

1. Press .

When a call is on hold, its indicator flashes on all telephones that have access to the line. The call can be retrieved from any of these telephones.

## Retrieve a held call

You can connect to a call on hold.

1. Press the flashing line button of the held call.

## Automatic Hold

You can switch from one call to another.

1. Press the line button of the caller you want to speak to. Your current caller is put on hold automatically.

## Exclusive Hold

**or**

You can put a call on Exclusive Hold so that it can be retrieved only at your telephone.

1. Enter the Exclusive Hold feature code. The line appears busy on all other telephones, and the call cannot be picked up by anyone else in the office.

## Listen on Hold

If you have been put on hold, you can hang up the receiver while you wait for the other person to return.

1. Press .
2. Hang up the receiver.
3. Press the line button of the call. You may hear indications from the far end that you are on hold (for example, tones or music).

4. When the person you were talking to returns you will hear them through your telephone speaker. Lift the receiver and talk.

## Music/Tones/Silence on Hold

External callers can hear either music, a periodic tone, or silence while they are on hold. In order for your caller to hear music, your company must have installed a music source.

### Warning

In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers, or a similar organization, if radio or TV broadcasts are transmitted through the Music on Hold feature of this telecommunication system.

Northern Telecom Inc. hereby disclaims any liability arising out of the failure to obtain such a license.

Your Installer sets this feature to music, tones, or silence in Configuration programming.

## Notes

On the M7100 telephone,  alternates between two lines; one active, one on hold. The M7100 cannot retrieve a call placed on hold by another telephone.

If the Automatic Handsfree feature has been assigned to your telephone, use the Handsfree/Mute feature instead of Listen on Hold.

---

# Host System Signaling

---


You can access Host systems, such as Private Branch Exchanges (PBX) from Norstar by using Host System Signaling features (also known as End-to-End Signaling). These features either send a special signal to the host system or allow you to program delays required by host systems onto external Autodial buttons or Speed Dial codes.

## Host system signaling codes

### Link

Feature  7  1

If your Norstar system is connected to a Private Branch Exchange (PBX), you can use a Link signal to access special features.

The Link signal can also be included as part of a longer stored sequence on an External Autodial button or in a Speed Dial code. The Link symbol () uses two of the 24 spaces in a dialing sequence.

### Pause

Feature  7  8

The Pause feature enters a 1.5 second delay in a dialing sequence on an external line. This is often required for signaling remote devices, such as answering machines, or when reaching through to PBX features or Host systems.

You can obtain a Pause with one button press if you program the feature code onto a memory button. More than one Pause can be programmed onto an External Autodial button.

The Pause symbol (6) uses one of the 24 spaces in a dialing sequence.



For Pulse Dialing, **\*** inserts a 1.5 second pause into the dialing sequence.

## Programmed Release

Feature **\*** **8** **9**

The Programmed Release feature performs the function of the **Rls** button in a programmed dialing sequence. When the system encounters Programmed Release in a programmed dialing sequence, it stops dialing and hangs up the call. The Programmed Release symbol (**RS**) takes up two of the 24 spaces in a programmed dialing sequence.

## Run/Stop

Feature **\*** **9**

Run/Stop inserts a break point into a sequence of dialed numbers or characters used for automatic dialing. This may be necessary when you are connecting to a PBX or similar Host system.

For example, you may call a company with an automated attendant that instructs you to dial the extension number you need. You can program the company number, a Run/Stop, then the extension number on one External Autodial button. Press the autodialer once to dial the company number. When you hear the automated attendant, press the autodialer again to dial the extension number.

The Run/Stop symbol (**RS**) uses one of the 24 spaces in 'an External Autodial or Speed Dial sequence.

## Timed Release

Feature **7** **2**

The Timed Release feature inserts a 1.5 second pause into a sequence. You can use it in a dialing sequence for accessing a remote system, such as a PBX. You can also dial it if you wish to release a call from your line but keep the line for another call. You will return to dial tone.

The Timed Release symbol (**TR**) takes up two of the spaces in a programmed dialing sequence.

## Displays

You may see this display while entering Host System Signaling codes:

```
Invalid code
```

You have entered a code that can only be used in a programmed Autodial or Speed Dial sequence, not on a call you dial directly. Programmed Release and Run/Stop are for use in programmed dialing sequences only.

## Notes

If your external telephone lines are programmed for Pulse Dialing, you can temporarily switch to Tone Dialing by pressing  after selecting the line. Tone Dialing lets your Norstar telephone communicate with devices and services that respond to tone signals, such as automatic switchboards, and FAX or answering machines.

# Line Pools

Feature

6

4

## Use a line pool

A line pool is a group of external lines that can be shared by many telephones. You can use a line in a line pool to make an external call.

1. If you have a free internal line, dial a line pool access code on an internal line. (You do not need the Line Pool feature code.) If you have no free internal line, enter the line pool feature code (    ) and then a line pool access code.

Everyone in the office should have a list of the line pool access codes for the line pools their telephones can use.

## Displays

You may see some of the following displays while using a line pool. For displays associated with dialing telephone numbers, see the Dialing section.

Enter a line pool access code.

Access to the line pool you requested is denied in Configuration programming.

You have entered an invalid line pool access code.

The line chosen by the system for your line pool request became active before connecting with your call. Retry the line pool request.

There is no free button on which the line pool line can appear.

No free lines

You have tried to access your line pool, but there are no lines in the line pool or all the lines are busy. Use Ring Again or call again later.

## Notes

You do not usually need to enter the Line Pool feature code to use a line pool. Simply dial the line pool access code on an internal line. If you have no free internal lines, you will need to use the feature code to get a line pool. You will also need it to program access to a specific line pool onto a memory button.

You can program a button to access a line pool by programming the Line Pool feature code and a line pool access code onto a memory button in Feature programming (  \*  ). When all the lines in a Line Pool are busy, the indicator for the Line Pool button turns on. The indicator turns off when a line becomes available.

Your Norstar system can have 15 line pools, and a telephone can be programmed to access any number of them.

You can use a line pool only to make external calls.

If no lines are available in the line pool, you can use Ring Again at the busy tone. You will be notified when a line in the line pool becomes available. See Ring Again.

Your Installer gives telephones access to line pools in Configuration programming. Each line pool is assigned a line pool access code in Configuration programming.

---

# Line Redirection

## Redirect a line

Line Redirection lets you send your external calls to a telephone outside the office. You may choose to redirect all your external lines or only some of them.

1. Enter the Line Redirection feature code ([Feature]  .
2. Select the outgoing line to be used for redirected calls.
3. Enter the number to which calls will be redirected.
4. Select the lines to be redirected.

## Cancel Line Redirection

You can cancel Line Redirection.

1. Enter the Cancel Line Redirection feature code.
2. Select the lines for which redirection is to be cancelled.

## Related Features

### Call forward



 

Note the differences between Line Redirection and Call Forward. Call Forward forwards all calls that arrive at a particular telephone to another telephone within the Norstar system. Line redirection redirects only the lines you specify, no matter which telephones they appear on, to a telephone outside the Norstar system. Line Redirection takes precedence over Call Forward

## Displays while redirecting lines

You will see some of the following displays while programming Line Redirection. The displays you see while cancelling redirection are listed under the heading Displays while cancelling redirection, below. See the Dialing section for displays that occur while entering telephone numbers.

9\_  
QUIT BKSP OK

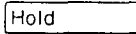
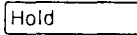
Continue entering digits. Press BKSP or  (volume down) to delete incorrect digits. Press OK or  when you are finished.

Access denied

You cannot perform line redirection on an M7100 telephone.

Enter digits  
QUIT OK

Enter the telephone number to which you wish to redirect calls using one of the following methods:

- Press an External Autodial button.
- Enter an external telephone number of no more than 24 digits. Then, press  or OK.
- Press  or OK if the line you have chosen as the outgoing line is a private network line that does not require you to dial digits.

In use: 4321

You have tried to program redirection while someone else is programming redirection. Only one person can program line redirection at a time.



Incoming only

The line you are trying to use for redirecting calls is for incoming calls only. Choose an outgoing line.

Line denied

The line you have selected is private to another telephone. Only the owner of a private line can redirect it.

Line Redirection  
QUIT ADD REMOVE

Press  or the ADD button to begin redirection. Press REMOVE or  to cancel a previous redirection.

No line to use

You have one external line on your telephone, but you need a second line to perform line redirection. Redirect your external line using a line pool as the outgoing line.

Outgoing line

You are attempting to redirect a line and the line you have chosen is the outgoing line you have selected as a destination. You cannot redirect a line to itself. Select another line.

Pool code: \_  
QUIT

Enter a valid line pool access code.

Programmed

This message appears when you have successfully redirected a line or successfully cancelled redirection of a line.

Redir by 4321  
OVERRIDE

You have attempted to redirect a line, but someone else has already redirected that line. You may press OVERRIDE or  to override the previous redirection and redirect the line as you wish.

Restricted call

The destination you have chosen for line redirection is restricted.

Select line out  
QUIT

Select the line that will be used to redirect calls out of the system, using one of the following methods:

- Press an external line button.
- Press an internal line button and dial a line pool access code.
- Press a line pool memory button.
- Press an External Autodial button.

Select line(s)  
QUIT ALL

Press the lines that are to be redirected. To deselect a line, press it again. You may press ALL to redirect all your lines.

Select line(s)  
ALL OK

Continue to press the lines that are to be redirected. Press OK or (Hold) when you are finished.

```
Unequipped line
```

The line you are attempting to redirect cannot be redirected because the hardware does not support redirection.

## Displays while cancelling redirection

You will see the following displays while cancelling Line Redirection.

```
Redir by 4321
OVERRIDE
```

This line is redirected by someone else. Press OVERRIDE or **\*** to cancel redirection of the line.

```
Select line(s)
QUIT  ALL
```

Press the lines that are no longer to be redirected. The lines light up as you press them. Once you cancel redirection for a line you cannot restore it by pressing the line again. You may press ALL to cancel redirection for all your lines. When you are finished, press OK or

[Hold

```
Select line(s)
      ALL  OK
```

Continue to press the lines that are no longer to be redirected. Press OK or [Hold] when you are finished.

## Notes

You can answer the telephone if it rings while you are in the middle of programming Line Redirection, but none of the Norstar call handling features will be available until the feature times out. If you need to use a Norstar feature to process the call, you must quit Line Redirection programming by pressing the [Feature] button. Do not press **Ris** or you will disconnect the call you are trying to process.



While you are programming Line Redirection you will not receive any indication of calls that do not actually ring at your telephone.

The system does not check that the number you give for Line Redirection is a valid one. If you redirect to an invalid number, redirection will fail. Using an autodialer to enter the redirection number helps avoid this possibility. An autodialer used for line redirection must have a specific line programmed onto it.

If you use the ALL button to redirect all your lines, it is important that you wait until all the lines on your telephone light up before pressing  or OK. If you press  or OK before all the lines light up, those lines not lit will not be redirected.

Be aware of the consequences of redirecting your lines. If you redirect your target line to your home, for instance, and someone calls you from home, they will get a busy signal when the system tries to call the telephone they are using. Companies with offices in different time zones should avoid situations in which the lines from the eastern office are redirected to the west and those from the west are redirected to the east. This could result in a costly long distance redirection loop.

The system can be set up so that redirected calls give a brief ring on telephones in the Norstar system as they are redirected. These calls cannot be answered within the system until you cancel redirection.

The line chosen for redirecting calls on other lines can still be used normally when it is not busy on a redirected call. To avoid redirection failing because the chosen line is in use, choose a line pool with several lines in it.

# Long Tones

Feature

## Use long tones

Feature

The Long Tones feature lets you control the length of a tone so that you can signal devices such as Fax or answering machines which require tones longer than the standard 120 milliseconds.

1. Enter the Long Tones feature code ([Feature]   ).
2. Press the dial pad buttons to produce the appropriate tones. Each tone will sound for as long as you hold down the button.

## Displays

You will see some of the following displays while using Long Tones.

Long Tones:

At the appropriate time, press any dial pad button. Hold each button down for as long as necessary. You can cancel Long Tones by pressing  or \_\_\_\_\_

Make call first

You have tried to use Long Tones when you are not on a call.

Tones denied

The person you are calling has pressed , cancelling your long tones.

## Notes

Long Tones can be used on any call except a conference call. You can use internal lines of the Norstar system to activate a device connected to an Analog Terminal Adapter (ATA) in another area of your office; or external lines to access devices outside the Norstar system.

# Message

Feature 1

## Send a message

Feature 1

You can leave a message on the display of another telephone in your Norstar system.

1. Enter the Message feature code ([Feature] 1).

The message sent reads `Message for YOU`.

## Cancel a sent message

Feature # 1

You can cancel a message that you have sent to someone.

1. Enter the Cancel a sent message feature code.

## Reply to a message

Feature 6 5

You can call the person who sent you a message.

1. Enter the Reply to Message feature code ([Feature] 6 5). The system calls the person who sent the message.

On a telephone with a two line display you can view your messages and decide if you want to reply to them.

1. Enter the Reply to Message feature code ([Feature] 6 5).
2. Review your messages, reply to them, or erase them.

## Show your sent messages

[Feature]

You can show and scan the messages you have sent.

1. Enter the Message feature code ([Feature] 1).
2. Press SHOW to display your first sent message.

## Erase a waiting message

Feature # 6 5

You can erase a message you have received.

1. Enter the Erase Message feature code ([Feature] # 6 5).

## Displays

You will see some of the following displays while sending messages.

```
1. 4321
NEXT ERASE EXIT
```

When reviewing the messages you have sent, press NEXT to view the next message or ERASE to erase the message on the display.

```
1. 4321 called
NEXT CALL ERASE
```

This is the first message in the list. Press NEXT to see the next message. Press CALL to reply to the message. Press ERASE to erase the message.

```
Can't send msg
```

You have tried to send a message to a Norstar Analog Terminal Adapter. The Norstar Analog Terminal Adapter does not have a display so it cannot show a message.

```
Cancel denied
```

You have entered an invalid number when attempting to cancel a message.

```
Cancel for:
```

Dial the internal number to which you sent the message you wish to cancel.

```
Message denied
```

You have tried to send a message to an invalid internal number or to a telephone that is out of service.

```
Message for you
MSG
```

You have a message waiting. Press MSG to review the message or enter Feature r [00] 5p l y .

```
Message list
SHOW ADD EXIT
```

The SHOW display button appears only if you have outstanding messages. Press SHOW to review or erase messages you have sent. Press ADD to send a new message.

Message to:

Enter the internal number of the telephone to which you would like to send a message.

Messages for you  
MSG

You have several messages waiting. Press **MSG** to review the messages or **Feature r e p l y** to the first message.

No button free

You have no line button free with which to reply to a message.

No messages

You don't have any messages to cancel or there are no messages to scan through.

Their list full

You are trying to send a message to a telephone whose message waiting list is full.

Your list full

You have tried to send a message but your telephone's list of sent messages is full. Cancel one of the messages you have sent, if possible, or wait until you have received a reply to one of those messages.

## Notes

You can send up to four messages to different telephones. Each telephone, including the Prime telephone, can receive up to four messages from different telephones, but only one message from any one telephone. Direct Dial telephones and Central Answering Positions (CAPs) can receive up to four messages, but can send up to 30 messages.

Any message can be cancelled either by the person who sent it or by the person who received it.

If your reply to a message is forwarded or is answered at another telephone using the Call Pickup feature, the message remains on your telephone until you cancel it or successfully contact the telephone that sent the message.

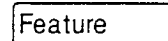
# Norstar Telephones

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This section covers the basic features of your Norstar telephone and optional equipment that may be attached to it. See the Components chapter for the differences between Norstar telephone models.

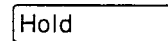
## Buttons

### Feature button



You use the Feature button to invoke Norstar features. See the Using Norstar features section.

### Hold button



You use the Hold button to put calls on hold. See the Hold section. It is also used in place of the OK display button on telephones with single line displays.

### Memory buttons

Memory buttons are the buttons with indicators on the M7208, M7310, and M7324 telephones, and the dual buttons without indicators on the M7310. There is also a single memory button, without an indicator, -on the M7100. Memory buttons can be used for any of the purposes listed below, except that lines and Answer buttons must appear on buttons with indicators.

### Answer buttons

You can use an Answer button to monitor calls on another person's telephone. All calls to the monitored telephone appear on the Answer button. Such calls may also ring at the telephone with the Answer button, depending on how the system is configured. Answer buttons are most useful for a secretary who monitors incoming calls for one or several managers.

If more than one call is ringing at the manager's telephone, the first call appears on the secretary's Answer button. Any subsequent calls appear on Intercom buttons if they are available.

More than one secretary may have an Answer button for a single manager. This allows two or more secretaries to handle calls for a busy manager.

Similarly, one person can handle calls for up to four other people, using separate Answer buttons for each person.

A secretary's telephone should have a memory button with an indicator programmed as the Internal Autodial button for the manager's telephone. This allows the secretary to call the manager and to deal efficiently with incoming calls.

You cannot make calls using Answer buttons.

### **Autodial buttons**

Autodial buttons let you dial numbers by pressing a single button. See the Autodial section.

### **Line buttons**



You have one line button for each line assigned to your telephone. You press the line button to select the line you want to answer or use to make a call. Having several line buttons allows you immediate access to more than one line so you can handle and monitor calls easily. The M7100 does not have line buttons and can have a maximum of two lines. You can switch between its two lines, one active and one on hold, by pressing .


### **Programmed Feature Buttons**

Programmed feature buttons allow you to invoke Norstar features by pressing a single button. See the Feature Programming section.

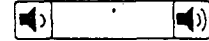
## Release button

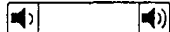


Pressing  ends a call. You do not have to put the receiver down.  also ends feature programming.

While you are on a call, do not press  to end a feature you are using (such as Show Message). If you do, you will disconnect the call. Use [Feature] instead.

## Volume Bar



The Volume Bar controls the volume of the receiver, telephone ring, Handsfree speaker, headset and Background Music. Press either end of the volume bar (  ) to adjust the volume.

## Headset

A headset lets you keep both hands free while you are on a call without others overhearing your telephone conversations.

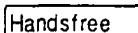
If you plug a headset into your telephone while you are on a call, your telephone's microphone and speaker (or your receiver if you are on a regular call) are turned off and your headset microphone and earpiece are turned on.

You must have the Handsfree/Mute feature assigned to your telephone if you wish to use a headset.

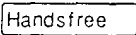
While you are using the headset, the receiver and the switch in the telephone cradle do not work.


A headset cannot be used on an M7100 Telephone.

## Using a headset

While on a call using the headset, press  to turn your headset on and off.

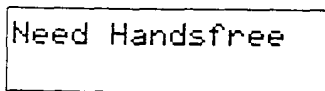


To answer a call, press  .

To adjust the volume, press the appropriate side of the volume bar ().

To change to a Handsfree call while you are on a call using your headset, unplug your headset. Your telephone's microphone and speaker turn on and the call becomes a Handsfree call. (It is a good idea to put the call on hold while you do this.)

You may see this prompt when you try to use a headset.

 Need Handsfree

You are attempting to use a headset, but Handsfree/Mute is not programmed for your telephone. If you are not using a headset, you have accidentally plugged your telephone receiver into the headset outlet on the bottom of the telephone.

## Hearing Aid Compatibility

The receivers on all Norstar telephones are compatible with hearing aids as defined in the FCC rules, Part 68, section 68.316.

Note: Not all hearing aids are optimized for use with a telephone.

## Wall Mounting

Most Norstar telephones can be mounted on a wall. Contact the Installer or Service Representative if you wish to have any telephones in your system wall-mounted.

# Page

Feature  6  0

## Make a page announcement

Feature  6  0

You can make announcements over the Norstar system.

1. Enter the Page feature code (  Feature  6  0 ).
2. Choose a page type.
3. If necessary, choose a zone.
4. Make your announcement.
5. Press  Rls .

Page types are :

- 1 through the telephone speakers (Internal Page)
- 2 through an external speaker (External Page)
- 3 both internal and External (Combined Page)

## Paging shortcuts

Instead of entering the Page feature code followed by the page type, you can enter the following shortcut codes.

Internal	<input type="text"/> Feature <input type="text"/> 6 <input type="text"/> 1	and zone (0 to 6)
External	<input type="text"/> [Feature] <input type="text"/> 6 <input type="text"/> 2	(code 2 has no zones)
Combined	<input type="text"/> [Feature] <input type="text"/> 6 <input type="text"/> 3	and zone (0 to 6)

## Related Features

### Voice Call

Feature  6  6

You can make an announcement to one person by placing a voice call to their telephone. See Voice Call.

## Displays

You will see some of these displays while making a Page announcement.

Enter zone: ALL	Enter the desired zone number (0-6) or press <u>ALL</u> to page to all zones. (0 equals all zones.)
Invalid zone	You have entered a page zone code that is not between 0 and 6.
Page choice: SETS SPKR BOTH	Select the type of page you want by pressing: <input type="checkbox"/> or <u>SETS</u> — Internal Page <input type="checkbox"/> or <u>SPKR</u> — External Page <input type="checkbox"/> or <u>BOTH</u> — Combined Page
Page timeout	The time allotted for paging has expired.
Paging ALL	The prompt appears while you are paging and shows the page zone you have chosen. Press <input type="text" value="Feature"/> or <input type="text" value="Ris"/> when you are finished paging.
Paging busy	A page is already being made in the Page Zone you have requested.

## Notes

Page zone 0 equals all zones.

When making an announcement using External Page or Combined Page, the Long Tones feature is automatically activated for the external paging system only. This allows you to control optional equipment with the Long Tones feature.

Each Norstar telephone can be assigned to one of six Page Zones, or to none, in Administration programming.

Make sure that everyone who needs to make page announcements has a list showing which telephones are in which page zones.

---

# Priority Call

---

Feature

6

9

If you get a busy signal when you call someone in your office, you can interrupt them. Use this feature for urgent calls only.

1. Enter the Priority Call feature code (Feature  ).
2. Wait for a connection, then speak.

A person who receives a Priority Call while they are on another call has eight seconds to accept or reject the call. If the person does nothing, the Priority Call feature puts their active call on Exclusive Hold and connects your call.

## Displays

You will see some of these displays while making a Priority Call.

Call blocked

You tried to place a Priority Call to another Norstar telephone. The person you called has blocked your call. Try to call the person later.

Denied in admin

You have tried to make a Priority Call, but this feature has not been assigned to your telephone.

Make call first

You have attempted to use the Priority Call feature with no ringing or busy tone on the line. Use Priority Call only when you hear ringing or a busy signal.

Please wait

The party you are calling has eight seconds to decide whether to accept or reject your Priority Call.

Priority denied

The telephone you are calling is already in a Priority Call or is unable to receive Priority Calls.

## Notes

You can make a Priority Call only while your telephone display shows one of the following prompts:

```
Do Not Disturb  
PRIORITY LATER
```

```
On another call  
PRIORITY LATER
```

```
Calling 4321  
PRIORITY LRTER
```

```
4321 busy  
PRIORITY LATER
```

If Call Forward is active at the telephone you are trying to reach, your call will be forwarded.

If the telephone receiving the Priority Call is in a conference call, the other two parties are automatically put on hold when the Priority Call is accepted.

The System Coordinator gives a telephone permission to make priority calls in Administration programming.

---

# Service Modes

Feature   8  7

## Switch to a service mode

Feature   8  7

You can use Service Modes to make your Norstar system behave differently at different times of day. For instance, all incoming external calls can be directed to a security guard's telephone during the night, or calls to one receptionist can be directed to another receptionist during lunch.

1. Enter the Service Modes feature code ([Feature]   8  7) on a Control telephone. (See Special telephones for information on Control telephones.)
2. Select the service mode you want.

## Cancel Service Modes

Feature  #  8  7

You can return to normal operation or cancel the manual override of an automatic mode. You cannot cancel an automatic mode.

1. Enter the Cancel Service Modes feature code.

## Displays

You will see some of the following displays when selecting a service mode.

```
Night Service
QUIT  OK  NEXT
```

The name of the current service mode ("Night Service", in this case) is displayed. Press **Q** or **NEXT** to see other service mode options. Press **[Hold]** or **OK** to select the desired Mode.

```
Denied in admin
```

You are trying to activate a service mode from a telephone that is not a Control telephone or Direct Dial telephone, or else all service modes are disabled in Administration programming.

## Notes

A service mode allows you to change which lines ring at which telephone, to activate or deactivate the auxiliary ringer for certain lines, and to have Direct-Dial calls ring at the Extra-Dial telephone. Service modes can be programmed to begin automatically at certain times or they can be turned on and off at the control telephone. The System Coordinator sets up service modes in Administration programming.

Automatic service modes are indicated by an asterisk (\*) before the name of the service mode on the display. You can neither manually activate nor cancel automatic service modes, although you can override them with manual modes.

The Control telephone can override automatic service modes at any time by entering the Service Modes feature code ([Feature] 8 7), and selecting a different service mode; this override will remain in effect until it is cancelled by means of ([Feature] # 8 7). Note that if you selected a service mode with an asterisk (\*), the next automatic service mode will come into effect at the programmed time.

Direct dial calls to a Direct-dial telephone will ring at the Extra-dial telephone (designated in Administration programming) only when the Service Modes feature code ([Feature] 8 7) is entered at that Direct-dial telephone. Note that only the Extra-dial telephone will be activated, not the actual service mode (unless that Direct-dial telephone is also a Control telephone).

Norstar provides three service modes named "Night", "Lunch", and "Evening". You can change these names to suit yourself. In addition, there is normal service when no service modes are active.

---

# Special Telephones

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You can assign several special functions to the telephones in your Norstar system. Except where noted, you do not need special hardware. A special function is assigned to a telephone either by your Installer in Configuration programming or by the System Coordinator in Administration programming.

## Alarm telephone

An Alarm telephone is a Norstar telephone with a two line display (M7310 or M7324) that your Installer has assigned to display Norstar's system alarm codes, should they occur.

If an alarm message appears on the Alarm telephone's display, follow the instructions below.

1. Record the alarm number.
2. Press TIME and record the time displayed.
3. Call your Installer or Service Representative and report the alarm code.
4. After speaking to your Installer or Service Representative, press CLEAR.

This is an example of an alarm display.

Alarm: 61-4-2
TIME CLEAR

Report this alarm and the time it occurred to your Installer or service representative.



## Central Answering Position

A Central Answering Position (CAP) is a Norstar M7324 Telephone that your installer has defined as a CAP in Configuration programming. You can connect one or two Norstar CAP modules to the CAP to increase the number of lines it can handle. There can be from one to five CAPs in a Norstar system. It is best if the CAP is also the Prime telephone and Direct-Dial telephone for the lines and telephones it serves.

The CAP module displays the busy/not busy status of the telephones in your system by using the triangular indicators beside Internal Autodial, Programmed Feature or line buttons. A CAP can support 120 external lines.

You can send up to 30 messages from a CAP.

For more information, see the *Norstar Central Answering Position User Card*.

## Control telephone

The Control telephone lets you place the external lines for which it has responsibility into and out of Service Modes. See Service Modes.

## Direct-Dial

You can dial a Direct-Dial telephone with a single digit. The Direct-Dial telephone is usually in a central location, such as a receptionist's or secretary's desk. It is usually a Prime telephone and a Central Answering Position (CAP).

There may be up to five Direct-Dial telephones in your system, but each telephone in the system is assigned to a single Direct-Dial telephone. There is a single Direct-Dial digit for the whole system that lets each telephone call its assigned Direct-Dial telephone.

Each Norstar Direct-Dial telephone can send up to 30 messages and each can invoke Service Modes to activate the Extra-Dial telephone.

Your installer sets up Direct-Dial telephones in Configuration programming. The System Coordinator assigns telephones to Direct-Dial telephones in Administration programming.

## Emergency telephone

The emergency telephone is a single-line telephone (not a Norstar telephone) that functions independently of the Norstar system. You can use the emergency telephone when your Norstar system is not working.

Emergency Transfer/Power Failure Cut-through provides basic telephone service on external line 001 through an Emergency Telephone if the power fails or if a system error occurs.

The emergency telephone is usually located near the Key Service Unit (KSU). Each KSU can support two Emergency telephones, and each Trunk Module can support one additional Emergency telephone.

## Extra-Dial telephone

In Service Modes, a second telephone can be assigned to ring on calls made to a Direct-Dial telephone. There may be one Extra-Dial telephone for each Direct-Dial telephone, and it may be a different telephone in each Service Mode.

## Hotline telephone

You can call a programmed internal or external telephone number simply by picking up the receiver of the Hotline telephone (or by pressing ).

A Hotline telephone can be set up to dial an operator or an emergency number. You should put a notice by the Hotline telephone to let people know which number will be dialed when they lift the receiver.

If the Hotline telephone is set up to dial an external number using the prime line, there must be an external prime line assigned to the telephone. If not, the Hotline call will fail.

The System Coordinator sets up the Hotline telephone, the telephone number it dials, and the line on which that number is dialed, in Administration programming.

### To bypass a Hotline

Press a line button, or use the Pre-Dial or Automatic Dial feature before you pick up the receiver or press .

The following displays may occur at a Hotline telephone.

The line assigned to the Hotline is in use. Make the call using normal methods or wait until the Hotline line is free.

The Hotline has been set up to dial an external number on a prime line but the Hotline telephone does not have a prime line. This must be corrected in Configuration or Administration programming.

No free lines

The Hotline has been set up to dial an external number on a prime line but the Hotline telephone has an internal prime line and no access to line pools. This must be corrected in Configuration or Administration programming.

This message may also appear if the line pool assigned to the telephone is busy.

### Prime telephone

Each line in a Norstar system can have a telephone assigned to it as a Prime telephone. Calls not answered at their normal destinations are transferred to the Prime telephone. The Prime telephone is usually the telephone on the receptionist's desk and it is often the Control telephone and a Central Answering Position as well. A Prime telephone is assigned to a line in Configuration programming.

See the Answering the telephone section for the displays that may occur at a Prime telephone.

---

# Speed Dial

---

[Feature] 0

## Make a speed dial call

[0] [Feature]

You can quickly dial external telephone numbers that have been programmed onto speed dial codes.

1. Enter the Speed Dial feature code ([Feature] [0]).
2. Enter the appropriate two-digit Speed Dial code.

Norstar supports two types of Speed Dial codes, Personal and System. System Speed Dial codes are from 01 to 70. The System Administrator can assign numbers to System Speed Dial codes for the entire system in Administration programming. Personal Speed Dial codes are from 71 to 94 and may have different numbers assigned to them on each telephone. Users can program their own Personal Speed Dial numbers.

## Program Personal Speed Dial

[Feature] [\*] 4

You can add or change a Personal Speed Dial number on your telephone.

1. Enter the Personal Speed Dial programming feature code ([Feature] [\*] 4).
2. Enter the code onto which you want to program a number.
3. If you want to include a line selection for this number, select the line or line pool.
4. Enter the number you want to program.

## Displays

You will see some of these prompts while using or programming Speed Dial.

---

9_ QUIT BKSP OK	Continue entering the number you wish to program. You can change the number by pressing the left side of the volume bar or by pressing <u>BKSP</u> . When you are finished, press <u>[Hold]</u> or <u>OK</u> .
Access denied	You have tried to program a Personal Speed Dial number while someone else on the system' is in Configuration or Administration programming.
Autodial full	You have tried to enter a new personal speed dial number, but the memory for these numbers in your Norstar system is full.
Enter code	Enter a two-digit code between 71 and 94 for the personal speed dial number you want to program.
Enter digits WIT OK	Enter the telephone number you wish to program exactly as you would if you were dialing it normally. When you are finished, press <u>[Hold]</u> or <u>OK</u> .
Invalid code	You have entered a code outside the code range (01-94).
No number stored	There is no number stored on the speed dial code you have dialed.
Program and HOLD	If you want to program a line or line pool selection for this speed dial, select the line or line pool. Otherwise, enter the telephone number you wish to prog-t-am exactly as you would if you were dialing it normally. When you are finished, press <u>[Hold]</u> .

```
Program a n d  OK
QUIT          OK
```

If you want to program a line or line pool selection for this speed dial, select the line or line pool. Otherwise, enter the telephone number you wish to program exactly as you would if you were dialing it normally. When you are finished, press [Hold] or OK.

```
Select a line
```

The line associated with your speed dialer is busy or there is no line associated with it. Select a free external line or line pool and enter the Speed Dial feature code again.

```
Speed dial>
```

Enter a two-digit Speed Dial code (01-94). You must enter the zero for codes 01 to 09.

## Notes

There is no difference between using Personal Speed Dial and using System Speed Dial. They differ only in how you program them.

Speed Dial numbers may include line choices and Host System Signaling codes.

Speed Dial numbers are subject to the same Class of Service as regularly dialed numbers. System speed dial numbers can be programmed to bypass dialing restrictions.

Normally, speed dial numbers are shown on the display while they are being dialed. System speed dial numbers may be programmed to show a speed dial name instead of the number, keeping the actual number confidential.

---

# System features

---

The following features are available for the whole Norstar system.

## Accidental Disconnect Protection

If you accidentally drop the receiver back into the telephone cradle while answering a call, you can quickly retrieve the call.

1. Pick up the receiver again or press . You are connected to your call.

## Automatic telephone relocation

If Automatic telephone relocation is enabled, you can move your telephone from one Norstar jack to another without it losing any of its custom programming. Your Installer enables Automatic telephone relocation in Configuration programming.

## Background Music

You can listen to music through your telephone speaker.

1. Enter the Background Music feature code.

### Warning

In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers or a similar organization if radio or TV broadcasts are transmitted through the Background Music feature of this telecommunication system.

Northern Telecom Inc. hereby disclaims any liability arising out of the failure to obtain such a license.

The music stops automatically if you make or answer a call.



Your Installer makes this feature available to all telephones in Configuration programming. You will need to supply a music source, such as a radio, attached to your KSU (Key Service Unit.)

## Cancel Background Music

Feature  #  8  6

You can cancel Background Music.

1. Enter the Cancel Background Music feature code.

## Class of Service

The Class of Service for a call consists of all the Norstar features and lines available to you for that call. This is determined by the features assigned to the telephone in Administration programming, including all Dialing Filters and Remote Access Packages.

Users who need to dial numbers not permitted by the Class of Service of the line or telephone that they are using, can switch to a different Class of Service by entering a Class of Service Password. Remote users can change the set of Norstar features available to them by entering the DISA DN followed by a Class of Service password. See Class of Service Password.

## Internal numbers

Each telephone in the Norstar system has its own internal number. The length of internal numbers in your system may be from 2 to 7 digits. All numbers in your system are the same length. Your Installer sets the length of internal numbers (also called the DN length) in Configuration programming.

To find out your internal number, use the Button Inquiry feature (  Feature  \*  0 ) on an internal line button. On the M7100 telephone, Button inquiry shows your internal number followed by the function assigned to your single memory button.

## Lines

The following features and characteristics are associated with the use of lines.

### Disconnect Supervision

When Disconnect Supervision is assigned to a line, the Norstar system monitors it to detect if an external caller hangs up. This allows the system to release the line for other uses. Your installer assigns disconnect supervision to lines in Configuration programming. Disconnect supervision can be turned on and off only on Loop start trunks. E&M and DID trunks are always disconnect supervised.

### Line appearance

Any of the lines in your system may appear at any of your telephones. Your Installer assigns lines to telephones in Configuration programming.

Usually, only the lines that are appropriate for a particular person appear at that person's telephone. When a line is assigned to a telephone it is automatically given a line button on that telephone, if a button is available. The M7100 telephone has no line buttons for its lines.

Normally, you cannot answer a call that is ringing on a line that does not appear on your telephone. The following features will allow you to pick up such a call: Call Pickup, Call Park, and Transfer.

### Hung lines

A line that has been redirected using Line Redirection may remain busy after a call is over. If this happens, the outgoing line for the redirection will also remain busy. These are hung lines and you must clear them.

Note that a line indicator that has been solid for a long time is the only real indication that a line is hung. However, the solid line indicator may also indicate a genuine call in progress. Make reasonably sure that the line is indeed hung before clearing it or you may cut off a real conversation.

You can clear a hung line only at the telephone that was used to redirect the line.

1. Select Button Inquiry ([Feature] [\*] 0) at the telephone that was used to redirect the line.
2. Press the button of the redirected line.
3. Press SHOW or Q.
4. Press DROP or [\*]. The hung line is cleared.

Clearing the redirected line clears the outgoing line for the redirection as well.

### Line Pools

A line pool allows each telephone access to external lines from a group (or “pool”) of external lines. You can access such lines by pressing an Intercom button and entering a line pool access code or by pressing a memory button programmed with the line pool feature code.

### Private lines

A private line is exclusive to a particular telephone. Calls that are put on hold or left unanswered on a private line cannot be picked up at any telephone except the Prime telephone.

### Prime line

Your telephone can be programmed to select an internal or external line or a line pool automatically whenever you lift the receiver or press Handsfree. This is your Prime line.

### Ringling Line Preference

Each telephone in the Norstar system can be programmed to ring or remain silent for incoming calls on any external lines that appear on the telephone.

For example, a telephone may have buttons assigned for lines 1 to 3, but have only lines 1 and 2 programmed to ring. An incoming call on any of the three lines causes a line button indicator to flash, and the telephone can be used to answer the call. This is especially useful for people who monitor other telephone lines, but want only their own lines to actually ring.

If a telephone has an external line as a prime line, that line is usually made to ring.

### Target line

A target line is used to route a call dialed with a particular number to a particular telephone or group of telephones. A target line can be used for incoming calls only. A single trunk may provide connections to several different target lines. This allows each person or department in the office to have their own number without having as many trunks on the system as there are people in the office.

### Overflow Call Routing

If a call comes in for a target line that is busy, Norstar routes the call to the Prime telephone for that target line. If there is no Prime telephone assigned to the target line or if a call cannot be directed to a target line, the call will go to the Prime telephone for the incoming trunk.

### System Speed Dial

Speed dial codes 01 to 70 are the same for the entire system. See the Speed Dial section for details.

---

# Time features

---

The Time features let you check the present time and how long you have spent on a call.

## Call Duration Timer

Feature

You can see how long you spent on your last call or how long you have been on your present call.

1. Enter the Call Duration Timer feature code.
2. Read the display.

## Show Time

Feature

You can see the present date and time while you are on a call.

1. Enter the Show Time feature code.
2. Read the display.

## Displays

One of the following displays will occur when you use a Time feature.

Make call first

You have not made a call since your telephone's clock was last reset.

432 1 82: 47

The display shows the last call you made, or the current call, and the total elapsed time in minutes and seconds.

APR 9 9:54 am I

The display shows the present time.

---

# Transfer

---

Feature  

## Transfer a call

Feature  

You can transfer a call to another person in your office.

1. Enter the Transfer feature code (    ).
2. Dial the number of the person to whom you want to transfer the call.

To transfer a call to someone outside your office, see Unsupervised Conference below.

## Transfer with Announcement

Feature  

You can consult a co-worker before transferring a call. This type of Transfer can only be used on the M7324 and M7310 telephones.

1. Enter the Transfer feature code.
2. Press ANNOUNCE .
3. Enter the number of the co-worker to whom you are transferring the call. You can announce the transfer when your co-worker answers.
4. Press JOIN.

## Unsupervised Conference

You can use the Unsupervised Conference feature to connect yourself and two other people, then drop out of the conference leaving the other two to talk to each other. If both parties are external, certain restrictions apply. See Notes below.

1. Establish a Conference call as described in Conference.
2. Enter the Transfer feature code (    ).

If you are unable to establish an unsupervised conference, you can put the conference on hold. See the Conference section.

## Transfer using Hold

Call the person you want to transfer the call to and tell them there is a call on hold for them. Do not enter the Transfer feature code. To accept the call, your co-worker presses the line button with the flashing indicator.

Transfer using Hold can only be used to transfer an external call to another telephone that has a button for the line that the external call is on.

An M7100 telephone can transfer a call using Hold but it cannot receive a call transferred in this way.

## Displays

You will see some of the following displays while transferring calls.

<pre>432 1 busy       CALLBACK</pre>	The person to whom you tried to transfer a call is on another call. Press <u>CALLBACK</u> or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.
<pre>432 1 DND       CALLBACK</pre>	The person to whom you tried to transfer a call has Do Not Disturb active on their telephone. Press <u>CALLBACK</u> or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.
<pre>432 1 hung u p</pre>	The internal caller you were trying to transfer hung up before the transfer was complete.
<pre>(432 1 n o r e p l y       CALLBACK</pre>	The person to whom you tried to transfer a call did not-answer. Press <u>CALLBACK</u> or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

4321>4322  
CANCEL JOIN

Press JOIN to transfer the call from telephone 4321 to telephone 4322.

Announce to:  
CANCEL

Dial the internal telephone number of the person to whom you want to transfer the call. If you are already connected to that person, press the line button of their call.

Calling 4321  
CANCEL JOIN

Press JOIN to connect the two calls. Press CANCEL to reconnect to the person you were trying to transfer. If you are not reconnected, press Rls and then press the line button of the call on hold.

Calling 4321  
PRIORITY LATER

Either wait for the telephone to be answered, or press LATER to use the Ring Again or Message features, or press PRIORITY to make a priority call.

Line001 hung U P

The external caller you were trying to transfer has hung up before the transfer was complete.

Line001>4321  
CANCEL JOIN

Press JOIN to transfer the call on line 001 to telephone 4321.

Make call first

You have tried to use the Transfer feature when you have no call to transfer.

Not in service  
CALLBACK

The telephone to which you are trying to transfer a call is out of service. Press CALLBACK or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

Not in service

The telephone to which you are trying to transfer a call is out of service.



Transfer denied

Your transfer cannot be completed for one of these reasons:

- All the internal resources needed to perform a transfer are in use. Try again later.
- You have tried to transfer an external call to another external party. Try establishing an Unsupervised Conference, instead.
- An Unsupervised Conference is not possible for your call. See Notes below.

Transfer to:  
CANCEL ANNOUNCE

Press ANNOUNCE if you wish to announce the call. Otherwise enter the internal number of the person you want to transfer the call to.

## Notes

You can establish an Unsupervised Conference whether the other two people are inside or outside the Norstar system. However, if both of the other people are outside the system there are some restrictions: At least one of the outside callers must have called you and that call must be on a disconnect supervised line.

You may discover that you can establish an Unsupervised Conference between two internal calls or one internal and one external call, simply by hanging up or pressing RIS. This is not a good habit to get into, because if you do it when you have two external calls, you will drop the calls.

# Using **Norstar** remotely

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You can use the lines, and some of the features, of a Norstar system from outside that system. You can do this over the public telephone network when you are away from the office, or you can call into a Norstar system in another office from your own Norstar system over a private network.

The exact facilities available to you through Remote Access will vary depending on how your system is set up. The Norstar features that can be made available to remote users are: access to lines, access to line pools, and remote paging.

## Examples

A salesman who spends most of his time on the road needs to make long distance calls to the European office. Your Norstar system has a leased line to Europe with reduced transatlantic charges. You provide that salesman with a Class of Service password that gives access to the transatlantic line. The salesman can then telephone into the Norstar system from a client's site, enter his Class of Service password, and use the leased transatlantic line to make his calls.

The manager of one of your branch offices also needs to talk to the European office. She uses a private network line between her branch office and the head office to access the head office's Norstar system and use its transatlantic lines.

## Accessing **Norstar** remotely Over the public network

You can use Norstar remotely over the public telephone network.

1. Dial the Norstar system's remote access number.
2. If you hear stuttered dial tone, enter a COS password.
3. Wait for system dial tone.

### Over a private network

You can access Norstar remotely using a private network line.

1. Select the private network line or the line pool that contains private network lines.
2. Dial the number, if any, needed to access the remote system.
3. If you hear stuttered dial tone, enter a COS password.
4. Wait for system dial tone.

### Using **Norstar** remotely

Once connected to a remote system you can do any one of the following:

- enter the DISA DN followed by a COS password to change your Class of Service.
- dial the number of someone on the remote Norstar system.
- dial a line pool access code and make an external call.
- enter a paging feature code (60 through 63). Use **Q** instead of [Feature] when entering the feature codes. See Page.

### Tones you may hear

Busy tone

The number you dialed on the Norstar system is busy. Your call will be disconnected after five seconds.

Norstar system dial tone	<p>You may:</p> <ul style="list-style-type: none"><li>— enter the DISA DN followed by a COS password to change your Class of Service.</li><li>— dial the number of someone on the remote Norstar system.</li><li>— dial a line pool access code and make an external call.</li><li>— enter a paging feature code (60 through 63) using <input type="checkbox"/> instead of <input type="text" value="Feature"/>. See Page.</li></ul>
Fast busy tone	<p>You have done one of the following:</p> <ul style="list-style-type: none"><li>— entered an incorrect COS password. Your call will be disconnected after five seconds.</li><li>— taken too long while entering a COS password. Your call will be disconnected after five seconds.</li><li>— tried to use a line pool or feature not permitted by your Class of Service. You will hear system dial tone again after five seconds.</li><li>— dialed a number in the Norstar system which does not exist. Your call will be disconnected after five seconds.</li></ul>
Stuttered dial tone	<p>Enter your COS password on the dial pad of your telephone.</p>

## Controlling access to your **Norstar** system

It is important that you maintain the security of your Norstar system by limiting access to authorized users and limiting those users to just those features they need. Remember that a remote user can make long distance calls that will be charged to your company and can make page announcements in your office.

## Direct inward System Access

You can control access to your Norstar system with Direct Inward System Access (DISA). If you set up the trunk used for remote access for auto-answer with DISA, callers will hear stuttered dial tone and must enter a Class of Service password before they are allowed into the system. Access to your Norstar system from the public telephone network should always be controlled with DISA.

If you are setting up access to your system from another Norstar system over a private network, you may not need DISA. If you set up your E&M trunk to answer without DISA, callers from remote Norstar systems will receive system dial tone immediately.

Your DISA facility has a number (the DISA DN) which an external caller can dial when they hear system dial tone to activate DISA and enter a Class of Service password to change to a different Class of Service.

## Class of Service

You can control which feature a remote user can access through the Class of Service for the call. The Class of Service of a Remote Access call is determined either by the Class of Service password entered when the system answers with DISA or by the Class of Service associated with the trunk when the system answers without DISA.

After having accessed the system, a remote user can change the Class of Service for the call by dialing the DISA DN followed by a Class of Service password.

## Maintaining security

To maintain the security of your system, the following practices are recommended:

- Warn anyone to whom you give the remote access number to keep it confidential.
- Change Class of Service passwords often.
- Warn anyone to whom you give a Class of Service password to remember it and not to write it down.
- Remove the Class of Service password of anyone who leaves your company.

## Notes

Remote Access is possible only on DID and E&M trunks, and Loop start trunks that are set to auto-answer.

To use the system remotely, the telephone you are using to call the system must use tone dialing.

If the Loop start trunk used for Remote Access is set to unsupervised mode, auto-answer will not function and the caller will hear ringing instead of stuttered or system dial tone.

If you use one Norstar system to call remotely into another Norstar system, you can use the available features of the remote Norstar system by pressing **Q** followed by the feature code. If you press  , you will invoke the features of the local system, not the remote one.

Your Installer sets trunks to be auto-answer, with or without DISA, in Configuration programming. DNs are set in Configuration programming. The System Coordinator sets up Classes of Service and Class of Service passwords in Administration programming.

# Voice Call

Feature  6 6

## Make a voice call

Feature  6 6

You can make an announcement or begin a conversation through the speaker of another telephone in the system.

1. Enter the Voice Call feature code (  6 6 ).
2. Wait for the beep, then speak.

## Mute Voice Call tones

When a Voice Call begins at your telephone, you hear a beep every 15 seconds as a reminder that the microphone is on. You can stop it beeping.

1. Pick up the receiver or press  Handsfree

## Handsfree Answerback

If Handsfree Answerback is assigned to your telephone, you can respond to a Voice Call without touching the telephone.

1. When someone makes a voice call to you, simply start talking. Your telephone's microphone picks up your voice.

Your telephone will beep periodically to remind you the microphone is on. You can stop it beeping.

1. Pick up the receiver or press  Handsfree .

## Voice Call Deny

Feature  8 8

You can prevent your telephone from receiving voice calls.

1. Enter the Voice Call Deny feature code (  8 8 ). Voice calls will ring like regular internal calls. Your other calls will proceed normally.

## Cancel Voice Call Deny

Feature  # 8 8

You can cancel Voice Call Deny.

1. Enter the Cancel Voice Call Deny feature code (  # 8 8 ).

## Displays

You will see some of these displays while making a voice call.

Dial voice call

Dial the internal number or press the internal autodial button of the person to whom you want to speak.

Voice call

The line is open for you to speak.

No voice call

The telephone receiving the call cannot accept voice calls for one of the following reasons: it is active or ringing with another call; it is in Call Forward mode; it is in Do Not Disturb mode; it has Voice Call Deny turned on; it is not a Norstar telephone.

Your call proceeds automatically as a regular ringing call.

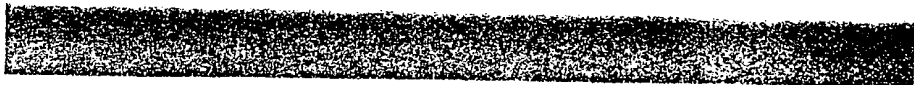
## Notes

Once you have answered a voice call, you can put it on hold, transfer it, or otherwise treat it as a normal call.

When you have Handsfree Answerback assigned to your telephone, and you are using an On-Hook Dialing Mode, the microphone and speaker are both activated for external calls.

The System Coordinator assigns Handsfree Answerback to a telephone in Administration programming. You can not assign Handsfree Answerback capability to the M71 00 telephone.

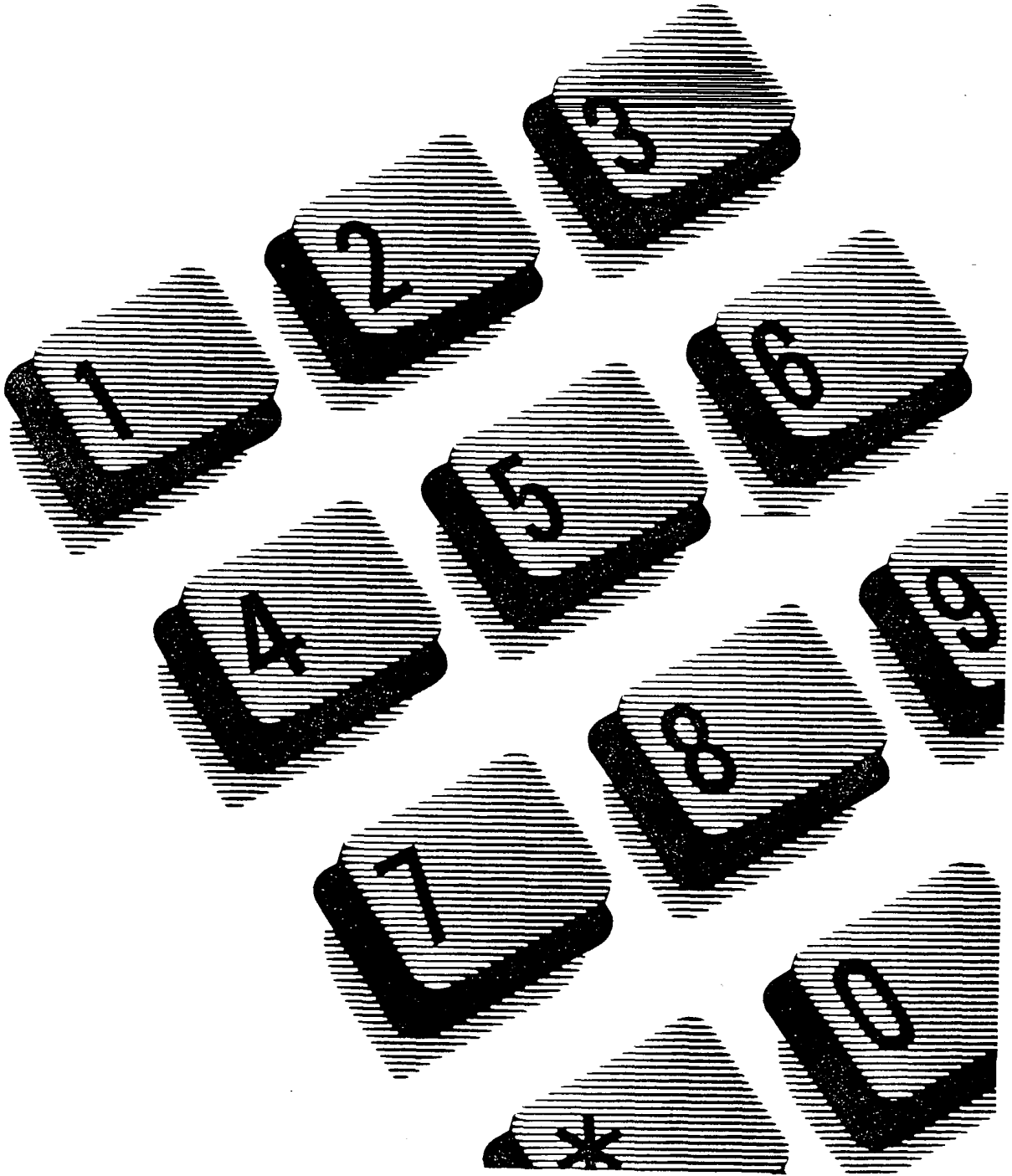




# Telephone user cards

[telemanuals.com](http://telemanuals.com)

| e e e e o \* e e e e e e \* e e \* e e \* e e e e e e m e e e e e e e



## Norstar alphabetical feature list

Background Music	Feature <input type="text" value="8"/> <input type="text" value="6"/>	Cancel Feature <input type="text" value="#"/> <input type="text" value="8"/> <input type="text" value="6"/>
	Listen to music (provided by your office) through your telephone speaker when you are not on a call.	
Button inquiry	Feature <input type="text" value="*"/> <input type="text" value="9"/>	
	Check what is stored on any button. Use when labeling memory buttons.	
Call Duration Timer	Feature <input type="text" value="7"/> <input type="text" value="7"/>	
	Temporarily displays the approximate length of your current or most recent call	
Call Forward	Feature <input type="text" value="4"/>	Cancel Feature <input type="text" value="#"/> <input type="text" value="4"/>
	Send your calls to another telephone within your Norstar system.	
Call Park	Feature <input type="text" value="7"/> <input type="text" value="4"/>	
	Automatically puts a call on hold and a retrieval code from 001 to 909 is displayed. The call can be retrieved from any telephone in your Norstar system.	
Call Park Retrieval	Intercom <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="9"/> <input type="text" value="0"/> <input type="text" value="9"/>	
	Get a parked call from any telephone by selecting an internal line and entering the retrieval code (001 to 909). The M7100 Telephone has no <input type="text" value="Intercom"/> , so just dial the retrieval code.	
Call Pickup Directed	Feature <input type="text" value="7"/> <input type="text" value="6"/>	
	Answer any ringing telephone by using the feature code and dialing that telephone's internal number.	
Call Pickup Group	Feature <input type="text" value="7"/> <input type="text" value="5"/>	
	A member of a pickup group can answer a call that is ringing at another telephone within the same group.	
Call Queuing	Feature <input type="text" value="9"/> <input type="text" value="0"/> <input type="text" value="1"/>	
	Answers the next available call. Gives priority to the longest waiting external call.	
Camp-On	Feature <input type="text" value="8"/> <input type="text" value="2"/>	
	Lets you re-route a call to another telephone even if all its lines are busy. Enter the feature code, then dial the internal number of the receiving telephone. To answer the call, use Call Queuing. If more than one call is waiting, priority is given to incoming external calls over camped calls.	
Class of Service	Feature <input type="text" value="6"/> <input type="text" value="9"/>	
	Enter this feature code and a password provided by your System Coordinator to switch from one Class of Service to another. The Class of Service determines which numbers you can dial.	
Conference/Transfer	Feature <input type="text" value="3"/>	
	Lets you set up a three-person call or transfer a call to another telephone within or outside of your Norstar system.	
Contrast Adjustment	Feature <input type="text" value="*"/> <input type="text" value="7"/>	
	To adjust the contrast of your telephone display, enter the feature code and then press <input type="text" value="1"/> through <input type="text" value="9"/> (depending on your telephone) to select the correct level.	
Dialing Modes	Feature <input type="text" value="*"/> <input type="text" value="8"/> <input type="text" value="9"/>	
	Lets you choose the method for dialing without lifting the receiver. To change the Dialing Mode from Standard Dialing to Pre-Dial or Automatic, enter the feature code, then press <input type="text" value="9"/> to select the mode. Press <input type="text" value="Hold"/> to store the selected Dialing Mode.	

## 2 / MDR4 Feature Card

**Standard Dialing:** The ordinary way to dial without lifting the receiver. Press a line button, then dial the telephone number.

**Automatic Dialing:** Dial a telephone number automatically on the dial pad without picking up the receiver or pressing a line button.

**Pre-Dial:** Dial a telephone number, revise it by pressing **BACK**, then press a line button to place the call. For the M7208 or M7100 Telephone, press **⏮** (volume down) on the volume bar to revise the number.

**Pre-Dial (Line Pool):** Program Pre-Dial on the telephone first. Dial a telephone number. Press a memory button that has been programmed for direct access to a Line Pool.

**Do Not Disturb**    Cancel      
Prevents incoming calls from ringing at your telephone.

**Exclusive Hold**     
Temporarily suspends a call and prevents other telephones from picking it up.  
Exclusive Hold Retrieval: Press  of the held call (press  on the M7100).

**Group Listening**     Cancel       
Use both the receiver and your speaker at the same time while you are on a call. To avoid acoustical feedback, hold the receiver away from the speaker during a call, and before hanging up, press .

**Language Choice**       
English language: Displayed on your telephone.  
      
Alternate language: Displayed on your telephone.

**Last Number Redial**    
Automatically redials the last external telephone number that you dialed.

**Line Pools**     
Several external lines can be shared by a group of telephones, but not all telephones require a button for every line. Enter the feature code, then enter the Line Pool access code.

**Line Redirection †**    Cancel      
You can redirect one or more lines on your telephone so that calls coming in on the line(s) will be directed to one or more locations outside the Norstar system.

**Link**     
Generates a Link signal (also called flash or recall) to access other systems or carriers.

**Long Tones**      
Sometimes necessary to communicate with devices (such as fax or answering machines) which use longer tone signals. A Long Tone lasts as long as a dial pad button is held down.

**Messages**    Cancel      
Message, Reply: Call back the co-worker who sent you a message on your display.  
        Cancel     
Message, Send: Leave a message on a co-worker's telephone display to call you back.

† Feature not available on the M7100 Telephone.

## User cards

## MDR4 Feature Card / 3

<b>Moving Line Buttons †</b>	Feature <input type="text" value="*81"/>
	Lets you change the position of a line button. Enter the feature code and press the line button you want to move. Then, press the button to which you want the line to move. The two lines switch positions. Lines can not be moved to positions occupied by <input type="text" value="Handsfree 0 r Answer"/> buttons.
<b>Page</b>	<p>Feature <input type="text" value="6Q"/> to 6) (0 means all zones)</p> <p>Internal (Zone): Make announcements, through the Norstar telephone speakers, to a select group or to all Norstar telephones.</p> <p>Feature <input type="text" value="62"/></p> <p>External: Make announcements through your office's loudspeaker system (if connected)</p> <p>Feature <input type="text" value="6(03)"/> to 6) (0 means all zones)</p> <p><b>External/Internal:</b> Make announcements through both your Norstar telephone speakers and your office's loudspeaker system.</p> <p>Feature <input type="text" value="6(10)"/> to 3) then zone (0 to 6)</p> <p>General: You have a choice of making announcements through the internal and external speakers. Press <input type="text" value="1"/> for internal, <input type="text" value="2"/> for external or <input type="text" value="Q"/> for both.</p>
<b>Pause</b>	<p>Feature <input type="text" value="78"/></p> <p>For Pulse and Tone Dialing: Inserts a 1.5 second delay in a number being dialed.</p> <p><input type="text" value="*"/></p> <p>For Pulse Dialing only: Inserts a 1.5 second delay in a number being dialed.</p>
<b>Priority Call</b>	<p>Feature <input type="text" value="69"/></p> <p>Permits you to interrupt another telephone while it is on another call, or to override a telephone on Do Not Disturb. See your System Coordinator. When you are on another call, you have the option of blocking a Priority Call on your telephone by entering the Do Not Disturb feature code or by pressing <input type="text" value="DND"/>.</p>
<b>Privacy</b>	<p>[Feature] <input type="text" value="83"/></p> <p>Prevents another telephone, which shares your line, from joining your current call or permits it to join.</p>
<b>Programmed Release</b>	<p>Feature <input type="text" value="*Q9"/></p> <p>When programmed at the end of an External Autodial sequence, performs the same function as <input type="text" value="Ris"/>.</p>
<b>Ring Again</b>	<p>Feature <input type="text" value="2"/> Cancel <input type="text" value="Feature #2"/></p> <p>When another telephone or Line Pool within the Norstar system is busy, Ring Again signals you to call back when the telephone or Line Pool becomes available.</p>
<b>Ring Type</b>	<p>Feature <input type="text" value="*6"/></p> <p>Select a distinctive ring to help differentiate between your telephone and others nearby. Enter the feature code and press <input type="text" value="Q"/> through <input type="text" value="4"/> to select the new Ring Type. Press <input type="text" value="Hold"/> to store the new ring.</p>
<b>Ring Volume</b>	<p>Feature <input type="text" value="*80"/></p> <p>Makes your telephone ring so you can adjust the volume, even while you are on a call</p>

† Feature not available on the M7100 Telephone.

## 4 / MDR4 Feature Card

---

Run/Stop      Feature  \*  9

When using the External Autodial programming feature, store more than one number on a memory button by inserting a break point between each two numbers. The first press of the memory button dials the first number; the second press dials the second number, and so on.

---

Saved Number      Feature  6  7

**Redial**      Stores the external telephone number appearing on the display. Redials the number when the feature code is entered.

---

Service Modes      Feature  8  7

**Cancel**      Feature  #  8  7

You can assign a specific telephone to accept all ringing, external, incoming calls. You can program up to three different telephone answering options for specific times of the day, for example, at night or at lunch time. This eliminates the need to forward all your calls. Only an assigned Control Telephone can turn ON Service Modes. See your System Coordinator.

---

Show Time      Feature  8  0  3

You can temporarily display the date and the time while you are on a call.

---

Speed Dial      Feature  \*  4

**Personal:** Lets you program a telephone number into a Personal Speed Dial code (from 71 to 94)

0 **System**     

**Personal and System:** Lets you dial a telephone number using Personal codes (71-94) or System codes (01-70). System Speed Dial codes are programmed by your System Coordinator.

---

Telephone      Feature  \*  1

**programming**      External Autodial: Lets you store an external telephone number onto a memory button for one-button access to that number.

Feature  \*  2

**Internal Autodial:** Store an internal telephone number onto a memory button for one-button access to that telephone number.

Feature  \*  3

**Program Features:** Store a feature onto a memory button for one-button access to that feature.

**Note:** You cannot program  Line ,  Intercom ,  Answer , or  Handsfree  buttons.

---

Timed Release      Feature  7  2

Generates a longer Link signal (1.5 seconds). Use this feature when you want to release a call on your line but retain the use of the line for another call.

---

Transfer      Feature  7  0

Sends a call to another telephone within your Norstar system.

---

Trunk Answer      Feature  8  0  0

Lets you pick up an external call that is ringing on a line which has been placed into Service Modes from any telephone within the Norstar system. This feature does not work on private lines.

---

Voice Call      Feature  6  6

You can make a voice announcement or begin a conversation through the speaker of another telephone without first making the other telephone ring.

---

Voice Call Deny      Feature  8  8

**Cancel**      Feature  #  8  8

Prevents your telephone from receiving Voice Calls, permits only ordinary ringing calls.

---

User cards

## Understanding Norstar features

### How to use Norstar features

You can use many features by pressing **Feature** plus a code.

1. Press **Feature**.
2. Enter the code from the dial pad.
3. Follow the display messages for specific operations of a feature.

### How to program Norstar features

You can program many features onto memory buttons by pressing

**Feature** \* **3**.

1. If you are on a call or have an open line, press **Hold** or **Rls**.
2. Press **Feature** **M71003** telephones, go to step 4.)<sup>1</sup>
3. Press the memory button that you wish to program.
4. Press **Feature**, then enter the code from the dial pad.

**Note:** See your System Coordinator for more detailed information.

## Using Line Pools

### Line pool

With a Line Pool, several external lines can be shared by a group of telephones without requiring each telephone to have a button for every line. Telephones have access to external lines through a programmed system-wide access code. This code is assigned in Configuration programming and is particularly useful for M7100 Telephones which have no line buttons.

#### *To program a Line Pool feature button*

1. If you are on a call or have an open line, press **Hold** or **Rls**.
2. Press **Feature** \* **3**.
3. Press the memory button you want to program.
4. Press **Feature** **6** **4**.
5. Enter the access code for a Line Pool.

#### *To use a Line Pool*

1. Press **Intercom** and dial the Line Pool access code for one of the Line Pools assigned to your telephone.

OR

Press **Line pool** (if programmed).

2. If you are using a line pool which connects you to the public network, dial the telephone number of the person you want to call.

If you are using a line pool which automatically connects you to another Norstar system, see *Using Norstar from outside the office*. \*

If you are using a line pool which automatically connects you to a system other than Norstar, follow the procedure for using that system. Ask your System Coordinator if you need help.

<sup>1</sup> Meridian and Norstar are trademarks of Northern Telecom

## Using Conference and Transfer

### Coni/Trans

#### *To conference (three- way conference call)*

1. Make or answer the first call.
2. Put the first call on hold.
3. Make or answer the second call.
4. After the second call is connected, press    (or press  if programmed).
5. Press the line button of the first held call. (This step is not required on the M7100 Telephone.)
6. Press  to end the conference call.

#### *Managing three-way conference calls*

See your System Coordinator for complete instructions for these operations:  
**Putting a conference on hold** - Put your end of the call on hold; the other two callers can still speak to each other.

**Splitting a conference** - Speak privately to one of the callers.

**Disconnecting one party** - Drop one call and stay connected to the other.

**Independent/y holding two calls** - Put both parties on hold as separate calls.

#### *To establish an unsupervised conference*

When you are on a conference call, press    (or  if programmed). The other two parties remain connected.

**Note:** If both of the parties are external, one of them must have called you.

Some external lines may not support this type of transfer if two external parties are involved.

### Transfer

#### *Transfer without Announcement*

1. Make or answer a call.
2. Press    (or  if programmed).
3. Dial an internal telephone number or press an Internal Autodial button.  
The call is immediately transferred.

**Note:** If an external call is transferred to a busy internal line, or not answered after a few rings, the call automatically rings you back and the display indicates that the line was busy or that no one answered.

#### *Transfer with Announcement*

(Not available on the M7100 Telephone.)

1. Make or answer a call.
2. Press . The call is automatically put on hold.
3. Dial an internal telephone number or press an Internal Autodial button.
4. Announce the call after the called party answers.
5. Press    (or  if programmed).
6. Press the line button of the first held call.

## Using Speed Dial

About Speed Dial codes

Speed Dial lets you dial external telephone numbers using a two-digit code. There are two types of Speed Dial codes. System Speed Dial codes (01 to 70) can be used from any Norstar telephone in the system and are assigned by your System Coordinator. Personal Speed Dial codes (71 to 94) can be used exclusively at your telephone and are assigned by you.

**Note:** You cannot assign Speed Dial codes while someone is programming your Meridian Norstar\* Business Communication System.

Assigning numbers to Personal Speed Dial codes

1. If you are on a call or have an open line, press (Hold] or [Ris].
2. Press [Feature] [\*] [4] to enter Personal Speed Dial codes.
3. Enter a two-digit code (from 71 to 94).
4. Dial the telephone number you want to assign to that code.  
Telephone numbers cannot exceed 24 digits.
5. Press [Hold] to finish programming.
6. Keep a record of each Personal Speed Dial code.

[Speed Dial

Using Sped Dial

1. Press [Feature] [0] (or press [Dial] if programmed)
2. Enter the two-digit SystemSpeed Dial code (01 to 70) or Personal Speed Dial code (71 to 94) for the number you want.  
A line is automatically selected and your call is placed.

## Using Norstar from outside the office

Calling Norstar from outside the office

You can use your Norstar system even when you are not in the office. You will be able to use Norstar to make calls or use the paging feature. You may be required to enter a Class of Service password to get onto the system. Your Class of Service will determine which features you can use and which numbers you can dial.

**To** connect to the **Norstar system**

1. Dial the remote access number provided by your System Coordinator.
2. If you hear stuttered dial tone, enter a 6-digit COS password.
3. When you hear steady dial tone, you are connected to the Norstar system.  
You can do one of the following:
  - Change your Class of Service by dialing the DISA DN and entering a Class of Service password.
  - Dial the number of someone in the office.
  - Enter a line pool access code to use external lines in a line pool.
  - Enter a Page feature code ([\*] [6] [0] through [\*] [6] [3]) and the appropriate page type and zone number to page someone in the office.

**Note:** Ask your System Coordinator for details on your Classes of Service and Class of Service passwords.



## The Norstar Prime Telephone

What is a Prime Telephone?

A Prime Telephone can be any Meridian Norstar\* telephone that has been assigned to provide a backup answering service for incoming external calls. An external call rings at a Prime Telephone when the call is not answered at any other telephones with that call's line appearance.

A Prime Telephone can be any one of the following:

- any Norstar telephone
- an M7310 telephone with a Busy Lamp Field (BLF)
- an M7324 telephone with a Central Answering Position (CAP) module(s).

Your role in operating a Prime Telephone

As the assigned Prime Telephone operator, you are responsible for answering unanswered external calls. You are alerted to these calls when your telephone display shows you a descriptive message, the line indicator flashes, and the call rings. ►

After answering a call, you may take a message or redirect the call to another telephone.

Who assigns the external lines for my Prime Telephone?

Check with your System Coordinator to determine which external lines have been assigned for backup answering and which of those lines ring at your Prime Telephone. To help you do your job well, this person should provide a list of names and numbers associated with each Norstar telephone and external line, and a list of System Speed Dial names and numbers. This person can also tell you which features have been assigned to your telephone.

There may be more than one Prime Telephone operator in your Norstar system. If this is the case, then each Prime Telephone operator is responsible for a particular group of assigned lines when providing a backup answering service. Let the appropriate people within your backup answering group know that you are now providing a service for them.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Answering calls

When do I answer a call?

You answer a call if:

- someone within Norstar calls you. You hear the Norstar internal ring (two quick rings followed by a longer pause), and an indicator ► flashes beside one of your telephone's intercom buttons.
- an external call comes directly to your Prime Telephone. You hear the familiar external telephone ring, and an indicator ► flashes beside one of your telephone's external line buttons.
- a call is redirected to your Prime Telephone from somewhere else within the Norstar system. You hear an internal ring, an external ring, or the Camp-On tone (two quick beeps), and you see a message on the display of your telephone.

---

Note: You do not answer the call if your Prime Telephone does not ring

How do I answer a call?

If you want a line to be automatically selected:

1. Pick up the receiver or press  (if assigned).

OR

If you want to manually answer a line:

1. Press the line or intercom button with a slow flashing indicator ►
2. Pick up the receiver if you want the handsfree microphone OFF.

---

Note: A fast flashing indicator ► shows that a line is on hold.

Handling more than one call at once

When you have more than one call arriving at your telephone, the Call Queuing feature allows you to answer each of the waiting calls by automatically selecting the next call for you.

Use Call Queuing when you are on a call and a new call alerts you by ringing at your telephone, or by sending Call Queuing tones.

1. Pick up the receiver to answer the first call.
2. Press     or the Call Queuing button if programmed.  
The call you were on is automatically put on hold.
3. To return to a previous call:  
Press the external line button of the call on hold.
4. Continue to answer incoming calls.
5. Press  when you are finished with the call you are on.

## Redirected calls

Redirecting calls using display messages

The display messages which appear on your Prime Telephone for redirected Norstar calls should help you to understand why those calls were passed to your Prime Telephone. This information is useful when you need to decide what to do with the call once it has been answered.

The following table lists some example display messages that could appear on a Prime Telephone when you receive redirected calls:

Example Prime Telephone display message	What is happening to the call at the other telephone
Held by KAREN	Karen holds a call for too long.
JOHN DND	The call you transferred is returned to you because the telephone is in Do Not Disturb mode.
DRT Line025	Delayed Ring Transfer redirects an unanswered call on line 025.
Lit-412 to Prime	A call on line 012 cannot ring elsewhere
Line010> JANET	A call on line 010 was forwarded or routed to Janet, but was not answered.
Line883 callback	A transferred, camped, or parked call on line 003 was returned to the originator using the Callback feature, but was not answered.

The Held Line Reminder message Held call is repeated periodically after the first message Held by KAREN appears. This message is accompanied by the same tone used with the Camp-On feature (two quick beeps).

## Completing a call

Your options

You have just answered a call for someone else. What do you do next?

You can:

Transfer the call to another telephone within or outside of the Norstar system.

OR

Camp the call on another Norstar telephone.

OR

Announce the call to the office, asking that someone take the call.

OR

Take a message.

Transferring  
the active call

To another **Norstar** telephone:

1. Check whether the telephone to which you want to transfer is already busy:
  - Is there an indicator ► beside the Internal Autodial button for the other telephone?
  - If you have a BLF, is the indicator ON for the other telephone?
  - If you have a CAP module, is the indicator ► ON for the other telephone?
2. Transfer the call using one of these four methods:
  - \*Transfer with Announcement - you first talk on the telephone to the person to whom you want to transfer the call.
    - ┆ Transfer without Announcement - you immediately transfer the call after talking to the caller.
    - ┆ Establish a conference call.
    - ┆ Transfer using hold.

Do not forget that you can use programmed autodial buttons on your Norstar telephone and CAP module (if installed) to select a Norstar telephone.

To a telephone outside the **Norstar** system:

1. Call the person to whom you wish to transfer the call.
2. Establish a conference with the two parties.
3. Drop out of the conference using the Unsupervised Conference feature.

Note: Some external lines may not support an unsupervised conference call. In this case, you may put the conference on hold, allowing the other two parties to continue talking to each other.

Note: Do not use the **[Ris]** button to create an unsupervised conference. Although it will create an unsupervised conference with internal parties, it will not work in a conference with two external parties.

## Completing a call

### Camping the call

If the Norstar telephone you want to transfer the call to is busy on another call, you may want to camp the call on that telephone. The person receiving the camped call will hear Camp-On tones (two quick beeps).

1. Press    or the Camp-On button (if programmed).
2. Dial the internal number of the other telephone or press its Internal Autodial button if programmed.

### Announcing the active call

You are trying to pass calls you have answered to co-workers who are not at their telephones. Using the Page feature, you can announce the calls over the Norstar telephones, an external loudspeaker, or both. A co-worker hearing an announcement can answer the call from the nearest Norstar telephone.

*If you want your co-worker to take the call from a specific Norstar telephone:*

1. Place the call on hold.
2. Using the Page feature, announce the call and the location of the telephone to which you will transfer the call.
3. Transfer the call to the appropriate Norstar telephone.  
OR  
Camp the call on the appropriate Norstar telephone.
4. Replace your receiver.

*If you want your co-worker to take the call on a specific line:*

1. Place the call on hold.
2. Use the Page feature to announce the call and its line number.
3. Replace the receiver.

Your co-worker can now go to the nearest Norstar telephone that has that line, select the line, and lift the receiver.

*If you want your co-worker to take the call from any Norstar telephone:*

1. Use the Call Park feature to place the call on hold. Your telephone shows a three-digit Call Park Retrieval code on the display.
2. Use the Page feature to announce the call and the Call Park Retrieval code.
3. Replace your receiver.

Your co-worker can now retrieve the call from any other Norstar telephone by lifting the receiver and dialing the three-digit code.

---

*Note:* Remember that callback (the call is redirected back to your Prime Telephone) occurs if your transferred, parked, or camped call goes unanswered.

## Useful Norstar features

informing your co-workers about their calls

Use the Send Message feature to notify co-workers that they should call you for information.

If the person you are trying to call is on another line, or their telephone has Do Not Disturb ON, a display message shows you that their telephone is busy. If the person you are trying to call does not answer, a display message informs you that there is no reply. In each case, you can use the Ring Again feature.

The Ring Again feature is a method of ensuring that you immediately know when there is a change in the use of the other telephone. You can then try again to place a call.

Working with other features

Some of the many special features which Norstar provides may be particularly useful to you. Some of these features, however, are only available if assigned during Configuration or Administration programming. Speak to your System Coordinator to determine which features you can use, and to obtain details on how to use them.

**Answer Group:** You can immediately answer and monitor a specific group of Norstar telephones, for example, your managers', using Answer buttons.

**Automatic Handstree:** If programmed, you can use the Handsfree microphone and speaker for all your calls.

**Call Pickup Directed:** Anyone in the office can answer a call ringing at any other Norstar telephone by dialing that telephone's internal number.

**Call Pickup Group:** Any member of a specified group can answer an external or internal call ringing at another telephone within that specified group.

**Direct-Dial Telephone:** If your Prime Telephone is administered as a Direct-Dial telephone, anyone assigned to your Direct Dial telephone can quickly contact you by dialing an assigned single-digit number.

**Hotline:** A Norstar telephone may be programmed to automatically dial your Prime Telephone as soon as its receiver has been lifted.

**Multiple Prime Telephones:** There may be a requirement for more than one Prime Telephone to provide backup answering.

**Page Zone:** If you do not want to disturb the entire office with an announcement, you can direct the page to a choice of smaller areas.

**Priority Call:** If you have answered an urgent call for someone who is busy on another line, you can interrupt the person with this feature. •

## Other information

### Some unique situations

If an external call comes to you, and no remaining external line buttons are available, the indicator ► for that call will appear next to any available intercom buttons on your telephone.

If your Prime Telephone receives a callback call, you will hear the internal telephone ring instead of the familiar external telephone ring.

The Held Line Reminder or the Delayed Ring Transfer feature is not available unless assigned during Configuration programming.

If you are using all of your external line buttons and intercom buttons; you can still receive a camped call (you will hear two quick beeps).

If your Prime Telephone is an M7324 telephone, you can monitor the busy/not busy status of other Norstar telephones. Check for the presence or absence of indicators ► beside the Internal Autodial buttons for the other telephones.

---

### Where to get help

To learn more about Norstar and its features, the System Coordinator can provide you with the following Norstar documents:

*The Meridian Norstar Telephone User Cards* show you how to:

- make an external call
- make an internal call
- put a call on hold
- use
- program memory buttons.

The *Meridian Norstar Feature Card* lists the feature codes and describes the features.

The *Meridian Norstar Busy Lamp Field (BLF) User Card* describes how to use the Busy Lamp Field.

The *Meridian Norstar Central Answering Position (CAP) User Card* describes how to use Central Answering Position modules.

## Your Norstar M7100 telephone

**Release button** —  
cancels active calls.

**Display** —  
shows the time, date, call information and guides you while using Norstar\* features.

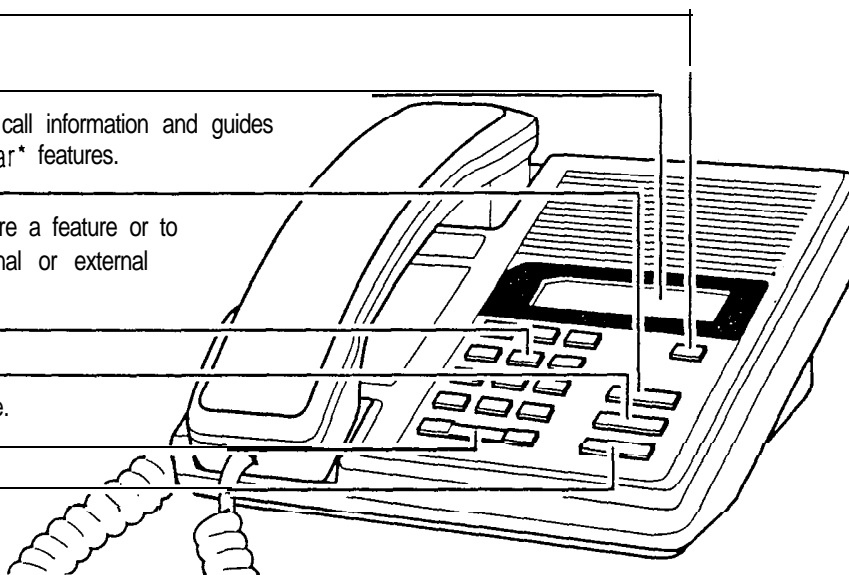
**Memory button** —  
is programmable to store a feature or to automatically dial internal or external number.

**Dial pad** —

**Feature button** —  
starts or ends a feature.

**Volume control** —

**Hold button** —



### Button inquiry

Confirm that your memory button has the correct snap-on cap by checking its programming.

1. Release all calls and open lines with dial tone.
2. Press **Feature** \* 0
3. Read the display.
4. Press **Feature** when finished.

### Adjusting display contrast

1. Press **Feature** \* 7 .
2. Press **1** to **9** for the level you want.

### Selecting a ring type and volume

1. Press **Feature** \* 6 .
2. Press **q** , **q** , **3** or **4** to hear the different types of rings.
3. While the telephone is ringing, press **softer** **louder** to adjust the volume
4. Press **softer** to store the ring.

### Adjusting receiver or telephone speaker volume

1. Press **softer** **louder** when using the receiver or the speaker.

\* Meridian and Norstar are trademarks of Northern Telecom.



## Making calls

- Internal calls
1. Pick up the receiver.
  2. Dial the internal number.
- 

- External calls
1. Pick up the receiver.
  2. Dial **9** (or your system's external line access code).
  3. Dial the external telephone number.
- 

**Note:** Internal numbers and the external access code are supplied by your System Coordinator.

---

### Making and answering a second call

The M7100 telephone allows you to have two calls active at the same time. By using **Hold** you can switch between calls.

#### *To answer a second call while on another call*

1. Press **Hold** to put the first call on hold. The second call automatically comes onto the line.

#### *To hold a call and make a second call*

1. Press **Hold** to put the first call on hold.
2. Dial the telephone number for the second call.

#### *To return to the first call*

1. Press **Hold** again to return to the first call on hold. The second call is automatically put on hold.
- 

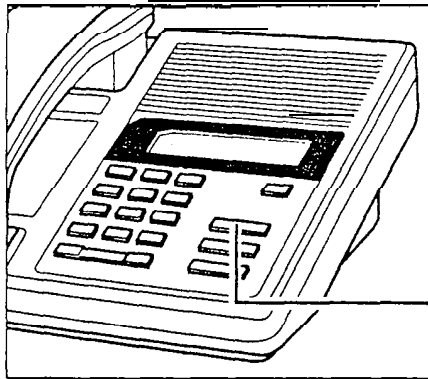
**Hold**

#### *To hold a call*

1. Press **(Hold)**.
2. Press **(Hold)** again to return to the call on hold. Check the display for confirmation or additional information.

## Programming the memory button

### About the memory button



The memory button can store a telephone number or feature code to give you one touch dialing or feature activation. You can change the memory button by programming it with a new number or feature code.

Memory button

Remember: Press  \*  to check the memory button.

### Programming memory buttons

#### *External autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Dial the external number.
4. Press  to store the number.
5. Label your new button.

#### *Internal autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Dial the internal number.
4. Label your new button.

#### *Features*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press  and the feature code.
4. Label your new button.

#### *Erasing memory buttons*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press  to erase the button.

## Your Norstar M7208 telephone

**Display** \_\_\_\_\_  
shows the time, date, call information and guides you while using Norstar\* features.

**indicators** \_\_\_\_\_  
appear beside active lines and features.

**Feature button** \_\_\_\_\_  
starts or ends a feature.

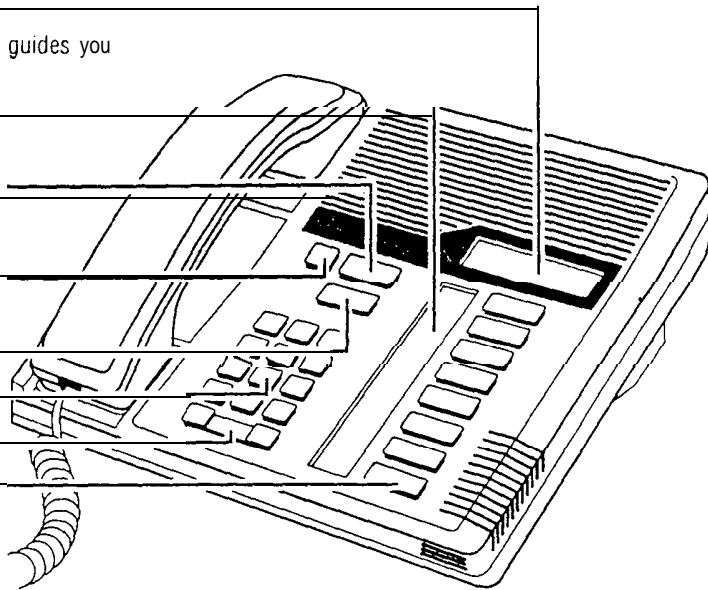
**Release button** \_\_\_\_\_  
cancels active calls.

**Hold button** \_\_\_\_\_

**Dial pad** \_\_\_\_\_

**Volume control** \_\_\_\_\_

**Memory and line buttons** \_\_\_\_\_  
are buttons with indicators for one touch dialing, feature operation or line access.



### Button Inquiry

Confirm that your memory and line buttons have the correct snap-on caps by checking their programming.

1. Release all calls and open lines with dial tone.
2. Press **Feature** \* 0 .
3. Press the button you want to check.
4. Read the display.
5. Press **Feature** when finished.

### Adjusting display contrast

1. Press **Feature** \* 7 .
2. Press a number on the dial pad for the contrast level you want, the higher the number the higher the contrast level.

### Selecting a Ring Type and volume level

1. Press **Feature** \* 6 .
2. Press 1, 2, 3 or 4 to hear the different types of rings.
3. While the telephone is ringing, press **Volume** to adjust the volume.
4. Press **Feature** to store the ring.

### Adjusting receiver or telephone speaker volume

1. Press **Volume** when using the receiver or the speaker.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

[ Line ]

#### *Internal calls using Intercom buttons*

1. Pick up the receiver.
2. If ► appears beside an intercom button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### *External calls using numbered Line buttons*

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

*Note:* Internal numbers are supplied by your System Coordinator.

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#### *Internal calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside an extension button, then dial.

#### *External calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside the extension button, dial 9 (or your system's external line access code) and the number.

Hold

#### *Holding Calls*

1. Press Hold . The ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call.  
Check the display for confirmation or additional information.

#### *Automatic hold*

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### *Making calls*

1. Press Handsfree instead of picking up the receiver.

#### *Switching between Handsfree and handset*

1. Press Handsfree and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### *Using Mute*

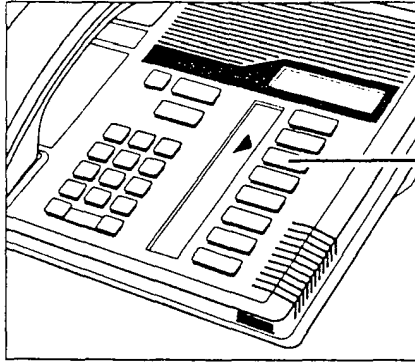
1. Press Handsfree to turn the microphone OFF.
2. Press Handsfree again to turn the microphone ON.

### Dialing without lifting the handset

1. Press a line button without ►, then dial your call.
2. When answered, pick up the receiver, or press Handsfree .
3. If the call is not answered, or the line is busy, press Ris .

## Programming memory buttons

### About memory buttons



Memory buttons are the buttons with indicators other than line or Handsfree buttons. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation. You can change what a memory button does by just programming it with a new number or feature. You cannot program a line or Handsfree button.

**Remember:** Press  \*  to check a memory or line button

### Programming memory buttons

#### *External autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Dial the external number.
5. Press  to store the number.
6. Label your new button.

#### *Internal autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

#### features

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Press  and the feature code.
5. Label your new button.

#### *Erasing memory buttons*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press the memory button you want to erase.
4. Press  to erase the button.

# Your Norstar M7310 telephone

**Shift button** \_\_\_\_\_  
for using the top function of a dual-memory button.

**Display** \_\_\_\_\_  
shows the time, date, call information and guides you while using Norstar\* features. The lower line of the display is reserved for display button instructions.

**Dual-memory buttons** \_\_\_\_\_  
store any two features and/or autodial numbers.

**Display buttons** \_\_\_\_\_

**Feature button** \_\_\_\_\_  
starts or cancels a feature.

**Release button** \_\_\_\_\_  
cancels active calls.

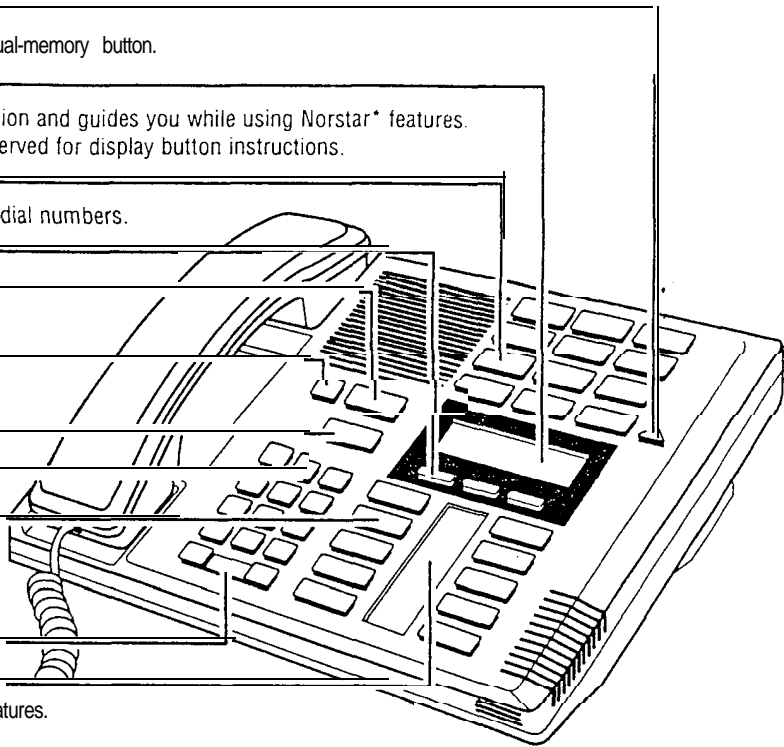
**Hold button** \_\_\_\_\_

**Dial pad** \_\_\_\_\_

**Memory and line buttons** \_\_\_\_\_  
are buttons with indicators for one touch dialing, feature operation or line access,

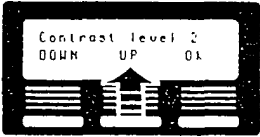
**Volume control** \_\_\_\_\_

**Indicators** \_\_\_\_\_  
appear beside active lines and features.



## Using display buttons

Display buttons change with each feature you use. The labels for display buttons appear in capital letters directly above them on the second line of the display. A display button with an "OK" label above it is represented as **OK** in this card.



## Button inquiry

Confirm that your memory and line buttons have the correct snap-on caps by checking their programming.

1. Release all calls or open lines with dial tone.
2. Press **Feature** \* **0**
3. Press the button(s) you want to check and read the display.
4. Press **Feature** when finished.

## Adjusting display contrast

1. Press **Feature** \* **7**
2. Press **UP** or **DOWN** for the level you want.
3. Press **OK** when finished.

## Selecting a ring type and volume level

1. Press **Feature** \* **6**.
2. Press **1**, **2**, **3** or **4** to hear the different types of rings.
3. While the telephone is ringing, press **softer** or **louder** to adjust the volume.
4. Press **OK** to store the ring.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

Line 1

#### Internal calls using Intercom buttons

1. Pick up the receiver.
2. If ► appears beside an Intercom button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### External calls using numbered Line buttons

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

*Note:* Internal numbers are supplied by your System Coordinator.

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#### Internal calls using extension buttons

1. Pick up the receiver,
2. When ► appears beside an extension button, then dial.

#### External calls using extension buttons

1. Pick up the receiver.
2. When ► appears beside the extension button, then dial **9** (or your system's external line access code) and the number.

Hold

#### Holding Calls

1. Press **Hold**. The ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call. Check the display for confirmation or additional information.

#### Automatic hold

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### Making calls

1. Press **Handsfree** instead of picking up the receiver.

#### Switching between Handsfree and handset

1. Press **Handsfree** and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### Using Mute

1. Press **Handsfree** to turn the microphone OFF.
2. Press **Handsfree** again to turn the microphone ON.

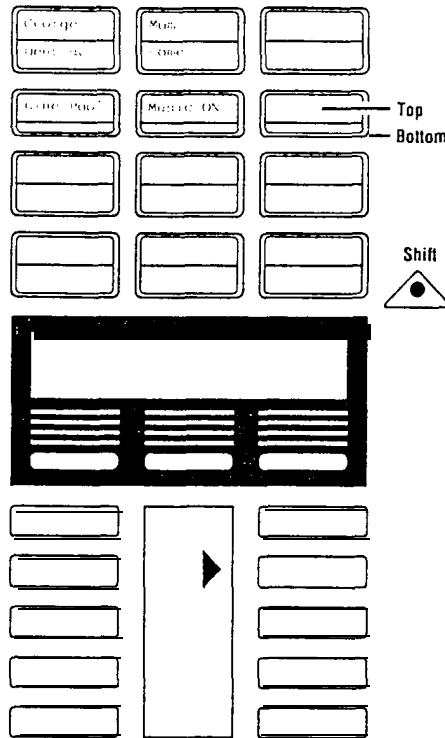
### Dialing without lifting the handset

1. Press a line button without ►, then dial your call.
2. When answered, pick up the receiver, or press **Handsfree**.
3. If the call is not answered, or the line is busy, press **Fls**.

### User cards

## Programming memory buttons

### About memory buttons



There are two types of memory buttons: single-memory and dual-memory. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation.

#### *Dual-memory buttons*

To use the bottom function, press the dual-memory button.

To use the top function, press the shift button, then press the dual-memory button.

#### *Single-memory buttons*

Single-memory buttons are the buttons with indicators other than line or Handsfree buttons.

Remember: Press **Feature** \* **0** to check a memory or line button.

### Programming memory buttons

#### **External autodial**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press a memory button.
4. Dial the external number.
5. Press **OK** to store the number.
6. Label your new button.

#### **Internal autodial**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **2**.
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

#### **features**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **3**.
3. Press a memory button.
4. Press **Feature** and the feature code.
5. Label your new button.

#### **Erasing memory buttons**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press **OK** to erase the button.



## Your Norstar M7324 telephone

Memory and line buttons

are buttons with Indicators for one touch dialing, feature operation or line access.

Display

shows the time, date, call information and guides you while using Norstar\* features. The lower line of the display is reserved for display button instructions.

Display buttons

Dial pad

Volume control

Feature button

starts or ends a feature.

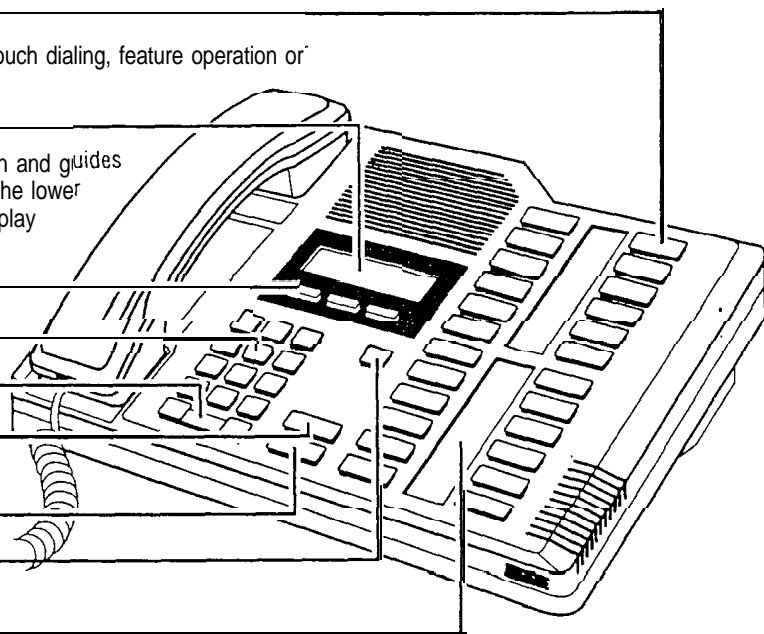
Hold button

Release button

cancels active calls.

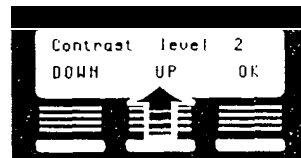
Indicators

appear beside active lines and features.



### Using display buttons

Display buttons change with each feature you use. The labels for display buttons appear in capital letters directly above them on the second line of the display. A display button with an "OK" label above it is represented as **OK** in this card.



### Button inquiry

Confirm that your memory and line buttons have the correct snap-on caps by checking their programming.

1. Release all calls or open lines with dial tone.
2. Press **Feature** \* **0**.
3. Press the button(s) you want to check and read the display.
4. Press **Feature** when finished.

### Adjusting display contrast

1. Press **Feature** \* **7**.
2. Press **UP** or **DOWN** for the level you want.
3. Press **OK** when finished.

### Selecting a ring type and volume level

1. Press **Feature** \* **6**.
2. Press **1**, **2**, **3** or **4** to hear the different types of rings.
3. While the telephone is ringing, press **softer** or **louder** to adjust the volume.
4. Press **OK** to store the ring.

\* Meridian and Norstar are trademarks of Northern Telecom

## User cards

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

Line 1

#### *Internal calls using intercom buttons*

1. Pick up the receiver.
2. If ► appears beside an intercom button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### *External calls using numbered Line buttons*

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

*Note:* Internal numbers are supplied by your system coordinator.

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#### *Internal calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside an extension button, then dial.

#### *External calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside the extension button, then dial **9** (or your system's external line access code) and the number.

Hold

#### *Holding Calls*

1. Press **Hold** ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call.  
Check the display for confirmation or additional information.

#### *Automatic hold*

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### *Making calls*

1. Press **Handsfree** instead of picking up the receiver.

#### *Switching between Handsfree and handset*

1. Press **Handsfree** and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### *Using Mute*

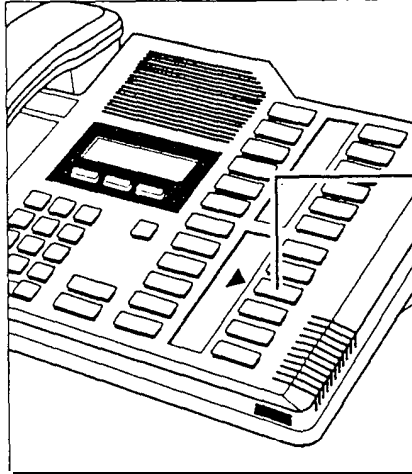
1. Press **Handsfree** to turn the microphone OFF.
2. Press **Handsfree** again to turn the microphone ON.

### Dialing without lifting the handset

1. Press line button without ►, then dial your call.
2. When answered, pick up the receiver, or press **Handsfree**.
3. If the call is not answered, or the line is busy, press **Fls**.

## Programming memory buttons

### About memory buttons



Memory buttons are the buttons with indicators other than line or Handsfree buttons. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation. You can change what a memory button does by just programming it with a new number or feature.

If you have programmed a memory button with an internal number the indicator comes on when the number is busy.

*Remember:* Press **Feature** \* **0** to check a memory or line button.

### Programming memory buttons

#### **External autodial**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press a memory button.
4. Dial the external number.
5. Press OK to store the number.
6. Label your new button.

#### **Internal autodial**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **2**.
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

#### **Features**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **Q**.
3. Press a memory button.
4. Press **Feature** and the feature code.
5. Label your new button.

#### **Erasing memory buttons**

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press **OK** to erase the button



## Using the Busy Lamp Field

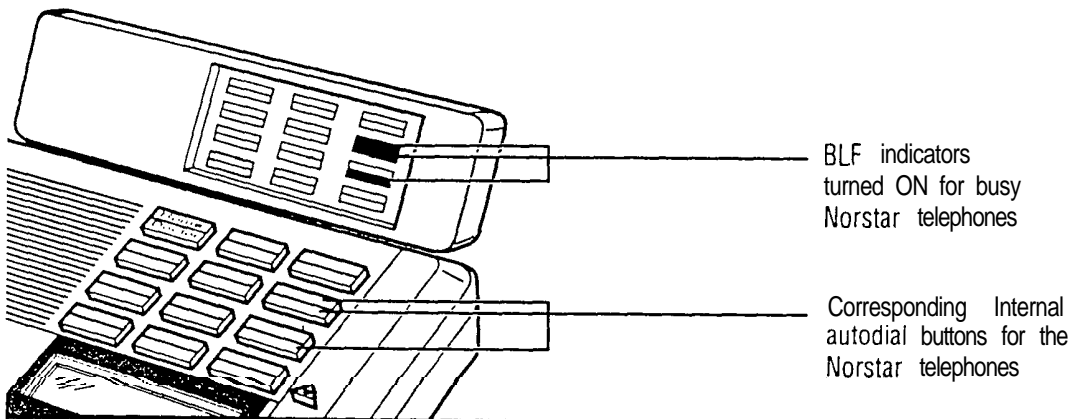
The BLF Indicator shows you the busy/not busy status of any Norstar telephone within your office. When a call for one of your co-workers comes to your telephone, there are many possible ways to handle it. The lists below show some of these options. As soon as you learn who a call is for, check the appropriate indicator on the BLF.

*If the indicator is ON*

- Use Send Message  
OR
- Use Ring Again on Busy  
OR
- Try to call on an internal line. The person you call will hear a muted ringing.

*If the indicator is OFF*

- Transfer the incoming call immediately using the Transfer feature (if equipped)  
OR
- Announce your call using the Conference/Transfer or Transfer feature.



You will quickly become familiar with the layout of your internal autodial buttons and the matching layout of the Busy Lamp Field indicators. Remember, you can change any internal autodial number on a dual-memory button and the BLF automatically changes too.

Please be sure to read your *Norstar M7310 User Card* and your *Norstar Prime Telephone User Card* (if applicable). They contain information which shall help you to use Norstar features effectively with your BLF.

\*Meridian and Norstar are trademarks of Northern Telecom

## The Central Answering Position (CAP)

Why use the CAP?

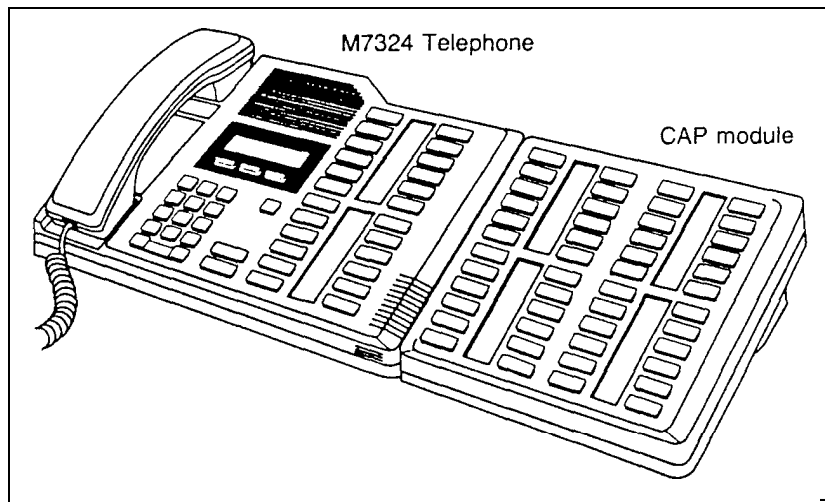
The Meridian Norstar\* Central Answering Position (CAP) consists of a Norstar M7324 Telephone and one or two Norstar CAP modules. The CAP allows you to:

- answer calls made from outside your Norstar system
- check the busy/hot busy or Do Not Disturb status of the telephones in your Norstar system
- transfer calls to your co-workers' telephones
- use many more features and autodial numbers with one-touch access.

What is a CAP module?

A CAP module is an add-on device which provides 48 extra memory or line buttons for the M7324 Telephone. A CAP module is connected to the side of the M7324; a second CAP module can be connected to the first CAP module. See the *Norstar Central Answering Position Installer Card* for instructions on installation. When two CAP modules are connected to a Norstar M7324 Telephone, they provide a total of 96 extra memory or line buttons for the M7324 Telephone.

**Norstar M7324 Telephone with one CAP module attached**



By pressing a line button on your CAP module and lifting the receiver, you can answer a call made from outside your Norstar system. Pressing the appropriate programmed memory button allows you to automatically dial an internal or external number, or use a feature.

**Note:** A headset may be plugged into the bottom of the M7324 Telephone when Handsfree has been administered.

## Checking the pre-assigned CAP module buttons

### About pre-assigned buttons

When one or two CAP modules are first plugged into your telephone, each CAP module button is pre-assigned either to select a line or dial an internal number.

If you have been assigned up to 12 lines, you can select them by pressing the buttons in the left-hand column of your M7324 telephone. Remaining lines are assigned to buttons on the CAP module(s), beginning at the top left-hand corner of the first CAP module and moving down.

After lines are assigned, any remaining buttons on your CAP module(s) become Internal Autodial buttons, starting with the lowest default internal number. These internal numbers can be between two and seven digits. The numbering length is controlled in Configuration programming.

---

Note: In order for lines to be automatically assigned to buttons on your CAP module, your telephone must first be designated as a CAP in Configuration programming.

---

### Checking the pre-assigned CAP module buttons

1. Replace the receiver.
  2. Press  \* 0 .
  3. Press the buttons you want to check and read the display.
  4. Ensure that your pre-assigned line buttons and internal Autodial buttons have the correct snap-on caps.
  5. Press  when you are finished.
- 

### Customizing your CAP module

You can program any of the buttons on your CAP module that do not select lines. These buttons can be programmed to automatically dial internal or external numbers. You can also program features onto CAP module buttons. If you want more line buttons programmed, see your System Coordinator.

Your CAP module will be most effective if you use it along with the Call Park, Transfer, Conference/Transfer, Camp-On, Message, or Voice Call features. Make sure that these features are programmed on your CAP module buttons by following the steps presented in this card.

## Programming CAP module buttons

### Programming CAP module buttons

#### *External Autodial*

1. Replace the receiver.
2. Press **Feature** \* **1**.
3. Press a CAP module button.
4. Dial the external number.
5. Press **OK** to store the number.
6. Label your new button.

#### *Infernal Autodial*

1. Replace the receiver.
2. Press **Feature** \* **2**.
3. Press a CAP module button.
4. Dial the internal number.
5. Label your new button.

#### *Erasing memory buttons*

1. Replace the receiver.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press **OK** to erase the button.

#### *f e a t u r e s*

1. Replace the receiver.
2. Press **Feature** \* **3**.
3. Press a CAP module button.
4. Press **(Feature)** and the feature code.
5. Label your new button.

#### *Moving external line buttons*

1. Replace the receiver.
2. Press **Feature** \* **B** **1**.
3. Press the line button which you want to move.
4. Press the memory button on your telephone or CAP module to which you want the line moved.
5. Label your new button.

### Monitoring Internal Autodial indicators

It is important that you pay attention to the indicators ► beside the internal Autodial buttons on your CAP module. This tells you the status of a Norstar telephone when you answer an external call.

#### *An indicator appears:*

- ┆ When the telephone is active on an internal or external line
- OR
- ┆ When the telephone is using the Do Not Disturb feature.

#### *No indicator appears:*

- ┆ When the telephone is idle
- OR
- ┆ When the telephone is ringing
- OR
- ┆ When the telephone has one or more calls on hold, but is not connected to any active calls.

The status of a Norstar telephone cannot be monitored by your CAP module if an Internal Autodial button has not been programmed.



## Answering and transferring a call

Answering and transferring a call

Most of the telephone calls which you deal with should involve the following procedures:

1. Answer a call made from outside the Norstar system.
2. Determine whom the call is for.
3. Check the status of the destination Norstar telephone on the CAP module.
4. If the indicator is OFF, transfer the call to that telephone.

OR

If the indicator ► is ON, use the Send Message, Ring Again on Busy, or Camp-On feature.

---

Note: If your telephone has been assigned as a CAP in Configuration programming, you can send up to 30 messages. If your telephone has not been assigned as a CAP, you can send up to four messages.

---

Other **Norstar** documents

Please be sure to read your *Norstar M7324* Telephone User Card and your *Norstar Prime* Telephone User Card (if applicable). They contain information which should help you to use Norstar features more effectively with your CAP





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# Technical specifications

The following information lists technical specifications for the Norstar Modular 1 10 V and 220 V systems.

## Power specifications for the 110 V system

Characteristic	KSU	TM	SM'
Voltage V ac	92-127	92-127	92-127
Current A rms (max)	1.75	1.75	1.0
Frequency Hz	47-63	47-63	47-63
Crest factor	4.0	4.0	4.0

## Power specifications for the 220 V system

Characteristic	KSU	TM	SM
Voltage V ac	170-264	170-264	170-264
Current A rms (max)	1.0	1.0	0.5
Frequency Hz	45-63	45-63	45-63
Crest factor	4.0	4.0	4.0

Telephone loop power for 110 V and 220 V systems

---

Characteristic	Value
Loop resistance	50 ohms (295 m of 0.5 mm wire or 1000 ft of 24 AWG wire)
Loop length	150 ohms per conductor between TC and network interface for E, SG, M, and SB leads on an E&M/DISA TC
Terminating impedance	600 ohms
Flash rate (incoming alerting call)	1 Hz (50% duty cycle)
Minimum voltage at telephone	10 V dc
Current at telephone (idle)	45 mA nominal
Current at telephone (active)	80 mA maximum

Environmental specifications for 110 V and 220 V systems

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Characteristic	Value
Operating temperature range	0°C to 50°C (32°F to 122°F)
Storage temperature range	-55°C to 70°C (-67°F to 158°F)
Humidity	5% to 95% (non-condensing)

Service tone cadence for 110 V and 220 V systems

Tone	Cadence (seconds)
Busy	0.5 ON / 0.5 OFF
Overflow	0.25 ON / 0.25 OFF
Ringback	2.0 ON / 4.0 OFF
Confirmation tone	1.0 ON / 1.0 OFF (3 bursts followed by no tone)
Recall tone	1.0 ON / 1.0 OFF (3 bursts followed by steady tone)
Ring splash	0.2 ON (1 burst)

## Regulatory requirements

### Interconnect

Norstar Modular equipment meets all applicable requirements of both the Canadian Department of Communications CS-03 and US Federal Commission FCC part 68 and has been registered under files: DOC 3322492A and FCC AB67UJ-17156-KF-E (key system) and AB67UJ-17338-MF-E (hybrid system).

### Electromagnetic compatibility (EMC)

#### Radiated emissions

Norstar Modular equipment meets all FCC part 15, subpart J, class A radiated emissions requirements as shown on the next page:



### Radiated emissions requirements

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Frequency range	Field Strength ( $\mu\text{V/m}$ ) at 30 m
30-88 MHz	30
88-216 MHz	50
216-1000 MHz	70

### , Conducted emissions

Norstar Modular equipment meets all FCC part 15, subpart J, class A conducted emissions requirements.

### Safety

Norstar Modular equipment meets all applicable requirements of both the Canadian Standards Association C22.2 No. 0.7 M1985 and US Underwriter's Laboratory UL-1459, issue 1, and has been registered under files: CSA LR58855-12 and UL EI 15515 88NK16650.

## Electrical requirements

### Electrostatic discharge

The Norstar KSU and telephones meet IEC 801-2 severity level 4. Specifically, there is no malfunction or discharge up to 12 kV with a 150 ohm/1 50 pF probe. Connectors meet IEC 801-2 severity level 2.

### Electromagnetic compatibility — Immunity

#### Radiated immunity

Norstar Modular equipment can function correctly when exposed to RF fields up to 5 V/m over the frequency range of 10 kHz to 1 GHz.

### Conducted immunity

Norstar Modular equipment can function correctly when exposed to RF signal on the external lines with a common mode voltage of 2 V rms or a common mode current of 86 dB $\mu$ A over a frequency range of 0.06 to 0.1 MHz and 92 dB $\mu$ A over remaining frequencies in the 0.01 to 30 MHz range.

### Mechanical requirements

Norstar Modular equipment meets the requirements shown below:

#### Mechanical requirements

Vibration operational	IEC 68-2-6-Fc
Resonance search	IEC 68-2-6-Fc
Vibration endurance transportation	IEC 68-2-6-Fc
Bounce	IEC 68-2-55 A
Shock fragility	IEC 68-2-27-Ea
Unpacked drop	IEC 68-2-31 -Ec
Packaged drop	NSTA Proj. 1A

## Transportation methods

No special constraints need be applied to standard methods of shipment (such as air freight, truck, and rail) except for the -55°C (-67°F) storage limit.

## Environmental requirements

Norstar Modular equipment can operate in the temperature range 0°C to 50°C (32°F to 122°F). In addition, it can withstand storage in the temperature range of -55°C to +70°C (-67°F to 158°F) and thermal shocks from sudden temperature changes from -55°C (-67°F) to room ambient and +70°C (158°F) to room ambient.

The following details apply:

- Low temperature operation (0°C; 32°F) as per I.E.C. 68-2-1 Test Ad.
- Low temperature storage (16 hrs) at (-55°C; -67°F) as per I.E.C. 68-2-1 Test Ab.
- High temperature operation (50°C;122°F) as per I.E.C. 68-2-2 Test Bd. Methods A.
- High temperature storage (16 hrs at +70°C; 158°F) as per I.E.C. 68-2-2 Test Bd.
- Temperature shock (-55°C to +25°C) (-67°F to +77°F) as per I.E.C. 68-2-14 Test Na, 5 cycles.
- Temperature shock (+70°C to +25°C) (158°F to +77°F) as per I.E.C. 68-2-1 4 Test Na, 5 cycles.

## Humidity

Norstar Modular equipment can operate from 0°C to 50°C (32°F to 122°F) with relative humidities between 5% and 95% RH except that at temperatures above 34°C (93°F) the relative humidity may be limited to 52 mbar of water vapor pressure.

For the purpose of demonstration of compliance, the product shall be exposed to 40°C (104°F) at 90% to 95% RH for 3 days followed by operational tests.

In addition, the product (without its transportation package) shall be able to withstand 10 days storage at 40°C (104°F) at 90% to 95% RH as per I.E.C. 68-2-3, Test Ca, Severity A, without evidence of corrosion, physical damage or degradation in electrical performance.

# Port numbering

---

## Port number coding on the wiring charts

The code shown for “Ports” (as on the wiring charts for MI 2X0 Trunk Module external line wiring and MOX16 Station Module internal wiring) shows the link between particular port numbers and the wiring on the distribution block. This is useful for example, in tracking down faults during a Maintenance session where codes appear on a Norstar telephone display indicating error messages (see the Maintenance chapter).

The code shown on the charts (for example: “X12”) has two components:

- “X” corresponds to the number which appears on the face of the Expansion Cartridge port to which the TM or SM is connected.
- Numerical digits (for example “01” or “12”) identify an individual port number associated with that Expansion Cartridge.

For example:

The code “812” appearing as part of an error message for a TM indicates Expansion Cartridge port #8 and internal port “12”. The corresponding TM pins on the distribution block are Pin 47 (Violet-Orange) and Pin 22 (Orange-Violet). These codes apply to both TMs and SMs (up to “X16” for SMs for up to 16 telephones; up to “X12” for TMs for up to 12 external lines).

## Norstar system numbering plan

This section describes the numbering plan for conventional Norstar installations.

A numbering plan refers to the digits dialed by the user to access other Norstar telephones. These are the internal telephone numbers (also called Directory Numbers or DNs). All internal numbers must have the same number of digits.

A non-expanded system, which only consists of a KSU (no TM or SM) has two-digit DNs by default. For an expanded system (with an Expansion Cartridge installed) the length of DNs changes automatically to three digits. To match the numbering plan to that of an existing Centrex or Private Branch Exchange (PBX) system you can change the Norstar DN length to a maximum of seven digits (on both non-expanded and expanded systems).

*Note:* If you are installing a non-expanded system, but plan to expand it later, program the DN length to 3 digits right from the start.

Line Pool access codes can be one to four digits in length, but if they start with the same digit they must be the same length. They can not conflict with:

- the first digit of any internal number
- the first digit of the Auto DN or the DISA DN
- the first digit of any Received number
- the Park prefix
- the Direct-dial digit.

For example, the internal number 2345 can co-exist with the Line Pool access code 321, but not with access code 231.

Symbols such as an asterisk (\*) or a pound sign (#) cannot be used in internal numbers or Line Pool access codes.

## B1 and B2 Directory Numbers (DN)

The terms B1 and B2 correspond to channels on Norstar for transmitting both voice and data. Each DN port number has one B1 DN and one B2 DN associated with it. Devices such as the Norstar telephones only need and use the B1 channel and the B1 DN. Other devices may need both B1 and B2 channels, therefore requiring B1 and B2 DNs.

## Key Service Unit (KSU)

The base Key Service Unit (KSU) has eight lines and 24 telephones. The default DN values shown below are assigned by performing System Startup. (DN or Directory Number is the same as the internal number which is assigned to a telephone.)

Non-expanded system (KSU alone)

Port #	External lines	External line ports	B1 DN	B2 DN	DN ports
KSU (#2)	1 - 8	201-208	- -	- -	- -
KSU (#1)	- -	- -	21 -44	45-68	101-124

Notice that although there are no physical DS-30 ports on a non-expanded KSU, the port numbers of the telephones and lines within the system have been assigned ports 101-124 and 201-208 respectively. A non-expanded system has two-digit default internal numbers. By expanding the system with an Expansion Cartridge, the default internal numbers become three digits to accommodate the additional internal numbers.

## Two-port Expansion Cartridge

A Two-port Expansion Cartridge accommodates DS-30s for any combination of TMs and SMs up to a total of two. The default DN values shown below are assigned by performing System Startup.

Two-port Expansion Cartridge and KSU numbering for ports and **DNs** (DN is the same as internal number)

Expansion port #	External lines	External line ports	B1 DN	B2 DN	DN ports
#4	9-20	401-412	261-276	317-332	401-416
#3	21-32	301-312	24.5260	301-316	301-316
KSU (#2)	1-8	201-208	- -	- -	- -
KSU (#1)	- -	- -	221-244	277-300	101-124

*Note:* Port #3 is the bottom port on the Expansion Cartridge.



## Six-port Expansion Cartridge

A Six-port Expansion Cartridge accommodates DS-30s for any combination of TMs and SMs up to a total of six. The default DN values shown below are assigned by performing System Startup.

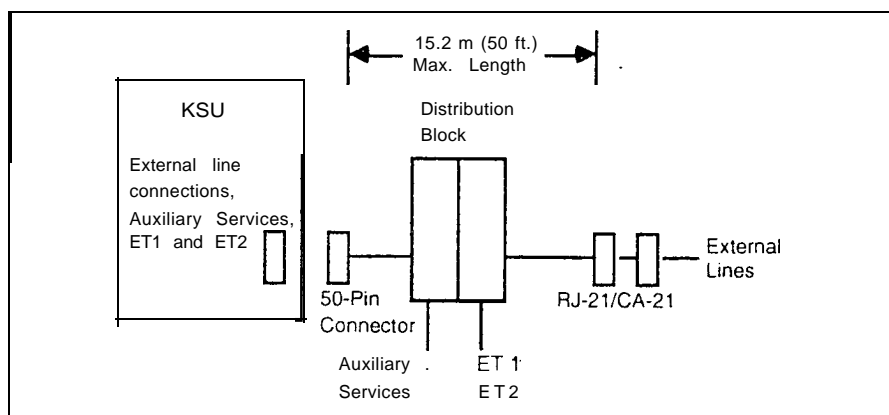
Six-port Expansion Cartridge and KSU numbering for ports and **DNs** (DN is the same as internal number)

Expansion port #	External lines	External line ports	B1 DN	B2 DN	DN ports
#8	9-20	801-812	325-340	445-460	801-816
#7	21-32	701-712	309-324	429-444	701-716
#6	33-44	601-612	293-308	413-428	601-616
#5	45-56	501-512	277-292	397-412	<b>501-516</b>
#4	57-68	401-412	261-276	381-396	401-416
#3	69-80	301-312	245-260	365-380	301-316
KSU (#2)	1-8	201-208	- -	- -	- -
KSU (#1)	- -	- -	221-244	341-364	101-124

*Note:* Port #3 is the bottom port on the Expansion Cartridge.

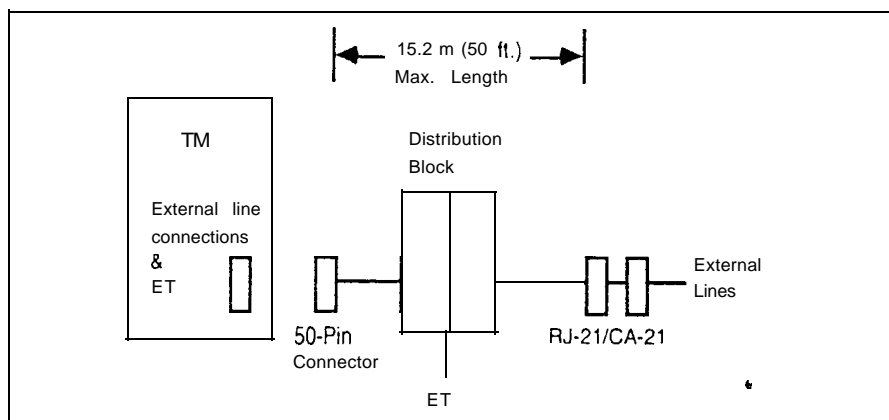
# Appendix A - Norstar wiring charts

## Wiring arrangement for Norstar KSU



See the wiring chart for Key Service Unit (KSU) to external lines and auxiliary equipment connecting arrangement.

## Wiring arrangement for Norstar TM



See the wiring chart for M12X0 Trunk Module (TM) to external lines connecting arrangement.

**KSU external lines and auxiliary equipment wiring**

KSU external lines connector					RJ-21/CA-21 external line connector		
Pin	Wire color	Port	Service	Line	Pin	Wire color	
26	White-Blue	201	T	1	26	White-Blue	
1	Blue-White	201	R	1	1	Blue-White	
2	Orange-White	202	T	2	27	White-Orange	
	Orange-White	202	R	2	2	Orange-White	
28	White-Green	203	T	3	28	White-Green	
3	Green-White	203	R	3	3	Green-White	
29	White-Brown	204	T	4	29	White-Brown	
4	Brown-White	204	R	4	4	Brown-White	
30	White-Slate	205	T	5	30	White-Slate	
5	Slate-White	205	R	5	5	Slate-White	
31	Red-Blue	206	T	6	31	Red-Blue	
6	Blue-Red	206	R	6	6	Blue-Red	
32	Red-Orange	207	T	7	32	Red-Orange	
7	Orange-Red	207	R	7	7	Orange-Red	
33	Red-Green	208	T	a	33	Red-Green	
a	Green-Red	208	R	a	a	Green-Red	

Port number code: see the explanation page preceding the charts.

*Note:* Auxiliary equipment can not be connected to the RJ-21/CA-21 connector.

KSU external lines connector				Aux equipment connections	
Pin	Wire color	Service	Line	Pin	Wire color
34	Red-Brown		No connection		
9	Brown-Red		No connection		
35	Red-Slate	T	ET 1	35	Red-Slate
10	Slate-Red	R	ET 1	10	Slate-Red
36	Black-Blue	T	ET 2	36	Black-Blue
11	Blue-Black	R	ET2	11	Blue-Black
37	Black-Orange	****	No connection	****	****
12	Orange-Black	****	No connection	****	****
38	Black-Green	****	No connection	****	****
13	Green-Black	****	No connection	****	****
39	Black-Brown	****	No connection	****	****
14	Brown-Black	****	No connection	****	****
40	Black-Slate	****	No connection	****	****
15	Slate-Black	****	No connection	****	****
41	Yellow-Blue	****	No connection	****	****
16	Blue-Yellow	****	No connection	****	****
42	Yellow-Orange	****	No connection	****	****
17	Orange-Yellow	****	No connection	****	****
43	Yellow-Green	T	Auxiliary Ring Make	43	Yellow-Green
18	Green-Yellow	R	Auxiliary Ring Common	18	Green-Yellow
44	Yellow-Brown	T	Auxiliary Ring Break	44	Yellow-Brown
19	Brown-Yellow		No connection	19	Brown-Yellow
45	Yellow-Slate	T	Page Relay Make	45	Yellow-Slate
20	Slate-Yellow	R	Page Relay Common	20	Slate-Yellow
46	Violet-Blue	T	Page Relay Break	46	Violet-Blue
21	Blue-Violet		No connection	21	Blue-Violet
47	Violet-Orange	T	Page Out Tip	47	Violet-Orange
	Orange-Violet	R	Page Out Ring	22	Orange-Violet
48	Violet-Green	****	No connection	****	****
23	Green-Violet	****	No connection	****	****
49	Violet-Brown	****	No connection	****	****
24	Brown-Violet	****	No connection	****	****
50	Violet-Slate	****	No connection	****	****
25	Slate-Violet	****	No connection	****	****

**KSU internal wiring**

Pin	Wire color	Port	Service	Telephones (KSU)	Default DN
26	White-Blue	101	T	1	
1	Blue-White	101	R	1	21/221/2221
27	White-Orange	102	T	2	
2	Orange-White	102	R	2	22/222/2222
28	White-Green	103	T	3	
3	Green-White	103	R	3	23122312223
29	White-Brown	104	T	4	
4	Brown-White	104	R	4	24122412224
30	White-Slate	105	T	5	
5	Slate-White	105	R	5	25122512225
31	Red-Blue	106	T	6	
6	Blue-Red	106	R	6	26/226/2226
32	Red-Orange	107	T	7	
7	Orange-Red	107	R	7	27122712227
33	Red-Green	108	T	8	
8	Green-Red	108	R	8	28122812228
34	Red-Brown	109	T	9	
9	Brown-Red	109	R	9	29/229/2229
35	Red-Slate	110	T	10	
10	Slate-Red	110	R	10	30/230/2230
36	Black-Blue	111	T	11	
11	Blue-Black	111	R	11	31/231/2231
37	Black-Orange	112	T	12	
12	Orange-Black	112	R	12	32/232/2232
38	Black-Green	113	T	13	
13	Green-Black	113	R	13	33123312233
39	Black-Brown	114	T	14	
14	Brown-Black	114	R	14	34123412234
40	Black-Slate	115	T	15	
15	Slate-Black	115	R	15	35123512235
41	Yellow-Blue	116	T	16	
16	Blue-Yellow	116	R	16	36/236/2236
42	Yellow-Orange	117	T	17	
17	Orange-Yellow	117	R	17	37123712237
43	Yellow-Green	118	T	18	
18	Green-Yellow	118	R	18	38123812238
44	Yellow-Brown	119	T	19	
19	Brown-Yellow	119	R	19	39/239/2239
45	Yellow-Slate	120	T	20	
20	Slate-Yellow	120	R	20	40/240/2240
46	Violet-Blue	121	T	21	
21	Blue-Violet	121	R	21	41/241/2241
47	Violet-Orange	122	T	22	
22	Orange-Violet	122	R	22	42/242/2242
48	Violet-Green	123	T	23	
23	Green-Violet	123	R	23	43124312243
49	Violet-Brown	124	T	24	
24	Brown-Violet	124	R	24	44124412244
50	Violet-Slate	***	***	Music-on-hold ground	....
25	Slate-Violet	***	***	Music-on-hold input	....

Note: T and R represent station connections and should not be confused with Tip and Ring on external lines. Station connections are non-polarized.

**CAUTION:** For "Music -on-hold", ensure that the polarity of the audio input is the same as identified above for pins 50(Violet-Slate) and 25(Slate-Violet) to avoid damage to audio equipment .

## M0X16 Station Module internal wiring

Pin	Wire color	Port	Service Telephones (SM)	
26	White-Blue	x01	T	1
1	Blue-White	x01	R	1
27	White-Orange	X02	T	2
2	Orange-White	X02	R	2
28	White-Green	X03	T	3
3	Green-White	X03	R	3
29	White-Brown	X04	T	4
4	Brown-White	X04	R	4
30	White-Slate	X05	T	5
5	Slate-White	X05	R	5
31	Red-Blue	X06	T	6
6	Blue-Red	X06	R	6
32	Red-Orange	X07	T	7
7	Orange-Red	X07	R	7
33	Red-Green	X08	T	a
a	Green-Red	x0a	R	a
34	Red-Brown	x09	T	9
9	Brown-Red	x09	R	9
35	Red-Slate	x10	T	10
10	Slate-Red	x10	R	10
36	Black-Blue	x11	T	11
11	Blue-Black	x11	R	11
37	Black-Orange	x12	T	12
12	Orange-Black	x12	R	12
38	Black-Green	x13	T	13
13	Green-Black	x13	R	13
39	Black-Brown	x14	T	14
14	Brown-Black	x14	R	14
40	Black-Slate	x15	T	15
15	Slate-Black	x15	R	15
41	Yellow-Blue	X16	T	16
16	Blue-Yellow	X16	R	16
42	Yellow-Orange	----	----	no connection
17	Orange-Yellow	----	----	no connection
43	Yellow-Green	----	----	no connection
1a	Green-Yellow	----	----	no connection
44	Yellow-Brown	----	----	no connection
19	Brown-Yellow	----	----	no connection
45	Yellow-Slate	----	----	no connection
20	Slate-Yellow	----	----	no connection
46	Violet-Blue	----	----	no connection
21	Blue-Violet	----	----	no connection
47	Violet-Orange	----	----	no connection
22	Orange-Violet	----	----	no connection
48	Violet-Green	----	----	no connection
23	Green-Violet	----	----	no connection
49	Violet-Brown	----	----	no connection
24	Brown-Violet	----	----	no connection
50	Violet-Slate	----	----	no connection
25	Slate-Violet	----	----	no connection

**Note:** T and R represent station connections and should not be confused with Tip and Ring on external lines. Station connections are non-polarized.

**Note:** Port number code: see the explanation page preceding the charts.

## M12X0 Trunk Module with Loop Start Trunk Cartridge external line wiring

Note: For other wiring arrangements see the sections on E&M/DISA Trunk Module wiring and DID Trunk Module wiring.

TM 50-pin connector arrangement						RJ-21 connector	
TC Slot	Pin	Wire color	Poll	Service	Line	Pin	Wire color
Slot 1	26	White-Blue	X01	T	1	26	White-Blue
	1	Blue-White	X01	R	1	1	Blue-White
	27	White-Orange	X02	T	2	27	White-Orange
	2	Orange-White	X02	R	2	2	Orange-White
	28	White-Green	----	No connection	----	----	----
	3	Green-White	----	No connection	----	----	----
	29	White-Brown	----	No connection	----	----	----
	4	Brown-White	----	No connection	----	----	----
	30	White-Slate	X03	T	3	28	White-Green
	3	Slate-White Red-Blue	X04	R	4	21 1	White-Brown Green-White
	6	Blue-Red	X04	R	4	4	Brown-White
	32	Red-Orange	----	No connection	----	----	----
	7	Orange-Red	----	No connection	----	----	----
	33	Red-Green	----	No connection	----	----	----
a	Green-Red	----	No connection	----	----	----	
Slot 2	34	Red-Brown	X05	T	5	30	White-Slate
	9	Brown-Red	X05	R	5	5	Slate-White
	35	Red-Slate	X06	T	6	31	Red-Blue
	10	Slate-Red	X06	R	6	6	Blue-Red
	36	Black-Blue	----	No connection	----	----	----
	11	Blue-Black	----	No connection	----	----	----
	37	Black-Orange	----	No connection	----	----	----
	12	Orange-Black	----	No connection	----	----	----
	38	Black-Green	X07	T	7	32	Red-Orange
	13	Green-Black	X07	R	7	7	Orange-Red
	39	Black-Brown	X08	T	8	33	Red-Green
	14	Brown-Black	X08	R	a	a	Green-Red
	40	Black-Slate	----	No connection	----	----	----
	15	Slate-Black	----	No connection	----	----	----
	41	Yellow-Blue	----	No connection	----	----	----
	16	Blue-Yellow	----	No connection	----	----	----
Slot 3	42	Yellow-Orange	x09	T	9	34	Red-Brown
	17	Orange-Yellow	x09	R	9	9	Brown-Red
	43	Yellow-Green	x10	T	10	35	Red-Slate
	18	Green-Yellow	X10	R	10	10	Slate-Red
	44	Yellow-Brown	----	No connection	----	----	----
	19	Brown-Yellow	----	No connection	----	----	----
	45	Yellow-Slate	----	No connection	----	----	----
	20	Slate-Yellow	----	No connection	----	----	----
	46	Violet-Blue	x11	T	11	36	Black-Blue
	21	Blue-Violet	x11	R	11	11	Blue-Black
	47	Violet-Orange	x12	T	12	37	Black-Orange
	22	Orange-Violet	x12	R	12	12	Orange-Black
	48	Violet-Green	----	No connection	----	----	----
	23	Green-Violet	----	No connection	----	----	----
	49	Violet-Brown	----	No connection	----	----	----
	24	Brown-Violet	----	No connection	----	----	----
	50	Violet-Slate	----	ET	----	----	No connection
25	Slate-Violet	----	ET	----	----	No connection	

Note: Auxiliary equipment can not be connected to the RJ-21/CA-21 connector.  
For an explanation of Port codes, see the section called Port number coding on the wiring charts.

# Appendix B - E&M/DISA Trunk Module wiring charts

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## Using the **E&M/DISA** wiring charts

Use the diagrams in this section when a Norstar Trunk Module (TM) contains E&M/DISA Trunk Cartridges (TC) or a mixture of E&M/DISA and DID or Loop Start TCs.

### Chart: **M12X0** Trunk Module with **E&M/DISA** cartridges

- shows the 50-pin connections on the TM.
- shows the RJ2HX/CA2HA cross-connections:
- to be used where E&M/DISA TCs alone are installed.

To obtain the cross-connections for E&M/DISA service, read across the column headings.

### Example of how to read wiring charts for mixed service

- to be used where there is a mixture of E&M/DISA, DID, and Loop Start TCs.

To obtain the cross-connections for mixed service, match Service columns on the appropriate charts in the example.

Note: When installing a mixture of E&M/DISA and DID or Loop Start TCs, it is important to cross-connect the wiring for each type of TC to a separate distribution block.

In addition, the cross-connections to each distribution block must always begin at pins 26 and 1. This allows you to wire to the correct pins for an RJ-21/CA-21 connection and for an RJ2HX/CA2HA connection.

Note: To retain emergency telephone function, a DID or Loop Start TC should go in the first slot of the TM.

### E&M/DISA cross connections

When you are required to connect two RJ2HX/CA2HA distribution blocks together (connecting to another Norstar or Private Branch Exchange), you will need to make these cross connections:

#### Back-to-back cross connections

1st distribution block	T	R	T1	R1	E	SG	M	SB
Next distribution block	T1	R1	T	R	SB	M	SG	E



## M12X0 Trunk Module with E&M/DISA Trunk Cartridges and RJ2HX/CA2HA wiring connections

TM 50-pin connector arrangement

RJ2HX/CA2HA connector

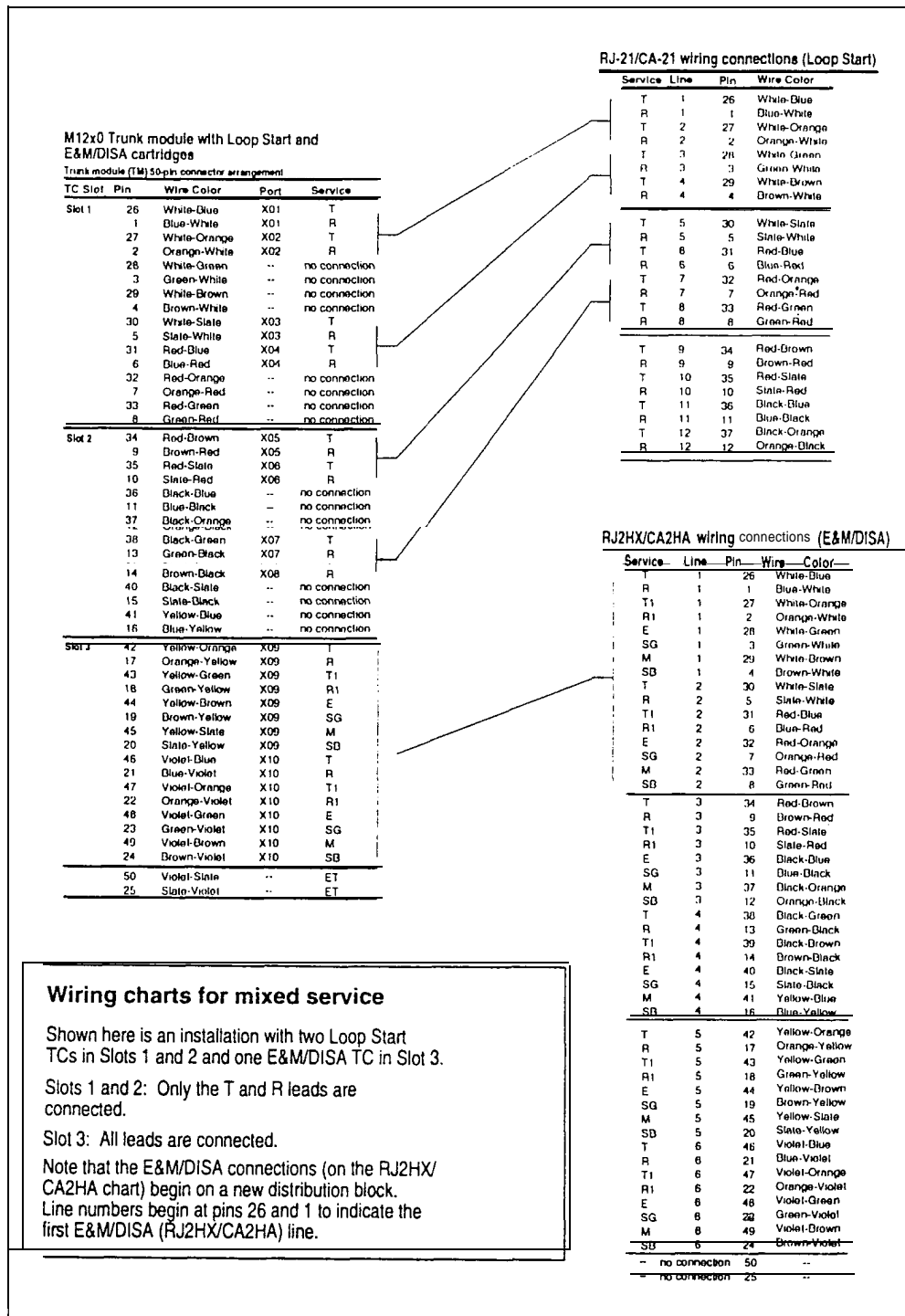
TC Slot	Pin	Wire color	Port	Service	Line	Pin	Wire color
Slot 1	26	White-Blue	X01	T	1	26	White-Blue
	1	Blue-White	x01	R	1	1	Blue-White
	27	White-Orange	x01	T1	1	27	White-Orange
	2	Orange-White	X01	R1	1	2	Orange-White
	28	White-Green	X01	E	1	28	White-Green
	3	Green-White	X01	SG	1	3	Green-White
	29	White-Brown	x01	M	1	29	White-Brown
	4	Brown-White	x01	SB	1	4	Brown-White
	30	White-Slate	X02	T	2	30	White-Slate
	5	Slate-White	X02	R	2	5	Slate-White
	31	Red-Blue	X02	T1	2	31	Red-Blue
	6	Blue-Red	X02	R1	2	6	Blue-Red
	32	Red-Orange	x02	E	2	32	Red-Orange
7	Orange-Red	X02	SG	2	7	Orange-Red	
33	Red-Green	X02	M	2	33	Red-Green	
a	Green-Red	x02	SB	2	a	Green-Red	
Slot 2	34	Red-Brown	X03	T	3	34	Red-Brown
	9	Brown-Red	X03	R	3	9	Brown-Red
	35	Red-Slate	X03	T1	3	35	Red-Slate
	10	Slate-Red	X03	R1	3	10	Slate-Red
	36	Black-Blue	X03	E	3	36	Black-Blue
	11	Blue-Black	X03	SG	3	11	Blue-Black
	37	Black-Orange	X03	M	3	37	Black-Orange
	12	Orange-Black	X03	SB	3	12	Orange-Black
	38	Black-Green	X04	T	4	38	Black-Green
	13	Green-Black	X04	R	4	13	Green-Black
	39	Black-Brown	X04	T1	4	39	Black-Brown
	14	Brown-Black	X04	R1	4	14	Brown-Black
	40	Black-Slate	X04	E	4	40	Black-Slate
	15	Slate-Black	X04	SG	4	15	Slate-Black
	41	Yellow-Blue	X04	M	4	41	Yellow-Blue
	16	Blue-Yellow	X04	SB	4	16	Blue-Yellow
Slot 3	42	Yellow-Orange	X05	T	5	42	Yellow-Orange
	17	Orange-Yellow	X05	R	5	17	Orange-Yellow
	43	Yellow-Green	X05	T1	5	43	Yellow-Green
	18	Green-Yellow	X05	R1	5	18	Green-Yellow
	44	Yellow-Brown	X05	E	5	44	Yellow-Brown
	19	Brown-Yellow	X05	SG	5	19	Brown-Yellow
	45	Yellow-Slate	X05	M	5	45	Yellow-Slate
	20	Slate-Yellow	X05	SB	5	20	Slate-Yellow
	46	Violet-Blue	X06	T	6	46	Violet-Blue
	21	Blue-Violet	X06	R	6	21	Blue-Violet
	47	Violet-Orange	X06	T1	6	47	Violet-Orange
	22	Orange-Violet	X06	R1	6	22	Orange-Violet
	48	Violet-Green	X06	E	6	48	Violet-Green
	23	Green-Violet	X06	SG	6	23	Green-Violet
49	Violet-Brown	X06	M	6	49	Violet-Brown	
24	Brown-Violet	X06	SB	6	24	Brown-Violet	
50	Violet-Slate	----	ET	----	----	No connection	
25	Slate-Violet	----	ET	----	----	No connection	

**Note:** Auxiliary equipment can not be connected to the RJ2HX/CA2HA connector.  
For an explanation of **Port** codes, see the section called **Port** number coding on the charts.

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### Technical data

Example of how to read the E&M/DISA wiring charts



# Appendix C - DID Trunk Module wiring charts

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## Using the DID wiring charts

Use the diagrams in this section when a Norstar Trunk Module (TM) contains DID Trunk Cartridges (TC) or a mixture of DID and E&M/DISA or Loop Start TCs.

Chart: **M12X0** Trunk Module with DID cartridges

- shows the 50-pin connections on the TM.
- shows the RJ-21/CA-21 cross-connections;
- to be used where DID TCs alone are installed.

To obtain the cross-connections for DID service, read across the column headings.

Example of how to read wiring charts for mixed service

- to be used where there is a mixture of DID and E&M/DISA or Loop Start TCs.

To obtain the cross-connections for mixed service, match Service columns on the appropriate charts in the example.

*Note:* When installing a mixture of DID and E&M/DISA or Loop Start TCs, it is important to cross-connect the wiring for each type of TC to a separate distribution block.

In addition, the cross-connections to each distribution block must always begin at pins 26 and 1. This allows you to wire to the correct pins for an RJ-21/CA-21 connection and for an RJ2HX/CA2HA connection.

Note: To retain Emergency Telephone function with mixed service, a DID or Loop Start TC should go in the first slot of the TM.

## DID supervisory signaling

Allowing this equipment to be operated in a manner that does not provide for proper answer supervision signaling, as outlined below, is in violation of FCC Part 68 Rules, and may be in violation of local tariffs.

This equipment is designed to return supervisory signals to the Public Switched Telephone Network (PSTN) when the DID calls are:

- answered by the called station

- answered by the attendant

- routed to a customer controlled recorded announcement

- routed to a dial prompt

This equipment is designed to return supervisory signals on all DID calls forwarded through the system back to the PSTN within 20 s of the call forwarding sequence being initiated.

## Emergency transfer conditions

Every DID Trunk has a Control Circuit Interface (CCI) which should be connected directly to the Central Office for monitoring purposes.

If the Norstar system loses power or the microcontroller on the DID Trunk Cartridge malfunctions, the CCI signals the Central Office that it can no longer handle DID calls. The Central Office, by pre-arrangement, can then forward the DID lines to other numbers. A POTS telephone can be connected to the trunk module ET relay. (See the Emergency Telephones section of the Installation chapter in the Installer Guide.)

Note: The CCI signaling to report power loss or malfunction of the DID Trunk Cartridge is not supported by all carriers. For carriers or installations which do not use CCI signaling, the CCI and ET connections should be treated as "No connection".

Note: When a DID TC is in the first slot of the TM, pins 26 and 1 of the 25-pair connector are diverted to pins 50 and 25 under emergency transfer conditions.

## M12X0 Trunk Module with DID Trunk Cartridges and RJ-21/CA-21 wiring connections

### TM 50-pin connector arrangement

### RJ-21/CA-21 connector

TC Slot	Pin	Wire color	Port	Service	Line	Pin	Wire color
Slot 1	26	White-Blue	X01	T	1	26	White-Blue
	1	Blue-White	X01	R	1	1	Blue-White
	27	White-Orange	X02	T	2	27	White-Orange
	2	Orange-White	X02	R	2	2	Orange-White
	28	White-Green	----	No connection	----	----	---
	3	Green-White	----	No connection	----	----	---
	29	White-Brown	----	CCI NC1	----	28	White-Green
	4	Brown-White	----	CCI Com1	----	3	Green-White
	30	White-Slate	X03	T	3	29	White-Brown
	5	Slate-White	X03	R	3	4	Brown-White
	31	Red-Blue	X04	T	4	30	White-Slate
	6	Blue-Red	X04	R	4	5	Slate-White
	32	Red-Orange	----	No connection	----	----	---
	7	Orange-Red	----	No connection	----	----	---
	33	Red-Green	----	No connection	----	----	---
	a	Green-Red	----	No connection	----	----	---
Slot 2	34	Red-Brown	X05	T	5	31	Red-Blue
	9	Brown-Red	X05	R	5	6	Blue-Red
	35	Red-Slate	X06	T	6	32	Red-Orange
	10	Slate-Red	X06	R	6	7	Orange-Red
	36	Black-Blue	----	No connection	----	----	---
	11	Blue-Black	----	No connection	----	----	---
	37	Black-Orange	----	CCI NC1	----	33	Red-Green
	12	Orange-Black	----	CCI Com1	----	a	Green-Red
	38	Black-Green	X07	T	7	34	Red-Brown
	13	Green-Black	X07	R	7	9	Brown-Red
	39	Black-Brown	X08	T	a	35	Red-Slate
	14	Brown-Black	X08	R	a	10	Slate-Red
	40	Black-Slate	----	No connection	----	----	---
	15	Slate-Black	----	No connection	----	----	---
	41	Yellow-Blue	----	No connection	----	----	---
	16	Blue-Yellow	----	No connection	----	----	---
Slot 3	42	Yellow-Orange	X09	T	9	36	Black-Blue
	17	Orange-Yellow	X09	R	9	11	Blue-Black
	43	Yellow-Green	X10	T	10	37	Black-Orange
	18	Green-Yellow	X10	R	10	12	Orange-Black
	44	Yellow-Brown	----	No connection	----	----	---
	19	Brown-Yellow	----	No connection	----	----	---
	45	Yellow-Slate	----	CCI NC1	----	38	Black-Green
	20	Slate-Yellow	----	CCI Com1	----	13	Green-Black
	46	Violet-Blue	x11	T	11	39	Black-Brown
	21	Blue-Violet	x11	R	11	14	Brown-Black
	47	Violet-Orange	x12	T	12	40	Black-Slate
	22	Orange-Violet	x12	R	12	15	Slate-Black
	48	Violet-Green	----	No connection	----	----	---
	23	Green-Violet	----	No connection	----	----	---
	49	Violet-Brown	----	No connection	----	----	---
	24	Brown-Violet	----	No connection	----	----	---
50	Violet-Slate	----	ET	----	----	No connection	
25	Slate-Violet	----	ET	----	----	No connection	

**Note:** Auxiliary equipment can not be connected to the RJ-21/CA-21 connector.

Port codes are explained in the section Port number coding on the wiring charts.

**Note:** For CCI connections in Service column: NC1 stands for the normally closed relay and Com1 the common relay.

**Note:** CCI signaling is not supported by all carriers. For carriers or installations which do not use CCI signaling, the CCI and ET connections should be treated as "No connection".

CCI wiring is a non-standard wiring arrangement which has been submitted to the DOC.

Example of how to read the DID wiring charts

**M12x0 Trunk module with DID and E&M/DISA cartridges**

Trunk module (TM) 50-pin connector arrangement

TC Slot	Pin	Wire Color	Part	Service
<b>Slot 1</b>				
	26	White-Blue	X01	T
	1	Blue-White	X01	R
	27	White-Orange	X02	T
	2	Orange-White	X02	R
	28	White-Green	--	no connection
	3	Green-White	--	no connection
	29	White-Brown	--	CCI NC1
	4	Brown-White	--	CCI Com1
	30	White-Slate	X03	T
	5	Slate-White	X03	R
	31	Red-Blue	X04	T
	6	Blue-Red	X04	R
	32	Red-Orange	--	no connection
	7	Orange-Red	--	no connection
	33	Red-Green	--	no connection
	8	Green-Red	--	no connection
<b>Slot 2</b>				
	34	Red-Brown	X05	T
	9	Brown-Red	X05	R
	35	Red-Slate	X06	T
	10	Slate-Red	X06	R
	36	Black-Blue	--	no connection
	11	Blue-Black	--	no connection
	37	Black-Orange	--	CCI NC1
	12	Orange-Black	--	CCI Com1
	38	Black-Green	X07	T
	13	Green-Black	X07	R
	39	Black-Brown	X08	T
	14	Brown-Black	X08	R
	40	Black-Slate	--	no connection
	15	Slate-Black	--	no connection
	41	Yellow-Blue	--	no connection
<b>Slot 3</b>				
	42	Yellow-Orange	X09	T
	17	Orange-Yellow	X09	R
	43	Yellow-Green	X09	T1
	18	Green-Yellow	X09	R1
	44	Yellow-Brown	X09	E
	19	Brown-Yellow	X09	SG
	45	Yellow-Slate	X09	M
	20	Slate-Yellow	X09	SB
	46	Violet-Blue	X10	T
	21	Blue-Violet	X10	R
	47	Violet-Orange	X10	T1
	22	Orange-Violet	X10	R1
	48	Violet-Green	X10	E
	23	Green-Violet	X10	SG
	49	Violet-Brown	X10	M
	24	Brown-Violet	X10	SB
	50	Violet-Slate	--	ET
	25	Slate-Violet	--	ET

**RJ-21/CA-21 wiring connections (DID)**

Service	Line	Pin	Wire Color
T	1	26	White-Blue
R	1	1	Blue-White
T	2	27	White-Orange
R	2	2	Orange-White
CCI	-	28	White-Green
CCI	-	3	Green-White
T	3	29	White-Brown
R	3	4	Brown-White
T	4	30	White-Slate
R	4	5	Slate-White
T	5	31	Red-Blue
R	5	6	Blue-Red
T	6	32	Red-Orange
R	6	7	Orange-Red
CCI	-	33	Red-Green
CCI	-	8	Green-Red
T	7	34	Red-Brown
R	7	9	Brown-Red
T	8	35	Red-Slate
R	8	10	Slate-Red
T	9	36	Black-Blue
R	9	11	Blue-Black
T	10	37	Black-Orange
R	10	12	Orange-Black
CCI	-	38	Black-Green
CCI	-	13	Green-Black
T	11	39	Black-Brown
R	11	14	Brown-Black
T	12	40	Black-Slate
R	12	15	Slate-Black

**RJ2HX/CA2HA wiring connections (E&M/DISA)**

Service	Line	Pin	Wire Color
T	1	26	White-Blue
R	1	1	Blue-White
T1	1	27	White-Orange
R1	1	2	Orange-White
E	1	28	White-Green
SG	1	3	Green-White
M	1	29	White-Brown
SD	1	4	Brown-White
T	2	30	White-Slate
R	2	5	Slate-White
T1	2	31	Red-Blue
R1	2	6	Blue-Red
E	2	32	Red-Orange
SG	2	7	Orange-Red
M	2	33	Red-Green
SD	2	8	Green-Red
T	3	34	Red-Brown
R	3	9	Brown-Red
T1	3	35	Red-Slate
R1	3	10	Slate-Red
E	3	36	Black-Blue
SG	3	11	Blue-Black
M	3	37	Black-Orange
SD	3	12	Orange-Black
T	4	38	Black-Green
R	4	13	Green-Black
T1	4	39	Black-Brown
R1	4	14	Brown-Black
E	4	40	Black-Slate
SG	4	15	Slate-Black
M	4	41	Yellow-Blue
SD	4	16	Blue-Yellow
T	5	42	Yellow-Orange
R	5	17	Orange-Yellow
T1	5	43	Yellow-Green
R1	5	18	Green-Yellow
E	5	44	Yellow-Brown
SG	5	19	Brown-Yellow
M	5	45	Yellow-Slate
SD	5	20	Slate-Yellow
T	6	46	Violet-Blue
R	6	21	Blue-Violet
T1	6	47	Violet-Orange
R1	6	22	Orange-Violet
E	6	48	Violet-Green
SG	6	23	Green-Violet
M	6	49	Violet-Brown
SD	6	24	Brown-Violet
--	no connection	50	--
--	no connection	25	--

**Wiring charts for mixed service**

Shown here is an installation with two DID TCs in Slots 1 and 2 and one E&M/DISA TC in Slot 3.

Slots 1 and 2: Only the T, R, and CCI leads are connected.

Slot 3: All leads are connected.

Note that the E&M/DISA connections (on the RJ2HX/CA2HA chart) begin on a new distribution block. Line numbers begin at pins 26 and 1 to indicate the first E&M/DISA (RJ2HX/CA2HA) line.



# Glossary

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# Glossary

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## A

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**Access code:** A sequence of characters used to gain entry into any type of Norstar system programming.

**Administration:** A program that lets one person in your office (the System Coordinator) assign and maintain certain settings on the Norstar system.

**Administration access code:** To enter Administration programming, enter:

\* \* A D M I N . You will be asked for an Administration password.

**Administration password:** A one to six-digit password which is used to prevent unauthorized access to Administration programming. The Administration password can be assigned and changed in Administration programming.

**Alarm code:** A number which appears on the Alarm Telephone's display, informing you that the KSU has detected a fault in the system.

**Alarm Set (Alarm Telephone):** A telephone which is designated to receive reports of Norstar system problems. This function is usually assigned to a Prime Telephone, but this can be changed in Configuration programming.

**Analog Terminal Adapter (ATA):** A device which permits the connection of analog telecommunication devices such as FAX machines, answering machines, and single line telephones to the Norstar system. Programmed defaults for the ATA are automatically assigned by the Norstar system.

**Answer button:** A telephone button with an indicator which is used to monitor another telephone. The Answer button indicates incoming calls destined for the other telephone. Someone working at a telephone with Answer buttons (a receptionist, for example) can receive all ringing and visual indication of incoming calls for other telephones, and answer those calls when necessary.

One telephone can have up to four Answer buttons. An Answer button is automatically assigned to a telephone when that telephone is assigned an Answer DN.

**Answer DN:** The Directory Number (DN) of a telephone that is monitored by an Answer button. Up to four Answer DNs can be assigned to a telephone. This is done in Configuration programming.

**Answer mode:** In Configuration programming, this subheading allows you to set the way in which the Norstar system will answer incoming calls on loop start and E&M trunks. The alternatives are manual and auto.

**Answer with DISA:** In Configuration programming, this subheading allows you to set whether an auto-answer trunk will be answered with Direct Inward System Access.

**Autodial button:** A memory button which, if programmed, provides one-touch dialing of external or internal numbers.

**Auto-answer trunk:** A trunk on which calls are answered by the system. The system either routes the call to a target line, or provides system dial tone or stuttered dial tone (see Remote Access). How the call is handled is determined by the received digits which are all or part of the telephone number used to dial the call. See Manual-answer trunk.

**Auto DN:** The received number assigned to Norstar system dial tone. If a caller using an auto-answer trunk calls a number which is assigned as the Auto DN, the caller hears system dial tone and can use Remote Access features. See Remote Access. The Auto DN is assigned in Configuration programming.

**Automatic Dial:** A feature that allows you to dial without having to pick up the receiver or select a line. You must have a prime line to use Automatic Dial.

**Automatic Handsfree:** A feature which automatically activates Handsfree operation when you make or answer a call. Automatic Handsfree is assigned in Administration programming.

**Automatic Hold:** A feature which automatically places an active call on hold when you select another line. Automatic Hold is assigned in Configuration programming.

**Automatic Privacy:** See Privacy.

**Automatic Telephone Relocation:** A feature which lets a telephone retain its personal and system programming when it is plugged into a different Norstar modular jack. Automatic telephone relocation is enabled in Configuration programming.

**Auxiliary ringer:** A separate external telephone ringer or bell which can be programmed to ring when a line or a telephone rings. An auxiliary ringer may be programmed to ring only when the system is in a particular service mode. Programming of an auxiliary ringer is done in both Administration and Configuration programming.

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## B

**Background Music:** A feature which lets you hear music from the speaker of your Norstar telephone. It is available only if a music source has been attached to the KSU. Background music is set up in Configuration programming.

**B channels:** The B1 and the B2 channels are paths for transmitting digital voice or data. Each port number has one B1 DN and one B2 DN associated with it.

**Busy Lamp Field (BLF):** A device with a liquid crystal display (LCD) panel of indicators that shows the status of up to 24 telephones in the Norstar system. The BLF will show a telephone as busy if it is active on a call, has Do Not Disturb turned ON, or is being used for programming. The BLF attaches to the M7310 Telephone.

**Button caps:** Interchangeable plastic caps which fit over the buttons of Norstar telephones. They are used to indicate the features programmed onto each programmable memory button. Button caps are either pre-printed or have clear windows which allow you to label the buttons.

**Button Inquiry:** With this feature you can check the function of each programmable button on your Norstar telephone.

**Bypass Restrictions:** Overrides any Call Restrictions applied to specific System Speed Dial numbers. Bypass Restrictions can be turned on in Administration programming.

## C

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**Callback:** If you park, camp, or transfer a call to another telephone and it is not answered there, it will ring again at your telephone. How long the system will wait before Callback occurs is set in Configuration programming.

**Call Forward:** With this feature you can have all the calls arriving at your telephone forwarded to another telephone in your Norstar system. To have calls forwarded outside the system, use Line Redirection.

**Call Forward No Answer:** A feature which forwards all calls arriving at your telephone to another designated telephone in your Norstar system after a specific number of rings. Call Forward No Answer is assigned in Administration programming.

**Call Forward On Busy:** A feature which forwards all calls at your telephone to another designated telephone if your telephone is busy. This feature is assigned in Administration programming.

**Call Handling:** In Configuration programming, this heading covers a number of settings which affect how the Norstar system handles calls.

**Call Park:** With this feature you can place a call on hold so that someone can retrieve it from any other telephone in the Norstar system by selecting an internal line and entering a retrieval code. The retrieval code appears on the display of your telephone when you park the call. You can park up to nine calls on the system at one time.

**Call Park Callback:** See Callback.

**Call Park prefix:** The first digit of the retrieval code of a parked call. This digit cannot conflict with the first digit of any existing DNs, Line Pool access codes, the Direct-dial digit, or the external line access code. The default Call Park prefix digit is "1 ". It may be set to none, in which case Call Park is disabled. Call Park prefix is assigned in Configuration programming.

**Call Pickup Directed:** A feature which lets you answer a call ringing at any Norstar telephone by entering the internal number of that telephone before taking the call. Call Pickup Directed is activated in Configuration programming.

**Call Pickup Group:** See Pickup Group.

**Call Queuing:** If you have several calls waiting at your telephone, you can invoke the Call Queuing feature to answer them in order of priority. Priority is given to incoming calls, followed by callback and camped calls.

**Camp-On:** A feature which lets you re-route a call to a telephone even if all the lines on that telephone are busy. To answer a camped call, use Call Queuing or select a line if the camped call appears on your telephone. Priority is given to queued calls over camped calls.

**Camp timeout:** In Configuration programming, this subheading lets you set the length of a delay before a camped call is returned to the telephone which camped the call.

**Capabilities:** In Administration programming, this section heading covers the dialing filters, remote access packages, set abilities, and line abilities which can be assigned to Norstar lines, telephones, or Class of Service passwords.

**CAP assignment:** In Configuration programming, this subheading sets which Norstar telephones are Central Answering Positions. Up to five Central Answering Positions can be installed in a single Norstar system.

**Central Answering Position (CAP):** A CAP is an M7324 telephone which has been designated a CAP in Configuration programming. The CAP provides backup answering and can be used to monitor the telephones within a Norstar system. One or two CAP modules can be attached to a CAP to increase the number of lines it can handle.

**Central Answering Position (CAP) module:** A CAP module is connected to an M7324 telephone to provide 48 additional buttons which can be used as Autodial buttons or Feature buttons. A maximum of two CAP modules can be connected to a single M7324 Telephone.

**Centrex template:** This is one of the four Norstar system templates. The Centrex template assigns one unique external line to each telephone until the maximum number of lines is reached (example: Line 001 to telephone 2221, Line 002 to telephone 2222, and so on). Any remaining telephones do not receive a default line assignment.

**Class of Service (COS):** The set of Norstar features and lines available to the user for a call. The Class of Service for a call is determined by the Dialing Filters and Remote Access Packages assigned to the telephone in Administration programming. Class of Service for a call can be changed by entering a six digit Class of Service password. (Internal users cannot change their access to features with a COS password, only their dialing filters.) Class of Service and Class of Service passwords are assigned in Administration programming. See Remote Access.

**Class of Service password:** See Class of Service.

**Configuration:** A type of Norstar programming usually performed by the installer or service representative. It establishes the basic operation of trunks, lines, and telephones in a Norstar system.

**Configuration access code:** To start Configuration programming, enter:

\* \* C O N F I G .

You must also enter an installer password before you can perform Configuration programming.

**Control Telephone:** A Control Telephone can place the lines for which it has responsibility in or out of a Service Mode. The Direct-dial Telephone is a Control Telephone for directing calls to the Extra Direct-dial Telephone. A telephone is made a Control telephone and has lines assigned to it in Administration programming.

**COS:** See Class of Service.

**Cursor:** A short horizontal line which appears on the Norstar telephone display to indicate that characters can be entered using the dial pad. .

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## D

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**Data Communications Interface:** A Norstar device which lets you attach an RS-232 data device to your Norstar system.

**Data terminal:** A device such as a modem which can be used to transfer data instead of sound over a telephone network. You cannot use Norstar programming to set up such devices. See the documentation that came with the device.

**Date:** See Show Time or Time and Date.

**DCI:** See Data Communications Interface.

**Defaults:** The settings for all Norstar features when the system is first installed. Defaults are determined by the template chosen at startup. Settings are changed from their defaults in Configuration and Administration programming. In this manual, default settings are shown in bold text.

**Delayed Ring Transfer (DRT) to Prime:** After a specified number of rings, this feature transfers an unanswered call on an external line, to the Prime Telephone associated with that line. This feature is activated in Configuration programming.

**Dialing filter:** Through a combination of restrictions and exceptions, dialing filters prevent certain telephone numbers from being dialed. Dialing filters can be applied to lines (line filters, remote filters), to sets (set filters), to specific lines on a set (line/set filters), and to Class of Service passwords (user filters, remote filters). The Norstar system can handle up to 100 dialing filters.

**Dial mode:** The dialing mode of a line can be either Tone or Pulse. Pulse is traditionally used by rotary dial telephones. Tone is also referred to as dual tone multifrequency (DTMF) tones. Dial mode can be changed in Configuration programming.

**DID trunk (Direct inward dialing trunk):** A trunk which permits a caller who dials a particular number to be connected directly to a target line in the Norstar system. This enables a caller to reach someone in your office without having to go through the receptionist. A DID trunk may also connect the caller to the Auto DN or the DISA DN. A DID trunk is used for incoming calls only. See Trunk and Target Line.

**Direct-dial:** A feature which lets you dial a designated telephone in your Norstar system with a single digit. As many as five direct dial sets can be established. Each telephone in the system is assigned to one Direct-dial telephone. There is a single, system wide digit for calling the assigned Direct-dial telephone of any telephone. Direct-dial telephones are established in Administration programming. Telephones are assigned to a Direct-dial telephone in Administration programming.

**Direct-dial #:** In Configuration programming, this subheading sets the system wide digit used to call a direct dial telephone.

**Direct-dial number:** The digit used to call the Direct-dial telephone.

**Direct Inward Dialing trunk:** See DID trunk.

**Direct Inward System Access (DISA):** The feature which lets remote users dial directly into the Norstar system and use Norstar features. Callers will hear stuttered dial tone and will be required to enter a Class of Service password to gain access to the system. See Remote Access.

**Directed Pickup:** See Call Pickup Directed.

**Directory Number (DN):** A unique number which is automatically assigned to each telephone or data terminal. The DN, also referred to as an internal number, is often used to identify a telephone when settings are assigned during programming. Default DN assignments start at 21 in a two-digit (non-expanded) system and 221 in a three-digit (expanded) system.

**Directory Number (DN) length:** The number of digits in a Directory Number. A non-expanded system can have a DN length of two to seven digits. An expanded system (a system with an Expansion Cartridge installed) can have a DN length of three to seven digits. All Directory Numbers for the system must be the same length. The default DN length is two digits for a non-expanded system and three digits for an expanded system. The DN length affects only internal DNs. Externally received numbers, including received numbers for Target lines and the Auto and DISA DNs, are governed by the Received Digit Length setting.

**DISA:** See Direct Inward System Access.

**DISA DN:** The received number assigned to the Norstar Direct Inward System Access facility. If a caller dials a number which is assigned to the DISA DN, the caller hears stuttered dial tone and must enter a Class of Service Password. Once the password is accepted, the caller hears system dial tone and can use Remote Access features. See Remote Access.

**Disconnect Supervision:** When disconnect supervision is assigned to a line, the Norstar system monitors the line to detect when an external caller hangs up. This allows the system to release the line for other uses. Disconnect supervision is assigned in Configuration programming.

**Display:** A liquid crystal display (LCD) on the Norstar telephone that guides you through feature operation and programming.

**Display button:** The Norstar M7310 Telephone and M7324 Telephone are each equipped with three buttons located directly beneath the display. During feature operation or programming, some or all of these buttons may be used to provide further options. If an option is available, it is shown in the bottom row of the two row display, directly above the corresponding display button. Display buttons are represented in this manual as underlined capital, e.g. OK.

**Display digits:** In Administration programming, this subheading lets you set whether an assigned name or the actual number will be displayed when someone uses a system speed dial code.

**DN:** See Directory Number.

**DRT delay:** The number of rings before a Delayed Ring Transfer occurs. This is assigned in Configuration programming.

**DRT to Prime:** See Delayed Ring Transfer to Prime.

## E

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**E&M trunk:** A trunk through which the Norstar system connects to a private telephone network. An E&M tie trunk can be used for both incoming and outgoing calls. E&M trunks are supported only on an expanded Norstar system.

**End-to-End Signaling:** See Host System Signalling.

**Emergency Telephone:** A single line telephone (also referred to as a 500/2500 telephone) that becomes active when there is no power to the Key Service Unit.

**Event message:** Event messages are stored in the system log and displayed during a Maintenance session. They record a variety of events and activities in the Norstar system.

**Exceptions:** One component of a Dialing filter. Exception-s are numbers you can dial even if they are forbidden by a more general Restriction. See Restrictions.

**Expanded system:** A Norstar system with an Expansion Cartridge.

**Expansion Cartridge:** A cartridge which connects Trunk modules and Expansion modules to the Key Service Unit. Expansion Cartridges are available with two or six ports.

**Expansion module:** Either a Trunk Module or a Station Module. See Trunk Module, Station Module, and Expansion Cartridge.

**External call:** A call to a destination outside the Norstar system.

**External Call Forward:** See Line Redirection.

**External code:** The number you dial to get an external line. By default it is 9, but this can be changed in Configuration programming. You do not always need an external code. It is primarily to support the M7100 Telephone and single line telephones using an Analog Terminal Adapter.

**External line:** A line on your Norstar telephone used for making calls to destinations outside the Norstar system.

**External music source:** See Music source.

**External paging:** A feature you can use to make voice announcements over an externally-mounted loudspeaker connected to the Key Service Unit. The external speaker is not a Norstar component and must be supplied by the customer.

**Extra-Dial set:** In Administration programming, this heading lets you assign an extra Direct-dial set when a service mode is active. You can have one Extra-Dial set for each of the three service modes.



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**F**

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**Feature button:** Many Norstar features are invoked by pressing the Feature button followed by a Feature code. The feature button is also used to exit a feature.

**Feature Cartridge:** A replaceable cartridge containing the Norstar features. The Feature Cartridge, a combination of a Data Cartridge and a Software Cartridge, is inserted into the Key Service Unit.

**Feature code:** A number that is used to activate a particular feature.

**Forward:** See Call Forward.

**Forward delay:** The number of rings before an unanswered call is forwarded to another telephone when the Call Forward No Answer feature is ON. Forward delay is assigned in Administration programming.

**Forward No Answer:** See Call Forward No Answer.

**Forward On Busy:** See Call Forward On Busy.

**Full Autohold (on idle line):** When this feature is ON, if you select an available line, and then do something which selects another line, the first line is put on hold.

**Full Handsfree:** See Handsfree.

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**G**

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**Gain:** In Configuration programming, this subheading lets you change the transmission level for signals on an E&M trunk.

**Group Listening:** A feature which allows you to have others in your office hear a caller through your phone's speaker. The caller hears you only when you speak into the receiver and cannot hear other people in the office.

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**H**

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**Handsfree:** A feature you can use to make calls without using the telephone receiver. Full Handsfree is activated in Administration programming. When it is activated, a Handsfree/Mute button is automatically assigned to the telephone.

**Handsfree (HF) Answerback:** When activated, this feature automatically turns ON the microphone at a telephone receiving a Voice Call so that the person receiving the call can respond without lifting the receiver. It is activated in Administration programming.

**Handsfree/Mute button:** See Handsfree.

**Headset:** A head-mounted or ear-mounted telephone receiver that is used instead of the hand-held receiver. Headsets are not Norstar components and must be supplied by the customer.

**Held (Line) Reminder:** A Norstar telephone rings and displays the message Held call when an external call has been placed on hold for a certain period of time. The Held Line Reminder feature and Remind delay are set up in Configuration programming.

**HF Answerback:** See Handsfree Answerback.

**Hold button:** This button is used to suspend calls so that the person using the telephone can perform another task without disconnecting the caller.

**Hookswitch Flash:** See Link time.

**Host delay:** This feature allows you to assign the delay between the moment an external line is selected to make a call and the moment that digits or codes are dialed out on the line. The Host delay time is assigned in Configuration programming.

**Host System Signaling:** (Also referred to as End-to-End Signaling.) Norstar telephones can access a remote system or dial a number on an alternate carrier by means of Host feature activation, such as Link, Pause and Run/Stop.

**Hotline:** This feature automatically calls a pre-assigned number when the telephone's receiver is lifted or the **Handsfree/Mute** button is pressed. A Hotline number can be an internal or external number. Hotline is assigned in Administration programming.

**Hybrid template:** One of the four Norstar system templates. In the Hybrid template, Line 001 appears on each telephone, and each telephone has access to Line Pool A. The template is assigned in System Startup.

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## I

**I/C:** An abbreviation of Intercom button. This appears in Configuration programming.

**Individual DNs:** In Configuration programming, this sub-heading is used to change the internal number of a Norstar telephone.

**Installer:** Someone who installs the Norstar equipment, and performs System Startup and Configuration programming. The Installer or the System Coordinator can program Administration settings.

**Installer password:** A 1 to 6 digit password used to prevent unauthorized access to Configuration programming. The default Installer password can be changed in Configuration programming.

**Intercom button:** A button which provides access to internal lines used for calls within a Norstar system and access to external lines through a Line Pool or external code. A telephone may be assigned zero to eight Intercom buttons. This is done in Configuration programming.

**Intercom keys:** See Intercom button.

**Internal line:** A line on your telephone dedicated to making calls to destinations inside your Norstar system. An internal line may still connect you with an external caller if you use it to access a line pool or to pick up a call using Norstar call handling features such as Call Park or Call Pickup Directed,

**Internal number:** A number (also referred to as a Directory Number or DN) that identifies a Norstar telephone or device.

**internal user:** Someone using a Norstar telephone within a Norstar system.

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## K

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**Key Service Unit (KSU):** The central hardware component in the Norstar system. The KSU has its own processor and memory, and provides a physical point of connection for the various types of devices, telephones, and expansion modules used in Norstar. The KSU can function on its own as a basic system (with 24 Norstar telephones and 8 external lines), or with the addition of a Trunk Module (TM) which supports more external lines, or a Station Module (SM) which supports more Norstar telephones.

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## L

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**Line:** The complete path of a voice or data connection between one telephone (or other device) and another.

**Line abilities:** In Administration programming, the heading under which you assign Line Filters, Remote Filters, and Remote Access Packages to lines.

**Line Access:** In Configuration programming, the heading under which you assign an individual telephone's access to lines.

**Line assignment:** In Configuration programming, the subheading under which you define which lines are accessible to an individual telephone.

**Line Data:** In Configuration programming, the heading under which you assign certain settings of individual lines.

**Line filter:** See Dialing filter.

**Line names:** In Administration programming, this sub-heading allows you to assign names to external lines.

**Line number:** A number which identifies an external line. The total number of lines depends on how many Trunk Modules are installed and the number of Target lines.

**Line Pool:** A group of lines used for making external calls. Line Pools provide an efficient way of giving a telephone access to external lines without taking up many line buttons. A line is assigned to be a member of a Line Pool in Configuration programming.

**Line Pool access:** In Configuration programming, the sub-heading under which you assign the Line Pools that a telephone may access.

**Line Pool access code:** A number that identifies a Line Pool. Line Pool access codes are assigned in "Configuration programming.

**Line Pool codes:** See Line Pool access codes.

**Line Profile:** A feature you can use to review the settings programmed to lines in Configuration and Administration programming. The settings cannot be changed with this feature. Line profile is available only on the M7310 and M7324 telephones.

**Line Redirection:** A feature which allows you to redirect all calls on an incoming line to a destination outside the Norstar system. Once a line is redirected it cannot be answered within the Norstar system. The system may be set up to give a brief ring when a call comes in on a redirected line. This feature differs from Call Forward in two ways. It redirects only external calls (not internal calls) and it redirects calls to destinations outside the system. Call forward redirects calls only to destinations inside the Norstar system. See Call Forward and Redirect Ring.

**Line type:** In Configuration programming, this setting controls whether a line is Public, Private, or a member of a Line Pool.

**Link time:** A specific time delay that allows access to PBX features through a Norstar system. Link time is also referred to as a "Hookswitch Flash" or "Recall". Link time is assigned in Configuration programming.

**Loop Start Trunk:** A type of telephone trunk that provides a connection to the public telephone network.

**Loop Start Trunk Cartridge:** This cartridge, when inserted into the Trunk Module, provides the connection to lines. See Trunk Cartridge.

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## M

**M7100 Telephone:** A telephone with a single line display and one programmable memory button without an indicator.

**M7208 Telephone:** A telephone with a single line display and eight programmable memory buttons with indicators.

**M7310 Telephone:** A telephone which has a two line display, three display buttons, 10 programmable memory buttons with indicators, and 12 dual memory programmable buttons without indicators. An M7310 can be equipped with a Busy Lamp Field.

**M7324 Telephone:** A telephone with a two line display, three display buttons, and 24 programmable memory buttons with indicators. An M7324 telephone can be equipped with a CAP module.

**M7900 Telephone:** A telephone with a touch screen display which replaces the display and memory buttons of other Norstar telephones. It provides simplified access to Norstar Features and an interface to computer driven applications.

**Maintenance:** A type of programming you can use to diagnose and repair problems in the Norstar system. Maintenance requires no programmable settings”

**Manual-answer trunk:** A trunk on which calls are not automatically answered by the Norstar system, but ring at telephones in the usual way. See Auto-answer Trunk.

**Memory buttons:** Buttons which can be programmed to dial frequently used features or numbers automatically. See M7100, M7208, M7310, M7324 and M7900 telephone entries for their exact memory button configurations.

**Message:** If you call someone in your Norstar system and their telephone is busy, you can send them a message indicating that you called.

**Miscellaneous:** A section heading in Configuration programming that has a collection of assorted system-wide settings.

**Music source:** A radio or other source of music can be connected to the Key Service Unit to provide music for the Music on Hold and Background Music features. A music source is not part of the Norstar system and must be supplied by the customer.

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## N

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**Names:** Names can be assigned to System Speed Dial numbers, external lines, telephones, and Service Modes. This is done in Administration programming. You can use up to sixteen characters to name a System Speed Dial number, and seven characters to name a telephone, line, or Service Mode. If a Name has not been assigned, the line number or DN will appear on the display instead of a Name.

**Night Service:** See Service Modes.

**Norstar Programming Overlay:** A paper template which is placed over the top four memory buttons with indicators on the M7310 or M7324 Telephone during programming. The overlay labels indicate the special function that each of the four buttons takes on in programming.

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## O

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**On hold:** In Configuration programming, this setting controls whether external callers hear music, periodic tones, or silence when they are placed on hold.

**Overlay:** See Norstar Programming Overlay.

## P

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**Page:** A feature you can use to make announcements over the Norstar system. You can choose Internal Page (announce over the telephone speakers), External Page (announce over an externally-mounted, customer-supplied loudspeaker), or both Internal and External Page.

**Page Zone:** An area in the office that receives internal Page announcements independently of the rest of the office. Each Page Zone is identified by a number. Telephones are assigned to Page Zones in Administration programming.

**Park prefix:** See Call park prefix.

**Park timeout:** The time before an unanswered parked call calls back to the telephone which parked it. Park timeout is defined in Configuration programming. See Call Park.

**Password:** A password is a specific sequence of digits that you enter to gain access to Norstar programming, to override dialing restrictions, or to use Remote Access with DISA. A password is required for System Startup and Configuration programming and may be required for Administration programming. See Class of Service password.

**Pause:** A character which inserts a 1.5 second delay in a dialing sequence on an external line.

**PBX template:** See Private Branch Exchange template.

**Personal Speed Dial:** Two-digit codes (71-94) can be programmed to dial external telephone numbers. Personal Speed Dial numbers are programmed for each telephone, and can be used only at the telephone on which they are programmed.

**Pickup Group:** A telephone can be placed into one of nine Call Pickup Groups. A call ringing at a telephone within a Pickup Group can be picked up at any other telephone within the same Pickup Group. A telephone is assigned to a Pickup Group in Administration programming.

**Pool:** See Line Pool.

**Port number:** The identification number of a specific point of connection at the Key Service Unit, Station Module, Trunk Module, or Expansion Cartridge. KSU ports are numbered 1 and 2. Expansion module ports are numbered from 3 to 8. The numbering of Trunk and Station module ports is dependant upon the KSU or Expansion Module port into which they are plugged.

**Pre-dial:** A feature that allows you to enter a number and check it on your telephone display before it is actually dialed. If the number is incorrect, you can edit it. The number is dialed only when you pick up the receiver or select a line.

**Prime line:** The line on your telephone which is automatically selected when you lift the receiver, press the Handsfree/Mute button or use an external dialing feature. A Prime Line is assigned to a telephone in Configuration programming.

**Prime Set (Prime Telephone):** A telephone which provides backup answering for incoming calls on external lines. The Prime Telephone for a line will ring for any unanswered calls on that line. A Prime Telephone is assigned to a line in Configuration programming.

**Priority Call:** A feature you can use to make a Voice call to a telephone which is idle, busy or has Do Not Disturb activated. This feature is enabled for a telephone in Administration programming.

**Privacy:** This feature determines whether a Norstar user may select a line in use at another telephone and join an established call. Privacy is assigned in Configuration programming, but can be turned ON and OFF by users during individual calls.

**Private Branch Exchange template:** One of the four Norstar System Startup templates. In the Private Branch Exchange (PBX) template, each telephone is assigned access to the first Line Pool.

**Private line:** See Private to.

**Private network:** A telephone network consisting of owned or leased telephone lines used to connect different offices of an organization independently of the public network.

**Private to:** In Configuration programming, this heading allows you to assign a line to one telephone as a Private line. The line cannot appear on any other telephone, except the Prime Telephone for that line. Private lines cannot be placed into Line Pools.

**Programming Overlay:** See Norstar Programming Overlay.

**Programming reminders:** Charts on which you can record some commonly-used settings from Administration and Configuration programming to keep the Norstar system's records up-to-date.

**Programming:** Setting the way the Norstar system will work. Programming includes system-wide settings and individual telephone and line settings.

**Public line:** An external line which can be assigned to any telephone and to many telephones. A line is assigned as Public in Configuration programming.

**Public network:** The regular telephone network which connects most homes and businesses.

## R

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**Radio Frequency (RF) Filter Kit:** A Norstar device designed to alleviate problems associated with radio frequency interference that may be experienced when a headset or external auxiliary ringer is used with a telephone.

**Recall:** See Link time.

**Rec'd #:** In Configuration programming, this heading allows you to assign certain digits received by Norstar (that is, all or part of a telephone number dialed by an external caller or received over a network link), to a particular target line. This means that when an external caller dials this number, the target line will ring. Received digits may also connect the call to the Auto DN or the DISA DN, establishing a Remote Access call.

**Rec'd # length:** In Configuration programming, the subheading which allows you to set the number of digits received from an external source that will be used to route a call to a target line.

**Received digit length:** See Rec'd # length.

**Received digits:** See Rec'd #.

**Receiver:** The handset of a telephone.

**Redirect ring:** In Administration programming, this subheading allows you to set whether a line that has been redirected through Line Redirection will give a short ring on those sets on which the line appears.

**Remind delay:** When a call has been on hold for a set period, the telephone beeps and displays the message **He 1 d ca 11**. This period is the Remind delay. It is set in Configuration programming.

**Remote access:** The ability to dial into a Norstar system from outside the system and make use of selected Norstar features. The lines, features, and dialing capabilities available to a remote user are determined by the Class of Service. If the remote access line is answered with DISA, the user must enter a Class of Service password to gain access to the Norstar system's features.

**Remote access dial filter:** See Remote filter.

**Remote access package:** In Administration programming, this subheading lets you set up access to Paging and Line Pools for remote users.

**Remote capability:** That subset of Norstar features which is available to users connected through remote access.



**Remote filter:** A dialing filter applied to a line in order to control which digits can be dialed during an incoming remote access call. It is the equivalent of a set filter for a remote user.

**Remote paging:** This feature allows remote users to use the Norstar paging feature. Access to this feature is governed by the Class of Service for the call. See Remote Access and Class of Service.

**Remote User:** Someone who calls into a Norstar system from a telephone outside that system and uses Norstar features or lines. See Remote Access.

**Restrictions:** One component of a Dialing filter. Restrictions are numbers you cannot dial when that dialing filter is in effect. See Exceptions.

**Ringling:** In Configuration programming, the heading which lets you assign a line to ring or not ring at a telephone. If a line has been assigned as "No ring", an incoming call is shown by a flashing indicator only.

**Ringling Sets (Ringling Telephones):** Those telephones which have been assigned to ring when a line has been placed into a Service Mode. Ringling Telephones are assigned in Administration programming.

**RIIs button:** The Release button ends a call in the same way that hanging up the receiver does. It may also be used to end Startup, Configuration programming, Administration programming, Maintenance sessions and feature operations.

**Run/Stop:** A character which creates a breakpoint in a programmed external dialing sequence. When you press a programmed key, the system dials the number up to the run/stop. When you press it again, the system dials the digits following the run/stop.

---

## S

**SAPS:** See Station Auxiliary Power Supply.

**Selective line redirection:** See Line Redirection

**Service Modes:** Certain features become active when one or more lines are placed into a Service Mode. This is usually done to provide special ringling and telephone access after normal office hours, or when there are few people available to answer calls. Service Modes settings are assigned in Administration programming.

**Set:** A telephone.

**Set ability:** In Administration programming, the subheading under which set filters, line/set filters, and a variety of system features are assigned to individual telephones.

**Set Copy:** In Configuration programming, Set Copy allows you to copy programmable settings from one telephone to another of the same type. Set Copy provides two options: duplicating System Data and User Data, or duplicating System Data only. Set Copy does not provide the same copy capability as the COPY display button, which is more selective of the settings that can be duplicated.

**Set filter:** See Dialing filter.

**Set lock (Telephone lock):** This feature allows you to limit the number of features that may be used or programmed at a telephone. Full set lock allows very few changes or features, Partial set lock allows some changes and features, and No set lock allows any change to be made and any feature to be used. Set lock is assigned in Administration programming.

**Set Names:** In Administration programming, this sub-heading allows you to assign Names of up to seven characters to telephones.

**Set Profile:** A feature you can use to review the settings programmed to telephones in Configuration and Administration programming. The settings cannot be changed with this feature. Set profile is available only on the M7310 and M7324 telephones.

**Set Relocation:** See Automatic Telephone Relocation.

**Shift button:** A small triangular button beside the dual memory buttons on the upper half of the M7310 Telephone. You press the shift button to store or access features on the top half of the dual memory buttons.

**Show Time:** While on a call, accessing this feature lets you see the current date and time on the Norstar telephone display.

**Signal:** In Configuration programming, this subheading allows you to change the type of signaling used by an E&M or DID trunk.

**Square template:** One of the four Norstar system templates. In the Square template, Lines 001 and 002 are assigned to each telephone. The Square template is the default during System Startup. All defaults shown in bold in this manual are those of the Square template.

**Station:** An individual telephone or other Norstar device.

**Station Auxiliary Power Supply (SAPS):** A device which provides power to a Norstar telephone that is connected more than 305 m (1000 ft) and less than 760 m (2500 ft) from the Key Service Unit, or to a CAP module.

**Station Module (SM):** An expansion module that allows you to connect the Norstar system to 16 more telephones or other devices. See Expansion Cartridge.

**Supervised line:** A line for which disconnect supervision is enabled. If an external caller hangs up, the Norstar system detects the disconnection and hangs up its line also. See Disconnect Supervision.

**Supervision:** In Configuration programming, the subheading under which you choose the time, in milliseconds, before a line disconnection is made on a supervised line.

**System Coordinator:** The person responsible for customizing the Norstar system through Administration programming and for helping co-workers use the Norstar system.

**System Data:** 1. An option in the Set Copy function. System Data refers to the system settings which apply to all telephones and lines. System Data consists of the programmable settings from System Startup, Configuration programming and Administration programming. 2. In Configuration programming, the heading under which you can change various settings associated with the directory numbers and received numbers of the Norstar system.

**System Speed Dial:** In Administration programming, a heading under which you can assign up to 70 numbers as system speed dial numbers.

**System Speed Dial Name:** In Administration programming, a subheading under which you can assign a name to a System Speed Dial Number.

**System Speed Dial Code:** A Two-digit code (01 to 70) that can be programmed to dial a telephone number up to 24 digits long. System Speed Dial codes are programmed for the entire Norstar system in Administration programming.

**System Startup:** When a Norstar system is first installed and powered up, System Startup must be performed before Configuration or Administration programming can be done. Startup initializes the system programming to defaults.

**System Startup access code:** To begin System Startup, enter:

Feature  \* \* S T A R T U P

An Installer password is required before System Startup can begin.

## T

**Tandem call:** A call established when a remote user dials into the Norstar system and uses the system to place an outgoing call. The combination of the incoming and outgoing calls forms a tandem call. See Remote Access.

**Target line:** A line dedicated to receiving calls from outside the Norstar system. Several Target Lines, each identified by a different received number, can be attached to a single trunk. You cannot make outgoing calls on a target line. Target lines require DID or auto-answer trunks.

**TCM line (Time Compression Multiplexing line):** A two-wire digital station loop joining the CROSS-connect at the Key Service Unit to a telephone.

**Template:** A system-wide setting assigned during System Startup. The most important effects of a template are the number of lines assigned to the telephones, and the assignment of Line Pool access. Templates will also assign other system-wide defaults, such as Prime line and Ringing line assignment. It is important to understand that a template is provided only as a convenience, and that any settings affected by a template can be changed. The four templates are Centrex, PBX, Hybrid, and Square.

**Tie line:** See E&M trunk.

**Time:** See Show Time or Time and Date.

**Time and Date:** The current Time and Date appear on the display of idle Norstar telephones. The Time and Date can be changed in Administration programming.

**Transfer:** A feature which lets you redirect a call to another telephone. There are four types of Transfer; Transfer using Hold, Transfer with Announcement, Transfer without Announcement, and transfer using Unsupervised Conference.

**Transfer Callback:** If a transferred call is not answered after a specific number of rings, the call will return to the telephone which made the transfer. The number of rings can be assigned in Configuration programming. Transfer Callback does not apply to calls transferred externally.

**Trk/Line data:** In Configuration programming, the heading under which the capabilities and characteristics of the Norstar system's lines and trunks are established.

**Trunk:** The physical connection between the Norstar system and the outside world using either the public telephone system or a private network. One trunk may provide connections for several lines. See Auto-answer trunk and Manual-answer trunk.

**Trunk Answer:** A feature you can use to answer a call on any line that has an active Service Mode, even if that line does not appear on your telephone. Trunk Answer is enabled in Administration programming.

**Trunk Cartridge (TC):** A Trunk Cartridge is inserted into a Trunk Module and provides connections for lines. Up to three cartridges can be used in one Trunk Module. Depending on your system and your needs, you may have any combination of Loop Start, DID or E&M Trunk Cartridges.

**Trunk data:** In Configuration programming, the subheading under which you set how the trunks of the Norstar system will operate.

**Trunk mode:** In Configuration programming, the heading under which you assign the mode of operation for a Loop Start trunk. There are two modes, supervised and unsupervised. See Disconnect Supervision.

**Trunk Module (TM):** An expansion module that provides up to 12 additional external trunks, depending on the number and type of Trunk Cartridges installed. See Expansion Cartridge.

## U

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**Unsupervised line:** A line for which disconnect supervision is disabled. If an external caller hangs up, the Norstar system does not detect the disconnection and does not hang up its line. See Disconnect Supervision.

**User Data:** User Data is an option in the Set Copy feature. User Data refers to the personal settings which are unique to an individual telephone, and are not programmed in Configuration or Administration programming. User Data is programmed at each telephone. These settings, for example, include Personal Speed Dial and the assignment of programmable memory buttons.

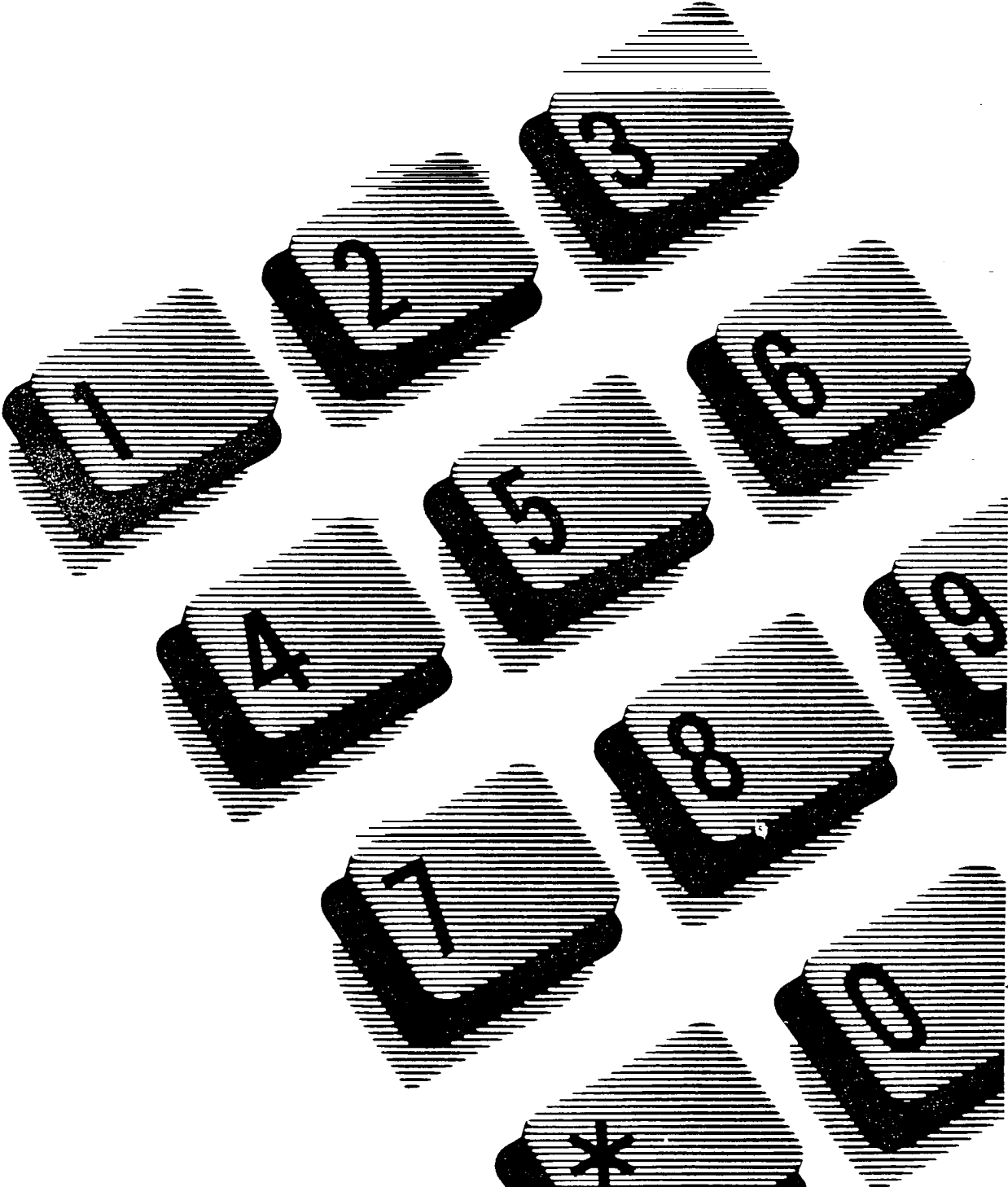
**User Filter:** See Dialing filter.

## V

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**Voice Call:** A feature you can use to make an announcement or begin a conversation through the speaker of another telephone in the Norstar system. The telephone you call will not ring. Instead, the person you call will hear a beep and then your voice. Their telephone will beep periodically to remind them that their microphone is open.

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# Introduction to **Norstar**





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# Welcome to Norstar

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Rather than the standard opening, congratulating you on acquiring your new Meridian Norstar Business Communication System, we'd just like to say. . .  
"Welcome aboard!"

It always takes a bit of time to settle into using any new equipment. For that reason, we advise new customers to appoint a Norstar System Coordinator to help.

The Coordinator becomes the "local expert" and is responsible for customizing Norstar to your organization. The Coordinator also assists co-workers while they learn to make Norstar part of their day-to-day routine.

This Guide will help a Norstar System Coordinator to:

- customize your system
- assist co-workers in using Norstar features
- know when to call your Service Representative (or Installer).

# Customizing Norstar

---

“One size fits all” is not a particularly good idea for telephone systems. You need features and services that match the way your office operates. Norstar has been designed to allow initial customizing and subsequent updating of information as your office grows and changes.

Norstar can be customized at three levels:

- Personal programming • done by telephone users
- Administration programming • usually done by you
- Configuration programming • usually done for you by the Installer or Service Representative.

## Personal programming

Personal programming allows you to personalize individual Norstar telephones by programming features and telephone numbers onto specific memory buttons. It is not necessary to lift the receiver to program your telephone.

Ask your co-workers which features they will use, and help them program these features onto memory buttons on their own telephones.

Everyone can also program specific characteristics of the telephone to suit their needs. These include, for example, the way the telephone sounds when it rings, the brightness of the display, and Personal Speed Dial numbers.

Personal programming is described in the *Norstar Telephone User Card* given to each of your co-workers. The user card is provided with each telephone and describes the operation of that particular type of telephone.

## Administration programming

Administration programming allows you to change various system-wide settings, as well as some specific settings for each line or telephone. This is the program that you will use most often. For a detailed description of Administration procedures, see the Administration chapter of this Guide.

Your system comes pre-programmed with default settings that may initially be sufficient for your needs. Familiarity with Administration programming will help you to determine which settings, default or customized, will be most useful for your office.

### Example: Time and Date

In areas where clocks are adjusted for Daylight Savings Time, the time and date display on Norstar telephones must be reset. This simple procedure must be performed twice a year using the Administration program.

### Example: Names

The Names feature adds a personal touch to Norstar. It associates your co-workers' first or last names with their telephone. When you program co-workers' names, the name of the caller appears on the telephone display of the person called. Names are also associated with any messages sent. Changes in co-workers should be reflected in the names that appear in Administration.

## Configuration programming

Configuration programming may be done for you by your telephone company. They connect the **Norstar** system to the telephone network through this program. Specific **system-wide** parameters are set up in Configuration, such as internal number length. Some data referring to each line can be turned ON or OFF, such as Privacy and Autohold.

You must know when to call your Service Representative to change some aspect of your system's Configuration. Your Installer should give you a list of settings for Configuration programming.

### Example: Ringing Lines

With **Norstar**, your co-workers can have more than one line appearing on their telephones. If every line were to ring, pandemonium would result. To avoid this, Configuration programming enables your Installer to choose which lines appearing on a particular telephone will or will not ring.

### Example: Delayed Ring Transfer

If Delayed Ring Transfer is turned ON, an unanswered call will be transferred to a designated telephone, perhaps to a secretary.

# Assisting your co-workers

---

It is human nature to ask someone how to do something rather than read a user guide.

The System Coordinator may be asked to demonstrate to co-workers how to select and use **Norstar** features. We make the following suggestions to help you prepare for that possibility.

## Preparation

Start by familiarizing yourself with the procedures for using **Norstar** features. Examine the components of your **Norstar** system, identifying the buttons on the different types of **Norstar** telephones. Read the Telephone user cards chapter of this Guide for more information on each telephone.

Familiarize yourself with the various Programming Reminders provided at the end of the Administration chapter of this Guide. You will distribute copies of these reminders to your co-workers after filling in information such as System Speed Dial numbers and names.

It is important for everyone in the office to know that you are the System Coordinator and to know when you are available for consultation.

You may wish to schedule sessions for small groups or provide individual assistance to co-workers for programming features on their **Norstar** telephones.

## Objectives

Your co-workers should be able to do the following:

- Make and answer a call.
- Operate Norstar features, following the display messages and using the Feature button and feature codes.
- Program features and **Autodial** numbers onto memory buttons. Erase information programmed on memory buttons. Use Button Inquiry to see what is programmed on any button.
- Program and use Speed Dial. Understand the difference between Personal Speed Dial and System Speed Dial. Program numbers in Personal Speed Dial.
- Know where to find more information.

## Suggestions

- Make sure that each of your co-workers has a *Norstar Telephone User Card*, a *Norstar Telephone Feature Card*, and a *Norstar Receiver Card* (installed under the receiver of the **Norstar** telephone).
- Show your co-workers where you keep this Guide in case they want a further explanation of any feature.
- Photocopy, use, and distribute the appropriate Programming reminders, which can be found in the Administration chapter of this Guide. They provide a record of programmable settings that your co-workers may need for frequent reference, such as names, internal numbers, or call pickup groups.
- Assist your co-workers in placing and answering calls in different ways. Move from simply picking up the receiver to other methods like using **Handsfree/Mute** and making Voice Calls.

- Point out that there are two types of calls • internal calls within your company, and external calls to locations outside your company. Explain how these affect different features.
- Explain the operation of features. Describe how all features begin the same way: you press the button marked “Feature”, enter a code using the dial pad, and follow the instructions on the display. Your co-workers should be reassured that the display will prompt them through any feature operation.
- Show your co-workers the adjustments they can make to the Ring Type and display brightness on their telephones.
- Help your co-workers as they program Autodials and features on memory buttons. “Home” is always a good first choice to program as an Autodial number. Frequently used features can be programmed onto memory buttons for one-touch access. This is the easiest and fastest way to use a feature.
- Explain the difference between System Speed Dial and Personal Speed Dial. Show your co-workers how to program their own Personal Speed Dial numbers and distribute a System Speed Dial list. A master copy of the System Speed Dial list can be found with other Programming reminders in the Administration chapter of this Guide.

# When to call your Service Representative

---

Ask your Service Representative for the service department's telephone number, and write it down. If you have problems with your Norstar equipment, telephone your Service Representative. If you have problems with programming or using any of the features, first read the appropriate section of this Guide and try again before calling your Service Representative.

Record the name and telephone number of the Service Representative here:

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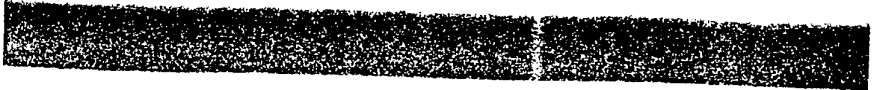
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## Configuration programming

Your Service Representative may have consulted with you or with your management before programming the best Configuration for your Norstar system. If you need more information, or if you would like to have any of your system's settings changed or reviewed, contact your Service Representative.





# Components



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# About this chapter

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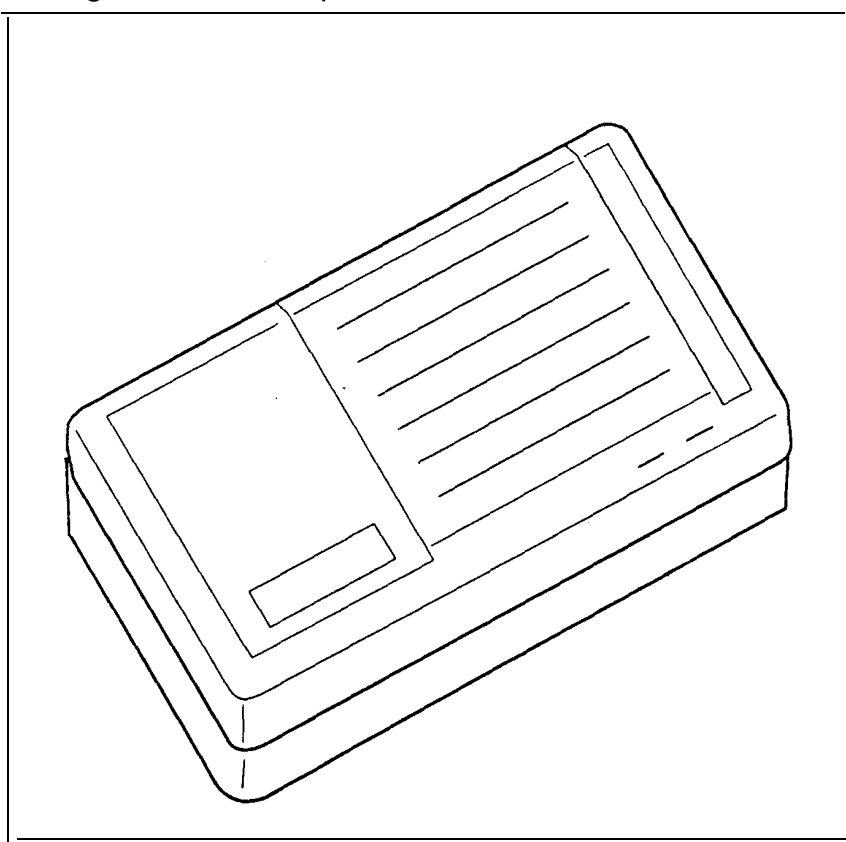
This chapter briefly describes the main components of the Norstar Modular system. The components are arranged in alphabetical order. For quick reference, each component's description appears on a separate page. Illustrations help you identify each component.

# Analog Terminal Adapter

---

The Analog Terminal Adapter (ATA) converts the Norstar digital interface to analog signals. This allows the connection of analog devices such as single line telephones, FAX machines, modems, and answering machines. The ATA allows single line telephones to access Norstar features such as Transfer, Call Pickup, and Exclusive Hold.

Analog Terminal Adapter



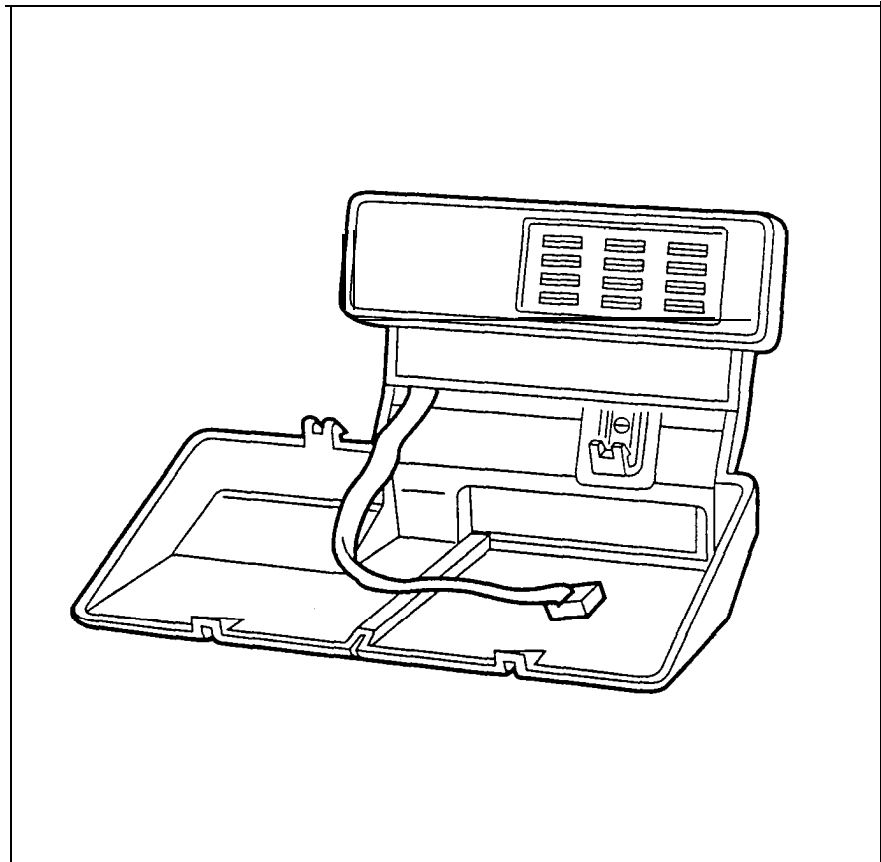
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# Busy Lamp Field

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The Busy Lamp Field (BLF) contains a panel of LCD indicators, and connects to the M7310 telephone. These indicators reflect the status (idle or busy) of Norstar telephones corresponding to dual-memory buttons programmed for Internal Autodial.

## Busy Lamp Field



# Cable troughs

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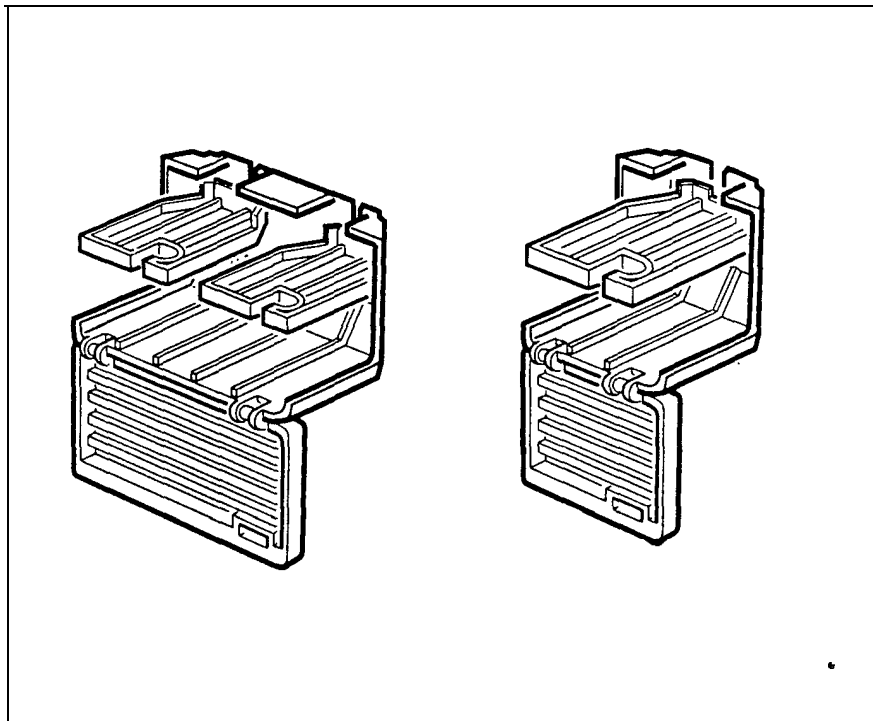
Cable troughs are used to route the cabling from the Key Service Unit (KSU), the Trunk Module, and the Station Module. Each cable trough is detachable from its module.

There are two sizes of cable troughs:

- half-size
- quarter-size

Two half-size cable troughs are attached to the KSU; one half-size cable trough is attached to the Trunk Module; and the quarter-size cable trough is attached to the Station Module.

Half-size and quarter-size cable troughs



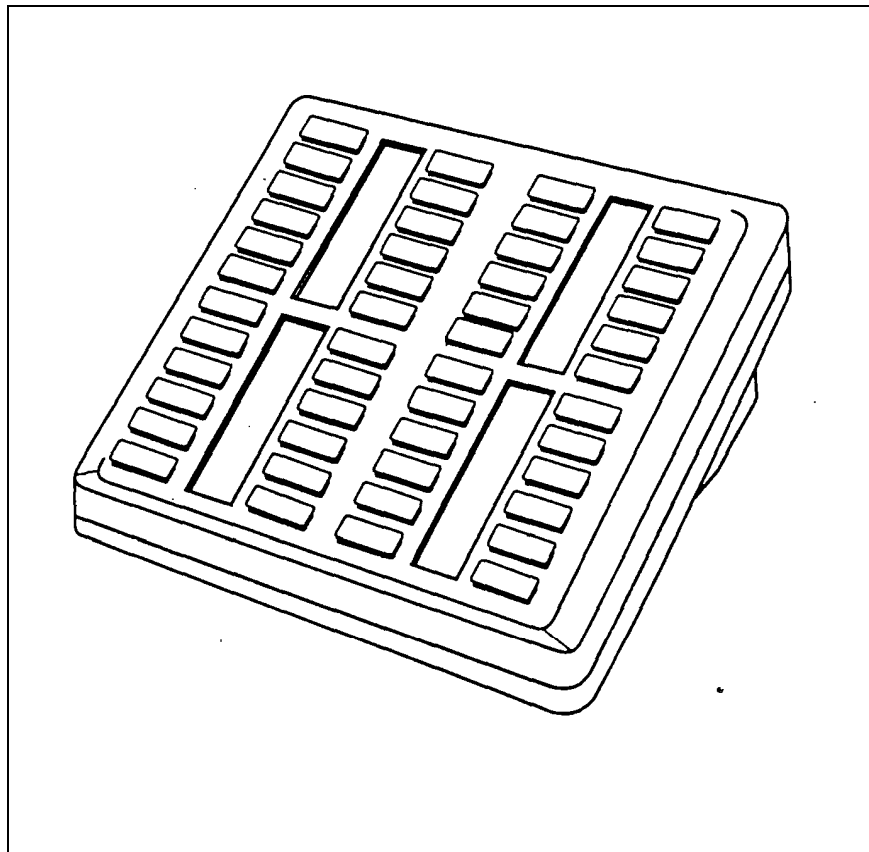
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# Central Answering Position module

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The Central Answering Position (CAP) module is a device which connects to an M7324 telephone. A second CAP module can also be attached to the first. Each CAP module shows the status (busy or not busy) of as many as 48 Norstar telephones. You can press CAP module buttons to answer external calls on up to 80 lines (if two CAP modules are attached). You can also use CAP module buttons to program features and Autodial numbers. You need a Station Auxiliary Power Supply for every two CAP modules.

CAP module

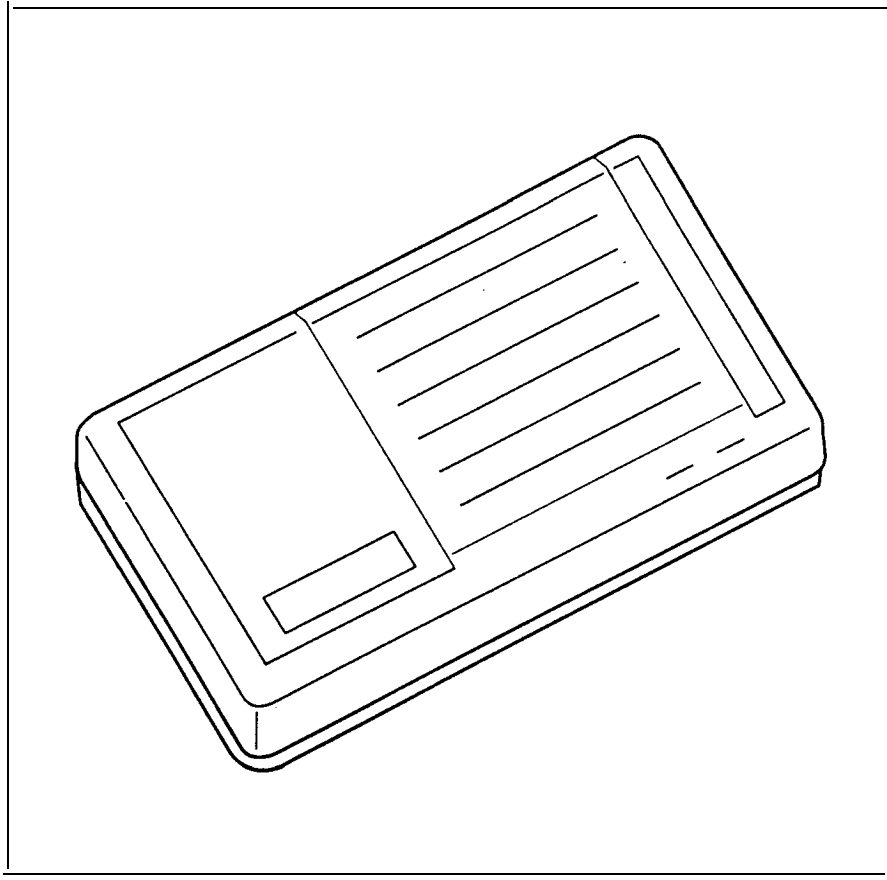


# Data Communications Interface

---

The Data Communications Interface (DCI) allows you to attach any serial RS-232 data device to the Norstar system. You can then place external data calls using an external line, or place internal data calls to other DCIs within the Norstar system.

## Data Communications Interface





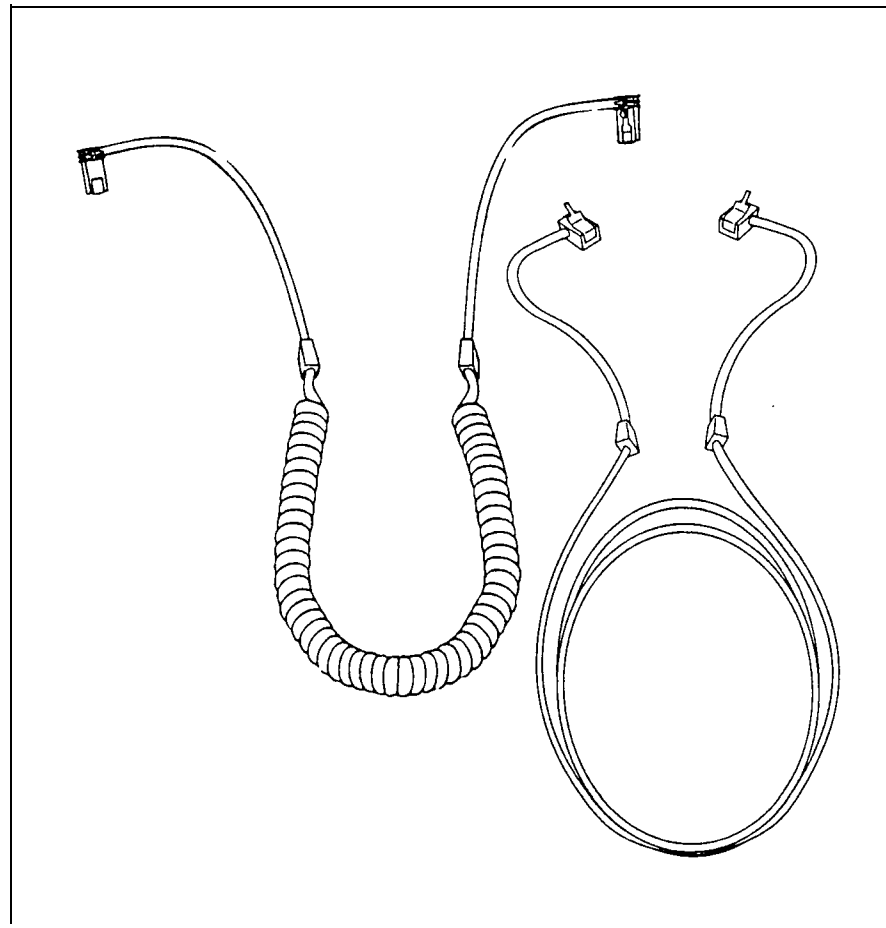
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# DS-30 cables

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DS-30 cables connect Trunk Modules and Station Modules to the KSU. One end of a DS-30 cable plugs into the appropriate connector in the Trunk Module or Station Module. The other end plugs into a connector in the Expansion Cartridge.

DS-30 cables



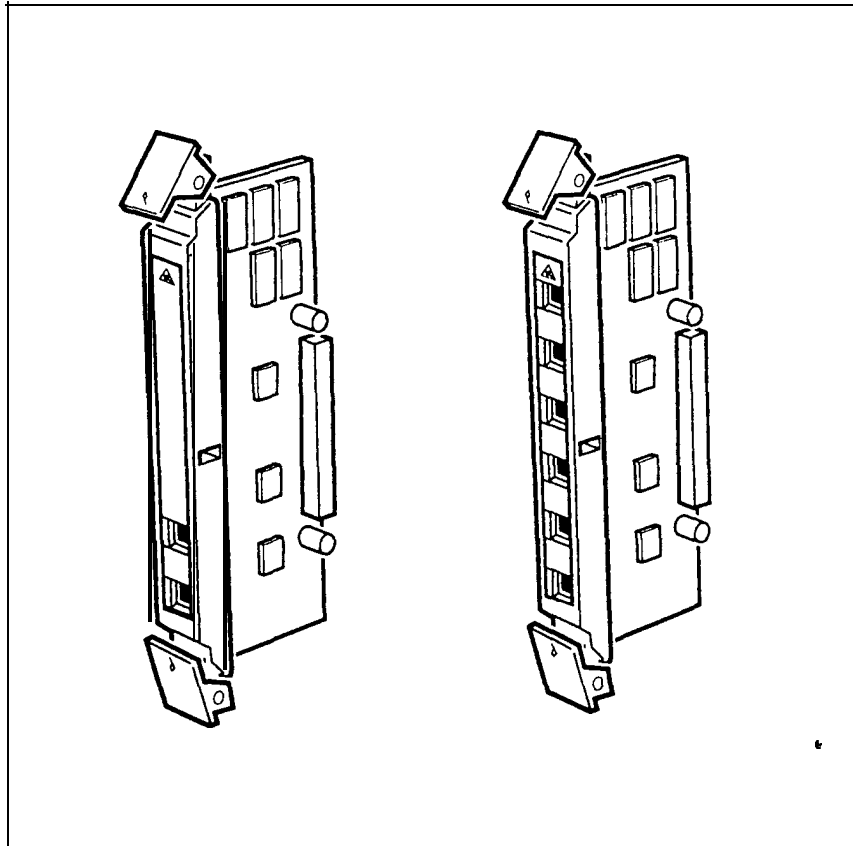
# Expansion Cartridge

---

The Expansion Cartridge allows for the addition of extra Trunk Modules and/or Station Modules to the Norstar system. This Cartridge fits into the right slot of the Key Service Unit (KSU).

The two-port Expansion Cartridge allows up to two additional modules (Trunk Modules and/or Station Modules) to be connected to the Modular system. The six-port Expansion Cartridge allows the connection of up to six additional Trunk or Station Modules.

## Two-port and six-port Expansion Cartridges



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# Feature Cartridge

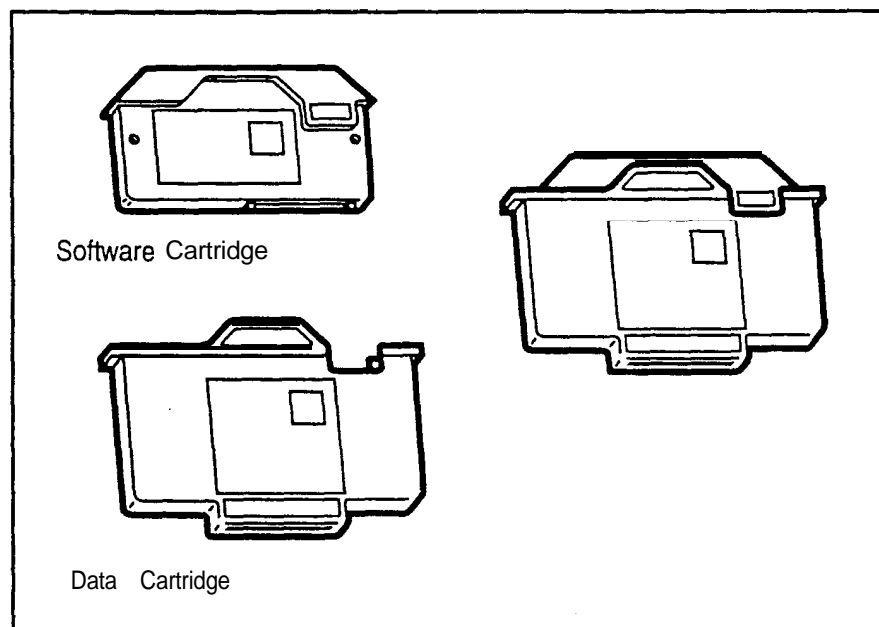
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The Feature Cartridge is made up of a Software Cartridge and a Data Cartridge. The Software Cartridge contains the system programming. The Data Cartridge contains the data from Configuration and Administration programming.

The Software Cartridge slides into the Data Cartridge. The Feature Cartridge assembly is then inserted into the KSU.

When there is a software upgrade, only the Software Cartridge, and not the Data Cartridge, needs to be replaced.

## Unassembled and assembled Feature Cartridges



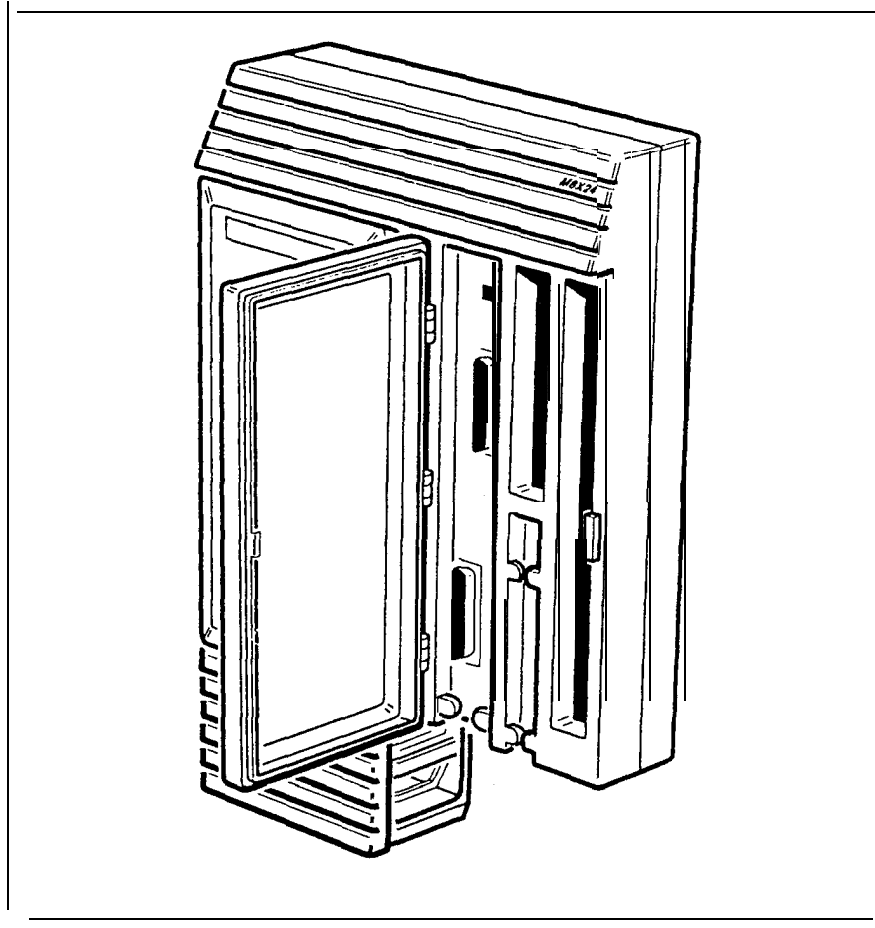
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# Key Service Unit

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The Key Service Unit (KSU) is the hub of the Norstar System. It can function on its own as a basic system (with up to 24 Norstar telephones and eight external lines). The system may also be expanded by any combination of up to six Trunk Modules and/or Station Modules.

## Key Service Unit



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# M7100 telephone

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The Norstar M7100 telephone offers the following features:

- a one-line display
- one memory button without an indicator

## M7100 telephone



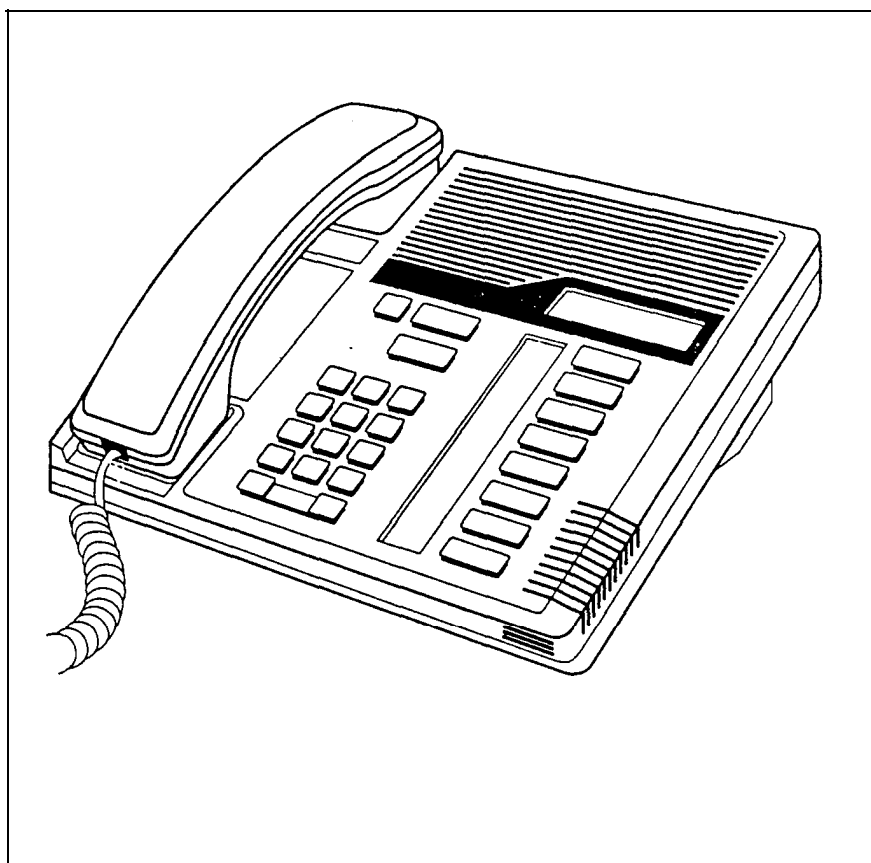
# M 7208 telephone

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The Norstar M7208 telephone offers the following features:

- a one-line display
- eight memory buttons with indicators
- Handsfree capability

M7208 telephone



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# M 7310 telephone

---

The Norstar M7310 telephone offers the following features:

- a two-line display
- three display buttons
- 10 memory buttons with indicators
- 12 dual memory buttons without indicators
- a shift button
- Handsfree capability

## **M7310** telephone



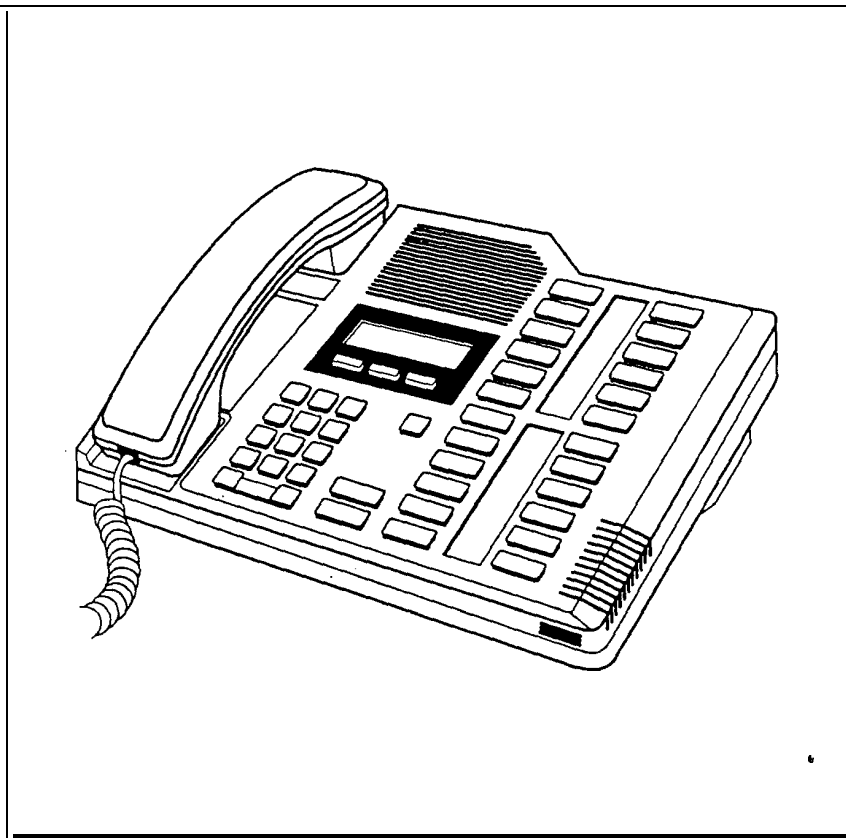
# M 7324 telephone

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The Norstar M7324 telephone offers the following features:

- a two-line display
- three display buttons
- 24 memory buttons with indicators
- Handsfree capability

M7324 telephone





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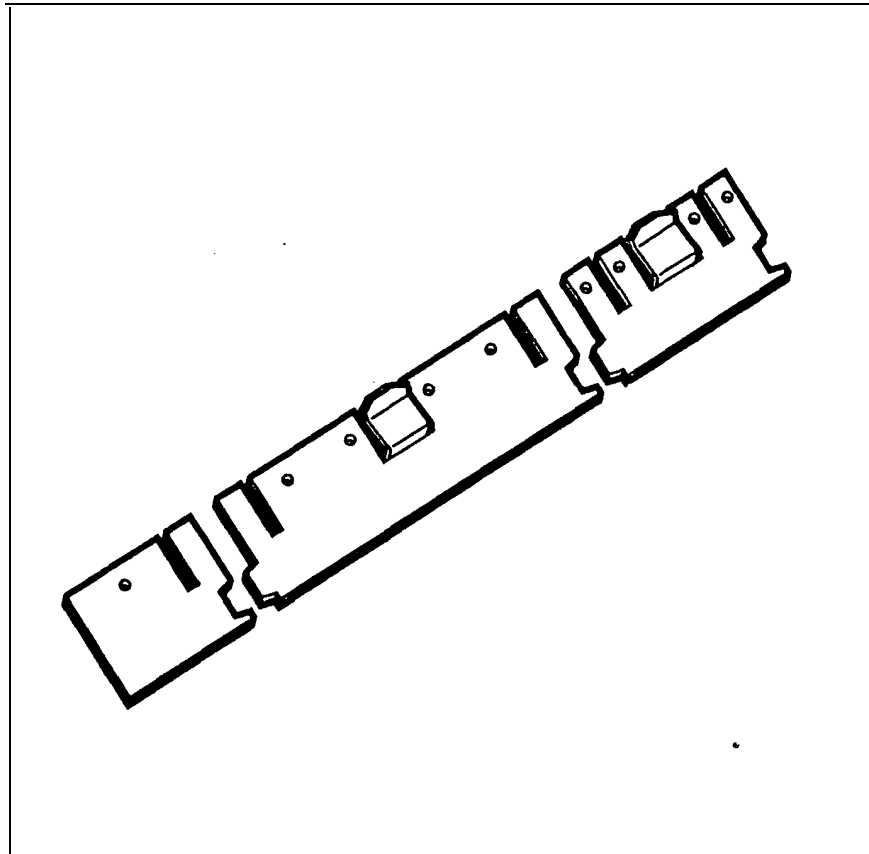
# Mounting brackets

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Mounting brackets support the Key Service Unit, Trunk Module and Station Module on a wall. These brackets are notched at the ends to aid in mounting the modules. Three sizes of mounting bracket are available:

Size:	Mounting for:
Full-size	Key Service Unit
Half-size	Trunk Module
Quarter-size	Station Module

Mounting brackets

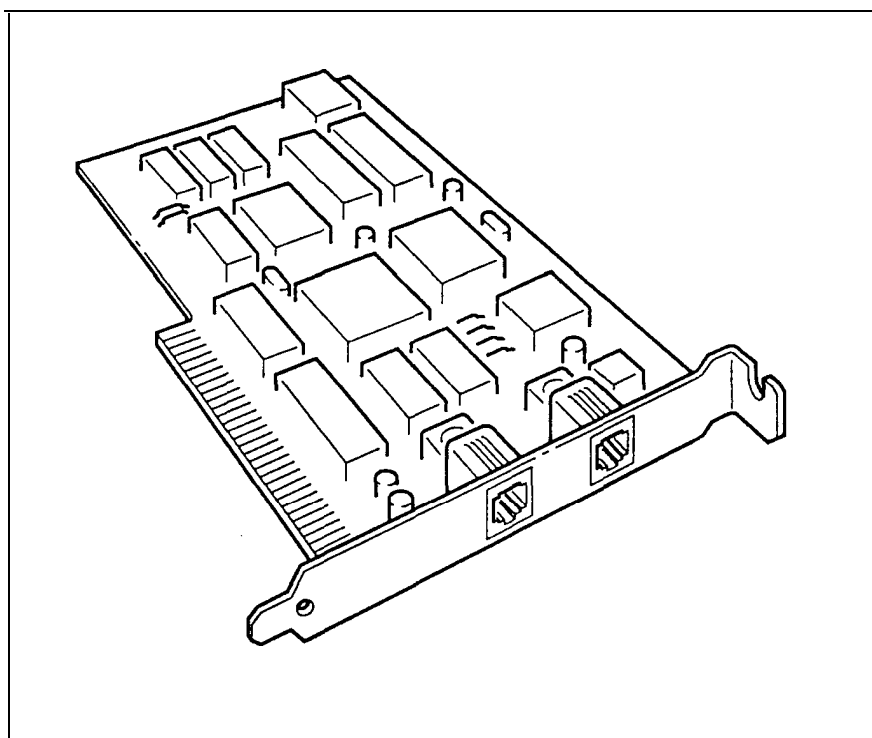


# PC Interface card

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The PC Interface card connects the Norstar system to a Personal Computer (PC). This allows PC applications to run with the Norstar system. The PC Interface card fits inside the PC.

PC Interface card



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# Power bar

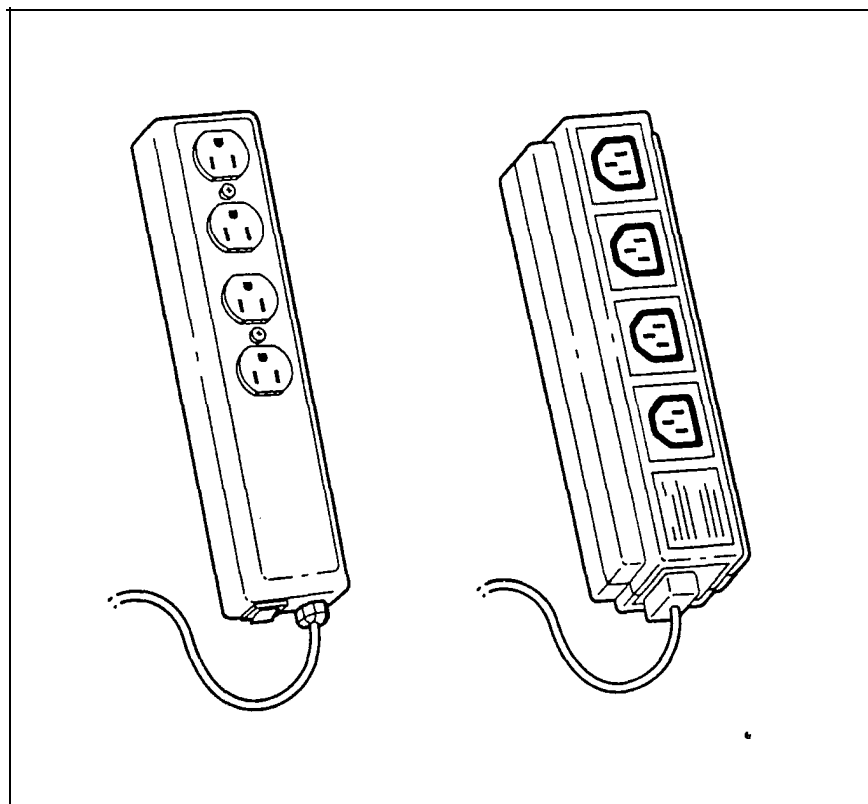
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The 'power bar provides four plug-in outlets for Trunk Modules and/or Station Modules. It should be installed in the lower half of the cable trough. If more modules are required than can be plugged into one power bar, a second power bar is required.

There are two types of power bars:

- the 110 volt power bar which is CSA/UL approved for use in North America
- the 220 volt power bar for use outside North America

110 and 220 volt power bars



# Station Auxiliary Power Supply

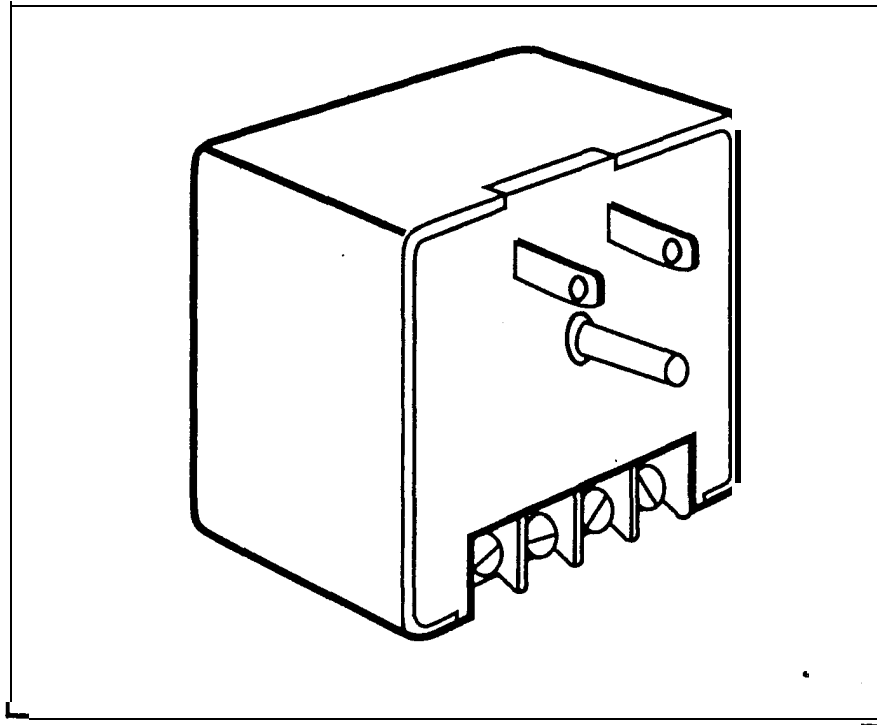
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The Nor-star Station Auxiliary Power Supply (SAPS) is a power transformer which plugs into a grounded 110 V ac outlet. The SAPS provides regulated direct current for either of two Norstar applications:

- station loops longer than 305 m (1000 ft)
- a Central Answering Position (CAP)

One SAPS can power two CAP modules, which do not have to be connected to the same M7324 telephone.

## Station Auxiliary Power Supply



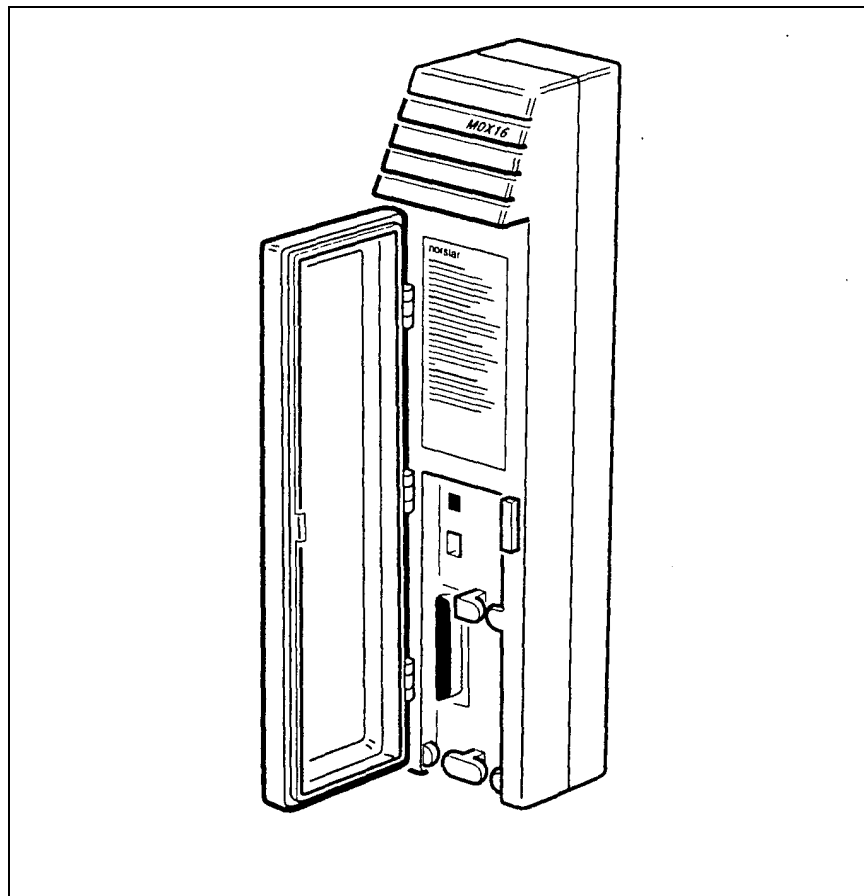
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# Station Module

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The Station Module allows up to 16 additional Norstar telephones to be connected to the Modular system. A DS-30 cable connects each Station Module to the KSU.

Station Module



# Trunk Cartridge

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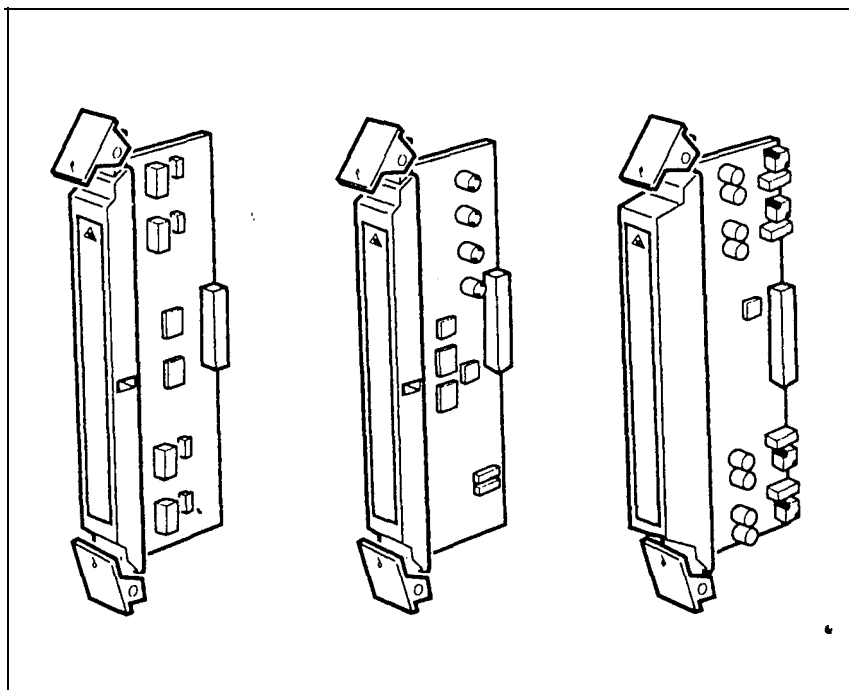
The Trunk Cartridge, when inserted in a Trunk Module, adds up to four external lines to the Norstar system. Up to three Trunk Cartridges can be added to each Trunk Module.

There are three types of Trunk Cartridges:

- the Loop Start Trunk Cartridge (4 lines)
- the E&M/DISA Trunk Cartridge (2 trunks)
- the DID Trunk Cartridge (4 trunks)

The Loop Start Trunk Cartridge supports regular external lines. The E&M/DISA Trunk Cartridge connects Norstar to a private network. The DID Trunk Cartridge supports direct inward dialing on incoming external lines.

Loop Start, **E&M/DISA**, and DID Trunk Cartridges



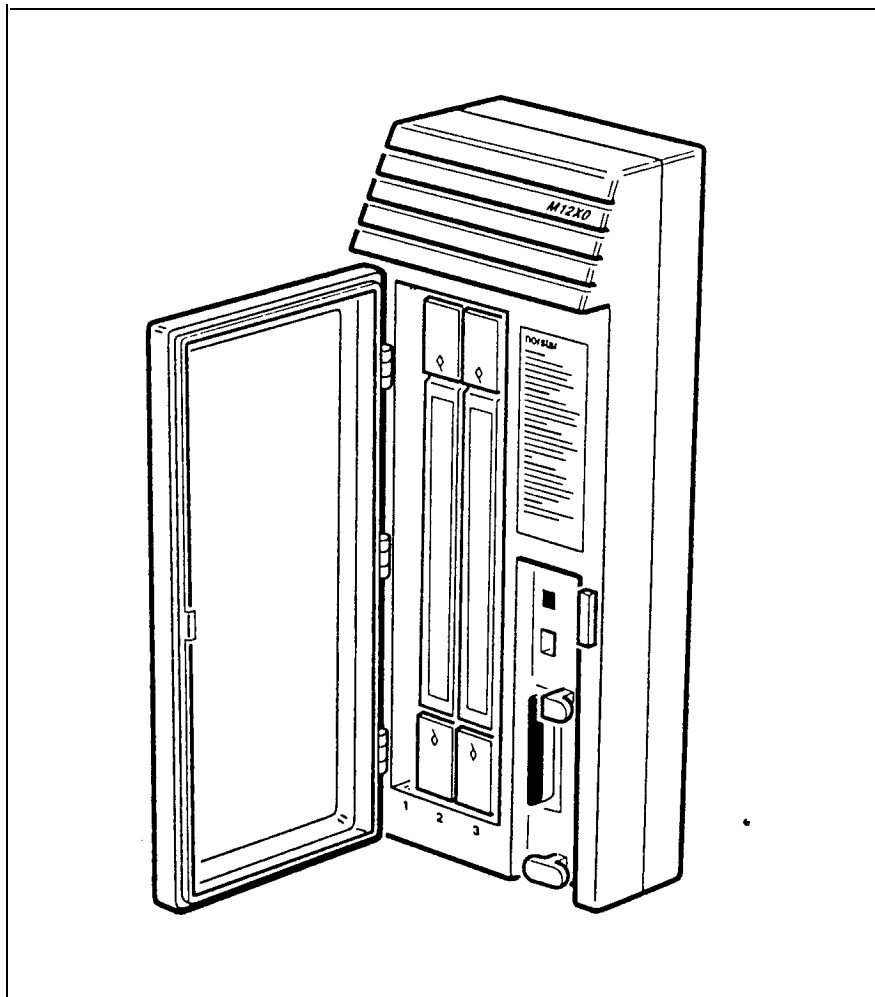
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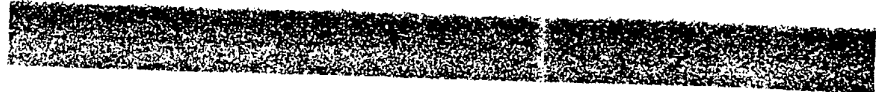
# Trunk Module

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The Trunk Module allows additional Trunk Cartridge installation. This in turn allows more external lines to be connected to the Norstar system. The Trunk Module has three slots in front for inserting Trunk Cartridges. Each Trunk Module can add a maximum of 12 external lines (four external lines per Trunk Cartridge). All three types of Trunk Cartridge (Loop Start, E&M/DISA, and DID) can be mixed in one Trunk Module.

## Trunk Module





# Introduction to programming

[telemanuals.com](http://telemanuals.com)





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# Customizing Norstar

---

Programming allows you to optimize the use of the Meridian Norstar\* telephone system. Norstar features can be programmed for individual telephones, for specific external lines, or for the system as a whole. This provides you with real flexibility in making your telephones work together.

## Why program the telephones?

Staff turnover, new business contacts, and other changes will make many demands on the Norstar system. Staff names and System Speed Dial numbers are just two examples of programmed settings that must be updated.

The system comes pre-programmed with default settings that may initially be sufficient. Familiarity with Norstar programming will help you determine which settings, default or customized, will be most useful for the installed system.

## How programming is done

Programming is done at an M7324 or M7310 Telephone. You press buttons on the telephone to enter a programmable setting or to request a specific programming action.

Norstar guides you step by step on the telephone display while you enter programming, select and change what you want, and exit programming.

## Programming overview

Norstar provides three types of programming that affect the system as a whole:

- System Startup
- Configuration
- Administration

A diagram illustrating the relationship of the programming types and their related functions is provided at the end of this section.

A fourth type, Personal programming, does not follow the same procedures as the three listed above. Personal programming allows you to assign a particular function to some of the buttons, and is unique to each telephone.

### System Startup

System Startup is done by the Installer only once, when the system is first installed. System Startup resets the Norstar system memory, and allows an Installer to assign a specific arrangement of external lines and feature button assignments to the telephones.

### Configuration

Configuration programming is done by an Installer when the system is first installed and when system upgrades are performed. Otherwise, this programming is not expected to change frequently. Configuration allows an installer to program a variety of settings for the system as a whole, and for individual external lines and telephones.

## Administration

Administration programming is performed by a System Coordinator on an ongoing basis. It includes settings that will probably have to be updated regularly. Administration lets you change various Norstar system-wide settings, and lets you assign some features to individual external lines and telephones.

## Reviewing programmed settings

The Set Profile (set is another word for telephone) and Line Profile features help you check your programming by allowing you to review the programmed settings.

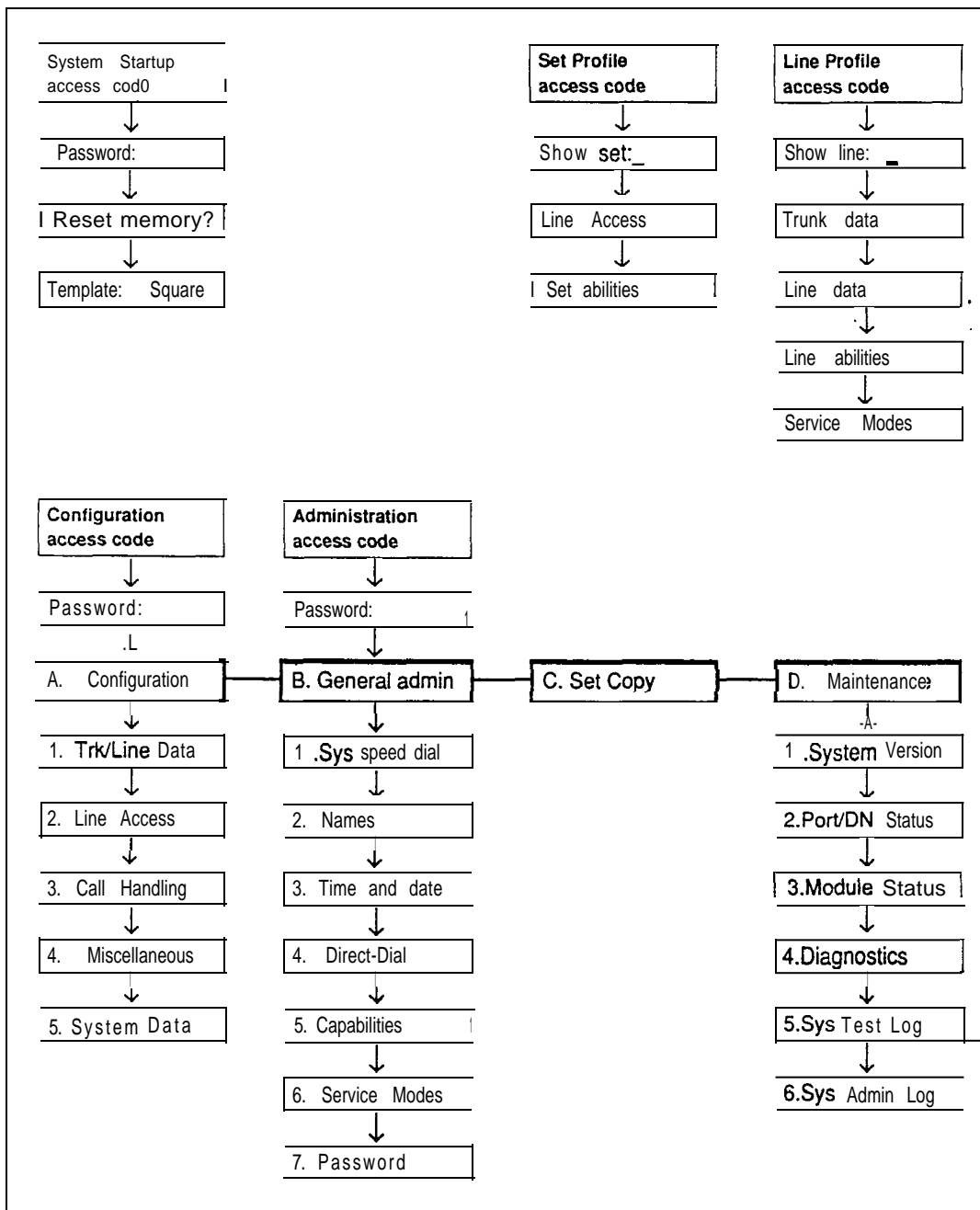
## Helping the Installer

Configuration programming provides the Set Copy and Maintenance functions that make an Installer's job easier.

An Installer can use Set Copy to copy programming from one Norstar telephone to another. This saves time, as it allows the Installer to quickly program many telephones with the same settings.

An Installer can use Maintenance to verify what hardware is installed, and to diagnose problems within the Norstar system.

Programming overview



Note: The Administration Access code and password provide access to Administration programming only, beginning with the 1. Sys speed dial heading.

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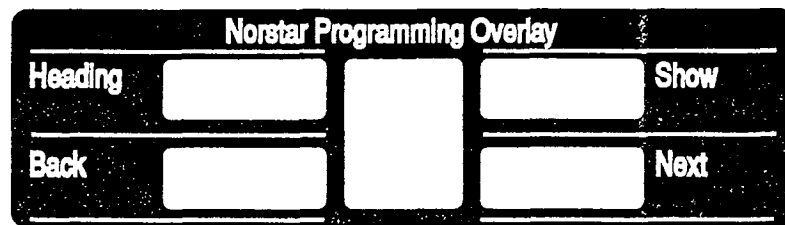
# Programming tools

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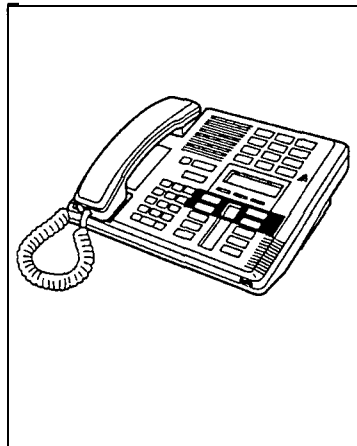
## The **Norstar** Programming Overlay

The Norstar Programming Overlay is a paper cutout that labels the function of four telephone buttons used during programming. This makes it easier for you to recognize the button you want. The Norstar Programming Overlay is provided at the end of this chapter.

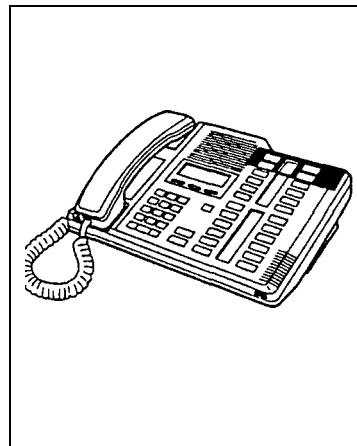
### Norstar Programming Overlay



M7310 Telephone with a **Norstar** Programming Overlay



M7324 Telephone with a **Norstar** Programming Overlay





## The **Norstar** Modular Programming Record

The *Norstar Modular Programming Record* provides a convenient way to record the settings you have programmed. The Record also helps you plan your programming. Space is provided for you to write down all the settings in the same order that they appear during programming.

Pages from the Record may be photocopied as necessary for programming many telephones or lines.

## The Programming reminders

The Programming reminders provide a convenient way to record the settings which most Norstar users need on a day to day basis. Refer to finishing programming in this chapter for more information.

## The **Norstar** Telephone User Cards

Each Norstar telephone has a *Meridian Norstar Telephone User Card* that lists the most commonly used features and operations of the Norstar telephones.

## The **Norstar** Feature Card

The *Norstar Feature Card* lists each of the features available in the Norstar system that may be accessed by using the

button.

---

# Programming basics

---

## What you can do in programming

In Norstar programming, you can:

- scan the settings to review current programming
- choose or enter a new setting
- erase an existing setting
- copy programming to another external line or Norstar telephone.

Programming changes can be made in two different ways. For some programming settings, you can choose among some predefined options. For other programming settings, you must enter a name or number.

In the majority of cases, programming changes are saved the moment they have been chosen or entered. Exceptions occur when you are changing DN length, Received Number Length, or Trunk cartridge type. In each of these cases you must press “Heading”, “Next” or “Back”, after which an important side-effect of your change is drawn to your attention, and you are prompted for confirmation that you still wish the change to take place.

## Entering programming

To enter programming, you require:


- an access code
- a password.

The access code is a sequence of digits that is entered from the dial pad. To make it easy to remember, the default code “spells out” a word.

The password is entered after the access code. To minimize the possibility of unauthorized changes to programming, you should distribute the password only to a limited number of people.

The procedure for entering programming is described in a programming example, later in this chapter.

## Exiting programming

You can exit programming at any time by pressing the  button.

## Finding your way around

Headings and sub-headings in Norstar programming help you keep track of where you are in programming.

In Administration programming, an example of a main heading is **1. Sys speed** dial for programming System Speed Dial. If you program this feature, one of the sub-headings is **Name** for programming a name to the System Speed Dial number.

Detailed programming procedures are provided in the appropriate programming chapter.

## Learning about **Norstar** programming buttons

Programming buttons allow you to move through the programming headings and make the required changes to the programmable settings.

### The **Norstar** Programming Overlay buttons

Norstar Programming Overlay buttons allow you to “navigate” through the headings and sub-headings of **Norstar** programming.

The Overlay is placed over the top four memory buttons of the M7310 or the M7324 Telephone. During programming, indicators (such as ►) will appear next to any buttons that can be used at that programming step.

The buttons labelled by the Overlay work as follows:

**Heading move** “up” in the hierarchy of headings and sub-headings.

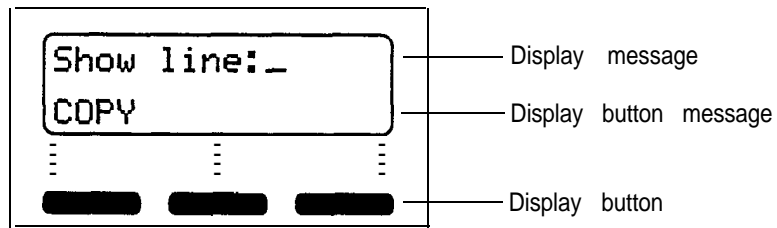
**Show move** “down” in the hierarchy of headings and sub-headings, or to begin programming for a heading or sub-heading.

**Next move** to the next heading, sub-heading or setting.

**Back move** to the previous heading, sub-heading or setting.

### The Nor-star display buttons

Display buttons can perform many different operations. Depending on where you are in programming, one, two, or three display buttons may be available at any one time. You press one of the display buttons to select the operation that you want to perform.



The most common display button messages are:

<u>CHANGE</u>	To change a programmable setting.
BKSP.	To move the cursor one space backwards (backspace) and delete a character. This allows you to re-enter a number or letter.
<u>COPY</u>	To copy line or telephone programming.
<u>UIEW-&gt;</u>	To view the last part of a displayed message longer than 16 characters.
<u>--&gt;</u>	To move the cursor one position forwards when programming a name.
<u>&lt;-VIEW</u>	To view the first part of a displayed message longer than 16 characters.
<u>&lt;==</u>	To move the cursor one position backwards when programming a name.

## Using **Norstar** telephone buttons

### Entering names

Letters and numbers can be entered as part of a name for various settings. The method of entering a name is always the same.

Begin with a setting that prompts you to enter a name. A cursor (    ) appears on the display to indicate where you can enter the next character. To enter a name:

1. Press the dial pad button with the printed letter or number you want.  
Each time you press the button, a new character appears. For example, the dial pad button for the number 3 has the letters D, E, and F, where:  
D appears after the first press  
E appears after the second press  
F appears after the third press  
3 appears after the fourth press  
D appears again after the fifth press.  
(Letters always appear in upper case.)
2. When the character you want is displayed:  
Press --> to move the cursor to the next character position.  
OR  
If you want to correct a character entered by mistake:  
Press <-- to move the cursor back until it is positioned beneath the character you want to correct.  
OR  
Press BKSP to move the cursor back and delete a character each time the display button is pressed.
3. Repeat step 1.

## Entering numbers

Numbers are entered from the Norstar telephone dial pad. The backspace display button may be used to edit the number.

Line numbers must always be entered as a three-digit number. Line numbers from 10 to 99 must be entered with one preceding zero (line "020", for example). Similarly, line numbers less than 10 must be entered with two preceding zeros (line "002", for example).

Internal telephone numbers, also referred to as Directory Numbers (DNs), can be from two to seven digits long on a non-expanded system, and from three to seven digits long on an expanded system. The default DN length is 2 on a non-expanded system and 3 on an expanded system. The DN length can be changed in Configuration programming.

### Viewing long telephone numbers

External telephone numbers can be up to 24 digits, but the telephone display is only 16 character spaces long. If you wish to see a previously programmed number that is longer than 16 digits, you must do the following:

Begin, for example, with 1234567890 12345...

The display shows only the first 15 digits. The three dots (...) at the end of the display indicate that more digits remain to the external number.

1. Press VIEW-> to see the remaining digits.
2. Press <-VIEW to again see the first 15 digits.

### Copying **Norstar** programmed settings

Programmed settings for external lines, **Norstar** telephones and certain **Norstar** Capabilities can be copied to other lines or **Norstar** telephones. If many lines or telephones require the same settings, there is no need to program each one individually. Instead, program one line or telephone, and then copy those settings.

The Copy Record page in the *Meridian **Norstar** Modular Programming Record* provides space to record the lines or telephones that are copied.

## Copying line programming

Line programming can be copied only for the following:  
Trk/Line Data of Configuration programming.

OR

Line abilities in the Capabilities section of Administration programming.

OR

Service Modes of Administration programming (only Ringing Telephones may be copied).

Begin with **Show 1 line:** \_ .

1. Press **COPY** .  
**Source:** \_ appears.
2. Enter the number of the line to be copied.  
**COPY to line:**\_ appears.  
OR  
Press **[Heading]** until you return to the desired heading, if you do not wish to proceed with copying.
3. Enter the number of the line to receive the programming.  
**Copied 00 1 > 002** appears briefly if, for example, programming for line 001 was copied to line 002.

While this brief message is on the display, you can already enter another line number to which the line programming should be copied , or you can wait for the **COPY to line:**, prompt to appear, as in step 2.

## Copying **Norstar** telephone programming

**Norstar** telephone programming can be copied only for the following headings:

Line Access of Configuration programming.

OR

Set abilities in the Capabilities section of Administration programming.



Begin with `Show set: _` .

1. Press `COPY` .  
`Source: _` appears.
2. Enter the internal number of the telephone to be copied.  
`COPY to set: _` appears.  
OR  
Press [Heading] until you return to the desired heading, if you do not wish to proceed with copying.
3. Enter the internal number of the telephone to receive the programming.  
`222 1> 2225` appears briefly if, for example, programming for telephone 2221 was copied to telephone 2225.

While this brief message is on the display, you can already enter another internal number to which the telephone programming should be copied , or you can wait for the

`COPY to set: _` again to appear, as in step 2.

### Copying **Norstar** Capabilities programming

In addition to Line abilities and Set abilities, **Norstar** Capabilities programming can be copied for the following headings:

Dialing filters in the Capabilities section of Administration programming.

OR

Rem access pkgs in the Capabilities section of Administration programming.

OR

COS passwords in the Capabilities section of Administration programming.

```
Beginwith Show filter: _  
OR  
Show Package: _  
OR  
Show Password: _ .
```

Press **Ctrl** proceed by responding to prompts as you would if you were copying line programming or Norstar telephone programming.

## Preparing for programming

### , Determining programming requirements

First read about the available programming settings in the Configuration or Administration chapters, and then determine how your co-workers would like the features programmed.

You should gather or define the following information:

#### For System Startup

- the template that will assign the most appropriate defaults

#### For Configuration or Administration

- the numbers of the installed external lines
- internal numbers of each installed Norstar telephone

#### For Configuration

- the appropriate length for internal numbers
- appropriate settings for each external trunk and line
- appropriate settings for each telephone
- appropriate system-wide settings

For Administration

- telephone numbers that will be programmed into System Speed Dial
- names for external lines and telephones
- external lines and telephones that will be subject to Line abilities and Set abilities programming
- required Filters and Remote access packages
- Set abilities to be assigned to individual telephones
- how the system should be programmed to make the best use of the Service Modes feature
- whether a new Administration password is required
- whether Class of Service passwords are required

Planning when and where you will program

Only one Norstar telephone can access Configuration or Administration programming at a time. The telephone you are using for programming cannot be used to make or receive calls. Other users of the Norstar system will still be able to use their telephones. However, they will not be able to do any Personal programming while you are programming.

# A programming example

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Once you have learned the programming basics, you can always apply the same rules to guide you through the programming steps. The following example takes you through the programming of System Speed Dial settings in Administration programming.

## Scenario

The taxi company your office normally uses has changed both its telephone number and name. Change the telephone number and name programmed in System Speed Dial of Administration programming, and review the other settings.

## Determining programming requirements

You have determined the following settings:

System Speed Dial code: 12

System Speed Dial telephone number: 5554568

Line Selection: Use prime line

Display Digits: N (No)

Name: Fleet Taxi

Bypass Restrictions: Y (Yes)

## Preparing for programming

1. Choose the Norstar telephone with which you will do the programming changes.
2. Obtain the Norstar Programming Overlay and place it over the buttons of your telephone.
3. Record the changes you make in the appropriate section of the *Norstar Modular Programming Record*.

## Entering programming

1. Enter the Administration access code using the feature button and the dial pad:

Press (Feature) [\*] [\*] [2] Q [6] [4] [6]

which is the same as

Press [Feature] [\*] [\*] A D M I N

Password: appears.

OR

1. Sys speed dial appears if there is no password. Proceed to Programming System Speed Dial.
2. Enter the Administration password from the dial pad. Press **RETRY** if you need to re-enter the password. The password does not appear on the telephone display.
  1. Sys speed dial appears.

## Programming System Speed Dial

Begin with 1. Sys speed dial .

1. Press [Show] to begin programming System Speed Dial. Speed dial #: \_ appears.

### Entering the System Speed Dial code

1. Press [1] [2] on the dial pad. Speed dial #: 12 appears.

### Entering the new telephone number

1. Press  .  
5553872 (the taxi company's old number) appears.
2. Press CHANGE .  
#12:\_ appears.
3. Enter the new telephone number:  
Press        on the dial pad.  
5554568, appears. .  
(If required, press the **BKSP** display button to  
backspace the cursor for re-entering a number).
4. Press OK when have completed entering the number.

### Programming Line Selection

1. Press  to move on to the Line Selection setting.  
Use prime 1 i ne appears (the default).  
OR  
Use line: 002 appears (for example, if line 002 was previously assigned).  
OR  
Pool code: 24 appears (for example, if the Line Pool access code 24 was previously assigned).
2. Press CHANGE until Use **prime** line appears.  
OR  
Program Display Digits if that option is already selected.

### Programming Display Digits

1. Press  to move on to the Display Digits setting.  
**Display digits:Y** appears.
2. Program Display Digits to "N" for No.  
Press CHANGE. **Display digits:N** appears.  
OR  
Program Name if that option is already selected.

## Programming Name

1. Press **Next** to move on to the Name setting.  
Name appears.
2. Press **[Show]** to view the name.  
The old company's name appears (if programmed). If the name was not previously programmed, then the default name appears as follows:  
**Sys Spd Dial 12 .**
3. Press **CHANGE** to change the name.  
The cursor ( , ) appears at the first character position for the name.
4. Enter the first letter (F) of the new name (Fleet Taxi):  
Press (3 on the dial pad).  
**F** appears.
5. Press **3** two more times.  
**F** appears.
6. Press **-->** to move the cursor to the next position.  
**F-** appears.  
Continue entering characters in the same way by pressing the appropriate dial pad buttons until **FLEET TAXI** appears.  
  
A blank space is created by pressing **-->** twice.  
  
If you make a mistake in entering the name, use **BKSP** , **<--** , or **-->** to move the cursor and re-enter the character.

## Programming Bypass Restrictions

1. Press **[Next]** to move on to the Bypass Restrictions setting.  
**Bypass restr'n: N** appears.
2. Program Bypass Restrictions to Yes.  
Press **CHANGE** until **Bypass restr'n: Y** appears  
OR  
Go to step 3 if that option is already selected.
3. You have finished System Speed Dial programming.  
Follow the next procedure to exit.

## Exiting programming

1. Press [Heading] three times to return to the main heading.  
1.Sys speed dial appears.  
OR  
Press [Rls] to exit Administration programming.  
End of session appears.



# Finishing programming

---

## Distributing information

You should ensure that programmed settings are recorded and easily available for reference:

- Record settings in the *Norstar Modular Programming Record*.
- Keep any passwords recorded in a safe place.
- Complete the Programming reminders section of the Administration chapter, and distribute copies of the sections that your co-workers will find useful. The Programming reminders that are required will depend on what has been programmed.

The Programming reminders section identifies:

- the names and internal numbers of each Norstar telephone
- the assignment of Prime Telephones, Central Answering Positions, and Direct Dial Telephones
- the locations of programmed Page Zones
- the Line Pool access codes for each Line Pool, and the type of Lines in that Line Pool (Public network or Private network)
- the digit that is dialed first to make an external call
- the digit that is dialed first to retrieve a parked call
- the digit that is dialed to reach Direct-Dial telephones
- the members of each Call Pickup Group
- the DISA DN for use by Remote Access callers to change their Class of Service

- Ensure that your co-workers know of any programmed settings that affect the operation of their telephone. The assignment of Handsfree, which assigns a  button to a telephone, is an example of this.

## Installing button caps

Each Norstar telephone comes with snap-on caps to identify the buttons that you program. The following buttons may be assigned to a telephone as a result of Configuration and Administration programming.

### Buttons assigned in Configuration

- Answer buttons (from Line Access programming)
- external and intercom buttons (from Line Access programming)

### Buttons assigned in Administration

- Handsfree buttons (from Set Abilities programming)

Some of the caps are already printed with a line number or feature name, and some of the caps have a clear top. Write programmed features or telephone numbers on the paper labels supplied, and place the label in the clear button cap.

## Using Button Inquiry

Use the Button Inquiry feature (  \*  ) to check the function or stored number programmed onto each button. You can also use Button Inquiry to deactivate the buttons before you press the button cap on.

# Set Profile and Line Profile

---

Use Set Profile and Line Profile to review the settings programmed in Configuration and Administration programming. Set Profile and Line Profile allow you to browse through, but not change, the programmed settings.

Set Profile allows you to verify settings for each Norstar telephone. Line Profile allows you to verify settings for each external line.

## Using Set Profile and Line Profile

As many as four people in the Norstar system can use Set Profile or Line Profile at the same time. You may access Set Profile and Line Profile while on a call at your telephone.

If someone is using Configuration or Administration programming, you can still access Set Profile and Line Profile from another Norstar telephone. The latest programming changes can therefore be seen as soon as they are made.

Set Profile and Line Profile can be used only from an M7310 or M7324 telephone.

A Norstar Programming Overlay is not required to perform Set Profile or Line Profile.

## Programming you can review

The following table shows the Configuration and Administration programming headings that can be reviewed in Set Profile and Line Profile.

Programming that can be reviewed

Set Profile	Line Profile
Set name	Line name
Line Access	Trunk data (physical lines only)
Set abilities	Received number (target lines only)
	Line data
	Line abilities
	Service Modes

The following table shows how line names and telephone names appear on the display while you are using Set Profile and Line Profile.

Telephone name	2221: 2221 OR 2221: ☎ WHITE	internal number:internal number or name (if programmed)
Line name	Line00 1: Line00 1 OR Line00 1: WATS	external line number:external line number or name (if programmed)

## To begin Set Profile and Line Profile

### To begin Set Profile

From an M7310 or M7324 Telephone:

1. Press (Feature) [\*][\*][7][3][8]  
which is the same as  
Press (Feature) [\*][\*][S][E][T]  
Show set: \_ appears.
2. Enter the internal number of the telephone to be reviewed.  
OR  
Press FIRST to review programming for the telephone with the first internal number.
3. 222 1: 222 1 appears, for example.  
OR  
222 1: C WHITE appears, for example, if that name was programmed for the telephone.

### To begin Line Profile

From an M7310 or M7324 Telephone:

1. Press (Feature) [\*][\*][5][4][6][3]  
which is the same as  
Press (Feature) [\*][\*][L][I][N][E]  
Show line: \_ appears.
2. Enter the number of the line to be reviewed.  
OR  
Press FIRST to review programming for the first line number.
3. Line00 1: Line00 1 appears, for example.  
OR  
Line00 1: WATS appears, for example, if that name was programmed for the line.

### To exit Set Profile or Line Profile

1. Press (Feature) .

## Using Set Profile

Begin with:

2221: 2221 .

OR

2221: C WHITE .

1. To see the Name for the next telephone,  
(or to return to **Show set: -**, if this telephone is the  
telephone with the last internal number),  
Press NEXT .

OR

To see the Name for the previous telephone  
(or to return to **Show set: -**, if this telephone is the  
telephone with the first internal number),  
Press BACK .

OR

Press SHOW to review settings for this telephone.

2. **Line Access** appears.  
Press SHOW to see programming for Line Access.

OR

Press BACK that the Name of the telephone  
appears, as in step 1.

OR

Press NEXT to review the next setting.

3. **Set abilities** appears.  
Press SHOW to see programming for  
**Set Abilities**.

OR

Press BACK so that **Line Access** appears, as in  
step 2.

OR

Press NEXT to return to the Name of the telephone.

## Using Line Profile for Loop Start or E&M lines

When you begin Line Profile, respond to

Show line:   

with the line number of a Loop Start or E&M line.

You might, for instance, begin with:

Line009:Line009 .

OR

Line009: WATS .

1. To see the Name for the next line,  
(or to return to Show 1 **ine:**   , if this is the last line number),  
Press NEXT .  
OR  
To see the Name for the previous line,  
(or to return to Show 1 **ine:**   , if this is the first line number),  
Press BACK .  
OR  
Press SHOW to review other settings.
2. Trunk data appears.  
Press SHOW to see programming for Trunk data.  
OR  
Press BACK so that the Name of the line appears, as in step 1.  
OR  
Press NEXT to review the next setting.
3. Line data appears.  
Press SHOW to see programming for Line data.  
OR  
Press BACK so that Trunk data appears, as in step 2.  
OR  
Press NEXT to review the next setting.

4. **Line abilities** appears.  
Press SHOW to see programming for  
Line abilities.  
OR  
Press BACK so that Line data appears, as in  
step 3.  
OR  
Press NEXT to review the next setting.
5. **Service Modes** appears.  
Press SHOW to see programming for Service Modes.  
OR  
Press BACK so that **Line abilities** appears, as  
in step 4.  
OR  
Press NEXT to return to the Name of the line.



## Using Line Profile for DTMF lines

When you begin Line Profile, respond to

Show line:     

with the line number of a DTMF line.

If you entered 011, for instance,

Line011:Line011 .

would be displayed.

1. To see the Name for the next line,  
Press NEXT .  
OR  
To see the Name for the previous line,  
Press BACK .  
OR  
Press SHOW to check the DTMF setting.
2. Line0 11: DTMF appears,  
confirming that Line 11 is a DTMF line.

Press NEXT or BACK so that the Name of the line appears, as in step 1.

## Using Line Profile for Target lines

When you begin Line Profile, respond to

Show line: —

with the line number of a Target line.

If you entered 08 1, for instance,

Line081:Line081 .

OR

Line081:SALES

would be displayed.

1. To see the Name for the next line,  
(or to return to Show 1 line: —, if this is the last line number),  
Press NEXT .  
OR  
To see the Name for the previous line,  
Press BACK .  
OR  
Press SHOW to review other settings.
2. Rec'd #: 555 1629 appears.  
Press BACK so that the Name of the line appears, as in step 1.  
O R  
Press NEXT to review the next setting.
3. Line data appears.  
Press SHOW to see programming for Line data.  
OR  
Press BACK so that Rec'd #: 555 1629 appears, as in step 2.  
OR  
Press NEXT to review the next setting.
4. Service Modes appears.  
Press SHOW to see programming for Service Modes.  
OR  
Press BACK so that Line data appears, as in step 3.  
OR  
Press NEXT to return to the Name of the line.

.

**Norstar Programming Overlay**

Heading

Back

Show

Next

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**Norstar Programming Overlay**

Heading

Back

Show

Next

PO698666 Issue 02  
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**Norstar Programming Overlay**

Heading

Back

Show

Next

PO698666 Issue 02  
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**Norstar Programming Overlay**

Heading

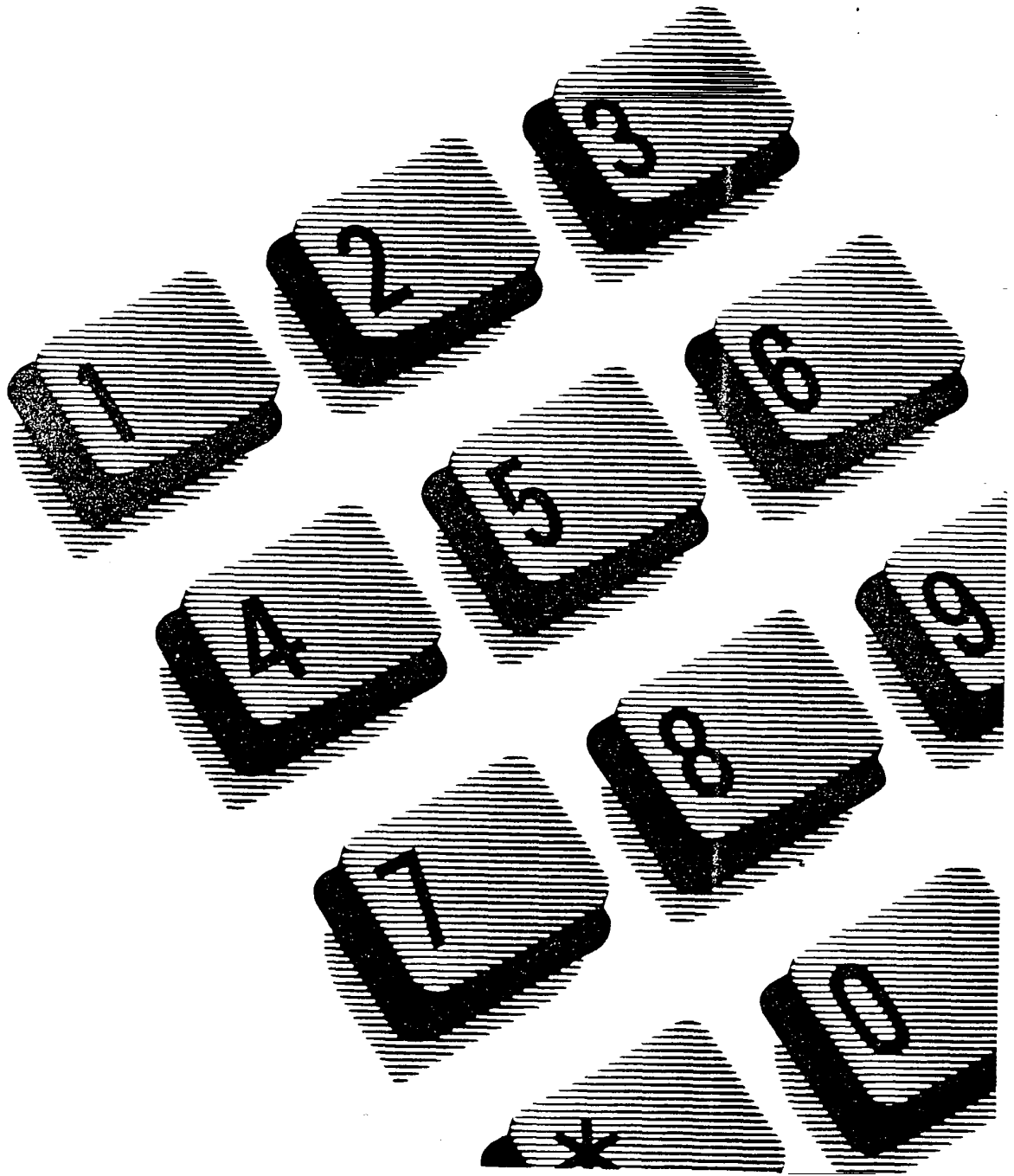
Back

Show

Next

PO698666 Issue 02  
Printed in Canada

# Administration



- Partial Telephone Administration Lock prevents the following at a telephone:
  - programming Autodial buttons
  - programming Personal Speed Dial numbers
  - programming feature buttons
  - changing the display language
  - changing Dialing Modes (Automatic Dial, Pre-Dial, and Standard Dial)
  - using Voice Call Deny
  - using Administration programming
  - moving line buttons
  - saving a number for Saved Number Redial
- Full Telephone Administration Lock prevents the following at a telephone:
  - programming Autodial buttons
  - programming Personal Speed Dial numbers
  - programming feature buttons
  - changing Background Music
  - changing Do Not Disturb
  - changing the display language
  - changing Dialing Modes (Automatic Dial, Pre-Dial, and Standard Dial)
  - changing Privacy
  - using Ring Again
  - using Call Forward all calls
  - using Send Message
  - using Trunk Answer

- using Voice Call Deny
- using Administration programming
- moving line buttons
- activating Service Modes
- saving a number with Saved Number Redial

### Programming Telephone Administration Lock

Begin with **Set lock: None** .

1. Press **CHANGE** to change the setting. Options are None, Full and Partial.
2. Press [**Heading**] until you return to the desired programming heading.  
OR  
Press  to program the Full Handsfree feature.

### Full Handsfree

This feature allows you to make or receive calls without picking up the receiver, and allows a headset to be used with the Norstar telephone.

#### Programming hints

A  button is automatically assigned to a telephone that is programmed with Full Handsfree.

Full Handsfree is disabled for an M7100 Telephone.

### Programming Full Handsfree

Begin with **Full handsfree: N** .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).

2. Press **[Heading]** until you return to the desired programming heading.  
OR  
Press **Next** .  
If you chose No, programming continues with the Handsfree Answerback feature.  
If you chose Yes, programming continues with the Automatic Handsfree feature.

## Automatic **Handsfree**

This feature activates the Handsfree microphone and speaker when you make or receive calls by pressing a line button.

### **Programming** hints

You can program this feature only if the telephone has Full Handsfree programmed.

### Programming Automatic Handsfree

Begin with **Auto handsfree: N** .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).
2. Press **[Heading]** until you return to the desired programming heading.  
OR  
Press **Next** to program the Handsfree Answerback feature.

## Handsfree Answerback

This feature allows you to answer a Voice Call without lifting the receiver.

### Programming hints

Regardless of the setting that you program, Handsfree Answerback is always disabled for an M7100 Telephone.



### Programming Handsfree Answerback

Begin with HF answerback: Y .

1. Press CHANGE to change the setting. Options are N (No), and Y (Yes).
2. Press [Heading] until you return to the desired programming heading.  
OR  
Press  to program the Call Pickup (Group) feature.

### Call Pickup (Group)

You can assign each telephone to one of up to nine Call Pickup groups. Members of a Call Pickup group can answer any calls ringing at another telephone in the group.

#### Programming hints

Each telephone in a Call Pickup Group does not have to be assigned the same external lines (programmed by the Installer in Configuration programming).

A call on a Private line in a Call Pickup Group cannot be picked up.

You cannot pick up a call that is ringing only the Auxiliary Ringer.

#### Programming Call Pickup Group

Begin with Pickup group: NO .

1. Press CHANGE to change the setting. Options are NO, 1, 2, 3, 4, 5, 6, 7, 8, and 9.
2. Press  until you return to the desired programming heading.  
OR  
Press (Next] to program the Page zone feature.

## Page zone

You can assign each telephone to one of six zones for receiving Page messages. A zone is any selection of Norstar telephones you want to group together, regardless of location.

### Programming Page zone

Begin with **Page zone: 1** .

1. Press **CHANGE** to change the setting. Options are 1, 2, 3, 4, 5, 6, and NO.
2. Press [**Heading**] until you return to the desired programming heading.  
OR  
Press [**Next**] to program the Auxiliary Ringer feature.

## Auxiliary Ringer

This feature rings the Auxiliary Ringer (if installed) when the telephone rings. An Auxiliary Ringer is important in noisy environments where a Norstar telephone might otherwise not be heard.

### Programming Auxiliary Ringer

Begin with **Aux. ringer: N** .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).
2. Press [**Heading**] until you return to the desired programming heading.  
OR  
Press [**Next**] to specify a Direct-dial telephone.

## Direct-dial telephones

A telephone can be assigned to call a Direct-dial telephone when the user dials the single digit defined in Configuration (4. Miscellaneous, Direct-dial).

Each telephone can call only one Direct-dial telephone, although up to five Direct-dial telephones can be designated in Administration (4. Direct-Dial). There is no limit to the number of telephones that can be assigned to call a particular Direct-dial telephone.

### Programming Direct-dial telephones

Begin with `Direct-dial:Set1` .

1. Press **CHANGE** to change the setting. Options are **Set1** , Set2, Set3, Set4, Set5 and None.
2. Press  until you return to the desired programming heading.  
OR  
Press **[Next]** to program the Call Forward on Busy feature.

### Call Forward On Busy

This feature always redirects an incoming call to another telephone on your Norstar system when you are busy on a call, or when you have Do Not Disturb activated at your telephone.

Exceptions to this occur as follows:

- If you are busy on a target line call, another call to that target line will be redirected to the Prime telephone for the trunk that received the second target line call.
- If Line Redirection is in effect, it will take precedence.

### Programming Call Forward On Busy

Begin with `Forward on busy` .

1. Press  .  
Forward to: **None** appears.

2. Press **CHANGE** to enter an internal number.  
OR  
Press  to program the Call Forward No Answer feature.
3. Enter the internal number from the dial pad.
4. Press  until you return to the desired programming heading.  
OR  
Press  to program the Call Forward No Answer feature.

### Call Forward No Answer

This feature lets you redirect an incoming call to another telephone on your Norstar system when the call is not answered at your Norstar telephone. Note, however, that Line Redirection will take precedence over this setting.

#### Options explained

If you assign another telephone to receive your calls, you can also assign the number of times that the incoming call will ring before the call is forwarded (the Call Forward No Answer delay). To estimate the delay time in seconds, multiply the number of rings by six.

#### Programming Call Forward No Answer

Begin with Forward no **answr** .

1. Press **(Show)**.  
Forward to: **None** OR Forward to: 223  
appears (for example).

2. Press **CHANGE** to enter the internal number.  
OR  
If a number is already assigned, press  to program the Forward No Answer delay.  
OR  
If you wish to delete an assigned number, press **CHANGE**, followed by . The number will be deleted, and you can move on to program the Redirect ring feature.  
OR  
If None, press  to program the Redirect ring feature.
3. Enter the internal number from the dial pad.  
OR  
Press **(Next)** to assign none. Programming continues with Redirect ring.
4. Press  to program the Forward No Answer delay.

#### Programming Forward No Answer delay

Begin with Forward **delay:3** .

1. Press **CHANGE** to select the delay. Options are 2, 3, 4, 6, and 10 rings.
2. Press  until you return to the desired programming heading.  
OR  
Press  to program Redirect ring.

#### Redirect ring

The Redirect ring setting causes a telephone to ring briefly (a 200 millisecond burst) when a call is redirected on one of its lines. Each telephone with a ringing appearance of that line will also ring briefly for the redirected call if the Redirect ring setting for them is 'Y' (the default).

A user enters the Line Redirection feature code to redirect calls. See the explanation of Line Redirection in the Telephone Features chapter for more information on redirecting lines.

### Programming Redirect ring

Begin with `Redirect ring: Y`.

1. Press `CHANGE` to change the setting. Options are Y (Yes) and N (No).
2. Press `[Heading]` until you return to the desired programming heading.  
OR  
Press `Next` to program the Hotline feature.

### Hotline

This feature automatically calls a pre-assigned number when you lift the receiver or press `Handsfree` at your telephone. Hotline has three options: None, internal (Intrnl), and external (Extrnl).

#### Options explained

- Intrnl assigns an internal number.
- Extrnl assigns an external number.
- If you select an external number, you can also select the line on which the call is made:
  - `Use prime 1 line` selects the telephone's Prime line.
  - `Use line: _` assigns an external line number.
  - `Pool code: _` assigns the Line Pool access code of a line pool.

### Programming hints

The telephone should be labeled to inform anyone using it that this feature is active.

A telephone's Prime line, Line Pool access codes, and access to a line pool are assigned by the installer in Configuration programming.

### Programming Hotline

Begin with **Hotline: None** .

1. Press **CHANGE** to change the setting. Options are None, Intrnl, and Extrnl.
2. If you chose None,  
Press  .  
**Priority call: N** appears for programming the Priority Call feature.  
OR  
If you chose Intrnl,  
Press **[Show]**.  
**Intrnl #: None** appears (an internal number appears if previously programmed).  
OR  
if you chose Extrnl,  
Press **(Show)**.  
**Extrnl #: None** appears (an external number appears if previously programmed).
3. Refer to the following procedures for each of the above options.  
O R  
Press **(Heading)** until you return to the desired heading.  
OR  
Press  to program the Priority Call feature.

### Programming the internal number

Begin with:

Intrnl #: None .

OR

Intrnl #: 222, for example, if a number was previously entered.

1. To specify an internal number, press CHANGE, and enter an internal number from the dial pad.

OR

To erase an internal number and return the setting to None, press CHANGE followed by .

2. Press [Heading] until you return to the desired programming heading.

OR

Press [Next] to program the Priority Call feature.

### Programming the external number

Begin with:

Extrnl #: None .

OR

Extrnl #: 9 123456 , for example, if a number of seven digits or less was previously entered.

OR

If a previously entered number is more than seven digits, the entire number will be displayed. VIEW-> and <-VIEW appear if a previously programmed number is greater than 16 digits.

1. Press CHANGE to enter the external number.
2. Enter the digits from the dial pad.  
Press BKSP to move the cursor back one space to edit a number.
3. Press OK after the complete number is entered.
4. Press  to program Line Selection.



### Programming Line Selection

Begin with:

Use **Prime** line ,

OR

Use line: **001** (example shows external line 01).

OR

**Pool** code: 1234 (example shows Line Pool access code 1234).

1. Press **CHANGE** to select the option you wish.
2. Press  until you return to the desired programming heading.  
OR  
If you selected the Prime line,  
Press  to program the Priority Call feature.  
OR  
If you selected an external line or a line pool,  
Go to step 3.
3. Enter from the dial pad the three digits of the line or the one to four digits of the Line Pool access code for the desired line pool.
4. Press  until you return to the desired programming heading.  
OR  
Press  to program the Priority Call feature.

## Priority Call

This feature lets you call from your Norstar telephone and interrupt calls or override Do Not Disturb on another Norstar telephone.

### Programming hints

Apply this feature only to telephones from which such interruptions can be justified.

### Programming Priority Call

Begin with Priority call: N .

1. Press **CHANGE** to change the setting. Options are N (No), and Y (Yes).
2. Press  to return to program Set abilities for another telephone.  
Show set: **-** appears.  
OR  
Press  until you return to the beginning of Set abilities programming.  
Set abi 1 it i es appears on the display.
3. If you returned to Set abi 1 it i es, press  to program Line abilities .

## Line abilities

Line abilities programming applies dialing filters, remote access dialing filters and remote access packages to lines. Line abilities includes the following settings:

- Line filter
- Remote filter
- Remote package

### Programming Line abilities

Begin with **Line abilities**.

1. Press .  
Show line: — appears on the display.
2. Enter a three-digit line number to begin programming Lineabilities.  
Line filter: 03 appears on the display.  
OR  
Press COPY to copy Line abilities programming from one line to another.  
OR  
Press  to return to the heading  
**Line abilities**

### Line filter

A Line filter is a collection of restrictions and exceptions defined in the **Dialing filters** and applied to an outgoing line. Filter 03 is the default Line filter.

A Line filter on an outgoing line may be used to limit the capabilities of that line to carry calls made to specific area codes or destinations.

### Programming Line filters

Begin with **Line filter: 03** .

1. Press **CHANGE** .  
**Line filter:**, appears on the display.
2. Enter a two-digit filter number.  
 OR  
 Press  to set the line filter to 00
3. Press  to program a Remote filter.  
 OR  
 Press **[Heading]** until you return to the desired programming heading.

### Remote filter

A remote access dialing filter can control dialing on incoming auto-answer trunks used for making tandem calls (that is, calling into Norstar to use one of its lines for placing calls). Filter 04 is the default Remote filter.

Employees can be allowed to telephone into a Norstar system on auto-answer lines, and call out on a line designated for long-distance calls to specific area codes.

### Programming Remote filters

Begin with **Remote filter: 04** .

1. Press **CHANGE** .  
**Remote filter:**, appears on the display .
2. Enter a two-digit filter number.  
 O R  
 Press  to set the line filter to 00
3. Press **[Next]** to program a Remote package.  
 OR  
 Press **[Heading]** until you return to the desired programming heading.

## Remote package

Remote access packages control access to line pools and the Remote Page capability, for calls on incoming auto-answer trunks.

Package 00 is the default Remote package, which gives no access to line pools or to Remote page.

## Programming Remote packages

Begin with Remote **pk9:00** .

1. Press **CHANGE** .  
Remote **pk9: \_** appears on the display.
2. Enter a two-digit remote access package number.  
OR  
Press  to set the line filter to 00.
3. Press  or  .  
Show **line: \_** appears on the display.
4. Enter another three-digit line number. to program line abilities on another line.  
OR  
Press  or  .  
**Line abilities** appears on the display.
5. At the Line abilities heading, Press  to program Class of Service passwords.

## Class of Service (COS) passwords

Class of Service (COS) passwords permit controlled access to a system's resources by remote users. Class of Service programming defines passwords, their associated dialing filters, user filters and remote-user access packages.

The three programming sections of COS passwords are:

- User filter
- Line filter
- Remote access package

A Class of Service can be associated with a telephone, a line or a COS password. Class of Service determines whether a remote user can or can not access lines in line pools and remote paging. It also determines the dialing capabilities that apply to outgoing lines from line pools (in the case of remote users), or to internal telephones and any lines used for external calls (in the case of internal users).

The capabilities to which a remote user has access depend on:

- the COS associated with the auto-answer trunk on which the user is calling
- a COS password, if entered.

Depending on the COS in effect, remote users may be able to access all or some of the system's resources available to remote users. Typically, each user has a separate password. Several users can share a password or one user can have several passwords.

Entry of a DISA DN ( if one has been programmed) allows a remote user to change the COS applied for the duration of the call.

## COS passwords for internal users

Internal users have a Class of Service associated with their telephones, in the sense that there are dialing filters associated with telephones, as well as line pool assignments. Internal use of a COS password affects only the telephone's dialing capabilities.

The ability to change the COS internally means that someone using another person's telephone can temporarily change the restrictions that would normally be applied.

## Password security

- Class of Service passwords for a system should be determined randomly, and should be changed on a regular basis.
- System users should memorize their COS passwords instead of writing them down.
- Employees' COS passwords should be deleted when they leave the company.

You can block tandem calls that would use expensive routes by using Class of Service to restrict access to line pools, and you can control the external destinations dialed through the use of dialing filters.

You can use Class of Service to prevent remote access to line pools and remote paging. Remote calls will then be limited to target lines in the system.

Groups of users can be restricted, or permitted, to access remote paging through the Class of Service applied to their password.

## Programming hints

- A system can have a maximum of 100 six-digit COS , passwords (00 to 99).
- You can copy the data from one COS password to another COS password number using the COPY display button in the same way that telephone and line data can be copied.
- When a DR3 system is upgraded to DR4, the system extends existing four-digit restriction override passwords to six-digits by adding two zeros to the end of the old password. For example, Pswd 0 1: 1576 changes to Pswd 0 1: 157600. The passwords are assigned filter 00, to provide no restrictions.
- DR4 passwords must be unique. In DR3, different password identifiers (for example, Pswd 0 1: \_ and Pswd 02: \_ ) could be administered with the same sequence of digits (for instance, both could be 2345). When upgrading from DR3 to DR4, if there are two or more COS passwords with the same digits, the digits for the first password are kept (with that addition of two zeros) and any others are changed to the value "None".

## Programming COS passwords

Begin with COS Passwords .

1. Press (Show).  
Show Password: \_ appears on the display
2. Enter a two-digit password number. For example, enter the numbers 01 and Pswd 0 1: None appears on the display.  
OR  
Press  for password 00. .
3. Press CHANGE to enter a new password code.  
OR  
Press [Heading] to return to the heading  
Show Password:- .



4. Enter the digits for the new password. When the sixth digit is entered BACK and the cursor disappears and CHANGE re-appears.  
OR  
Press  or  to set the password to the value None .
5. Press [show] to program COS user filters for the password appearing on the display.  
User f 1 tr : Def 1 t appears on the display.  
OR  
Press  or (Back] to see other passwords' that have been programmed (if any).  
OR  
Press  to return to the heading  
Show password: \_ .

### User filter

The COS User filter replaces the telephone (set) filter, the line/set filter or the remote filter, that would otherwise apply to a specific call. The default setting for this feature (Def 1 t), means that any other filters in place (telephone (set) filter, line/set filter, or remote filter) will still apply.

### Programming User filters

Beginwith User fltr:Deflt .

1. Press CHANGE .  
User fltr:\_ appears on the display.
2. Enter a two-digit filter number.  
OR  
Press   
User f 1 tr : Def 1 t appears on the display.
3. Press  to program the COS line filter.  
Line f 1 tr: Def 1 t appears on the display. .  
OR  
Press [Heading] .  
Show Password: \_ appears on the display to program another password.

## Line filter

The COS Line filter replaces the line filter that would otherwise apply to a specific call. The default setting for this feature (Deflt), means that any line filter in place will still apply.

### Programming Line filters

Begin with `Line fltr:Deflt`.

1. Press **CHANGE**.  
`Line fltr:_` appears on the display.
2. Enter a two-digit filter number.  
OR  
Press   
`Line fltr:Deflt` appears on the display.
3. Press  to program the COS remote package.  
`Remote Pkg:Deflt` appears on the display.  
OR  
Press .  
`Show Password: _` appears on the display to program another password.

## Remote package

The COS Remote package replaces the remote access package that would otherwise apply to a specific call. The default setting for this feature (Def lt) means that any remote access package in place will still apply.

### Programming Remote packages

Begin with Remote Pkg: Def lt .

1. Press CHANGE .  
Remote Pkg: \_ appears on the display.
2. Enter a two-digit package number.  
OR  
Press [N e x t]  
Remote Pkg: Def lt appears on the display.
3. Press  to go to the next highest 'password number.  
For example, Pswd 02: 123456 appears on the display or if the current password is the highest, then Show Password: \_ appears.  
'OR  
Press [Heading].  
Show Password: \_ appears on the display to program another password.
4. Press (Heading) at the Show Password: \_ prompt.  
COS Passwords appears on the display.
5. Press  at the COS Passwords prompt to continue programming with Service modes.

# Service Modes

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## What is Service Modes?

Service Modes controls how the Norstar system will respond to calls, depending on the time of day. You can program up to three different Service Modes, each with unique ringing arrangements.

Service Modes include the following six settings:

- Control telephones
- Service Mode name
- Service Mode control
- Trunk Answer
- Extra-dial telephone
- Ringing telephones and Auxiliary Ringer.

Select the setting or settings you wish to program, and find the description and programming procedure. The Service Modes settings are listed above in the order that the headings appear during programming.

## To begin Service Modes programming

Begin with 6. Service Modes .

1. Press [Show].  
Control sets appears for programming Control telephones.
2. Press  .  
Name1:Night appears on the display for programming the first Service Mode.  
OR  
Press  twice .  
Name2: Evening appears for programming.the second Service Mode.  
OR  
Press  three times .  
Name3: Lunch appears for programming the third Service Mode.

## Programming Service Modes

### Control telephones

This setting allows you to assign a telephone to each external line. That telephone can be used to control the Service Mode by allowing you to turn the Service Mode ON or OFF for that line.

### Programming hints

Only the external lines programmed with a Control telephone can be placed into a Service Mode.

You can assign a Control telephone to more than one external line, but a line cannot be assigned to more than one Control telephone.

Only one Service Mode applies at any one time to all external lines controlled by a given Control telephone.

By default, telephone 221 is assigned as the Control telephone and as a Ringing telephone, for all lines. This means that all lines will ring at Control telephone 221, when it (221) activates a Service Mode. Therefore, when programming Control telephones you must remember to remove the default assignment of 221 for each line that should not ring when Control telephone 221 activates a Service Mode.

### Programming Control telephones

Begin with Control `sets` .

1. Press `[Show]`.  
`Show line: _` appears.
2. Enter a line number from the dial pad.  
OR  
Press `[Next]` to assign the Control telephone for the first line (001).  
`Line00 1: 22 1` , for example, appears if that Control telephone has been previously assigned to line 001 (default is 221).  
`Line00 1: None` appears if no Control telephone is assigned for the line
3. Press `CHANGE` to assign a Control telephone to the line.  
`Line00 1: _` appears.  
OR  
Go to step 5.
4. Enter an internal number from the dial pad.
5. Press `[Next]` to assign a Control telephone to the next line.  
`Name 1: Night` appears after the last line has been assigned a Control telephone.  
OR  
Press `[Heading]` to return to `Show 1 line: _` of step 1.

## Service Mode 1

You can assign all Service Mode settings except the Control telephones.

### Beginning Service Mode 1 programming

Begin with Name 1: **Night**.

1. Press **CHANGE** to change the Service Mode name.  
Name 1: **\_** appears.  
OR  
Press **Show** to program the Service Mode control.  
**Setting: Manual** appears.  
OR  
Press **Next** to program the second Service Mode.

### Service Mode name

The Service Mode name identifies the active Service Mode, and appears on the display of the Control telephone when the Service Mode is turned ON.

### Programming hints

The default names of the three possible Service Modes are only suggestions, and may be changed to any other name.

A Service Mode name can be one to seven characters.

### Programming Service Mode name

Begin with Name 1: **\_**.

1. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.
2. Press **-->** to move the cursor to the next position. Continue entering characters (maximum of seven).
3. Press **(Next)** to program Service Mode control.

## Service Mode setting

This setting allows you to control how the Service Mode can be turned ON and OFF.

### Options explained

- “Manual” allows you to turn the Service Mode ON and OFF at any time from a Control telephone. The Service Modes feature code must be entered at the telephone to access this feature.
- “Automatic” allows you to pre-assign a stop and start time during which the Service Mode will be active. You will still be able to start and stop the Service Mode by entering the Service Modes feature code at a Control telephone.
- You can also turn the Service Mode OFF, so that it can not be activated.

### Programming hints

Default stop and start times correspond to typical hours which may be required for a night Service Mode.

### Default Service Mode times

Service Mode	Start time	Stop time
Service Mode 1: Night	23:00	07:00
Service Mode 2: Evening	17:00	23:00
Service Mode 3: Lunch	12:00	13:00

Overlapping times may be assigned. For example, if Service Mode 1 is assigned from 9:00 am to 4:00 pm and Service Mode 2 is assigned from 1:00 pm to 5:00 pm, then the start time of the second Service Mode is treated as a stop time for the first Service Mode. This is also true if two Service Modes have the same start time but different stop times.



If one Service Mode starts and stops within the times of another Service Mode, the first service temporarily ends when the second service starts. The first service then resumes when the second service has ended.

### Programming Service Mode setting

Begin with `Setting:Manual` .

1. Press **CHANGE** to change the setting. Options are Manual, Off and Auto.
2. Press **[Next]**.  
If you chose Manual,  
Trunk answer: `Y` appears for programming the Trunk Answer feature.  
OR  
If you chose Off,  
`Name2:Evenins` appears for programming the next Service Mode.  
OR  
If you chose Automatic,  
`Start time: 23:00` appears for programming the start and stop time.

### Programming the Automatic start time

Begin with `Start time: 23:00` .

1. Press **CHANGE** to change the start time.  
Hour: `23` appears.
2. Press **CHANGE** to program the hour.
3. Enter the digit(s) for the hour in 12- or 24-hour format from the dial pad.
4. Press **[Next]** to program the minutes.  
Minutes: `00` appears.
5. Press **CHANGE** .
6. Enter the digit(s) for the minutes from the dial pad.

7. Press **[Next]**.  
If AM or PM appears, go to step 8.  
OR  
Programming continues with the Automatic stop time.
8. Press **CHANGE** to choose the AM or PM setting.
9. Press **[Next]** to program Automatic stop time.  
OR  
Press **Heading** until you return to the desired programming heading.

### Programming the Automatic stop time

Begin with **Stop time: 07:00**.

1. Press **CHANGE** to change the stop time.  
**Hour: 07** appears.
2. Press **CHANGE** to change the hour.
3. Enter the digit(s) for the hour in 12- or 24-hour format from the dial pad.
4. Press **Next** to program the minutes.  
**Minutes: 00** appears.
5. Press **CHANGE**.
6. Enter the digit(s) for the minutes from the dial pad.
7. Press **Next**.  
If AM or PM appears, go to step 8.  
OR  
Programming continues with the Trunk Answer feature.
8. Press **CHANGE** to choose the AM or PM setting.
9. Press **Next** to program Trunk Answer.  
OR  
Press **Heading** until you return to the desired programming heading.

## Trunk Answer

This feature allows you to answer, from any telephone, an external call which is ringing at another telephone in your office.

This feature is useful if the other telephones have not been assigned the same lines as the telephone you are using to answer the call.

## Programming Trunk Answer

Begin with Trunk answer: 4 .

1. Press **CHANGE** to change the setting. Options are **Y(Yes)** and **N(No)**.
2. Press  to program the Extra-dial telephone.

## Extra-dial telephone

A telephone normally in service as a Direct-Dial telephone, can be programmed in Service Modes to extend its ringing to an Extra-Dial telephone.

When this is programmed, internal calls to the Direct-Dial telephone also ring at the Extra-dial telephone.

## Programming hints

Up to five Direct-Dial telephones can be assigned in the Direct-Dial section of Configuration programming. The Extra-dial telephone provides the option of assigning one more Direct-Dial telephone in the Norstar system for each operational Service Mode.

## Programming the Extra-dial telephone

Begin with Extra-dial: 221 .

1. Press CHANGE to change the Extra-dial telephone.
2. Enter an internal number from the dial pad. Default is 221.  
OR  
Press  for None.
3. Press  to program Ringing.  
Show line: **..** appears.

## Ringling

You can assign additional telephones to ring for incoming calls on each external line. Ringling can also be assigned to target lines.

You can also indicate that the Auxiliary Ringer (if installed) will also ring for those calls.

## Programming hints

A Ringling telephone can be assigned to more than one Service Mode.

## Programming Ringling

Begin with Show 1 line: **\_** .

1. Enter an external line number from the dial pad.  
Ringing Sets appears.  
OR  
Press COPY to copy the Ringling telephone assignments from one line to another.  
OR  
Press  to program the next Service Mode.

2. Press Next to program Auxiliary Ringer in step 6 (Flux. ringer: Y appears).  
OR  
Press Show to assign ringing telephones.  
set: 221 appears, or No ringing sets if none are assigned. Default is 221.
3. Press ADD to add a new ringing telephone for the line.  
Go to step 4.  
OR  
Press REMOVE to remove the ringing telephone from the line. Repeat step 3.  
OR  
Go to step 5.
4. To add a new ringing telephone:  
Enter the internal number from the dial pad.  
Repeat step 3 to assign more ringing telephones.
5. Press Next to program the Auxiliary Ringer.  
Flux. ringer: Y appears.
6. Press CHANGE to change the setting. Options are Y(Yes) and N(No).
7. Press Next to program Ringing for another line.  
Show line: \_ appears.  
OR  
Press Heading until you return to the desired programming heading.

## Service Mode 2

The second Service Mode is programmed in the same way as Service Mode 1.

### Beginning Service Mode 2 programming

Begin with **Name2: Evening** .

1. Press **CHANGE** to change the Service Mode name.  
**Name2: \_** appears.  
OR  
Press **[Show]** to program the Service Mode control.  
**Setting: Manual** appears.  
OR  
Press  to program the third Service Mode.

## Service Mode 3

The third Service Mode is programmed in the same way as Service Mode 1.

### Beginning Service Mode 3 programming

Begin with **Name3: Lunch** .

1. Press **CHANGE** to change the Service Mode name.  
**Name3: \_** appears.  
OR  
Press **[Show]** to program the Service Mode control.  
**Setting: Manual** appears.  
OR  
Press  to program the Passwords feature.

# Password

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## What is Password?

The Administration password helps prevent misuse of the Norstar telephone system. To ensure security, limit the distribution of the passwords to selected personnel.

The password is a one to six-digit number that allows access to Administration programming. This prevents unauthorized or unintentional changes to settings.

The default value of the Administration password is :

which is the same as:

.

The digits you enter for the password are not shown on the display.

### Programming hints

Keep a record of your password in a secure place.

The password will be easier to remember if the digits correspond to the letters in a word.

If you forget the Administration password, you will not be able to access Administration programming. Call your Service Representative to re-assign a new Administration password through Configuration programming.

For security reasons, it is a good idea to change the password periodically.

---

## Programming the Administration password

Begin with 7. Password .

1. Press  .  
Admin. Password appears for programming the Administration password.
2. Press CHANGE .  
New Pswd: \_ appears.
3. Enter the digits of the new password (maximum six digits) from the dial pad. Use the BKSP display button if required.  
OR  
Press OK to erase the password.  
Password erased briefly appears.  
Rdmin. Password appears.  
Press  to go to step 6.
4. Press OK to confirm the new password.  
Re-enter: \_ appears.
5. Enter the new password again.
6. Press OK :  
Password changed briefly appears.  
OR  
Pswd not changed briefly appears if you did not enter the same password again. The display returns to Rdmin. Password at the beginning of Administration programming.
7. Press  until you return to the desired programming heading.



# Programming reminders

---

The Programming reminders are a record of programmable settings which Norstar users may need to know on a day-to-day basis.

Fill out whatever sections are programmed and must be known. If more space is required to record the information, first photocopy the page before you begin. Not all of the programmable features may be required information.

Programmable settings can be determined from a review of the *Norstar* Modular *DR4* Programming Record and use of the Set and Line Profile feature.

Distribute the Programming reminders to each desk that has a Norstar telephone, or post them on the wall next to the telephone.



## Prime telephones

---

### Prime Telephone operator

---

Internal number

\_\_\_\_\_

Lines answered at the Prime telephone

- - - - -

---

### Prime Telephone operator

---

Internal number

- - - - -

Lines answered at the Prime telephone

\_\_\_\_\_

---

### Prime Telephone operator

---

Internal number

- - - - -

Lines answered at the Prime telephone

- - - - -

- - - - -

---

### Prime Telephone operator

---

Internal number

\_\_\_\_\_

Lines answered at the Prime telephone

- - - - -

- - - - -

---

## Central Answering Position

---

**CAP operator**

Internal number

---

---

---

---

---

---

---

---

---

---

---

Administration

Page zones

Page zone	Location
1	
2	
3	
4	
5	
6	

Line Pools

Pool	Access code	Use
A	_____	
B	_____	
C	_____	
n	_____	
E	- - - -	
F	_____	
G	- - - -	
H	_____	
	_____	
	_____	
K	- - - -	
L	_____	
M	- - - -	
N	_____	
O	- - - -	

Miscellaneous programming

Direct-dial telephone	- - - - -
DISA DN (used to change COS)	_____
Direct-dial digit	_____
Call Park Prefix digit	_____
Dial first to make external calls	_____

## Call Pickup Groups

---

Pickup Group	Names of members in the group
--------------	-------------------------------

---

_____	_____
	_____
	_____
	_____
	_____
	_____

---

_____	_____
	_____
	_____
	_____
	_____
	_____

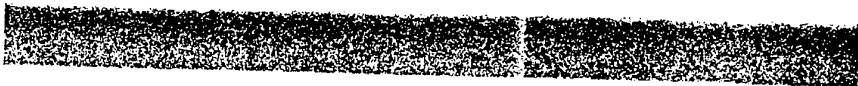
---

_____	_____
	_____
	_____
	_____
	_____
	_____

---

Service Modes

Service Mode 1	Service Mode 2	Service Mode 3
Name	Name	Name
Start Time      Stop Time	Start Time      stop Time	Start Time      stop Time
Control telephone	Control telephone	Control telephone
Ringing telephones	Ringing telephones	Ringing telephones
Extra-dial telephone	Extra-dial telephone	Extra-dial telephone



# Telephone features

| eemaeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee



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Date 17

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# Administration overview

---

Administration programming lets you change settings for the entire Norstar system, as well as settings for individual telephones and external lines.

Pre-programmed default settings may initially be sufficient for your needs. You can use Administration programming, however, to customize your Norstar System by changing these default settings.

## Administration headings

Administration programming has seven major sections:

- System Speed Dial assigns a two-digit code (01-70) for fast dialing of up to 70 telephone numbers from any Norstar telephone.
- Names identifies external lines and telephones by name (for example, LAURA or ROOM 6). When you call a co-worker, your name appears on the display of your co-worker's Norstar telephone.
- Time and Date adjusts the time and date displayed on each Norstar telephone.
- Direct-Dial designates the telephones that can be reached by dialing a single digit. There can be five Direct-Dial telephones, each with a group of telephones from which it will receive Direct-Dial calls.
- Capabilities defines dialing filters, remote access packages, line abilities and telephone abilities. It assigns restrictions and capabilities to Class of Service (COS) passwords, to telephones, to lines and to line/telephone combinations. Dialing filters, remote access packages and COS passwords control access to the system's resources by internal and remote users.

- Service Modes controls how the Norstar system will respond to calls, depending on the time of day. For example, incoming calls during lunch can be made to ring both at their normal destination, and at a receptionist's desk.
- Password changes the password that controls access to Administration programming.

# Getting started

---

## Before you begin programming

### Obtain

- the Norstar Programming Overlay
- the *Norstar Modular DR4 Programming Record*

### Know how

- to enter and exit Administration programming
- to use the buttons associated with the Programming Overlay.

### Remember

- to record programming changes on the *Norstar Modular DR4 Programming Record*. Photocopy the appropriate pages, and distribute them to everyone who uses the Norstar system. You can also record information for distribution on the Programming reminders charts at the end of this chapter.
- that default options are shown in bold type. Most display messages in procedures show a default option.
- that defaults correspond to those assigned during Norstar installation. The option you see while programming may be different if that feature has been changed. If a line number or internal number appears on the display during programming, an example is shown in the Administration procedures.
- that the default Norstar internal numbers depend on the installed Norstar system. The defaults are:
  - two-digit internal numbers (beginning at 21 ) for non-expanded Norstar systems
  - three-digit internal numbers (beginning at 221) for expanded Norstar systems.

## Entering Administration

1. Complete all calls on your M7310 or M7324 Telephone. (The receiver should remain on the telephone during programming.)
2. Enter the Administration access code, using the feature button and the dial pad:  
Press (Feature)         
which is the same as:  
Press
3. **Password:** appears.  
Enter the Administration password from the dial pad. (The password does not appear on the display as you enter it.)  
  
If the password is correct, 1. **Sys speed** dial appears, and three triangular indicators ► appear on the vertical display next to the rows of buttons.  
  
If the password is incorrect, the display does not change. Check the password. Press **RETRY** and re-enter the password.
4. Place the Norstar Programming Overlay over the buttons pointed to by the indicators ►.

## Exiting Administration

1. Press   
End of **session** appears.

Since Norstar records all changes as you make them, there is no need to worry about leaving the session without “saving” them.

---

# System Speed Dial

---

## What is System Speed Dial?

System Speed Dial allows you to program up to 70 telephone numbers that can be dialed, using a two-digit code (01 to 70), from any Norstar telephone.

System Speed Dial includes the following five settings:

- System Speed Dial number
- Line Selection
- Display Digits
- System Speed Dial Name
- Bypass Restrictions.

Select the setting or settings you wish to program, and find the description and programming procedure. The System Speed Dial settings are listed above in the order that they appear during programming.

## To begin System Speed Dial programming

Begin with 1. `Sys Speed dial` .

1. Press [Show]  
`Speed dial #: _` appears.
2. Enter the two-digit System Speed Dial code (from 01 to 70) from the dial pad.  
`Speed dial #: 12` , for example, appears if 12 was entered.  
OR  
Press  to program the first System Speed Dial number.  
`Speed dial #: 01` appears.

## Programming System Speed Dial

### System Speed Dial number

This setting lets you assign a System Speed Dial telephone number to a two-digit code. The System Speed Dial number may contain 24 characters.

You may first view a previously programmed number before changing it, or directly proceed to change the number.

### Programming hints

A Host System Signaling feature code may be inserted into the System Speed Dial number. Pause and Run/Stop each use one character position; and Link, Timed Release, and Programmed Release each use two positions.

### Programming the System Speed Dial number

Begin with **Speed dial #: 0 1** , for example.

1. Press **DEFAULT** only if settings for this System Speed Dial code were already assigned, and you wish now to assign default settings.  
Go to step 6.
2. Press **Show** :  
No **number stored** appears if no number was previously assigned.  
OR  
5552466 , for example, appears if a number was previously programmed. **UI EW->** and **<-UI EW** appear if the number is longer than 16 digits.
3. Press **CHANGE** .  
**#01: \_** appears.



4. Enter the new telephone number from the dial pad (maximum of 24 digits), including all digits such as an initial **[9]** or an area code that must be dialed to call the number manually.  
99975823, appears, for example.  
If the number is more than 16 digits long, the left-most digits disappear from the display as you continue to enter the System Speed Dial number.  
Press the **BACKSP** display button if required to backspace the cursor.
5. Press **OK** when the number has been entered.
6. Press **Back** to program another System Speed Dial number.  
Speed dial #:01 appears on the display to allow you to continue programming at step 1.  
OR  
Press **Next** to program Line Selection.

### Line Selection

This setting allows you to specify the external line that will be used for a System Speed Dial number. The options are the Prime line (the default), an external line, or a line pool.

### Programming Line Selection

Begin with:

Use **Prime 1** line (the default).

OR

Use **line: 002**, for example, if a line is already assigned.

OR

**Pool code: 42**, for example, if a Line Pool access code is already assigned.

1. If you wish to change the setting,  
Press **CHANGE** until the required setting appears.
2. If you have chosen a line number or a Line Pool access code, enter the digits from the dial pad. A Line Pool access code can be from one to four digits long.

3. Press [Next] when the digits have all been entered, to program Display Digits.

## Display Digits

This setting determines whether the telephone number will be displayed when a System Speed Dial number is used, or whether a name associated with that number will be displayed.

## Programming Display Digits

Begin with `Display digits:Y`.

1. Press CHANGE to change the setting. Options are Y (Yes), and N (No).
2. Press [Next] :  
If you chose No, program System Speed Dial Name.  
OR  
If you chose Yes, program Bypass Restrictions.

## System Speed Dial Name

This setting allows you to assign a name to the stored System Speed Dial number. The name can be up to the full length of the display (16 characters).

When the Display Digits setting is “No”, this name will be displayed on the Norstar display when someone uses the System Speed Dial feature.

This option appears only if the Display Digits setting is “No”.

If no name is specified, only the System Speed Dial number appears. The display shows, for example,  
`Sys Spd Dia 1 82` for System Speed Dial code 02.

## Programming the System Speed Dial Name

Begin with Name .

1. Press [Show].  
Sys Spd Dial 02 appears, for example.  
OR  
COURIER appears if, for example, the name "Courier" was assigned.
2. Press CHANGE to enter the new name.  
OR  
Press  to program Bypass Restrictions.
3. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press [Next] to restore the default name and proceed to program Bypass Restrictions.
4. Press --> to move the cursor to the next position.  
Continue entering characters (remember the 16 character limit).
5. Press  to program Bypass Restrictions.

## Bypass Restrictions

This setting allows the System Speed Dial number to bypass any previously programmed restrictions.

Restrictions prohibiting calls are programmed in the Capabilities section of Administration programming.

### Programming Bypass Restrictions

Begin with `BYPASS restr'n: N`.

1. Press `CHANGE` to change the setting. Options are N (No), and Y (Yes).
2. Press `[Heading]` until you return to the desired programming heading.  
OR  
Press `Next` to program the next System Speed Dial number.

---

# Names

---

## What is Names?

Names allows you to assign names to identify external lines, target lines and your co-workers' Norstar telephones. During a Norstar call, the name (if programmed) appears on each Norstar telephone's display instead of the external line number or internal telephone number of the caller.

Names includes the following settings:

- Telephone Names
- Line Names

Select the setting or settings you wish to program, and find the description and programming procedure. The Names settings are listed above in the order that they appear during programming.

## To begin Names programming

Begin with 2. Names .

1. Press [Show].  
`Set names` appears for programming telephone names.
2. Press (Next).  
`Line names` appears for programming line names.

## Programming Names

### Telephone Names

You personalize your office communication by assigning names to the telephones in the Norstar system. A telephone's internal number is its default name (for example, "227: 227").

### Programming hints

Telephone names can contain both letters and numbers, but cannot be longer than seven characters. The # and \* symbols cannot be used.

If Automatic Telephone Relocation is turned ON, the name and internal number of a telephone are saved if the telephone is moved within your system.

You can give the same name to two or more telephones, or to a telephone and a line in your system. To avoid confusion, however, you should avoid such duplication. Use initials, abbreviations, or even nicknames to give each telephone a unique name.

### Programming a Telephone Name

Begin with **Set names**.

1. Press **[show]**.  
Show set: **\_** appears.
2. Enter the internal number of the telephone.  
OR  
Press **[Next]** for the name of the telephone with the first internal number.  
  
22 1: JOHN appears, for example, if the name John is already assigned; or,  
22 1: 22 1 appears, for example, if a name has not yet been assigned.
3. Press **CHANGE**.  
A cursor appears, and the name disappears from the display.

4. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press  to restore the default name and proceed to program the name for the next internal number.
5. Press `-->` to move the cursor to the next position. Continue entering all of the required characters (remember the seven-character limit) for the name.
6. To enter the name for another telephone:  
Press [Back] to return to `Show set: _ .`  
OR  
Press  to show the name for the next internal number.

## Line Names

This setting allows you to assign a name to an external line. The line number is the default name (for example, "Line046").

For example

One external line in your company is assigned to calls to the main warehouse only. Name the line "WAREHSE".

### Programming hints

Line names can contain both letters and numbers but cannot be longer than seven characters. The # and \* symbols cannot be used.

You can name a line by its seven-digit telephone number. Two lines cannot have the same name. If you enter a line name which has already been used, you will hear an error tone, and Use `unique name` appears on your telephone's display. You can, however, give the same name to a telephone and a line in your system.

## Programming a Line Name

Begin with Line names .

1. Press  .  
Show line:      appears.
2. Enter the line number from the dial pad.  
OR  
Press  to program the name of the first line (001).  
  
Line00 1: WATS appears, for example, if the name WATS is already assigned; or,  
Line00 1:Line00 1 appears, for example, if a name has not been assigned.
3. Press CHANGE . A cursor appears, and the name disappears from the display.
4. Enter the first character of the name by pressing the appropriate dial pad button one, two, three, or four times.  
OR  
Press (Next] to restore the default name and proceed to program the name for the next external line.
5. Press --> to move the cursor to the next position.  
Continue entering all of the required characters (remember the seven-character limit) for the name.
6. To enter the name for another external line:  
Press  to return to Show 1 line:      .  
OR  
Press  to show the name for the next external line.



# Time and Date

---

## What is Time and Date?

When a Norstar telephone is in its normal idle state, the current time and date appear on the display (Mar 31 3:45 PM , for example). When active, some Norstar features cause a different message to appear.

Time and Date adjusts the following settings:

- Time
- Date

Select the setting or settings you wish to program, and find the description and programming procedure. The Time and Date settings are listed above in the order that the headings appear during programming.

## To begin Time and Date programming

Begin with 3. Time and date .

1. Press [Show].  
Time 15:45 , for example, appears for programming the time.
2. Press [Next].  
Date 31 Mar 91 , for example, appears for programming the date.

## Programming Time and Date

### Time

This feature allows you to assign the time.

#### Programming hints

During normal service, the time display in English is in 12-hour format showing **am** or **PM** . In the Alternate Language, the time is always displayed in 24-hour format as follows:

English Mar 31 **3:45 PM**

French 31 mar **15h45**

Spanish 31 Mar **15: 45**

If the display on a telephone is blank, the telephone may be disconnected, or there may be no power to the Key Service Unit (KSU). if power is out for more than three consecutive days, or if you reset the system, the display will show Jan 1 1: 00 **am** when the system is restarted. When power is restored, the clock will begin to run again, but the time will be incorrect.

All entries must consist of either one or two digits. If the system is being administered in English and the hour entry is less than 13, the display prompts you to specify **am** or **PM** .

#### Programming Time

Begin with Time 15: 45 .

1. Press **CHANGE** .  
Hour: 15 appears.
2. Press **CHANGE** to program the hour. The hour is erased.  
OR  
If you do not wish to change the hour, go to step 4.

3. Enter the digit(s) for the hour in 12 or 24-hour format from the dial pad.
4. Press  .  
Minutes: 45 appears.  
If you do not wish to change the minutes, go to step 7.
5. Press CHANGE .
6. Enter the digit(s) for the minutes from the dial pad.
7. Press  .  
If AM or PM appears, and you wish to change the setting, go to step 8.  
OR  
Go to step 9 if you do not wish to change AM/PM.  
OR  
Programming continues at step 10.
8. Press CHANGE .
9. Press  .
10. Date 31 Mar 91 appears.  
Proceed to program the date.  
OR  
Press (Heading) until you return to the desired programming heading.  
OR  
Press (Next) to program Direct-Dial.

## Date

This feature allows you to assign the date.

### Programming hints

All entries must consist of either one or two digits. The month is entered as a one or two-digit number between 1 and 12. For example, March is entered as either "3" or "03". Only the last two digits of the year are entered.

### Programming Date

Begin with Date 31 Mar 91 .

1. Press CHANGE .  
Year: 91 appears.
2. Press CHANGE to program the year.  
OR  
If you do not wish to change the year, go to step 4.
3. Enter the last two digits of the year from the dial pad. ' 1
4. Press  .  
Month: 03 appears.  
If you do not wish to change the month, go to step 7.
5. Press CHANGE .
6. Enter the digit(s) for the month from the dial pad.
7. Press [Next].  
Day: 3 1 appears.  
If you do not wish to change the day, go to step 10.
8. Press CHANGE .
9. Enter the digits from the dial pad.
10. Press  until you return to the desired programming heading.  
OR  
Press [Next] to program Direct-Dial.

---

# Direct-Dial

---

## What is Direct-Dial?

This feature allows Norstar users to call a Direct-Dial telephone assigned to their telephone, by dialing a single digit. Up to five Direct-Dial telephones can be designated to handle calls from five groups of telephones.

Use this Administration heading to specify which telephone directory numbers (DNs) will be designated as Direct-Dial telephones.

### Programming hints

You must select the Direct-Dial digit in Configuration (4. Miscellaneous). You must also specify which telephones can call a Direct-Dial telephone, and which one they will call, in Administration (5. Capabilities).

## Programming Direct-Dial

Begin with 4. Direct-Dial .

1. Press  .  
 Set 1: 22 1, for example, appears as the default DN assigned as the first Direct-Dial telephone.  
 OR  
 Press  to program Capabilities.
2. You can assign a new DN as a Direct-Dial telephone by pressing **CHANGE** and entering the digits of the new DN.  
 OR  
 You can change the value to **None** by pressing **CHANGE** , and pressing  .

3. Press (Heading) until you return to the programming heading 4. Direct-Dial .  
OR  
Press  to continue programming up to a total of five Direct-Dial telephones.

After the fifth Direct-Dial programming heading, pressing (Next] displays the programming heading for Capabilities.

---

# Capabilities

---

## What is Capabilities?

Capabilities programming assigns limitations, permissions, and remote access capabilities to Class of Service (COS) passwords, telephones, and lines.

The main sections of Capabilities programming are:

- Dialing Filters
- Remote access packages
- Telephone (set) abilities
- Line abilities
- Class of Service (COS) passwords

Dialing filters allows you to group restrictions on dialed-digit sequences into “filters”. These filters can later be applied to specific telephones or external lines.

Remote access packages allows you to define the types of access to Page and line pools that you will permit remote users.

Telephone abilities applies Dialing filters to telephones.

Line abilities applies Dialing filters, Remote access dialing filters, and Remote access packages to lines for remote access.

Class of Service (COS) passwords use Dialing filters and Remote Access packages to control remote users' access to the system's resources. COS password programming defines passwords, their associated filters, and their remote access packages.

## To begin Capabilities programming

Begin with 5. Capabilities .

1. Press .  
Dialing filters appears for programming the first level of Capabilities.
2. Press .  
Show filter: \_ appears for selecting a filter to be programmed.  
OR  
Press .  
Rem access pkgs appears for programming the remote access packages.  
OR  
Press  twice.  
Set abi 1 it ies appears on the display for programming the telephone characteristics.  
OR  
Press  three times.  
Line abi 1 it ies appears for programming line characteristics.  
OR  
Press  four times  
COS Passwords appears for programming Class of Service passwords.



## Dialing filters

A dialing filter is made up of restrictions and exceptions. These specify the external numbers which can or cannot be dialed from a telephone or on a line.

Filters are defined under the programming heading `Dialing filters`. A dialing filter can be applied later to one or more telephones, or lines, in programming `Set abilities`, `Line abilities` and `COS Passwords`. They may be used as telephone (set) filters, line filters and line/set filters to manage outgoing calls, and as remote filters applied to lines. Remote filters control the numbers that can be dialed by remote users when they are calling into Norstar to use a Norstar line for placing calls.

### Internal users

Dialing filters restrict the numbers that an internal user can dial on external lines.

If a line/set filter has been defined for the line selected at the user's telephone, it completely replaces any line filters or telephone filters which might otherwise apply.

If no line/set filters have been defined then dialed digits are filtered through (and may be rejected by either of) the telephone filter (if defined) and the line filter (if defined).

### External users

For a remote user, who has dialed into Norstar on an auto-answer line (or a DID line), and passed through any DISA security, there are no restrictions on the numbers the user can dial.

For remote users trying to tandem through the Norstar system, the Line filters and Remote filters assigned in Line abilities apply.

For a remote user entering the system through DISA, the filters and Remote access packages associated with their COS password replace the Remote filter, the Line filter, and the Remote access package assigned to the incoming line.

### Programming hints for Filters with Restrictions and Exceptions

- Norstar can have up to 100 dialing filters (00 to 99).
- Filter 00 permits unrestricted dialing. Unlike filters 01 to 99, the restrictions and exceptions for filter 00 cannot be changed.
- Filter 01 is pre-programmed with five restrictions and some associated exceptions. See the Dialing filter default templates.

#### Dialing filter default templates

Filter	Square	Centrex	Hybrid PBX
00	Unrestricted dialing		
01	Restr'n 0 Restr'n 1 Excpt'n: 1800 1555 1*1*555 1*0*555  Restr'n 911 Excpt'n 911  Restr'n 411  Restr'n 976	Restr'n 90 Restr'n 91 Excpt'n: 91800 91555 91*1*555 91   0*555  Restr'n 9911 Excpt'n 9911  Restr'n 9411  Restr'n 9976	Hybrid and PBX settings are the same as the Square template
02 - 99	None		

- The asterisk \* is a “wild card” character that stands for any digit.
- Each filter (01 to 99) can have as many as 48 restrictions; there is no specific limit on the number of exceptions that can be allocated to any restriction.

**Note:** The total number of restrictions and exceptions allocated to the 99 programmable filters cannot exceed 400.

- Filters 02, 03, and 04, although not pre-set with restrictions and exceptions, are the default filter settings used later in programming:

Filter	Where the filter appears as a default setting in Capabilities programming
02	<b>Set abilities-- Set filter:</b>
03	<b>Line abilities-- Line filter:</b>
04	<b>Line abilities-- Remote filter:</b>

- The maximum length for a restriction is 15 digits; for an exception, the maximum is 16 digits.
- Any restriction or exception can be used in one or more filters. Each time it is used, it counts as one entry. For example, if restriction 411 appears in filters 01, 02 and 03 it has used up three entries of the 400 entries available.
- Removing a restriction also removes the exceptions associated with it. This also changes the identifying number of the restriction. For example, removal of restriction 01 causes restrictions 01 to 48 to be re-numbered and displayed as 01 to 47.

**Note:** The removal of a restriction and its exceptions from one dialing filter has no effect on the contents of another filter into which the restriction and exceptions were copied.

- Deleting a filter is not possible. Removing the restrictions programmed on a filter makes it an unrestricted filter but the filter is not removed (for example, filter 08 remains filter 08 despite any changes to it or to other filters).

For example

You may need filters for three different types of users:

- Managers may require unrestricted dialing.
- Secretaries may need to be limited to calls on line 003 to the west coast office only.
- Clerks may need to be limited to calling specific area codes and the west coast office.

In the table below, notice the reduction in the number of available restrictions and exceptions after each filter has been programmed.

Filter #	User type	# of Restr'n	# of Excpt'n	#of restr'n & excpt'n remaining (400 max.)
00	manaer	--	--	400
01	secretary	5	5	390
02	clerk	7	12	371
Total		12	17	(400 - 12 - 17 = 371)

**Note:** Record restrictions and exceptions for each filter on the *Norstar Modular DR4 Programming Record*.

## Programming Dialing filters with Restrictions and Exceptions

### Restrictions

Beginwith Dialing filters ,

1. Press **[show]**.  
Show filter: \_ appears on the display for entering a filter number to be programmed.
2. Enter a two-digit filter number (for example, 05).  
The prompt No restrictions appears on the display if this filter has not been programmed before.
3. Press **ADD** to program a restriction.  
Restr'n 0 1: \_ appears on the display.
4. Enter the digits for the restriction.
5. Press **OK** to program the restriction.  
Restr'n 0 1: 1234, for example, appears on the display.
6. Press **ADD** to program another restriction for the filter.  
Restr'n 02: \_ appears on the display.  
OR  
Press **Show** to program any exceptions to this restriction.  
No exceptions appears.  
OR  
Press **(Heading)** or **Next** to program another filter.  
Show filter: \_ appears on the display.
7. At the Show filter: \_ prompt, press **(Heading)**, then press **Next** to continue programming with Remote Access Packages.

## Exceptions

Exceptions, if required, are entered for individual restrictions as soon as the restriction is programmed.

Begin, for example, at Restr'n 0 1: 1234 (continuing from step 5 above).

1. Press  .  
No exceptions appears on the display.
2. Press **ADD** to program an exception.  
Except'n 00 1: \_ appears on the display.
3. Enter the digits for the exception (for example 12345).
4. Press **OK** to program the exception.  
Except'n 00 1: 12345 appears on the display.
5. Press **ADD** to program another exception to the restriction.  
Except'n 002: \_ appears on the display.  
OR  
Press  or  to return to programming restrictions.  
Restr'n 0 1: 1234 appears on the display.  
OR  
Press  .  
Show filter: \_ appears on the display.
6. At the Show filter: \_ prompt, press [**Heading**], to return to the Dial ins f i l t e r s heading, then press  to continue programming with Remote Access Packages.

## Remote access packages

Remote access packages allow you to control the remote-use of Norstar line pools and the Remote Page feature.

Remote access packages are associated with COS passwords and the auto-answer lines used by remote users.

### Programming hints

Norstar systems can have up to 16 Remote access packages (00 to 15). The limitations are:

- Package 00 permits no access to line pools or to remote paging. Unlike packages 01 to 15, package 00 cannot be changed.
- For remote users calling into the Norstar system to use Norstar lines for calling out, for example, the Remote dialing filters and the outgoing Line dialing filters (in Line abilities.) still apply.

### Remote access packages default template

Parameter	Square	Centrex	Hybrid	PBX
<b>Package 00 †</b>	Prohibits access to line pools and Remote Page. Can not be changed.			
Package 01 Line Pool access Remote Page	Y for Pool A N for Pools B to 0 No			
Packages 02 • 15 Line Pool access Remote Page	N for Pools A to 0 No			

† Remote package 00 appears later in programming Line abilities as the default setting for the Remote package setting.

## Programming Remote access packages

Begin with `Rem access pkgs`.

1. Press .  
Show package: `_` appears on the display.  
OR  
Press  to program Telephone (Set) abilities.

2. Enter a two-digit package number.  
The heading `Line pool access` appears on the display.

3. Press `[Show]`.  
`PoolA(9):N`, for instance, appears on the display.

Note: This display shows an alphabetic line pool identifier, followed by a numeric line pool access code between brackets (defined in 4. Miscel 1 `aneous` of Configuration). If no access code has been identified, the brackets appear empty (for example `PoolA():N`).

OR

Press `[Next]` to program Remote paging.

4. Press `CHANGE` to allow Line Pool access.
5. Press  or  to display the settings for the next or previous line pools.

`Remote page: N` appears on the display after the last line pool.

6. Press `CHANGE` to allow Remote paging.  
OR  
Press  to return to the heading  
Show `package: _` to program another Remote access package.
7. Program another Remote access package.  
OR  
Press `[Heading]` to return to `Rem access pkgs`, and then press  to continue programming with Telephone (Set) abilities.



## Telephone (Set) abilities

Telephone (Set) abilities programming applies dialing filters and permissions to telephones. Telephone abilities include the following settings:

- Telephone (set) filters
- Line/telephone filters
- Telephone Administration Lock
- Full Handsfree
- Automatic Handsfree
- Handsfree Answerback
- Call Pickup Group
- Page zone
- Auxiliary Ringer
- Direct-dial telephones
- Call Forward On Busy
- Call Forward No Answer
- Redirect ring
- Hotline
- Priority Call.

## Programming Telephone (Set) abilities

Begin with Set abilities.

1. Press  .  
Show **set: \_** appears on the display
2. Enter the digits for a telephone's DN to begin programming Set abilities.  
Set filter: 02 appears on the display.  
OR  
Press **COPY** to copy Set abilities programming from one telephone to another.  
OR  
Press  to return to the heading  
Set abilities .
3. Press  to program the Line/telephone filters.  
OR  
Press  until you return to the desired programming heading.

## Telephone (Set) filter

A telephone filter is a collection of restrictions and exceptions defined in Dialing filters. These filters are applied to telephones through Set filter programming.

### Programming hints

Filters are most commonly used to prevent unauthorized long-distance calls, without restricting local calls.

Telephone filters do not apply to calls dialed out on E&M trunks. Someone could dial out to a destination on the private network that is restricted on the public network.

To restrict calling on E&M lines, apply a restriction to the line rather than to the telephone.

## Programming Telephone filters

Begin with `Set filter:02` .

1. Press `CHANGE` to change the filter number.
2. Enter a new two-digit filter number.  
OR  
Press  without entering any digits to set the filter to the 00 filter which permits unrestricted dialing.
3. Press  to program the Line/telephone filter.  
OR  
Press `(Heading]` until you return to the desired programming heading.

## Line/telephone (Line/set) filter

A Line/telephone dialing filter is applied to a line at a telephone. This type of filter replaces any line or telephone filters which might otherwise apply.

As with dialing filters applied to telephones, or to lines, line/set filters control the numbers that may be dialed on specific external lines.

For example, a Line/set filter can permit a specific telephone to call a specific long-distance number on line 003, but no other long-distance numbers, and on no other line.

## Programming hints

- Remember that up to 100 filters may be defined in the system (filters 00 to 99). Line/set filters fall under this limitation.
- A maximum of 255 Line/set dialing filters may be applied to lines at telephones.

## Programming Line/telephone filters

Begin with `Line/set` filters .

1. Press `[Show]`.  
`Show line: _` appears on the display to allow entry of a three-digit line number.
2. Enter a three-digit line number.  
`Filter: None` appears on the display for assigning a filter.
3. Press `CHANGE` to be able to enter a filter number.  
OR  
Press `[Next]` to retain the default of `None`.  
`Show line: _` appears on the display.
4. Enter an appropriate two-digit filter number.
5. Press `[Next]` or `[Heading]` to program a `Line/set` filter on another line.  
`Show line: _` appears on the display.
6. Enter a three-digit number to program a filter for another line  
OR  
Press `[Heading]` to return to `Line/set filters` ,  
and then press `[Next]` to continue programming with Telephone Administration Lock.

## Telephone Administration Lock

Telephone Administration Lock limits the types of features that may be used or programmed at a telephone.

There are three options: None, Full and Partial.

Options explained

- None allows you to access any feature on your telephone.

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# Using Norstar features

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## Using a feature

To use a Norstar feature, enter the feature code and watch your telephone display for instructions. Different displays come up, at different times, depending on how you invoke the feature and the choices you make while using the feature. If you want more information about a display, look it up in the Display section of each feature listing.

Note that some features only work in certain circumstances. For instance, to use Conference you must have two calls at your telephone, one active and one on hold.

## One line and two line displays

All Norstar telephones have LCD displays that give you information about your calls and guide you through Norstar features. The M7100 and M7208 telephones have a one-line display. The M7310 and M7324 telephones have a two-line display. The second line of a two-line display shows the functions of the three buttons directly below it. If you have a telephone with a two-line display, you can use these display buttons. Some display buttons, such as TRANSFER and ALL, are simply shortcuts. If you have a telephone with a one line display, these shortcuts are not available. Other display buttons, such as OK and SHOW, perform essential functions. If your telephone has a one line display, you can use the following buttons in place of these display buttons:

<u>OK</u>	Hold	<u>CANCEL</u>	#
<u>QUIT</u>	Rls	<u>VIEW</u>	#
<u>ADD</u>	*	<u>OVERRIDE</u>	#
<u>SHOW</u>	#	<u>BKSP</u>	<> >>

All displays listed in this book are shown as they appear on the two line display, except those that appear only on telephones with a single line display. If you are using a telephone with a single line display, ignore the second line of the display shown in this book, and the instructions for using display buttons.

### Common feature displays

You may see the following displays when you use a feature.

`Access denied`

Someone is in Configuration or Administration programming. You cannot use programming features. Try again later.

`Feature timeout`

You have taken more than 15 seconds to press a button in response to a display.

`Invalid code`

You have entered an invalid feature code.

`Not available`

You have tried to use a feature that is not available in the present set-up of your **Norstar** system.

`Set locked`

You cannot use the feature you have chosen because your telephone is locked. See Telephone Administration Lock in Customizing your telephone.

### Dialing and Answering the telephone

Many **Norstar** features require you to dial telephone numbers. The displays associated with dialing are listed in the Dialing section. If you see a display that is not listed with the feature you are using, look for it in the Dialing section. All the displays that appear when you are receiving a call are listed in the Answering the telephone section.

### One button access

You can program most Norstar feature codes onto telephone memory buttons so that you can use the feature by pressing a single button. See Feature programming for instructions.

Whenever this chapter tells you to enter a feature code, you can do so either by pressing the buttons shown in the feature description or by pressing a memory button on which the feature code has been programmed. Similarly, you can enter a telephone number by pressing an Autodial button.

### Cancelling a feature

Some features change the way your telephone works. To make your telephone work normally again you must cancel the feature. To cancel a feature, press [Feature], then **Q** and the feature code. Thus, to cancel Call Forward, which you activate by pressing [Feature] [4], press [Feature] # [4].

If a feature code is programmed onto a memory button, you can cancel the feature by pressing the memory button.

If you change your mind in the middle of using a feature, you can back out by pressing [Feature] or [Ris]. Be aware that pressing [Ris] will disconnect your current call.

### **M7100** telephone

Because the **M7100** telephone does not have any line buttons it sometimes works slightly differently from other Norstar telephones. Where other telephones may require you to select a line button to answer a call, on the **M7100** you simply pick up the receiver. Where other telephones require you to select a line button to take a call off hold, you press [Hold] on the **M7100**. The **M7100** cannot have a [Handsfree] button. You will find special instructions for the **M7100** in some feature descriptions.

---

# Answering the telephone

---

## Answering

Your Norstar telephone can receive many different types of calls. Your telephone's display tells you what sort of call you are receiving. The usual way to answer a call is to pick up the receiver, but there are several other possible methods, depending on how your system is set up and what kind of call is ringing.

## Callback

When you direct a call you have answered to another telephone, the system monitors the call to make sure someone answers it. If no one answers a call within a set time, the system directs it back to you. Callback generates a variety of displays. Most occur after a programmable delay and are listed in this section. Some occur immediately, if the telephone to which you are directing a call is out of service or otherwise unavailable. These are listed with the descriptions of the features in which they occur.

## Call Queuing

Feature

When you have more than one call ringing at your telephone, you can choose the call that has the highest priority.

1. Enter the Call Queuing feature code (   ). The system connects you to the call that has the highest priority.

Call Queuing answers incoming calls before callback and camped calls.

## Delayed Ring Transfer (DRT)

If no one answers a call within a set time, the system transfers the call to the Prime telephone.

## Related features

### Call Pickup

Call pickup lets you use your telephone to answer a call that is ringing at someone else's telephone. See Call Pickup.

### Do Not Disturb

Feature 8 5

If you do not wish to receive calls, turn on Do Not Disturb. See Do Not Disturb.

### Handsfree/Mute

Handsfree

You can answer calls without picking up the receiver using Handsfree/Mute. See Handsfree/Mute.

### Prime telephone

A Prime telephone receives calls that go unanswered at other telephones. See Special Telephones.

### Retrieving a Parked Call

You can retrieve a parked call at any telephone in the system. See Call Park.

### Voice Call Deny

Feature 8 8

If you do not wish to receive voice calls, turn on Voice Call Deny. See Voice Call.

## What line indicators mean

- |   |   |
|---|---|
| ▶ Flashing on and off for equal lengths of time | There is an incoming call on the line.            |
| ▶ Flashing on and off more quickly              | You have placed a call on hold:                   |
| ▶ Flashing on for longer than off               | Someone else has put a call on hold on that line. |

▶ On, not flashing	You are connected to the call on that line or the line is in use elsewhere.
Off	The line is free.

## Rings you may hear

A double beep every ten seconds	A call has been camped to your telephone.
A long single ring	There is an external call on the line for you.
A shorter double ring	There is an internal call on the line for you or a call is being transferred to you.
A brief single ring	A call is being redirected on one of your redirected lines. You cannot answer this call. See Line Redirection.
Three beeps descending in tone.	You are receiving a priority call.

## Displays

You will see one or more of the following displays when you receive a call on your telephone and while you are answering that call. See Message for a full explanation of the Message feature. See Dialing for a full explanation of Ring Again.

221 TRANSFER	You are connected to an internal call. You can press <u>TRANSFER</u> to transfer the call.
4302 >4321	Either you are receiving an internal call from telephone 4302 forwarded by telephone 4321 or you have an Answer button for telephone 4321 and an internal call from 4302 is ringing on 4321.



4321 Calling

You are receiving a call from telephone 4321.

Call 4321?  
YES NO

You have received a Ring Again offer for a call to an internal telephone. To call the number again, press YES or the flashing internal line button. On the M7100, just lift the receiver. Otherwise, press NO or wait 30 seconds for the Ring Again offer to expire. For an explanation of Ring Again, see Dialing.

Camped 4321  
CALLBACK

The person to whom you camped the call did not answer it. The call has come back to you. Press the CALLBACK button or the line button to reconnect to the call.

Line001  
TRANSFER

You are connected to an external call. You can press TRANSFER to transfer the call.

Line001 transfer

The call on line 001 is being transferred to you by someone else in your Norstar system.

Line001 waiting

A camped call is waiting. Press the line button or use Call Queuing to answer the call. If you have an M7100 telephone, press [Hold].

Line00 1>432 1

Either you are receiving an external call forwarded from telephone 4321 or you have an Answer button for telephone 4321 and an external call is ringing on that telephone.

No calls waiting

You tried to use Call Queuing but no call was ringing at your telephone.

No line selected

There is no call ringing at your telephone. If you have a flashing line-button but your telephone is not ringing, you must press the line button to answer the call on that line.

Parked call  
CALLBACK

Nobody answered the call you parked. The call has come back to you.

Pick UP receiver

You have used the Call Queuing feature without picking up the receiver. Auto Handsfree has not been assigned to your telephone. You must use the receiver or  to answer a ringing or camped call.

Priority>4321  
BLOCK

You are receiving a Priority Call, If you are on another call, inform the person you are speaking to that the call is about to be put on hold. Press the flashing line indicator of the Priority Call or wait till the call connects automatically (in eight seconds).

The Priority Call goes through when you hear the next beep.

Your active call is placed on Exclusive Hold. It will be reconnected automatically when the priority call ends (unless you transfer the Priority Call, in which case you must press the line button of your original call to reconnect).

To reject a Priority Call, use DND (  ) or press BLOCK.

Release a call

You have no free line buttons which to receive a call. Release one of your current calls and try again to answer the incoming call.

Use line pool? YES NO
--------------------------

You have received a Ring Again offer for a line pool. To use the line pool, press YES or the flashing internal line button. On the M7100, just lift the receiver. Otherwise, press NO or wait 30 seconds for the Ring Again offer to expire. For an explanation of Ring Again, see Dialing.

## Prime telephone displays

If yours is a Prime telephone, you may see the following displays.

DND from 432 1
----------------

The person at telephone 4321 has forwarded a call to you using Do Not Disturb.

DND transfer
--------------

The system has transferred a call to you from a telephone in Do Not Disturb mode.

DRT Line 001
--------------

Nobody answered this call so the system transferred it to you.

Line00 1 callback CALLBACK
-------------------------------

Someone has camped, parked, or transferred a call on line 001, but no one has answered it. Press the CALLBACK button or the line button to connect to the call.

Line001 to prime
------------------

There is no telephone that can receive a call on line 001 so the System has transferred it to you.

Line015>Line087
-----------------

The call coming in on line 015 was intended for target line 087. Line 087 is busy so the call has come to **you**.

## Notes

There are three indications of an incoming call: ringing, a line button flashing, and a message on the display. You will not necessarily receive all three indications for any particular call. You may have a line that has been set up not to ring at your telephone. If so, you will see only a flashing line button. If there is no button free for a camped call to appear, you will get a special ring and a message on your display, but no line button will flash. If someone makes a voice call to you, you will hear a beep followed by their voice. There are many possible combinations, depending on how your system is set up. See Lines in the System features section for more information on the behavior of lines.

There are many ways to answer a call. Many of them depend on settings in Administration programming. Depending on various settings and the type of call you are receiving, you may be able to answer a call by: picking up the receiver, picking up the receiver and pressing a line button, pressing  , pressing  and pressing a line button, pressing a line button, or simply speaking.

If you receive a Priority Call and your telephone has no free internal line buttons, you cannot transfer the call or do anything else with it, except release it.

On M7100 telephones, you may answer a second call by pressing  . Your active call is put on hold and you are connected to the waiting call. You can have no more than two calls at a time.

# Autodial

You can program memory buttons for one-touch dialing of internal or external telephone numbers.

## External Autodial

Feature \* 1

1. Enter the external autodial feature code (Feature \* 1).
2. Select the button you want to program.
3. If you want this autodialer to use a particular line or line pool, select that line or line pool.
4. Enter the number.

## Internal Autodial



Feature \* 2

1. Enter the internal autodial feature code (Feature \* 2).
2. Select the button you want to program.
3. Enter the number.

## Displays

You will see some of the following displays while programming an **Autodial** button. See **Dialing** for displays that may occur while using an **Autodial** button.

987\_  
QUIT BKSP OK

Continue to enter digits until the number is complete. Press **BKSP** or  (volume down) to erase an incorrect digit. Press **OK** or  when you are finished.

Autodial full

The memory allotted to **Autodial** numbers in your **Norstar** system is full.

Button erased

While programming External Autodial, you pressed **OK** before entering any digits. This erases the button.

Enter digits  
QUIT OK

Enter the number you wish to program exactly as you would if you were dialing it yourself.

Hold or release

You cannot program an Autodial button while you are on a call. Finish your call or place it on hold before programming an Autodial button.

Intercom#: \_

Enter the internal telephone number you wish to program.

Press a button  
QUIT

Press the memory button you want to program.

Program and HOLD

Enter the number you want to program onto the button, then press (Hold]. You may include a line or line pool selection in an autodial sequence by selecting the line before entering any digits.

Program and OK  
QUIT OK

Enter the number you want to program onto the button, then press  or OK. You may include a line or line pool selection in an autodial sequence by selecting the line before entering any digits.

Programmed

The number is stored on the button.

## Notes

If the power to your Norstar system is off for more than three days, Autodial numbers may be lost from the memory.

Autodial numbers must be programmed onto memory buttons. They can not be programmed onto line buttons, the Handsfree/Mute button, or Answer buttons.

You can program Host System Signaling codes as part of a number on an External Autodial button. See Host System Signaling.

If you do not include a line selection in an autodialer, the call will use your prime line, if you have one. If you select a line before pressing the **Autodial** button, any line selection programmed onto the button will be ignored.

You can copy the telephone number from a Last Number Redial button or Saved Number Redial button onto an Autodial button. Simply enter the Last Number Redial feature code or Saved Number Redial feature code when the **Autodial** feature asks you to enter a number.

---

# Call Forward

---

Feature  4

## Forward your calls

(Feature)  4

You can have all your calls forwarded to another telephone in the Norstar system.

1. Enter the Call Forward feature code (  Feature  4 ).
2. Enter the number of the internal telephone to which you want your calls forwarded.

Forwarding remains in effect until you enter the Cancel Call Forward feature code.

## Cancel Call Forward

Feature  #  4

You can start to receive calls again.

1. Enter the Cancel Call Forward feature code (  Feature  #  4 ).

## Call Forward on Busy

Call Forward on Busy redirects calls to another telephone when you are busy with a call. The System Coordinator sets up Call Forward on Busy in Administration programming.

## Call Forward (No Answer)

Call Forward (No Answer) forwards unanswered calls to another telephone. The System Coordinator sets up Call Forward (No Answer) in Administration programming.

## Call Forward Override

You can call someone and ask them to stop forwarding their calls to you.

1. Dial that person's number and ask them to cancel call forwarding. Your call will ring at that person's telephone even though they are forwarding their calls.



## Related features

### Do Not Disturb

Feature 8 5

You can use the Do Not Disturb feature to forward your calls to the Prime telephone. See Do Not Disturb.

### Line Redirection

Feature 8 4

Note the differences between Line Redirection and Call Forward. Call Forward forwards all calls that arrive at a particular telephone to another telephone within the Norstar system. Line redirection redirects only the lines you specify, no matter which telephones they appear on, to a telephone outside the Norstar system.

## Displays

You will see some of the following displays while forwarding your calls. See Do Not Disturb for a full explanation of that feature. See Answering the telephone for displays that occur when a telephone receives a call forwarded by another telephone.

Forward denied

You cannot forward calls to the number you have chosen. There are several reasons why this can happen. For instance, you cannot forward your calls to a telephone that has been forwarded to your telephone.

Forward to:

Dial the internal number or press the Internal **Autodial** button of the telephone to which you want your calls to be forwarded.

Forward>4321  
CANCEL

Your calls are being forwarded to telephone 4321. Press the **CANCEL** button or W a t u r e # r 4 y o u want to stop forwarding your calls.

Not in service
----------------

Two or more telephones are linked in a forwarding chain, and one of them is out of service or is being used to program the system.

## Notes

When a call is forwarded, it does not ring but its line indicator still flashes on your telephone. You can answer the call by pressing the button next to the flashing indicator.

If the telephone to which you forwarded your calls does not have the same external lines as your telephone, the forwarded calls appear on internal line buttons.

Telephones that have Call Forward on Busy active can still receive Priority calls. Call Forward on Busy does not forward camped calls.

When Call Forward is active, all calls go to the call forward destination, regardless of the Call Forward on Busy and Call Forward no Answer settings.

If you are one of a group of people who regularly forward their calls to one another, be aware that it is possible to set up forward loops in which a call is forwarded from one telephone to another in a circle, and is never answered anywhere.

Calls that are redirected by Line Redirection are not affected by any of the Call Forward features.

---

# Call Park

---

Feature  7  4

## Park a call

Feature  7  4

You can suspend a call so that it can be retrieved from any telephone in your system.

1. Enter the Call Park feature code (  Feature  7  4 ).
2. Use the Page feature to announce the retrieval code displayed by your telephone.

## Retrieving a parked call

1. Select an internal line on any Norstar telephone.
2. Dial the call park retrieval code.

## Displays

You will see some of these displays while parking a call. You may see some of these displays while retrieving a parked call.

Already parked

The person you were talking to has already parked your call. You cannot park the same call.

Get call first

You have attempted to park a call with no active call on your telephone. If the call you wish to park is on hold, you must reconnect to it before you can park it.

Invalid number

You have entered an invalid retrieval code.

No call on: 101

There was no call on the retrieval code you entered.

No call to park

You have attempted to park a call, but there are no calls at your telephone.

Park denied

You have tried to park a conference call. Split the conference and park the calls separately. The person who retrieves the calls can reconnect the conference.

Parked on: 302  
PAGE EXIT

Record the code shown. Use Page (Feature [6] [0]) or press PAGE to announce the call and its retrieval code.

Parking full

All available retrieval codes are in use. Transfer the call or take a message instead.

## Notes

When you park a call, the system assigns one of nine codes for the retrieval of the call. These codes consist of the Call Park prefix, which may be any digit from 0 to 9, and a two digit call number between 01 and 09. Thus, if the Call Park prefix is 3, parked calls are assigned Retrieve Park codes 301, 302, etc.

Your Installer sets the Call Park prefix in Configuration programming. If the Call Park Prefix is set to NONE, parking is disabled.

# Call Pickup

---

You can pick up a call that is ringing at another telephone.

## Directed Pickup

Feature  7  6

You can answer any telephone that is ringing in your Norstar system

1. Enter the Directed Pickup feature code (  7  6 ).
2. Enter the internal number of the ringing telephone.

## Group Pickup

Feature  7  5

Your Norstar system can be divided into as many as nine pickup groups. If you are a member of a pickup group, you can pick up a call that is ringing at any telephone in your pickup group.

1. Enter the Group Pickup feature code.

## Trunk Answer

Feature  8  0  0

The Trunk Answer feature allows you to answer an external call that is ringing at any other telephone in your office.

Trunk Answer works only with calls that are ringing on lines for which a Service Mode is active and Trunk Answer is ON in Administration programming.

1. Enter the Trunk Answer feature code (  8  0  0 ).

## Displays

You may see some of these displays while using a Call Pickup feature.

Already joined

You are already connected to the telephone that made the call you are trying to pick up. This can happen if you are on a call to a co-worker, your co-worker dials the number of a telephone in your Pickup Group, and you attempt to pick up that call.

Denied in admin

Your telephone is not a member of a Pickup Group.

Line denied

You have attempted to pick up a call on someone else's private line.

No button free

You have tried to pick up a call when you have no line button available.

Pickup denied

(Pickup) There is no call that you can pick up or the call that was ringing has already been answered.

(Trunk Answer) The call that is ringing is on a line that is not in a Service Mode.

Pickup:

Enter the internal number of the telephone that is ringing. (You may use an Internal Autodial button to do this.)

If you decide not to answer a ringing call once you have activated Directed Pickup, press . The call will continue to ring.

## Notes

Call Pickup cannot be used on private lines. Group Pickup can not be used to retrieve a camped call.

To use Directed Pickup, the telephone must be ringing. If, for example, the auxiliary ringer is ringing, but the call is not ringing at a telephone, the call cannot be answered using Directed Pickup. It must be answered normally at a telephone that has a flashing indicator for the call, or by using Trunk Answer.

If a call is ringing on an Answer button, you can use Directed Pickup to answer the call by entering the internal number of any member of the Answer group.

If there is more than one incoming call at a telephone in a pickup group, a call ringing on the Prime line is answered first followed by calls on external lines and, finally, calls on internal lines.

If there is more than one incoming call on lines in a Service Mode, the Trunk Answer feature picks up the external call that has been ringing the longest. See Service Modes.

The System Coordinator can assign telephones to one of nine Pickup Groups in Administration programming.

---

# Camp On

Feature

## Camp a call

Feature

You can send an external call to another telephone, even if all its lines are busy.

1. Enter the Camp On feature code ([Feature]  ).
2. Dial the number of the telephone you want to camp the call to.

## Related features

### Transfer

Feature

Camp On is a variation of the Transfer feature. See Transfer.

## Displays

You will see some of the following prompts while Camping a call.

4321 Camp max  
CALLBACK

You tried to camp a call to a telephone that already has a camped call. The call has come back to you. Press the **CALLBACK** button or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.

4321 DND  
CALLBACK

The person to whom you redirected a call has Do Not Disturb active on the telephone. The call has come back to you. Press the **CALLBACK** button or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.

Camp denied

You have tried to camp an internal call. You can only camp external calls.



Camp to:  
CANCEL

Dial the number of the internal telephone to which the call will be sent.

Camped: 4321  
CALLBACK

The telephone to which you camped a call did not answer the call. The call has come back to you. Press CALLBACK or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver..

Line001 hung U P

A call you camped has come back to you, but the caller hung up before you could reconnect.

Make call first

You have no call to camp. If the call you want to camp is on hold, take it off hold and then camp it.

Not in service  
CALLBACK

The telephone to which you have camped a call is out of service or is being used for Configuration or Administration programming. The call has come back to you. Press CALLBACK or the line button to reconnect to the call. On the M7100 telephone, just pick up the receiver.

Release a call

The line that the camped call is on is in use or that line does not appear at your telephone. Release the line or release an internal line.

## Notes

If you use **Call Queuing** to answer a camped call, external calls are answered before the camped call.

Camped calls appear on a line button on the receiving telephone, if one is available. If not, there is just a message on the display and Camp tones.

---

# Conference

---

[3] Feature]

## Create a conference

(Feature] [3]

You can talk to two people at once.

1. Make sure you have two calls, one active and one on hold.
2. Enter the Conference feature code ( [Feature] [3] ).
3. Take the held call off hold (this is automatic on the M7100 telephone).

## Conference using Privacy

[Feature] [8] [3]

Normally your calls are private; no one else can pick up your line and join in your conversation. You can turn privacy off for a call allowing another person with the same line to press the line button and join in your conversation, forming a conference.

1. Enter the privacy feature code ( [Feature] [8] [3] ).
2. Tell the other person to press the line button and join your conversation.

## Disconnect one party

You can disconnect one party from a conference and continue talking to the other.

1. Press the line button of the call that you want to disconnect. The call that you want to keep is automatically put on hold.
2. Press [Rls]. The call is disconnected.
3. Press the line button of the held call.

## Independently hold two calls

You can put the two people on hold independently so that they cannot talk to each other.

1. Press the line button of one person. The other person is automatically put on hold.
2. Press [Hold]. The second person is put on hold.

You can reestablish the conference.

1. Take one call off hold.
2. Enter the Conference feature code.
3. Take the other call off hold.

### Put a conference on hold

You can put a conference on hold, allowing the other two people to continue speaking to each other.

1. Press . The conference is on hold.

You can reconnect to the conference.

1. Press either of the held line buttons. You are reconnected.

### Split a conference

You can talk with one person while the other person is on hold.

1. Press the line button of the person you want to speak to. The other person is automatically put on hold.

You can reestablish the conference.

1. Enter the Conference feature code ( ).
2. Take the held call off hold.

## Related Features

### Unsupervised Conference

You can disconnect yourself from the conference and leave the other two people talking by entering the Transfer feature code (  ). However, if both of the other people are outside the system there are some restrictions: At least one of the outside callers must have called you and that call must be on a disconnect supervised line.

## Displays

You will see some of these displays while using the Conference feature.

3 Parties only

You are trying to add a fourth party to your conference call, or to join two conferences together. Release one call from the conference before adding another, or keep the two conferences separate.

Access denied

Privacy control cannot be used on internal or conference calls.

Conf. on hold

You have put a conference call on hold from your M7100 telephone, then tried to get another line. Your M7100 can handle only two lines at a time, and your conference call is using both of them.

Conference busy

You have tried to make a conference call, but your system is already handling its maximum number of conference calls.

Line001 4321  
TRANSFER

You are on a conference with the two lines or telephones shown. You can drop out of the conference and leave the other two parties connected (Unsupervised Conference) by pressing **TRANSFER** or entering the Transfer feature code.

Make calls first

You have tried to set up a conference call, without having made the calls that are to be connected. Make both calls first.

Make call first

You have tried to use Privacy Control when you are not on a call.

(Make second call)

You have tried to set up a conference call while connected to only one caller. Put your first call on hold, make a second call, and enter the Conference feature code again.

Press held line

You have activated the Conference feature with one call active and another on hold. Press the line of the call on hold to bring that person into the conference.

## N o t e s

Only the person who established the conference can process the conference in any of the ways described above.

The Conference feature supports only three people.

If you are using an M7100 telephone:

- Your conference is connected as soon as you enter the Conference feature code. There is no need to take the second call off hold.
- To split a conference, enter  |# .
- You cannot independently hold two calls.
- You cannot join an existing two-party call to establish a Privacy conference although you can use the Privacy feature for calls at your telephone.

When a third person joins a conversation on a line that has privacy turned off, the call becomes a conference. All the rules applicable to a conference apply except that there is only one line in use, instead of the normal two. This means that you cannot split a conference set up using Privacy.

# COS Password

Feature  6  8

## Change your Class of Service

Feature  6  8

A Class of Service password is a six digit code that lets you switch from your current Class of Service to one that lets you dial numbers prohibited by your current Class of Service.

1. Enter the COS Password feature code  
(  Feature  6  8 ).
2. Enter your COS password.

## Displays

You will see the first of these displays when entering a COS password, you may also see the second.

(Blank display) Enter your password. It will not be shown on the display.

You have entered a password that is not programmed into your system.

## Notes

If you use your Norstar system from outside the office, you may have to enter a Class of Service password to gain access to the system. Class of Service passwords can give you access to features not available with the regular Class of Service. See *Using Norstar* remotely.

You must enter a Class of Service password each time you wish to make a call using a Class of Service not normally available on your line or telephone.

- Norstar allows up to 100 Class of Service Passwords.

The System Coordinator defines Class of Service passwords in Administration programming.

# Customizing your telephone

---

You can change the way a telephone works in several ways. Some of the features described below are assigned to telephones in Administration programming. You can turn others on and off at individual telephones.

## Automatic Handsfree

Automatic Handsfree lets you make or answer a call without having to pick up the receiver or press the  button. The telephone's internal microphone and speaker turn on automatically when you make or answer a call.

The System Coordinator assigns Automatic Handsfree capability to a telephone in Administration programming. Full Handsfree capability must be assigned to a telephone before Automatic Handsfree capability can be assigned to it. This is also done in Administration programming.

This feature is not available on M7100 telephones.

## Contrast Adjustment

\*

You can set the contrast level of your telephone display.

1. Enter the Contrast Adjustment feature code.
2. Choose the contrast level you like best. The number of contrast levels available varies from one **Norstar** telephone to another.

This is the display you will see in Contrast adjustment.

```
Contrast level 2
DOWN  UP  OK
```

Press a number for the contrast level you want or press UP or DOWN. Press  or OK to set the new contrast level.

## Dialing Modes

[Feature] \* 8 2

You can set the dialing mode of your telephone.

1. Enter the Dialing Modes feature code.
2. Choose the dialing mode you want.

Norstar supports three dialing modes; Automatic Dial, Pre-Dial, and Standard Dial. All three modes support on-hook dialing. (On-hook dialing means dialing a call without picking up the receiver.) The special features of the Automatic and Pre-Dial modes are available only when you dial on-hook.

The Dialing Modes feature code cannot be programmed onto a memory button.

### Standard Dial

In Standard Dial mode you make a call by selecting a line and dialing the number. If you have a prime line, it is selected automatically when you lift the receiver or press

Handsfree.

Standard Dial does not support on-hook dialing on an M7100 telephone. If you have an M7100, use the Automatic Dial or Pre-Dial feature for on-hook dialing.

### Automatic Dial

If you have a prime line assigned to your telephone, Automatic Dial allows you to dial a number without selecting a line. Your prime line is selected as soon as you start dialing a number. Automatic Dial does not work if your prime line is in use.

Telephones connected to an Analog Terminal Adapter (ATA) cannot use Automatic Dialing.



## Pre-Dial

Pre-Dial allows you to enter a telephone number, check it, then change it before actually making the call. The call is not dialed until you select a line or line pool or pick up the receiver.

You can pre-dial both external and internal numbers. You must, however, select the correct type of line (external or internal) for the type of number you have entered.

If all the lines on your telephone are busy, you will not be able to enter a telephone number.

If your telephone starts ringing while you are pre-dialing a number, you can stop the ringing by turning on Do Not Disturb ([Feature] 8 5). This does not affect numbers you are entering.

This is the display you will see when selecting a Dial mode.

```
Standard dial
NEXT          OK
```

The current dial mode is shown. Press # or NEXT until the dial mode you want appears. Press Hold or OK to select the displayed dial mode. If Automatic dial is not available it is because you have no prime line.

## Language Choice

English

[Feature] \* 5 0 1

You can select English as the language of your telephone display.

1. Enter the English language choice feature code . ([Feature] \* 5 0 1).

Alternate Language

[Feature] \* 5 0 2

You can select the alternate language as the language of your telephone display.

1. Enter the alternate language choice feature code (**Feature** \* 5 0 2).

Each Norstar system supports English and one alternate language. Norstar systems are available with either French or Spanish as the alternate language. Button caps are available in both alternate languages.

You can select either English or the alternate language at each telephone. When your system is first installed, all telephones will use English.

You can program a memory button for one-touch switching between languages. Program **Feature** \* 5 0 1 onto the button. Pressing the button will switch you back and forth between English and the alternate language.

**Feature** \* 5 0 2 cannot be programmed onto a memory button.

One of the following displays will appear when you enter a language choice feature code.

En français...	Telephone display messages will be in French.
En español...	Telephone display messages will be in Spanish
In English...	Telephone display messages will be in English.

### Move Line buttons

**Feature** \* 8 1

You can move external lines to different buttons on your telephone. You can use this feature to arrange your lines in the way that makes the most sense to you.

1. Enter the Move Lines feature code (**Feature** \* 8 1).
2. Press the button you want to move the line from.
3. Press the button you want to move the line to.

You will see some of these displays while moving lines.

Invalid location

You have tried to move a line to a button that cannot be used as a line button, such as a Handsfree/Mute button, or an Answer button.

Move line from:  
QUIT

Press the button of the line you want to move. Press QUIT or (Feature] when you have finished moving lines.

Move line to:  
QUIT

Press the button you want to move the line to. Neither of the buttons is erased. The lines, or the line and feature, simply switch places.

Press a line

The button you are trying to move is not a line button. If you are trying to switch a line and a feature, move the line to the feature button and not vice versa.

## Pulse/Tone Dialing

Each external line is set to either pulse or tone dialing. Pulse dialing is the traditional method of dialing used by rotary dial or push button single-line telephones. Tone dialing allows telephones to communicate with other devices such as answering machines. Tone dialing is required to access the features that PBX systems may offer or to use another Norstar system remotely (see Using Norstar remotely).

Your Installer sets your lines to pulse or tone dialing in Configuration programming.

To switch from pulse to tone dialing

EI

If your external lines are programmed for pulse dialing, you can switch your telephone temporarily to tone dialing.

1. Press I# while on a call. Once you hang up, your telephone returns to pulse dialing.

## Ring Type

Feature  \*  6

You can choose one of four distinctive rings for your telephone. This makes it easier to identify your telephone in an open office.

1. Enter the Ring Type feature code.
2. Choose the ring type you want.

This is the display you will see when choosing a ring type.

Ring type 1  
NEXT  OK

Press , , ,  or NEXT. You hear the selected ring for two seconds. Repeat until you hear the ring you prefer, then press  or OK.

## Ring Volume

Feature  \*  8  0

You can set the volume at which your telephone rings.

1. Enter the Ring Volume feature code. The telephone will ring.
2. Press  to adjust the volume.

This is the display you will see while setting Ring volume.

Press VOLUME bar

Press either side of the volume bar () to adjust the volume.

## Telephone Administration Lock

Telephone Administration Lock limits the ways in which you can customize your telephone. There are three types of Telephone Administration Lock: Full, Partial, and None.

Full Administration Lock lets you change the contrast of your telephone's display, use Ring Type, Ring Volume and Button Inquiry, and control the volume of your speaker.

Partial Administration Lock allows you to forward your calls, turn on Do Not Disturb and Service Modes, and use the Background Music, Send Message, Ring Again, Privacy, and Trunk Answer features.

No Administration Lock allows you to access all features that are programmed for your telephone. The System Coordinator assigns Administration Lock to each telephone in Administration programming.

Telephone Administration Lock does not affect call handling features.

## Related Features

### **Autodial**

Feature  \* 1 / Feature  \* 2

You can program your telephone's memory buttons to dial frequently used numbers with the **Autodial** feature. See Autodial.

### **Feature programming**

Feature  \* 3

You can program feature codes onto your telephone's memory buttons using the Feature programming feature. See Feature programming.

### **Speed Dial programming**

Feature  \* 4

You can program personal speed dial numbers onto speed dial codes 71 to 94 using the Personal Speed Dial programming feature. See Speed Dial.

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# Dialing

---

One of the most important features of your telephone system is the ability to dial telephone numbers. Many features require you to dial telephone numbers. The displays associated with dialing are listed here.

## Direct Dial

You can dial a Direct Dial telephone with a single digit. The Direct Dial telephone is usually in a central location, such as a receptionist's or secretary's desk. It is usually a Prime telephone and a Central Answering Position (CAP).

## External line access code

The external line access code is the number you dial to get an external line. You will need to use an external line access code if your prime line is an internal line. The code will connect you to a line pool through your internal line.

If your prime line is an external line, or if you select an outgoing external line on your telephone, you will not need an external line access code. You will always need an external line access code on an M7100 telephone.

Your Installer assigns the external line access code in Configuration programming.

## Last Number Redial

Feature

You can redial the last external number you dialed.

1. Enter the Last Number Redial feature code ((Feature) ).

## Ring Again

[Feature] 2

If you can't get through to someone on your Norstar system because their telephone is busy or there is no answer, you can have the Norstar system tell you when they hang up or next use their phone.

1. Enter the Ring Again feature code ([Feature] 2) before you hang up.

You can also use Ring Again to tell you when a busy line pool becomes available.

Using Ring Again cancels any previous Ring Again requests at your telephone.

## Cancel Ring Again

[Feature] # 2

You can cancel a ring again request by entering the Cancel Ring Again feature code.

## Saved Number Redial

[Feature] 6 7

You can save the number of the external call you are on (providing you dialed the call) so that you can call it again later.

1. Enter the Saved Number Redial feature code while you are still on the call.

You can dial a saved number.

1. Enter the Saved Number Redial feature code when you are not on a call.

## Related Features

### Autodial

[Feature] \* 1 / [Feature] \* 2

The autodial feature lets you program telephone numbers onto memory buttons for one-touch dialing. See the **Autodial** section.

## Dialing modes

Feature  \*  8  2

Norstar supports three different methods of dialing. They are described in the Customizing your telephone section under the heading Dialing Modes.

## Line Pools

Line pools give you access to many external lines. See Line Pools.

## Priority Call

Feature  6  9

If you get a busy signal when you call someone in your office, you can interrupt them using Priority Call. See Priority Call.

## Speed Dial



[Feature]  0

The Speed Dial feature lets you dial programmed numbers by entering speed dial codes. See Speed Dial.

## Displays

You will see some of these displays while selecting lines and dialing telephone numbers and in response to the numbers you dial.

9\_  
QUIT BKSP

You are dialing using Pre-Dial. To erase an incorrect digit, press **BKSP** or    (volume down). When the number is complete, select a line or lift the receiver.

4321 busy

The telephone you have called has no internal lines available.

95551234  
TRANSFER

This prompt remains on your display as long as you are on a call you have dialed. You may transfer the call by pressing **TRANSFER**.



Already joined	Your telephone is already connected to the telephone you are trying to call. Check your active line buttons, and return to that call.
Calling 4321 LATER	Wait for the telephone to be answered, or press <u>LATER</u> to use the Ring Again or Message features,
Calling 4321 PRIORITY LATER	Wait for the telephone to be answered. If no one answers, you may press <u>LATER</u> to use the Ring Again or Message features or press <u>PRI ORITY</u> to make a priority call.
Can't ring again	You cannot use Ring Again on your current call. You can only use Ring Again while you have a busy signal on an internal call or line pool request or while, an internal call is ringing.
Do not disturb LATER	The telephone you are calling is in Do Not Disturb mode. Press <u>LATER</u> to use the Ring Again or Message features.
In use: 4321	The line you have chosen is in use at another telephone. Use a different line, or wait until the line is free.
/In use: Line001	You have tried to use a line that is active on an external call.
Invalid number	You have entered a number that does not exist.
Line in use	The line you have chosen is in use. Try another. If the line remains in use and never seems to clear, it <b>may be</b> hung. See Lines in the System Features section for information on hung lines.

---

Line001 TRANSFER	Enter the digits of the number you want to dial.
No button free	You have tried to make or receive a call when no line button was available.
No last number	You have not dialed an external telephone number since the last power interruption or system reset.
No line selected	Either you have no prime line or your prime line is busy. Select a line manually before dialing.
No number saved	You have tried to save the number of an incoming call. You can only save numbers that you have dialed yourself.
No saved number	You have tried to use Saved Number Redial, but have not first saved a telephone number. The Saved Number Redial memory is empty.
Not in service	You have entered the number of a telephone that is not in service.
On another call LATER	The telephone you have called is on another call. Press <b>LATER</b> to use the Ring Again or Message features.
Release a call	You have Pre-Dial assigned to your telephone but you have no free line buttons. Release one of your calls and try Pre-Dial again.
Restricted call I	The call you are trying to make is not allowed for your Class of Service. Make your call on a line or telephone that is not restricted, or use a Class of Service password to bypass the restriction.

---

Ring Again?  
YES NO EXIT

Press YES to use Ring Again. Press NO if you prefer to send a message. See Message and Ring Again.

Select a line

Either you have no prime line, or the prime line is in use, or the line programmed onto an Autodialer, Speed Dialer, Last Number Redial, Saved Number Redial or Hotline is in use. Select a line and dial again.

Send message?  
YES NO

Press YES to send a message. See Messages.

Your number

You have dialed your own number.

## Notes

The maximum number of digits that Last Number Redial or Saved Number Redial records is 24.

You can copy the telephone number from a Last Number Redial or Saved Number Redial button onto an *Autodial* button. Simply enter the Last Number Redial or Saved Number Redial feature code when the *autodial* feature asks you to enter a number.

Each telephone can save only one number at a time with Saved Number Redial, not one number for each line.

# Do Not Disturb

[Feature] [8] [5]

## Do Not Disturb

[Feature] [8] [5]

You can stop calls from ringing at your telephone.

1. Enter the Do Not Disturb feature code ([Feature] [8] [5]).

Only Priority Calls will ring at your telephone. A line button will flash when you receive a call, but the call will not ring.

You can refuse to answer a particular call (including a Priority Call).

1. Enter the Do Not Disturb feature code ([Feature] [8] [5]) while your telephone is ringing.

## Cancel Do Not Disturb

[Feature] [#] [8] [5]

You can cancel Do Not Disturb.

1. Enter the Cancel Do Not Disturb feature code ([Feature] [#] [8] [5]).

## Displays

Do not disturb

Your telephone is in Do Not Disturb mode. To cancel Do Not Disturb, press [Feature] [#] [8] [5].

Allow calls

Your telephone is receiving calls normally.

## Notes

If you use Do Not Disturb while an external call is ringing, the call will be forwarded to the Prime Telephone. It may also be answered by anyone whose telephone shares the line it is on. Once you turn Do Not Disturb on, calls will be forwarded to the Prime telephone only if there is no other telephone on which the line appears. (The Delayed Ring Transfer feature transfers all unanswered calls to the Prime telephone after a set time.)

---

# Feature Programming

---

Feature \* 3

## Program a button

Feature \* 3

You can program a feature code onto a memory button.

1. Enter the Feature Programming feature code ([Feature] \* 3).
2. Select the button you want to program.
3. Enter the feature code you want to program onto the button.

## Erase a button

Feature \* 1

You can erase a memory button.

1. Enter the Erase Button feature code ([Feature] \* 1). This is actually the External Autodial feature code.
2. Erase the button by programming it with no number.

You cannot erase Answer, Handsfree/Mute, Intercom, or line buttons.

## Button Inquiry

Feature \* 0

You can check the function of any line, intercom, or memory button on your Norstar telephone.

1. Enter the Button Inquiry feature code ([Feature] \* 0).
2. Press the button you want to know about.
3. Read the display.

When you are labeling or replacing a button cap, activate Button Inquiry so that you won't accidentally activate a feature.

## Displays

You will see some of the following displays while programming, erasing, or checking buttons. A variety of displays appear in Button Inquiry. See the display <Feature name> for information applicable to these displays.

```
123456789012345...
      VIEW→  OK
```

Press  to move either right or left, or press VIEW→ or ←VIEW to view a number that is too long to fit on the display. Press  or OK when you are finished.

```
<Feature name>
      SHOW  OK
```

The name of the feature assigned to a button is displayed when you press the button. SHOW appears when there is more information available. Press  or SHOW for additional information.

```
Enter code:
```

If you are checking a Speed Dial button, enter the two-digit Speed Dial code that you want to check.

```
Enter Digits
-----
F_
QUIT CLEAR
```

To erase a button, press .

While entering a feature code you can press  or QUIT to quit programming or CLEAR to clear out the characters you have entered. The system will accept the entry as soon as you enter a valid feature code.

```
Feature code:
QUIT
```

Press  and enter the feature code you want to program onto the button. Invalid codes cannot be entered.

Feature moved	You have programmed a button with a feature that was already programmed onto another button. The feature has moved to the button you just programmed. Its original button is blank.
Hold or release	You cannot program an autodialer or feature button while you are on a call.
Press a button EXIT	Press the button you want to check. Press <u>[Feature]</u> or <u>EXIT</u> if you are finished.
Program and HOLD	To erase a button, press <input type="text" value="Hold"/> .
Program and OK QUIT OK	To erase a button, press <input type="text" value="Hold"/> or press <u>OK</u> .
Release calls	You have tried to use Button Inquiry while you were on a call or had calls on hold.

## Notes

When this book tells you to enter a feature code, you can do so by pressing a memory button programmed with that feature code. In some cases, pressing the button a second time cancels the feature.

On the M7100 telephone, Button inquiry shows your internal number followed by the function assigned to your single memory button.

Any memory button not programmed as an external or internal line, target line, Answer button, or Handsfree/Mute button, is available for programming features.

The following feature codes cannot be programmed onto a memory button: Long Tones and any code beginning with  except Language Choice and Contrast Adjustment.



---

# Group Listen

---

Feature

## Group Listen

Feature

You can let people in your office listen in on a call.

1. Enter the Group Listen feature code (   ). You will hear the caller's voice through your telephone's speaker.
2. Continue to speak to the caller through the telephone receiver. The caller will not hear people in your office.

## Cancel Group Listen

Feature

You can cancel Group Listen for the current call.

1. Enter the Cancel Group Listen feature code (    ).

Group Listen is cancelled automatically when you hang up the Group Listen call.

## Displays

You may see one of these displays with Group Listen.

You have tried to use Group Listen when you are not on a call.

You have tried to use Group Listen without picking up the receiver.

## Notes

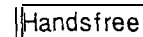
Keep the receiver away from the speaker, or you may hear feedback. The higher the volume, the more the feedback. Press the  button to prevent feedback when hanging up.

You can switch a Group Listen call to Handsfree by pressing . To switch back to Group Listen, enter the Group Listen feature code again.

---

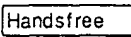
# Handsfree/Mute

---

A small icon consisting of a vertical bar on the left and a horizontal bar on the right, with the word "Handsfree" written inside the horizontal bar.

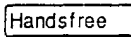
## Make calls without lifting the receiver

You can make calls without lifting the receiver.

1. Press . The telephone's internal microphone and speaker are automatically turned on.
2. Dial your call.
3. Speak normally.

## Answer calls without lifting the receiver

You can answer calls without lifting the receiver.

1. When your telephone rings, press . The telephone's internal microphone and speaker are automatically turned on.
2. Speak normally.

## Mute Handsfree

You can switch off the telephone microphone so that you can speak privately to someone in your office while you are on a handsfree call.

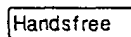
1. Press . The microphone is turned off.

You can turn the microphone back on again and continue your handsfree call.

1. Press .

## Regular call to Handsfree

You can turn any regular call into a handsfree call.

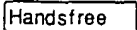
1. Press  and hang up the receiver.

## Handsfree to regular call

You can turn a handsfree call into a regular call.

1. Lift the receiver.


## Notes

The indicator next to  is solid when you are in handsfree mode. It flashes when you mute the microphone.

Always tell the person you are speaking to that you are using Handsfree, and let them know who else is listening to the conversation.

Direct your voice toward the telephone. The closer you are to the telephone, the easier it is for the microphone to transmit your voice clearly to your listener.

Wait for your caller to finish speaking before you speak. The microphone and speaker cannot both be on at once. Your caller's voice may be cut off if you both speak at the same time. Noises such as a tapping pencil could be loud enough to turn on your microphone and cut off your caller's speech.

To prevent a possible echo, keep the area around your telephone free of paper and other objects that might screen your microphone. Turning down the microphone's volume (using ) also prevents echo.

Handsfree calls may be heard in nearby offices. In open-concept environments, use the receiver or a headset when Handsfree communication is not necessary, or when you need privacy during a call.

Place the telephone so that any unavoidable local noise (such as an air conditioner) is behind it. This limits the amount of disruptive background noise.

A Handsfree button is assigned to a telephone by the System Coordinator in Administration programming.

The Handsfree/Mute feature is not available on M7100 Telephones.

---

# Hold

---

## Put a call on hold

You can temporarily suspend a call.

1. Press .

When a call is on hold, its indicator flashes on all telephones that have access to the line. The call can be retrieved from any of these telephones.

## Retrieve a held call

You can connect to a call on hold.

1. Press the flashing line button of the held call.

## Automatic Hold

You can switch from one call to another.

1. Press the line button of the caller you want to speak to. Your current caller is put on hold automatically.

## Exclusive Hold

   **or** 

You can put a call on Exclusive Hold so that it can be retrieved only at your telephone.

1. Enter the Exclusive Hold feature code. The line appears busy on all other telephones, and the call cannot be picked up by anyone else in the office.

## Listen on **Hold**

If you have been put on hold, you can hang up the receiver while you wait for the other person to return.

1. Press .
2. Hang up the receiver.
3. Press the line button of the call. You may hear indications from the far end that you are on hold (for example, tones or music).

4. When the person you were talking to returns you will hear them through your telephone speaker. Lift the receiver and talk.

### **Music/Tones/Silence on Hold**

External callers can hear either music, a periodic tone, or silence while they are on hold. In order for your caller to hear music, your company must have installed a music source.

#### **Warning**

In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers, or a similar organization, if radio or TV broadcasts are transmitted through the Music on Hold feature of this telecommunication system.

Northern Telecom Inc. hereby disclaims any liability arising out of the failure to obtain such a license.

Your installer sets this feature to music, tones, or silence in Configuration programming.

### **Notes**

On the M7100 telephone,  alternates between two lines; one active, one on hold. The M7100 cannot retrieve a call placed on hold by another telephone.

If the Automatic Handsfree feature has been assigned to your telephone, use the Handsfree/Mute feature instead of Listen on Hold.

---

# Host System Signaling

---


You can access Host systems, such as Private Branch Exchanges (PBX) from Norstar by using Host System Signaling features (also known as End-to-End Signaling). These features either send a special signal to the host system or allow you to program delays required by host systems onto external Autodial buttons or Speed Dial codes.

## Host system signaling codes

### Link

Feature 7 1

If your Norstar system is connected to a Private Branch Exchange (PBX), you can use a Link signal to access special features.

The Link signal can also be included as part of a longer stored sequence on an External Autodial button or in a Speed Dial code. The Link symbol () uses two of the 24 spaces in a dialing sequence.

### Pause

Feature 7 8

The Pause feature enters a 1.5 second delay in a dialing sequence on an external line. This is often required for signaling remote devices, such as answering machines, or when reaching through to PBX features or Host systems.

You can obtain a Pause with one button press if you program the feature code onto a memory button. More than one Pause can be programmed onto an External Autodial button.

The Pausesymbol (8) uses one of the 24 spaces in a dialing sequence.

For Pulse Dialing, **Q** inserts a 1.5 second pause into the dialing sequence.

### Programmed Release

Feature \* 8 9

The Programmed Release feature performs the function of the **Rls** button in a programmed dialing sequence. When the system encounters Programmed Release in a programmed dialing sequence, it stops dialing and hangs up the call. The . Programmed Release symbol (**☐☐**) takes up two of the 24 spaces in a programmed dialing sequence.

### Run/Stop

Feature \* 9

Run/Stop inserts a break point into a sequence of dialed numbers or characters used for automatic dialing. This may be necessary when you are connecting to a PBX or similar Host system.

For example, you may call a company with an automated attendant that instructs you to dial the extension number you need. You can program the company number, a Run/Stop, then the extension number on one External **Autodial** button. Press the autodialer once to dial the company number. When you hear the automated attendant, press the autodialer again to dial the extension number.

The Run/Stop symbol (S) uses one of the 24 spaces in an External **Autodial** or Speed Dial sequence.

### Timed Release

Feature 7 2

The Timed Release feature inserts a 1.5 second pause into a sequence. You can use it in a dialing sequence for accessing a remote system, such as a PBX. You can also dial it if you wish to release a call from your line but keep the line for another call. You will return to dial tone.

The Timed Release symbol (**☐☐**) takes up two of the spaces in a programmed dialing sequence.

## Displays

You may see this display while entering Host System Signaling codes.

Invalid code

You have entered a code that can only be used in a programmed Autodial or Speed Dial sequence, not on a call you dial directly. Programmed Release and Run/Stop are for use in programmed dialing sequences only.

## Notes

If your external telephone lines are programmed for Pulse Dialing, you can temporarily switch to Tone Dialing by pressing **#** after selecting the line. Tone Dialing lets your Norstar telephone communicate with devices and services that respond to tone signals, such as automatic switchboards, and FAX or answering machines.



# Line Pools

Feature  6  4

## Use a line pool

A line pool is a group of external lines that can be shared by many telephones. You can use a line in a line pool to make an external call.

1. If you have a free internal line, dial a line pool access code on an internal line. (You do not need the Line Pool feature code.) If you have no free internal line, enter the line pool feature code (  Feature  6  4 ) and then a line pool access code.

Everyone in the office should have a list of the line pool access codes for the line pools their telephones can use.

## Displays

You may see some of the following displays while using a line pool. For displays associated with dialing telephone numbers, see the Dialing section.

Code:	Enter a line pool access code.
Denied in admin	Access to the line pool you requested is denied in Configuration programming.
Invalid code	You have entered an invalid line pool access code.
Line in use	The line chosen by the system for your line pool request became active before connecting with your call. Retry the line pool request.
No button free	There is no free button on which the line pool line can appear.

No free lines

You have tried to access your line pool, but there are no lines in the line pool or all the lines are busy. Use Ring Again or call again later.

## Notes

You do not usually need to enter the Line Pool feature code to use a line pool. Simply dial the line pool access code on an internal line. If you have no free internal lines, you will need to use the feature code to get a line pool. You will also need it to program access to a specific line pool onto a memory button.

You can program a button to access a line pool by programming the Line Pool feature code and a line pool access code onto a memory button in Feature programming (  \*  ). When all the lines in a Line Pool are busy, the indicator for the Line Pool button turns on. The indicator turns off when a line becomes available.

Your Norstar system can have 15 line pools, and a telephone can be programmed to access any number of them.

You can use a line pool only to make external calls.

If no lines are available in the line pool, you can use Ring Again at the busy tone. You will be notified when a line in the line pool becomes available. See Ring Again.

Your Installer gives telephones access to line pools in Configuration programming. Each line pool is assigned a line pool access code in Configuration programming.

---

# Line Redirection

---

Feature  8  4

## Redirect a line

Line Redirection lets you send your external calls to a telephone outside the office. You may choose to redirect all your external lines or only some of them.

1. Enter the Line Redirection feature code ( Feature  8  4 ).
2. Select the outgoing line to be used for redirected calls.
3. Enter the number to which calls will be redirected.
4. Select the lines to be redirected.

## Cancel Line Redirection

Feature  #  8  4

You can cancel Line Redirection.

1. Enter the Cancel Line Redirection feature code.
2. Select the lines for which redirection is to be cancelled.

## Related Features

### Call forward



[Feature]  4

Note the differences between Line Redirection and Call Forward. Call Forward forwards all calls that arrive at a particular telephone to another telephone within the Norstar system. Line redirection redirects only the lines you specify, no matter which telephones they appear on, to a telephone outside the Norstar system. Line Redirection takes precedence over Call Forward

## Displays while redirecting lines

You will see some of the following displays while programming Line Redirection. The displays you see while cancelling redirection are listed under the heading Displays while cancelling redirection, below. See the Dialing section for displays that occur while entering telephone numbers.

9\_  
QUIT BKSP OK



Continue entering digits. Press **BKSP** or  (volume down) to delete incorrect digits. Press **OK** or  when you are finished.

Access denied

You cannot perform line redirection on an M7100 telephone.

Enter digits  
QUIT OK

Enter the telephone number to which you wish to redirect calls using one of the following methods:

- Press an External Autodial button.
- Enter an external telephone number of no more than 24 digits. Then, press  or **OK**.
- Press  or **OK** if the line you have chosen as the outgoing line is a private network line that does not require you to dial digits,

In use: 4321

You have tried to program redirection while someone else is programming redirection. Only one person can program line redirection at a time.


Incoming only

The line you are trying to use for redirecting calls is for incoming calls only. Choose an outgoing line.

Line denied

The line you have selected is private to another telephone. Only the owner of a private line can redirect it.

Line Redirection  
QUIT ADD REMOVE

Press **Q** or the **ADD** button to begin redirection. Press **REMOVE** or  to cancel a previous redirection.

No line to use

You have one external line on your telephone, but you need a second line to perform line redirection. Redirect your external line using a line pool as the outgoing line.

Outgoing line

You are attempting to redirect a line and the line you have chosen is the outgoing line you have selected as a destination. You cannot redirect a line to itself. Select another line.

Pool code: \_  
QUIT

Enter a valid line pool access code.

Programmed

This message appears when you , have successfully redirected a line or successfully cancelled redirection of a line.

Redir by 4321  
OVERRIDE

You have attempted to redirect a line, but someone else has already redirected that line. You may press **OVERRIDE** or **\*** to override the previous redirection and redirect the line as you wish.

Restricted call

The destination you have chosen for line redirection is restricted.

Select line out  
QUIT

Select the line that will be used to redirect calls out of the system, using one of the following methods:

- Press an external line button.
- Press an internal line button and dial a line pool access code.
- Press a line pool memory button.
- Press an External Autodial button.

Select line(s)  
QUIT ALL

Press the lines that are to be redirected. To deselect a line, press it again. You may press **ALL** to redirect all your lines.

Select line(s)  
ALL OK

Continue to press the lines that are to be redirected. Press **OK** or **Hold** when you are finished.

Unequipped line

The line you are attempting to redirect cannot be redirected because the hardware does not support redirection.

## Displays while cancelling redirection

You will see the following displays while cancelling Line Redirection.

Redir by 4321  
OVERRIDE

This line is redirected by someone else. Press **OVERRIDE** or **\*** to cancel redirection of the line.

Select line(s)  
QUIT ALL

Press the lines that are no longer to be redirected. The lines light up as you press them. Once you cancel redirection for a line you cannot restore it by pressing the line again. You may press **ALL** to cancel redirection for all your lines. When you are finished, press **OK** or

**Hold**

Select line(s)  
ALL OK

Continue to press the lines that are no longer to be redirected. Press **OK** or **Hold** when you are finished.

## Notes

You can answer the telephone if it rings while you are in the middle of programming Line Redirection, but none of the **Norstar** call handling features will be available until the feature times out. If you need to use a **Norstar** feature to process the call, you must quit Line Redirection programming by pressing the **Feature** button. Do not press **Rls** or you will disconnect the call you are trying to process.

While you are programming Line Redirection you will not receive any indication of calls that do not actually ring at your telephone.

The system does not check that the number you give for Line Redirection is a valid one. If you redirect to an invalid number, redirection will fail. Using an autodialer to enter the redirection number helps avoid this possibility. An autodialer used for line redirection must have a specific line programmed onto it.

If you use the **ALL** button to redirect all your lines, it is important that you wait until all the lines on your telephone light up before pressing **Hold** or **OK**. If you press **Hold** or **OK** before all the lines light up, those lines not lit will not be redirected.

Be aware of the consequences of redirecting your lines. If you redirect your target line to your home, for instance, and someone calls you from home, they will get a busy signal when the system tries to call the telephone they are using. Companies with offices in different time zones should avoid situations in which the lines from the eastern office are redirected to the west and those from the west are redirected to the east. This could result in a costly long distance redirection loop.

The system can be set up so that redirected calls give a brief ring on telephones in the **Norstar** system as they are redirected. These calls cannot be answered within the system until you cancel redirection.

The line chosen for redirecting calls on other lines can still be used normally when it is not busy on a redirected call. To avoid redirection failing because the chosen line is in use, choose a line pool with several lines in it.

# Long Tones

Feature  8  0  8

## Use long tones

Feature  8  0  8

The Long Tones feature lets you control the length of a tone so that you can signal devices such as Fax or answering machines which require tones longer than the standard 120 milliseconds.

1. Enter the Long Tones feature code (  8  0  8).
2. Press the dial pad buttons to produce the appropriate tones. Each tone will sound for as long as you hold down the button.

## Displays

You will see some of the following displays while using Long Tones.

Long Tones:

At the appropriate time, press any dial pad button. Hold each button down for as long as necessary. You can cancel Long Tones by pressing       or  d  .

/Make call first

You have tried to use Long Tones when you are not on a call.

Tones denied

The person you are calling has pressed  Hold , cancelling your long tones.

## Notes

Long Tones can be used on any call except a conference call. You can use internal lines of the Norstar system to activate a device connected to an Analog Terminal Adapter (ATA) in another area of your office; or external lines to access devices outside the Norstar system.



---

# Message

---

Feature  1

## Send a message (Feature) 1

You can leave a message on the display of another telephone in your Norstar system.

1. Enter the Message feature code (  1).

The message sent reads **Message for** YOU.

## Cancel a sent message Feature # 1

You can cancel a message that you have sent to someone.

1. Enter the Cancel a sent message feature code.

## Reply to a message Feature 6 5

You can call the person who sent you a message.

1. Enter the Reply to Message feature code (  6  5). The system calls the person who sent the message.

On a telephone with a two line display you can view your messages and decide if you want to reply to them.

1. Enter the Reply to Message feature code (  6  5).
2. Review your messages, reply to them, or erase them.

## Show your sent messages Feature 1

You can show and scan the messages you have sent.

1. Enter the Message feature code (  1).
2. Press **SHOW** to display your first sent message.

## Erase a waiting message Feature # 6 5

You can erase a message you have received.

1. Enter the Erase Message feature code (  #  6  5).

## Displays

You will see some of the following displays while sending messages.

```
1. 4321
NEXT ERASE EXIT
```

When reviewing the messages you have sent, press NEXT to view the next message or ERASE to erase the message on the display.

```
1. 4321 called
NEXT CALL ERASE
```

This is the first message in the list. Press NEXT to see the next message. Press CALL to reply to the message. Press ERASE to erase the message.

```
Can't send msg
```

You have tried to send a message to a Norstar Analog Terminal Adapter. The Norstar Analog Terminal Adapter does not have a display so it cannot show a message.

```
Cancel denied
```

You have entered an invalid number when attempting to cancel a message.

```
Cancel for:
```

Dial the internal number to which you sent the message you wish to cancel.

```
Message denied
```

You have tried to send a message to an invalid internal number or to a telephone that is out of service.

```
Message for you
MSG
```

You have a message waiting. Press MSG to review the message or enter Feat re r 66 5 p l y .

```
Message list
SHOW ADD EXIT
```

The SHOW display button appears only if you have outstanding messages. Press SHOW to review or erase messages you have sent. Press ADD to send a new message.

Message to:	Enter the internal number of the telephone to which you would like to send a message.
Messages for you MSG	You have several messages waiting. Press <b>MSG</b> to review the messages or <b>Feature r e p l y</b> to the first message.
No button free	You have no line button free with which to reply to a message.
No messages	You don't have any messages to cancel or there are no messages to scan through.
Their list full	You are trying to send a message to a telephone whose message waiting list is full.
Your list full	You have tried to send a message but your telephone's list of sent messages is full. Cancel one of the messages you have sent, if possible, or wait until you have received a reply to one of those messages.

## Notes

You can send up to four messages to different telephones. Each telephone, including the Prime telephone, can receive up to four messages from different telephones, but only one message from any one telephone. Direct Dial telephones and Central Answering Positions (CAPs) can receive up to four messages, but can send up to 30 messages.

Any message can be cancelled either by the person who sent it or by the person who received it.

If your reply to a message is forwarded or is answered at another telephone using the Call Pickup feature, the message remains on your telephone until you cancel it or successfully contact the telephone that sent the message.

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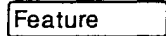
# Norstar Telephones

---

This section covers the basic features of your Norstar telephone and optional equipment that may be attached to it. See the Components chapter for the differences between Norstar telephone models.

## Buttons

### Feature button

A rectangular button with the word "Feature" inside.

You use the Feature button to invoke Norstar features. See the Using Norstar features section.

### Hold button

A rectangular button with the word "Hold" inside.

You use the Hold button to put calls on hold. See the Hold section. It is also used in place of the OK display button on telephones with single line displays.

### Memory buttons

Memory buttons are the buttons with indicators on the M7208, M7310, and M7324 telephones, and the dual buttons without indicators on the M7310. There is also a single memory button, without an indicator, on the M7100. Memory buttons can be used for any of the purposes listed below, except that lines and Answer buttons must appear on buttons with indicators.

### Answer buttons

You can **use** an Answer button to monitor calls on another person's telephone. All calls to the monitored telephone appear on the Answer button. Such calls may **also ring** at the telephone with the Answer button, depending on how the system is configured. Answer buttons are most useful for a secretary who monitors incoming calls for one or several managers.

If more than one call is ringing at the manager's telephone, the first call appears on the secretary's Answer button. Any subsequent calls appear on Intercom buttons if they are available.

More than one secretary may have an Answer button for a single manager. This allows two or more secretaries to handle calls for a busy manager.

Similarly, one person can handle calls for up to four other people, using separate Answer buttons for each person.

A secretary's telephone should have a memory button with an indicator programmed as the Internal **Autodial** button for the manager's telephone. This allows the secretary to call the manager and to deal efficiently with incoming calls.

You cannot make calls using Answer buttons.

### **Autodial** buttons

**Autodial** buttons let you dial numbers by pressing a single button. See the **Autodial** section.

### Line buttons



You have one line button for each line assigned to your telephone. You press the line button to select the line you want to answer or use to make a call. Having several line buttons allows you immediate access to more than one line so you can handle and monitor calls easily. The **M7100** does not have line buttons and can have a maximum of two lines. You can switch between its two lines, one active and one on hold, by pressing .


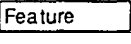
### **Programmed Feature** Buttons

Programmed feature buttons allow you to invoke **Norstar** features by pressing a single button. See the Feature Programming section.

## Release button

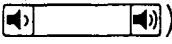


Pressing  ends a call. You do not have to put the receiver down.  also ends feature programming.

While you are on a call, do not press  to end a feature you are using (such as Show Message). If you do, you will disconnect-the call. Use  instead.

## Volume Bar



The Volume Bar controls the volume of the receiver, telephone ring, Handsfree speaker, headset and Background Music. Press either end of the volume bar () to adjust the volume.

## Headset

A headset lets you keep both hands free while you are on a call without others overhearing your telephone conversations.

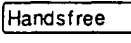
If you plug a headset into your telephone while you are on a call, your telephone's microphone and speaker (or your receiver if you are on a regular call) are turned off and your headset microphone and earpiece are turned on.

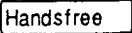
You must have the Handsfree/Mute feature assigned to your telephone if you wish to use a headset.


While you are using the headset, the receiver and the switch in the telephone cradle do not work.

A headset cannot be used on an M7100 Telephone.

## Using a headset

While on a call using the headset, press  to turn your headset on and off.

To answer a call, press .

To adjust the volume, press the appropriate side of the volume bar (.

To change to a Handsfree call while you are on a call using your headset, unplug your headset. Your telephone's microphone and speaker turn on and the call becomes a Handsfree call. (It is a good idea to put the call on hold while you do this.)

You may see this prompt when you try to use a headset.

 **Need Handsfree**

You are attempting to use a headset, but **Handsfree/Mute** is not programmed for your telephone. If you are not using a headset, you have accidentally plugged your telephone receiver into the headset outlet on the bottom of the telephone.

## Hearing Aid Compatibility

The receivers on all Norstar telephones are compatible with hearing aids as defined in the FCC rules, Part 68, section 68.316.

Note: Not all hearing aids are optimized for use with a telephone.

## Wall Mounting

Most Norstar telephones can be mounted on a wall. Contact the Installer or Service Representative if you wish to have any telephones in your system wall-mounted.

# Page

Feature

## Make a page announcement

Feature

You can make announcements over the Norstar system.

1. Enter the Page feature code (    ).
2. Choose a page type.
3. If necessary, choose a zone.
4. Make your announcement.
5. Press .

Page types are :

- through the telephone speakers (Internal Page)
- through an external speaker (External Page)
- both Internal and External (Combined Page)

## Paging shortcuts

Instead of entering the Page feature code followed by the page type, you can enter the following shortcut codes.

Internal    and zone (0 to 6)

External    (code 2 has no zones)

Combined    and zone (0 to 6)

## Related Features

### Voice Call

Feature

You can make an announcement to one person by placing a voice call to their telephone. See **Voice Call**.

## Displays

You will see some of these displays while making a Page announcement.



Enter zone: ALL	Enter the desired zone number (0-6) or press <b>ALL</b> to page to all zones. (0 equals all zones.)
Invalid zone	You have entered a page zone code that is not between 0 and 6.
Page choice: SETS SPKR BOTH	Select the type of page you want by pressing: <b>0</b> or <b>SETS</b> — Internal Page <b>2</b> or <b>SPKR</b> — External Page <b>3</b> or <b>BOTH</b> — Combined Page
Page timeout	The time allotted for paging has expired.
Paging ALL	The prompt appears while you are paging and shows the page zone you have chosen. Press <b>Feature</b> or <b>Fls</b> when you are finished paging.
Paging busy	A page is already being made in the Page Zone you have requested.

## Notes

Page zone 0 equals all zones.

When making an announcement using External Page or Combined Page, the Long Tones feature is automatically activated for the external paging system only. This allows you to control optional equipment with the Long Tones feature.

Each **Norstar** telephone can be assigned to one of six Page Zones, or to none, in Administration programming.

Make sure that everyone who needs to make page announcements has a list showing which telephones are in which page zones.

# Priority Call

Feature  6  9

If you get a busy signal when you call someone in your office, you can interrupt them. Use this feature for urgent calls only.

1. Enter the Priority Call feature code (  Feature  6  9 ).
2. Wait for a connection, then speak.

A person who receives a Priority Call while they are on another call has eight seconds to accept or reject the call. If the person does nothing, the Priority Call feature puts their active call on Exclusive Hold and connects your call.

## Displays

You will see some of these displays while making a Priority Call.

Call blocked

You tried to place a Priority Call to another Norstar telephone. The person you called has blocked your call. Try to call the person later.

Denied in admin

You have tried to make a Priority Call, but this feature has not been assigned to your telephone.

Make call first

You have attempted to use the Priority Call feature with no ringing or busy tone on the line. Use Priority Call only when you hear ringing or a busy signal.

Please wait

The party you are calling has eight seconds to decide whether to accept or reject your Priority Call.

Priority denied

The telephone you are calling is already in a Priority Call or is unable to receive Priority Calls.

## Notes

You can make a Priority Call only while your telephone display shows one of the following prompts:

```
Do Not Disturb  
PRIORITY LATER
```

```
On another call  
PRIORITY LATER
```

```
Calling 4321  
PRIORITY LATER
```

```
4321 busy  
PRIORITY LATER
```

If Call Forward is active at the telephone you are trying to reach, your call will be forwarded.

If the telephone receiving the Priority Call is in a conference call, the other two parties are automatically put on hold when the Priority Call is accepted.

The System Coordinator gives a telephone permission to make priority calls in Administration programming.



## Notes

A service mode allows you to change which lines ring at which telephone, to activate or deactivate the auxiliary ringer for certain lines, and to have Direct-Dial calls ring at the Extra-Dial telephone. Service modes can be programmed to begin automatically at certain times or they can be turned on and off at the control telephone. The System Coordinator sets up service modes in Administration programming.

Automatic service modes are indicated by an asterisk (\*) before the name of the service mode on the display. You can neither manually activate nor cancel automatic service modes, although you can override them with manual modes.

The Control telephone can override automatic service modes at any time by entering the Service Modes feature code (Feature  8 7), and selecting a different service mode; this override will remain in effect until it is cancelled by means of  # 8 7. Note that if you selected a service mode with an asterisk (\*), the next automatic service mode will come into effect at the programmed time.

Direct dial calls to a Direct-dial telephone will ring at the Extra-dial telephone (designated in Administration programming) only when the Service Modes feature code (Feature  8 7) is entered at that Direct-dial telephone. Note that only the Extra-dial telephone will be activated, not the actual service mode (unless that Direct-dial telephone is also a Control telephone).

Norstar provides three service modes named "Night", "Lunch", and "Evening". You can change these names to suit yourself. In addition, there is normal service when no service modes are active.

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# Special Telephones

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You can assign several special functions to the telephones in your Norstar system. Except where noted, you do not need special hardware. A special function is assigned to a telephone either by your Installer in Configuration programming or by the System Coordinator in Administration programming.

## Alarm telephone

An Alarm telephone is a Norstar telephone with a two line display (M7310 or M7324) that your Installer has assigned to display Norstar's system alarm codes, should they occur.

If an alarm message appears on the Alarm telephone's display, follow the instructions below.

1. Record the alarm number.
2. Press TIME and record the time displayed.
3. Call your Installer or Service Representative and report the alarm code.
4. After speaking to your Installer or Service Representative, press CLEAR.

This is an example of an alarm display.

Alarm: 61-4-2
TIME CLEAR

Report this alarm and the time it occurred to your Installer or service representative.

## Central Answering Position

A Central Answering Position (CAP) is a Norstar M7324 Telephone that your installer has defined as a CAP in Configuration programming. You can connect one or two Norstar CAP modules to the CAP to increase the number of lines it can handle. There can be from one to five CAPs in a Norstar system. It is best if the CAP is also the Prime telephone and Direct-Dial telephone for the lines and telephones it serves.

The CAP module displays the busy/not busy status of the telephones in your system by using the triangular indicators beside Internal Autodial, Programmed Feature or line buttons. A CAP can support 120 external lines.

You can send up to 30 messages from a CAP.

For more information, see the *Norstar Central Answering Position User Card*.

## Control telephone

The Control telephone lets you place the external lines for which it has responsibility into and out of Service Modes. See Service Modes.

## Direct-Dial

You can dial a Direct-Dial telephone with a single digit. The Direct-Dial telephone is usually in a central location, such as a receptionist's or secretary's desk. It is usually a Prime telephone and a Central Answering Position (CAP).

There may be up to five Direct-Dial telephones in your system, but each telephone in the system is assigned to a single Direct-Dial telephone. There is a single Direct-Dial digit for the whole system that lets each telephone call its assigned Direct-Dial telephone.

Each Norstar Direct-Dial telephone can send up to 30 messages and each can invoke Service Modes to activate the Extra-Dial telephone.

Your Installer sets up Direct-Dial telephones in Configuration programming. The System Coordinator assigns telephones to Direct-Dial telephones in Administration programming.

### Emergency telephone

The emergency telephone is a single-line telephone (not a Norstar telephone) that functions independently of the Norstar system. You can use the emergency telephone when your Norstar system is not working.

Emergency Transfer/Power Failure Cut-through provides basic telephone service on external line 001 through an Emergency Telephone if the power fails or if a system error occurs.

The emergency telephone is usually located near the Key Service Unit (KSU). Each KSU can support two Emergency telephones, and each Trunk Module can support one additional Emergency telephone.

### Extra-Dial telephone

In Service Modes, a second telephone can be assigned to ring on calls made to a Direct-Dial telephone. There may be one Extra-Dial telephone for each Direct-Dial telephone, and it may be a different telephone in each Service Mode.

### Hotline telephone

You can call a programmed internal or external telephone number simply by picking up the receiver of the Hotline telephone (or by pressing Handsfree).



A Hotline telephone can be set up to dial an operator or an emergency number. You should put a notice by the Hotline telephone to let people know which number will be dialed when they lift the receiver.

If the Hotline telephone is set up to dial an external number using the prime line, there must be an external prime line assigned to the telephone. If not, the Hotline call will fail.

The System Coordinator sets up the Hotline telephone, the telephone number it dials, and the line on which that number is dialed, in Administration programming.

#### To bypass a Hotline

Press a line button, or use the Pre-Dial or Automatic Dial feature before you pick up the receiver or press .

The following displays may occur at a Hotline telephone.

The line assigned to the Hotline is in use. Make the call using normal methods or wait until the Hotline line is free.

The Hotline has been set up to dial an external number on a prime line but the Hotline telephone does not have a prime line. This must be corrected in Configuration or Administration programming.

No free lines

The Hotline has been set up to dial an external number on a prime line but the Hotline telephone has an internal prime line and no access to line pools. This must be corrected in Configuration or Administration program'ing.

This message may also appear if the line pool assigned to the telephone is busy.

### Prime telephone

Each line in a Norstar system can have a telephone assigned to it as a Prime telephone. Calls not answered at their normal destinations are transferred to the Prime telephone. The Prime telephone is usually the telephone on the receptionist's desk and it is often the Control telephone and a Central Answering Position as well. A Prime telephone is assigned to a line in Configuration programming.

See the Answering the telephone section for the displays that may occur at a Prime telephone.

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# Speed Dial

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 Feature

## Make a speed dial call

You can quickly dial external telephone numbers that have been programmed onto speed dial codes.

1. Enter the Speed Dial feature code (   ).
2. Enter the appropriate two-digit Speed Dial code.

Norstar supports two types of Speed Dial codes, Personal and System. System Speed Dial codes are from 01 to 70. The System Administrator can assign numbers to System Speed Dial codes for the entire system in Administration programming. Personal Speed Dial codes are from 71 to 94 and may have different numbers assigned to them on each telephone. Users can program their own Personal Speed Dial numbers.

## Program Personal Speed Dial

 \* 

You can add or change a Personal Speed Dial number on your telephone.

1. Enter the Personal Speed Dial programming feature code (  \*  ).
2. Enter the code onto which you want to program a number.
3. If you want to include a line selection for this number, select the line or line pool.
4. Enter the number you want to program,

## Displays

You will see some of these prompts while using or programming Speed Dial.

9\_  
QUIT BKSP OK

Continue entering the number you wish to program: You can change the number by pressing the left side of the volume bar or by pressing **BKSP**. When you are finished, press  or **OK**.

Access denied

You have tried to program a Personal Speed Dial number while someone else on the system is in Configuration or Administration programming.

Autodial full

You have tried to enter a new personal speed dial number, but the memory for these numbers in your Norstar system is full.

Enter code

Enter a two-digit code between 71 and 94 for the personal speed dial number you want to program.

Enter digits  
QUIT OK

Enter the telephone number you wish to program exactly as you would if you were dialing it normally. When you are finished, press  or **OK**.

Invalid code

You have entered a code outside the code range (01-94).

No number stored

There is no number stored on the speed dial code you have dialed.

Program and HOLD

If you want to program a line or line pool selection for this speed dial, select the line or line pool. Otherwise, enter the telephone number you wish to program exactly as you would if you were dialing it normally. When you are finished, press .

```
Program and OK  
QUIT          OK
```

If you want to program a line or line pool selection for this speed dial, select the line or line pool. Otherwise, enter the telephone number you wish to program exactly as you would if you were dialing it normally. When you are finished, press  or OK.

```
Select a line
```

The line associated with your speed dialer is busy or there is no line associated with it. Select a free external line or line pool and enter the Speed Dial feature code again.

```
Speed dial>
```

Enter a two-digit Speed Dial code (01-94). You must enter the zero for codes 01 to 09.

## Notes

There is no difference between using Personal Speed. Dial and using System Speed Dial. They differ only in how you program them.

Speed Dial numbers may include line choices and Host System Signaling codes.

Speed Dial numbers are subject to the same Class of Service as regularly dialed numbers. System speed dial numbers can be programmed to bypass dialing restrictions.

Normally, speed dial numbers are shown on the display while they are being dialed. System speed dial numbers may be programmed to show a speed dial name instead of the number, keeping the actual number confidential.

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# System features ,

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The following features are available for the whole Norstar system.

## Accidental Disconnect Protection

If you accidentally drop the receiver back into the telephone cradle while answering a call, you can quickly retrieve the call.

1. Pick up the receiver again or press  . You are connected to your call.

## Automatic telephone relocation

If Automatic telephone relocation is enabled, you can move your telephone from one Norstar jack to another without it losing any of its custom programming. Your Installer enables Automatic telephone relocation in Configuration programming.

## Background Music

You can listen to music through your telephone speaker.

1. Enter the Background Music feature code.

### Warning

In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers or a similar organization if radio or TV broadcasts are transmitted through the Background Music feature of this telecommunication system.

Northern Telecom Inc. hereby disclaims any liability arising out of the failure to obtain such a license.

The music stops automatically if you make or answer a call.

Your Installer makes this feature available to all telephones in Configuration programming. You will need to supply a music source, such as a radio, attached to your KSU (Key Service Unit.)

## Cancel Background Music #

You can cancel Background Music.

1. Enter the Cancel Background Music feature code.

## . Class of Service

The Class of Service for a call consists of all the **Norstar** features and lines available to you for that call. This is determined by the features assigned to the telephone in Administration programming, including all Dialing Filters and Remote Access Packages.

Users who need to dial numbers not permitted by the Class of Service of the line or telephone that they are using, can switch to a different Class of Service by entering a Class of Service Password. Remote users can change the set of **Norstar** features available to them by entering the **DISA DN** followed by a Class of Service password. See Class of Service Password.

## Internal numbers

Each telephone in the **Norstar** system has its own internal number. The length of internal numbers in your system may be from 2 to 7 digits. All numbers in your system are the same length. Your Installer sets the length of internal numbers (also called the DN length) in Configuration programming.

To find out your internal number, use the Button **Inquiry**-feature ( \* ) on an internal line button. On the **M7100** telephone, Button inquiry shows your internal number followed by the function assigned to your single memory button.

## Lines

The following features and characteristics are associated with the use of lines.

### Disconnect Supervision

When Disconnect Supervision is assigned to a line, the Norstar system monitors it to detect if an external caller hangs up. This allows the system to release the line for other uses. Your Installer assigns disconnect supervision to lines in Configuration programming. Disconnect supervision can be turned on and off only on Loop start trunks. E&M and DID trunks are always disconnect supervised.

### Line appearance

Any of the lines in your system may appear at any of your telephones. Your Installer assigns lines to telephones in Configuration programming.

Usually, only the lines that are appropriate for a particular person appear at that person's telephone. When a line is assigned to a telephone it is automatically given a line button on that telephone, if a button is available. The M7100 telephone has no line buttons for its lines.

Normally, you cannot answer a call that is ringing on a line that does not appear on your telephone. The following features will allow you to pick up such a call: Call Pickup, Call Park, and Transfer.

### Hung lines

A line that has been redirected using Line Redirection may remain busy after a call is over. If this happens, the outgoing line for the redirection will also remain busy. These are hung lines and you must clear them.



Note that a line indicator that has been solid for a long time is the only real indication that a line is hung. However, the solid line indicator may also indicate a genuine call in progress. Make reasonably sure that the line is indeed hung before clearing it or you may cut off a real conversation.

You can clear a hung line only at the telephone that was used to redirect the line.

1. Select Button inquiry (  \* 0 ) at the telephone that was used to redirect the line.
2. Press the button of the redirected line.
3. Press SHOW or .
4. Press DROP or . The hung line is cleared.

Clearing the redirected line clears the outgoing line for the redirection as well.

## Line Pools

A line pool allows each telephone access to external lines from a group (or "pool") of external lines. You can access such lines by pressing an Intercom button and entering a line pool access code or by pressing a memory button programmed with the line pool feature code.

## Private lines

A private line is exclusive to a particular telephone. Calls that are put on hold or left unanswered on a private line cannot be picked up at any telephone except the Prime telephone.

## Prime line

Your telephone can be programmed to select an internal or external line or a line pool automatically whenever you lift the receiver or press . This is your Prime line.

### Ringling Line Preference

Each telephone in the Norstar system can be programmed to ring or remain silent for incoming calls on any external lines that appear on the telephone.

For example, a telephone may have buttons assigned for lines 1 to 3, but have only lines 1 and 2 programmed to ring. An incoming call on any of the three lines causes a line button indicator to flash, and the telephone can be used to answer the call. This is especially useful for people who monitor other telephone lines, but want only their own lines to actually ring.

If a telephone has an external line as a prime line, that line is usually made to ring.

### Target line

A target line is used to route a call dialed with a particular number to a particular telephone or group of telephones. A target line can be used for incoming calls only. A single trunk may provide connections to several different target lines. This allows each person or department in the office to have their own number without having as many trunks on the system as there are people in the office.

### Overflow Call Routing

If a call comes in for a target line that is busy, Norstar routes the call to the Prime telephone for that target line. If there is no Prime telephone assigned to the target line or if a call cannot be directed to a target line, the call will go to the Prime telephone for the incoming trunk.

### System Speed Dial

Speed dial codes 01 to 70 are the same for the entire system. See the Speed Dial section for details.

---

# Time features

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The Time features let you check the present time and how long you have spent on a call.

## Call Duration Timer

Feature

You can see how long you spent on your last call or how long you have been on your present call.

1. Enter the Call Duration Timer feature code.
2. Read the display.

## Show Time

Feature

You can see the present date and time while you are on a call.

1. Enter the Show Time feature code.
2. Read the display.

## Displays

One of the following displays will occur when you use a Time feature.

Make call first

You have not made a call since your telephone's clock was last reset.

432 1 02: 47

The display shows the last call you made, or the current call, and the total elapsed time in minutes and seconds.

APR 9 9:54 am

The display shows the present time.

---

# Transfer

---

Feature  7 0

## Transfer a call

Feature  7 0

You can transfer a call to another person in your office.

1. Enter the Transfer feature code (   7  0 ).
2. Dial the number of the person to whom you want to transfer the call.

To transfer a call to someone outside your office, see Unsupervised Conference below.

## Transfer with Announcement

Feature  7 0

You can consult a co-worker before transferring a call. This type of Transfer can only be used on the M7324 and M7310 telephones.

1. Enter the Transfer feature code.
2. Press ANNOUNCE.
3. Enter the number of the co-worker to whom you are transferring the call. You can announce the transfer when your co-worker answers.
4. Press JOIN.

## Unsupervised Conference

You can use the Unsupervised Conference feature to connect yourself and two other people, then drop out of the conference leaving the other two to talk to each other. If both parties are external, certain restrictions apply. See Notes below.

1. Establish a Conference call as described in Conference.
2. Enter the Transfer feature code (   7  0 ).

If you are unable to establish an unsupervised conference, you can put the conference on hold. See the Conference section.

## Transfer using Hold

Call the person you want to transfer the call to and tell them there is a call on hold for them. Do not enter the Transfer feature code. To accept the call, your co-worker presses the line button with the flashing indicator.

Transfer using Hold can only be used to transfer an external call to another telephone that has a button for the line that the external call is on.

An M7100 telephone can transfer a call using Hold but it cannot receive a call transferred in this way.

## Displays

You will see some of the following displays while transferring calls.

4321 busy  
CALLBACK

The person to whom you tried to transfer a call is on another call. Press CALLBACK or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

4321 DND  
CALLBACK

The person to whom you tried to transfer a call has Do Not Disturb active on their telephone. Press CALLBACK or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

4321 hung up

The internal caller you were trying to transfer hung up before the transfer was complete.

4321 no reply  
CALLBACK

The person to whom you tried to transfer a call did not answer. Press CALLBACK or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

4321>4322  
CANCEL JOIN

Press JOIN to transfer the call from telephone 4321 to telephone 4322.

Announce to:  
CANCEL

Dial the internal telephone number of the person to whom you want to transfer the call. If you are already connected to that person, press the line button of their call.

Calling 4321  
CANCEL JOIN

Press JOIN to connect the two calls. Press CANCEL to reconnect to the person you were trying to transfer. If you are not reconnected, press Rls and then press the line button of the call on hold.

Calling 4321  
PRIORITY LATER

Either wait for the telephone to be answered, or press LATER to use the Ring Again or Message features, or press PRIORITY to make a priority call.

Line001 hung UP

The external caller you were trying to transfer has hung up before the transfer was complete.

Line001>4321  
CANCEL JOIN

Press JOIN to transfer the call on line 001 to telephone 4321.

Make call first

You have tried to use the Transfer feature when you have no call to transfer:

Not in service  
CALLBACK

The telephone to which you are trying to transfer a call is out of service. Press CALLBACK or the flashing line button to reconnect to the call. On the M7100 telephone, lift the receiver.

Not in service

The telephone to which you are trying to transfer a call is out of service.

**Transfer denied**

Your transfer cannot be completed for one of these reasons:

- All the internal resources needed to perform a transfer are in use. Try again later.
- You have tried to transfer an external call to another external party. Try establishing an Unsupervised Conference instead.
- An Unsupervised Conference is not possible for your call. See Notes below.

Press **ANNOUNCE** if you wish to announce the call. Otherwise enter the internal number of the person you want to transfer the call to.

## Notes

You can establish an Unsupervised Conference whether the other two people are inside or outside the Norstar system. However, if both of the other people are outside the system there are some restrictions: At least one of the outside callers must have called you and that call must be on a disconnect supervised line.

You may discover that you can establish an Unsupervised Conference between two internal calls or one internal and one external call, simply by hanging up or pressing **Ris**. This is not a good habit to get into, because if you do it when you have two external calls, you will drop the calls.

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# Using **Norstar** remotely

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You can use the lines, and some of the features, of a Norstar system from outside that system. You can do this over the public telephone network when you are away from the office, or you can call into a Norstar system in another office from your own Norstar system over a private network.

The exact facilities available to you through Remote Access will vary depending on how your system is set up. The Norstar features that can be made available to remote users are: access to lines, access to line pools, and remote paging.

## Examples

A salesman who spends most of his time on the road needs to make long distance calls to the European office. Your Norstar system has a leased line to Europe with reduced transatlantic charges. You provide that salesman with a Class of Service password that gives access to the transatlantic line. The salesman can then telephone into the Norstar system from a client's site, enter his Class of Service password, and use the leased transatlantic line to make his calls.

The manager of one of your branch offices also needs to talk to the European office. She uses a private network line between her branch office and the head office to access the head office's Norstar system and use its transatlantic lines.

## Accessing **Norstar** remotely

### Over the public network

You can use Norstar remotely over the public telephone network.



1. Dial the Norstar system's remote access number.
2. If you hear stuttered dial tone, enter a COS password.
3. Wait for system dial tone.

### Over a private network

You can access Norstar remotely using a private network line.

1. Select the private network line or the line pool that contains private network lines.
2. Dial the number, if any, needed to access the remote system.
3. If you hear stuttered dial tone, enter a COS password.
4. Wait for system dial tone.

## Using **Norstar** remotely

Once connected to a remote system you can do any one of the following:

- enter the DISA DN followed by a COS password to change your Class of Service.
- dial the number of someone on the remote Norstar system.
- dial a line pool access code and make an external call.
- enter a paging feature code (60 through 63). Use  instead of [Feature] when entering the feature codes. See Page.

## Tones you may hear

Busy tone

The number you dialed on the Norstar system is busy. Your call will be disconnected after five seconds.

Norstar system dial tone

You may:

- enter the DISA DN followed by a COS password to change your Class of Service.
- dial the number of someone on the remote **Norstar** system.
- dial a line pool access code and make an external call.
- enter a paging feature code (60 through 63) using  instead of . See Page.

Fast busy tone

You have done one of the following:

- entered an incorrect COS password. Your call will be disconnected after five seconds.
- taken too long while entering a COS password. Your call will be disconnected after five seconds.
- tried to use a line pool or feature not permitted by your Class of Service. You will hear system dial tone again after five seconds.
- dialed a number in the **Norstar** system which does not exist. Your call will be disconnected after five seconds.

Stuttered dial tone

Enter your COS password on the dial pad of your telephone.

## Controlling access to your **Norstar** system

It is important that you maintain the security of your **Norstar** system by limiting access to authorized users and limiting those users to just those features they need. Remember that a remote user can make long distance calls that will be charged to your company and can make page announcements in your office.

## Direct Inward System Access

You can control access to your Norstar system with Direct Inward System Access (DISA). If you set up the trunk used for remote access for auto-answer with DISA, callers will hear stuttered dial tone and must enter a Class of Service password before they are allowed into the system. Access to your Norstar system from the public telephone network should always be controlled with DISA.

If you are setting up access to your system from another Norstar system over a private network, you may not need DISA. If you set up your E&M trunk to answer without DISA, callers from remote Norstar systems will receive system dial tone immediately.

Your DISA facility has a number (the DISA DN) which an external caller can dial when they hear system dial tone to activate DISA and enter a Class of Service password to change to a different Class of Service.

## Class of Service

You can control which feature a remote user can access through the Class of Service for the call. The Class of Service of a Remote Access call is determined either by the Class of Service password entered when the system answers with DISA or by the Class of Service associated with the trunk when the system answers without DISA.

After having accessed the system, a remote user can change the Class of Service for the call by dialing the DISA DN followed by a Class of Service password.

## Maintaining security

To maintain the security of your system, the following practices are recommended:

- Warn anyone to whom you give the remote access number to keep it confidential.
- Change Class of Service passwords often.
- Warn anyone to whom you give a Class of Service password to remember it and not to write it down.
- Remove the Class of Service password of anyone who leaves your company.

## Notes

Remote Access is possible only on DID and E&M trunks, and Loop start trunks that are set to auto-answer.

To use the system remotely, the telephone you are using to call the system must use tone dialing.

If the Loop start trunk used for Remote Access is set to unsupervised mode, auto-answer will not function and the caller will hear ringing instead of stuttered or system dial tone.

If you use one **Norstar** system to call remotely into another **Norstar** system, you can use the available features of the remote **Norstar** system by pressing [\*] followed by the feature code. If you press , you will invoke the features of the local system, not the remote one.

Your Installer sets trunks to be auto-answer, with or without DISA, in Configuration programming. DNs are set in Configuration programming. The System Coordinator sets up Classes of Service and Class of Service passwords in Administration programming.

---

# Voice Call

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Feature  

## Make a voice call

Feature  

You can make an announcement or begin a conversation through the speaker of another telephone in the system.

1. Enter the Voice Call feature code (    ).
2. Wait for the beep, then speak.

## Mute Voice Call tones

When a Voice Call begins at your telephone, you hear a beep every 15 seconds as a reminder that the microphone is on. You can stop it beeping.

1. Pick up the receiver or press  .

## Handsfree Answerback

If Handsfree Answerback is assigned to your telephone, you can respond to a Voice Call without touching the telephone.

1. When someone makes a voice call to you, simply start talking. Your telephone's microphone picks up your voice.

Your telephone will beep periodically to remind you the microphone is on. You can stop it beeping.

1. Pick up the receiver or press  .

## Voice Call Deny

Feature  

You can prevent your telephone from receiving voice calls.

1. Enter the Voice Call Deny feature code (    ). Voice calls will ring like regular internal calls. Your other calls will proceed normally.

## Cancel Voice Call Deny

Feature   

You can cancel Voice Call Deny.

1. Enter the Cancel Voice Call Deny feature code (     ).

## Displays

You will see some of these displays while making a voice call.

Dial voice call

Dial the internal number or press the internal autodial button of the person to whom you want to speak.

Voice call

The line is open for you to speak.

No voice call

The telephone receiving the call cannot accept voice calls for one of the following reasons: it is active or ringing with another call; it is in Call Forward mode; it is in Do Not Disturb mode; it has Voice Call Deny turned on; it is not a Norstar telephone.

Your call proceeds automatically as a regular ringing call.

## Notes

Once you have answered a voice call, you can put it on hold, transfer it, or otherwise treat it as a normal call.

When you have Handsfree Answerback assigned to your telephone, and you are using an On-Hook Dialing Mode, the microphone and speaker are both activated for external calls.

The System Coordinator assigns Handsfree Answerback to a telephone in Administration programming. You can not assign Handsfree Answerback capability to the M7100 telephone.

# Telephone user cards



## Norstar alphabetical feature list

<b>Background Music</b>	Feature <input type="text" value="8"/> <input type="text" value="6"/>	Cancel <input type="text" value="Feature"/> # <input type="text" value="8"/> <input type="text" value="6"/>
	Listen to music (provided by your office) through your telephone speaker when you are not on a call.	
<b>Button inquiry</b>	Feature <input type="text" value="*"/> <input type="text" value="0"/>	
	Check what is stored on any button. Use when labeling memory buttons.	
<b>Call Duration Timer</b>	Feature <input type="text" value="7"/> <input type="text" value="7"/>	
	Temporarily displays the approximate length of your current or most recent call.	
<b>Call Forward</b>	Feature <input type="text" value="4"/>	Cancel <input type="text" value="Feature"/> # <input type="text" value="4"/>
	Send your calls to another telephone within your Norstar system.	
<b>Call Park</b>	Feature <input type="text" value="7"/> <input type="text" value="4"/>	
	Automatically puts a call on hold and a retrieval code from 001 to 909 is displayed. The call can be retrieved from any telephone in your Norstar system.	
<b>Call Park Retrieval</b>	Intercom <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="1"/> to <input type="text" value="9"/> <input type="text" value="0"/> <input type="text" value="9"/>	
	Get a parked call from any telephone by selecting an internal line and entering the retrieval code (001 to 909). The M7100 Telephone has no <input type="text" value="Intercom"/> , so just dial the retrieval code.	
<b>Call Pickup Directed</b>	Feature <input type="text" value="7"/> <input type="text" value="6"/>	
	Answer any ringing telephone by using the feature code and dialing that telephone's internal number.	
<b>Call Pickup Group</b>	Feature <input type="text" value="7"/> <input type="text" value="5"/>	
	A member of a pickup group can answer a call that is ringing at another telephone within the same group.	
<b>Call Queuing</b>	Feature <input type="text" value="8"/> <input type="text" value="0"/> <input type="text" value="1"/>	
	Answers the next available call. Gives priority to the longest waiting external call.	
<b>Camp-On</b>	Feature <input type="text" value="8"/> <input type="text" value="2"/>	
	Lets you re-route a call to another telephone even if all its lines are busy. Enter the feature code, then dial the internal number of the receiving telephone. To answer the call, use Call Queuing. If more than one call is waiting, priority is given to incoming external calls over camped calls.	
<b>Class of Service</b>	Feature <input type="text" value="6"/> <input type="text" value="8"/>	
	Enter this feature code and a password provided by your System Coordinator to switch from one Class of Service to another. The Class of Service determines which numbers you can dial.	
<b>Conference/Transfer</b>	Feature <input type="text" value="3"/>	
	Lets you set up a three-person call or transfer a call to another telephone within or outside of your Norstar system.	
<b>Contrast Adjustment</b>	Feature <input type="text" value="*"/> <input type="text" value="7"/>	
	To adjust the contrast of your telephone display, enter the feature code and then press <b>Q</b> through <b>Q</b> (depending on your telephone) to select the correct level.	
<b>Dialing Modes</b>	Feature <input type="text" value="*"/> <input type="text" value="Q"/> <input type="text" value="2"/>	
	Lets you choose the method for dialing without lifting the receiver. To change the Dialing Mode from Standard Dialing to Pre-Dial or Automatic, enter the feature code, then press <input type="text" value="Q"/> to select the mode. Press <input type="text" value="Hold"/> to store the selected Dialing Mode.	



## 2 / MDR4 Feature Card

Standard Dialing: The ordinary way to dial without lifting the receiver. Press a line button, then dial the telephone number.

Automatic Dialing: Dial a telephone number automatically on the dial pad without picking up the receiver or pressing a line button.

Pre-Dial: Dial a telephone number, revise it by pressing **BKSP**, then press a line button to place the call. For the M7208 or M7100 Telephone, press **⏮** (volume down) on the volume bar to revise the number.

Pre-Dial (Line Pool): Program Pre-Dial on the telephone first. Dial a telephone number. Press a memory button that has been programmed for direct access to a Line Pool.

Do Not Disturb **Feature** **8** **5** Cancel **Feature** **#** **8** **5**  
Prevents incoming calls from ringing at your telephone.

Exclusive Hold **Feature** **7** **9**  
Temporarily suspends a call and prevents other telephones from picking it up.  
Exclusive Hold Retrieval: Press **Line** of the held call (press **Hold** on the M7100).

Group **Feature** **8** **0** **2** Cancel **Feature** **#** **8** **0** **2**  
Listening Use both the receiver and your speaker at the same time while you are on a call. To avoid acoustic feedback, hold the receiver away from the speaker during a call, and before hanging up, press **Ans**.

Language **Feature** **\*** **5** **0** **1**  
Choice English language: Displayed on your telephone.

**Feature** **\*** **5** **0** **2**  
Alternate language: Displayed on your telephone.

Last Number **Feature** **5**  
Redial Automatically redials the last external telephone number that you dialed.

Line Pools **Feature** **6** **4**  
Several external lines can be shared by a Group of telephones, but not all telephones require a button for every line. Enter the feature code, then enter the Line Pool access code.

Line **Feature** **8** **4** Cancel **Feature** **#** **8** **4**  
Redirection † You can redirect one or more lines on your telephone so that calls coming in on the line(s) will be directed to one or more locations outside the **Norstar** system.

Link **Feature** **7** **1**  
Generates a Link signal (also called flash or recall) to access other systems or carriers.

Long Tones **Feature** **8** **0** **8**  
Sometimes necessary to communicate with devices (such as fax or answering machines) which use longer tone signals. A Long Tone lasts as long as a dial pad button is held down.

Messages **Feature** **6** **5** Cancel **Feature** **#** **6** **5**  
Message, Reply: Call back the co-worker who sent you a message on your display.  
**Feature** **1** Cancel **Feature** **#** **1**  
Message, Send: Leave a message on a co-worker's telephone display to call you back.

† Feature not available on the M7100 Telephone.

## User cards

<b>Moving Line Buttons †</b>	<p>[Feature] * 8 1</p> <p>Lets you change the position of a line button. Enter the feature code and press the line button you want to move. Then, press the button to which you want the line to move. The two lines switch positions. Lines can not be moved to positions occupied by [Intercom], [Handsfree], or [Answer] buttons.</p>
<b>Page</b>	<p>[Feature] 6 0 1 to 6) (0 means all zones)</p> <p>internal (Zone): Make announcements, through the Norstar telephone speakers, to a select group or to all Norstar telephones.</p> <p>[Feature] 6 2</p> <p>External: Make announcements through your office's loudspeaker system (if connected).</p> <p>[Feature] 6 0 3 to 6) (0 means all zones)</p> <p>External/Internal: Make announcements through both your Norstar telephone speakers and your office's loudspeaker system.</p> <p>[Feature] 6 Q to 3) then zone (0 to 6)</p> <p>General: You have a choice of making announcements through the internal and external speakers. Press Q for internal, 2 for external or 3 for both.</p>
<b>Pause</b>	<p>[Feature] 7 8</p> <p>For Pulse and Tone Dialing: Inserts a 1.5 second delay in a number being dialed.</p> <p>E I</p> <p>For Pulse Dialing only: Inserts a 1.5 second delay in a number being dialed.</p>
<b>Priority Call</b>	<p>[Feature] 6 9</p> <p>Permits you to interrupt another telephone while it is on another call, or to override a telephone on Do Not Disturb. See your System Coordinator. When you are on another call, you have the option of blocking a Priority Call on your telephone by entering the Do Not Disturb feature code or by pressing [DND].</p>
<b>Privacy</b>	<p>[Feature] 8 3</p> <p>Prevents another telephone, which shares your line, from joining your current call or permits it to join.</p>
<b>Programmed Release</b>	<p>[Feature] * Q Q</p> <p>When programmed at the end of an External Autodial sequence, performs the same function as [Ris].</p>
<b>Ring Again</b>	<p>[Feature] 2</p> <p>Cancel [Feature] # 2</p> <p>When another telephone or Line Pool within the Norstar system is busy, Ring Again signals you to call back when the telephone or Line Pool becomes available.</p>
<b>Ring Type</b>	<p>[Feature] * 6</p> <p>Select a distinctive ring to help differentiate between your telephone and others nearby. Enter the feature code and press Q through Q to select the new Ring Type. Press [Hold] to store the new ring.</p>
<b>Ring Volume</b>	<p>[Feature] * 8 0</p> <p>Makes your telephone ring so you can adjust the volume, even while you are on a call.</p>

† Feature not available on the M7100 Telephone.

## 4 / MDR4 Feature Card

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Run/Stop  \*

When using the External Autodial programming feature, store more than one number on a memory button by inserting a break point between each two numbers. The first press of the memory button dials the first number; the second press dials the second number, and so on.

---

Saved Number

**Redial** Stores the external telephone number appearing on the display. Redials the number when the feature code is entered.

---

Service Modes

Cancel  #

You can assign a specific telephone to accept all ringing, external, incoming calls. You can program up to three different telephone answering options for specific times of the day, for example, at night or at lunch time. This eliminates the need to forward all your calls. Only an assigned Control Telephone can turn ON Service Modes. See your System Coordinator.

---

Show Time

You can temporarily display the date and the time while you are on a call.

---

Speed Dial  \*

Personal: Lets you program a telephone number into a Personal Speed Dial code (from 71 to 94)

Personal and System: Lets you dial a telephone number using Personal codes (71-94) or System codes (01-70). System Speed Dial codes are programmed by your System Coordinator.

---

Telephone  \*

**programming** External Autodial: Lets you store an external telephone number onto a memory button for one-button access to that number.

\*

Internal Autodial: Store an internal telephone number onto a memory button for one-button access to that telephone number.

\*

Program Features: Store a feature onto a memory button for one-button access to that feature.

**Note:** You cannot program    or  buttons.

---

Timed Release

Generates a longer Link signal (1.5 seconds). Use this feature when you want to release a call on your line but retain the use of the line for another call.

---

Transfer

Sends a call to another telephone within your Norstar system.

---

Trunk Answer

Lets you pick up an external call that is ringing on a line which has been placed into Service Modes from any telephone within the **Norstar** system. This feature does not work on private lines.

---

Voice Call

You can make a voice announcement or begin a conversation through the speaker of another telephone without first making the other telephone ring.

---

Voice Call Deny

Cancel  #

Prevents your telephone from receiving Voice Calls, permits only ordinary ringing calls.

---

## User cards

## Understanding Norstar features

### How to use Norstar features

You can use many features by pressing **Feature** plus a code.

1. Press **Feature**.
2. Enter the code from the dial pad.
3. Follow the display messages for specific operations of a feature.

### How to program Norstar features

You can program many features onto memory buttons by pressing

**Feature** \* **3**.

1. If you are on a call or have an open line, press **Hold** or **Rls**.
2. Press **Feature** **M7100** (Telephones, go to step 4.)
3. Press the memory button that you wish to program.
4. Press **Feature**, then enter the code from the dial pad.

Note: See your System Coordinator for more detailed information.

## Using Line Pools

### Line pool

With a Line Pool, several external lines can be shared by a group of telephones without requiring each telephone to have a button for every line. Telephones have access to external lines through a programmed system-wide access code. This code is assigned in Configuration programming and is particularly useful for M7100 Telephones which have no line buttons.

#### *To program a Line Pool feature button*

1. If you are on a call or have an open line, press **J** or **Rls**.
2. Press **Feature** \* **Q**.
3. Press the memory button you want to program.
4. Press **Feature** **6** **4**.
5. Enter the access code for a Line Pool.

#### *To use a Line Pool*

1. Press **Intercom** and dial the Line Pool access code for one of the Line Pools assigned to your telephone.

OR

Press **Line pool** (if programmed).

2. If you are using a line pool which connects you to the public network, dial the telephone number of the person you want to call.

If you are using a line pool which automatically connects you to another Norstar system, see *Using Norstar from outside the office*.

If you are using a line pool which automatically connects you to a system other than Norstar, follow the procedure for using that system. Ask your System Coordinator if you need help.

## Using Conference and Transfer

Conf/Trans

To conference (*three-way conference call*)

1. Make or answer the first call.
2. Put the first call on hold.
3. Make or answer the second call.
4. After the second call is connected, press **Feature** **3**  
(or press **Conf/Trans** if programmed).
5. Press the line button of the first held call. (This step is not required on the M7100 Telephone.)
6. Press **Rls** to end the conference call.

Managing *three-way* conference calls

See your System Coordinator for complete instructions for these operations:

**Putting a conference on ho/d** • Put your end of the call on hold; the other two callers can still speak to each other.

**Splitting a conference** • Speak privately to one of the callers.

**Disconnecting one party** • Drop one call and stay connected to the other.

**Independently holding two calls** • Put both parties on hold as separate calls.

To establish an *unsupervised conference*

When you are on a conference call, press **Feature** **7** **0** (or **Transfer** if programmed). The other two parties remain connected.

*Note:* If both of the parties are external, one of them must have called you. Some external lines may not support this type of transfer if two external parties are involved.

Transfer

Transfer **without** Announcement

1. Make or answer a call.
2. Press **Feature** **7** **0** (or **Transfer** if programmed).
3. Dial an internal telephone number or press an Internal Autodial button.  
The call is immediately transferred.

*Note:* If an external call is transferred to a busy internal line, or not answered after a few rings, the call automatically rings you back and the display indicates that the line was busy or that no one answered.

Transfer **with** Announcement

(Not available on the M7100 Telephone.)

1. Make or answer a call.
2. Press **Intercom**. The call is automatically put on hold.
3. Dial an internal telephone number or press an Internal Autodial button.
4. Announce the call after the called party answers.
5. Press **Feature** **7** **0** (or **Transfer** if programmed).
6. Press the line button of the first held call.

User cards

## Using Speed Dial

About Speed Dial codes

Speed Dial lets you dial external telephone numbers using a two-digit code. There are two types of Speed Dial codes. System Speed Dial codes (01 to 70) can be used from any Norstar telephone in the system and are assigned by your System Coordinator. Personal Speed Dial codes (71 to 94) can be used exclusively at your telephone and are assigned by you.

**Note:** You cannot assign Speed Dial codes while someone is programming your Meridian Norstar\* Business Communication System.

Assigning numbers to Personal Speed Dial codes

1. If you are on a call or have an open line, press **Hold** or **Rls**.
2. Press **Feature** \* **4** to enter Personal Speed Dial codes.
3. Enter a two-digit code (from 71 to 94).
4. Dial the telephone number you want to assign to that code.  
Telephone numbers cannot exceed 24 digits.
5. Press **Hold** to finish programming.
6. Keep a record of each Personal Speed Dial code.

Speed Dial

### Using Speed Dial

1. Press **Feature** **0** (or press **Speed Dial** if programmed).
2. Enter the two-digit SystemSpeed Dial code (01 to 70) or Personal Speed Dial code (71 to 94) for the number you want.

A line is automatically selected and your call is placed.

## Using Norstar from outside the office

Calling Norstar from outside the office

You can use your Norstar system even when you are not in the office. You will be able to use Norstar to make calls or use the paging feature. You may be required to enter a Class of Service password to get onto the system. Your Class of Service will determine which features you can use and which numbers you can dial.

### To connect to the Norstar system

1. Dial the remote access number provided by your System Coordinator.
2. If you hear stuttered dial tone, enter a 6-digit COS password.
3. When you hear steady dial tone, you are connected to the Norstar system.  
You can do one of the following:
  - Change your Class of Service by dialing the DISA DN and entering a Class of Service password.
  - Dial the number of someone in the office.
  - Enter a line pool access code to use external lines in a line pool.
  - Enter a Page feature code (\* **6** **0** through \* **6** **3**) and the appropriate page type and zone number to page someone in the office.

**Note:** Ask your System Coordinator for details on your Classes of Service and Class of Service passwords.

## The Norstar Prime Telephone

What is a Prime Telephone?

A Prime Telephone can be any Meridian Norstar\* telephone that has been assigned to provide a backup answering service for incoming external calls. An external call rings at a Prime Telephone when the call is not answered at any other telephones with that call's line appearance.

A Prime Telephone can be any one of the following:

- any Norstar telephone
- an M7310 telephone with a Busy Lamp Field (BLF)
- an M7324 telephone with a Central Answering Position (CAP) module(s).

Your role in operating a Prime Telephone

As the assigned Prime Telephone operator, you are responsible for answering unanswered external calls. You are alerted to these calls when your telephone display shows you a descriptive message, the line indicator flashes, and the call rings. ►

After answering a call, you may take a message or redirect the call to another telephone.

Who assigns the external lines for my Prime Telephone?

Check with your System Coordinator to determine which external lines have been assigned for backup answering and which of those lines ring at your Prime Telephone. To help you do your job well, this person should provide a list of names and numbers associated with each Norstar telephone and external line, and a list of System Speed Dial names and numbers. This person can also tell you which features have been assigned to your telephone.

There may be more than one Prime Telephone operator in your Norstar system. If this is the case, then each Prime Telephone operator is responsible for a particular group of assigned lines when providing a backup answering service. Let the appropriate people within your backup answering group know that you are now providing a service for them.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Answering calls

When do I answer a call?

You answer a call if:

- someone within Norstar calls you. You hear the Norstar internal ring (two quick rings followed by a longer pause), and an indicator ► flashes beside one of your telephone's intercom buttons.
- an external call comes directly to your Prime Telephone. You hear the familiar external telephone ring, and an indicator ► flashes beside one of your telephone's external line buttons.
- a call is redirected to your Prime Telephone from somewhere else within the Norstar system. You hear an internal ring, an external ring, or the Camp-On tone (two quick beeps), and you see a message on the display of your telephone.

---

**Note:** You do not answer the call if your Prime Telephone does not ring.

How do I answer a call?

If you want a line to be automatically selected:

1. Pick up the receiver or press Handsfree (if assigned).

OR

If you want to manually answer a line:

1. Press the line or intercom button with a slow flashing indicator ►.
2. Pick up the receiver if you want the handsfree microphone OFF.

---

**Note:** A fast flashing indicator ► shows that a line is on hold.

Handling more than one call at once

When you have more than one call arriving at your telephone, the Call Queuing feature allows you to answer each of the waiting calls by automatically selecting the next call for you.

Use Call Queuing when you are on a call and a new call alerts you by ringing at your telephone, or by sending Call Queuing tones.

1. Pick up the receiver to answer the first call.
2. Press Feature 8 0 **Q** or the Call Queuing button if programmed.

The call you were on is automatically put on hold.

3. To return to a previous call:

Press the external line button of the call on hold.

4. Continue to answer incoming calls.
5. Press Ris when you are finished with the call you are on.



## Redirected calls

Redirecting calls using display messages

The display messages which appear on your Prime Telephone for redirected Norstar calls should help you to understand why those calls were passed to your Prime Telephone. This information is useful when you need to decide what to do with the call once it has been answered.

The following table lists some example display messages that could appear on a Prime Telephone when you receive redirected calls:

Example Prime Telephone display message	What is happening to the call at the other telephone
Held by KAREN	Karen holds a call for too long.
JOHN DND	The call you transferred is returned to you because the telephone is in Do Not Disturb mode.
DRT Line025	Delayed Ring Transfer redirects an unanswered call on line 025.
Line012 to prime	A call on line 012 cannot ring elsewhere.
Line010>JANET	A call on line 010 was forwarded or routed to Janet, but was not answered.
Line003 callback	A transferred, camped, or parked call on line 003 was returned to the originator using the Callback feature, but was not answered.

The Held Line Reminder message **Held call** is repeated periodically after the first message **Held by KAREN** appears. This message is accompanied by the same tone used with the Camp-On feature (two quick beeps).

## Completing a call

### Your options

You have just answered a call for someone else. What do you do next?

You can:

Transfer the call to another telephone within or outside of the Norstar system.

OR

Camp the call on another Norstar telephone.

OR

Announce the call to the office, asking that someone take the call.

OR

Take a message.

---

### Transferring the active call

To another **Norstar** telephone:

1. Check whether the telephone to which you want to transfer is already busy:
  - Is there an indicator ► beside the Internal Autodial button for the other telephone?
  - If you have a BLF, is the indicator ON for the other telephone?
  - If you have a CAP module, is the indicator ► ON for the other telephone?
2. Transfer the call using one of these four methods:
  - Transfer with Announcement - you first talk on the telephone to the person to whom you want to transfer the call.
  - Transfer without Announcement - you immediately transfer the call after talking to the caller.
  - Establish a conference call.
  - Transfer using hold.

Do not forget that you can use programmed autodial buttons on your Norstar telephone and CAP module (if installed) to select a Norstar telephone.

To a telephone outside the Norstar system:

1. Call the person to whom you wish to transfer the call.
2. Establish a conference with the two parties.
3. Drop out of the conference using the Unsupervised Conference feature.

---

**Note:** Some external lines may not support an unsupervised conference call. In this case, you may put the conference on hold, allowing the other two parties to continue talking to each other.

**Note:** Do not use the **[Rts]** button to create an unsupervised conference. Although it will create an unsupervised conference with internal parties, it will not work in a conference with two external parties.

---

## Completing a call

- Camping the call** If the Norstar telephone you want to transfer the call to is busy on another call, you may want to camp the call on that telephone. The person receiving the camped call will hear Camp-On tones (two quick beeps).
1. Press **Feature** **8** **2** or the Camp-On button (if programmed).
  2. Dial the internal number of the other telephone or press its Internal Autodial button if programmed.
- 
- Announcing the active call** You are trying to pass calls you have answered to co-workers who are not at their telephones. Using the Page feature, you can announce the calls over the Norstar telephones, an external loudspeaker, or both. A co-worker hearing an announcement can answer the call from the nearest Norstar telephone.
- If you want your co-worker to fake the call from a specific Norstar telephone:***
1. Place the call on hold.
  2. Using the Page feature, announce the call and the location of the telephone to which you will transfer the call.
  3. Transfer the call to the appropriate Norstar telephone.
- OR
1. Camp the call on the appropriate Norstar telephone.
  2. Replace your receiver.
- If you want your co-worker to fake the call on a specific line:***
1. Place the call on hold.
  2. Use the Page feature to announce the call and its line number.
  3. Replace the receiver.
- Your co-worker can now go to the nearest Norstar telephone that has that line, select the line, and lift the receiver.
- If you want your co-worker to fake the call from any Norstar telephone:***
1. Use the Call Park feature to place the call on hold. Your telephone shows a three-digit Call Park Retrieval code on the display.
  2. Use the Page feature to announce the call and the Call Park Retrieval code.
  3. Replace your receiver.
- Your co-worker can now retrieve the call from any other Norstar telephone by lifting the receiver and dialing the three-digit code.
- 
- Note:** Remember that callback (the call is redirected back to your Prime Telephone) occurs if your transferred, parked, or camped call goes unanswered.

## Useful Norstar features

Informing your co-workers about their calls

Use the Send Message feature to notify co-workers that they should call you for information.

If the person you are trying to call is on another line, or their telephone has Do Not Disturb ON, a display message shows you that their telephone is busy. If the person you are trying to call does not answer, a display message informs you that there is no reply. In each case, you can use the Ring Again feature.

The Ring Again feature is a method of ensuring that you immediately know when there is a change in the use of the other telephone. You can then try again to place a call.

Working with other features

Some of the many special features which Norstar provides may be particularly useful to you. Some of these features, however, are only available if assigned during Configuration or Administration programming. Speak to your System Coordinator to determine which features you can use, and to obtain details on how to use them.

**Answer Group:** You can immediately answer and monitor a specific group of Norstar telephones, for example, your managers', using Answer buttons.

**Automatic Handsfree:** If programmed, you can use the Handsfree microphone and speaker for all your calls.

**Call Pickup Directed:** Anyone in the office can answer a call ringing at any other Norstar telephone by dialing that telephone's internal number.

**Call Pickup Group:** Any member of a specified group can answer an external or internal call ringing at another telephone within that specified group.

**Direct-Dial Telephone:** If your Prime Telephone is administered as a Direct-Dial telephone, anyone assigned to your Direct Dial telephone can quickly contact you by dialing an assigned single-digit number.

**Hotline:** A Norstar telephone may be programmed to automatically dial your Prime Telephone as soon as its receiver has been lifted.

**Multiple Prime Telephones:** There may be a requirement for more than one Prime Telephone to provide backup answering.

**Page Zone:** If you do not want to disturb the entire office with an announcement, you can direct the page to a choice of smaller areas.

**Priority Call:** If you have answered an urgent call for someone who is busy on another line, you can interrupt the person with this feature.

## Other information

### Some unique situations

If an external call comes to you, and no remaining external line buttons are available, the indicator ► for that call will appear next to any available intercom buttons on your telephone.

If your Prime Telephone receives a callback call, you will hear the internal telephone ring instead of the familiar external telephone ring.

The Held Line Reminder or the Delayed Ring Transfer feature is not available unless assigned during Configuration programming.

If you are using all of your external line buttons and intercom buttons, you can still receive a camped call (you will hear two quick beeps).

If your Prime Telephone is an M7324 telephone, you can monitor the busy/not busy status of other **Norstar** telephones. Check for the presence or absence of indicators ► beside the Internal Autodial buttons for the other telephones.

### Where to get help

To learn more about **Norstar** and its features, the System Coordinator can provide you with the following **Norstar** documents:

*The Meridian **Norstar** Telephone User Cards* show you how to:

- make an external call
- make an internal call
- put a call on hold
- use Handsfree
- program memory buttons.

The Meridian **Norstar** Feature Card lists the feature codes and describes the features.

The Meridian **Norstar** Busy Lamp Field (BLF) User Card describes how to use the Busy Lamp Field.

The Meridian **Norstar** Central Answering Position (CAP) User Card describes how to use Central Answering Position modules.

## Your Norstar M7100 telephone

Release button \_\_\_\_\_  
cancels active calls.

Display \_\_\_\_\_  
shows the time, date, call information and guides  
you while using Norstar\* features.

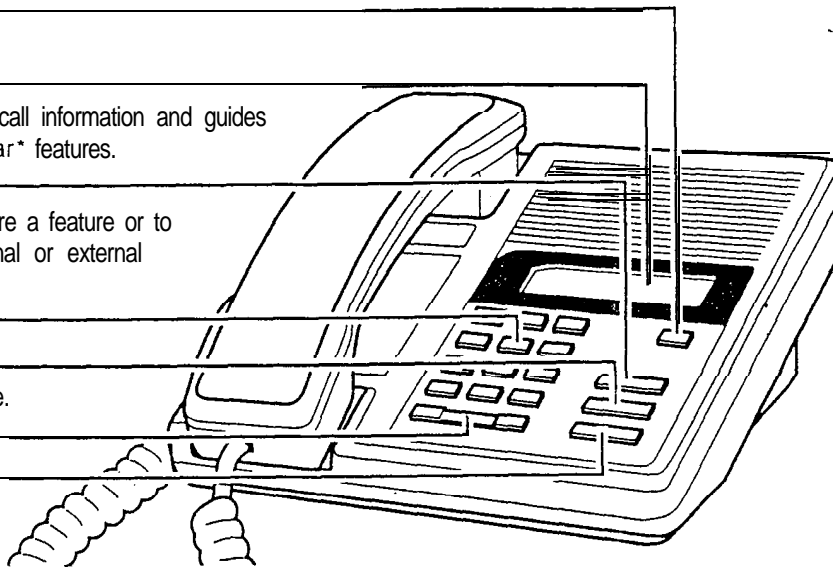
Memory button \_\_\_\_\_  
is programmable to store a feature or to  
automatically dial internal or external  
number.

Dial pad \_\_\_\_\_

'Feature button \_\_\_\_\_  
starts or ends a feature.

Volume control \_\_\_\_\_

Hold button \_\_\_\_\_



Button inquiry

Confirm that your memory button has the correct snap-on cap by checking its programming.

1. Release all calls and open lines with dial tone.
2. Press **Feature** \* 0 .
3. Read the display.
4. Press **Feature** when finished.

Adjusting display  
contrast

1. Press **Feature** \* 7 .
2. Press 1 to 9 for the level you want.

Selecting a ring type  
and volume

1. Press **Feature** \* 6 .
2. Press 1, 2, 3 or 4 to hear the different types of rings.
3. While the telephone is ringing, press **softer** **louder** to adjust the volume.
4. Press **softer** to store the ring.

Adjusting receiver or  
telephone speaker  
volume

1. Press **softer** **louder** when using the receiver or the speaker.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Making calls

### Internal calls

1. Pick up the receiver.
2. Dial the internal number.

### External calls

1. Pick up the receiver.
2. Dial  (or your system's external line access code).
3. Dial the external telephone number.

**Note:** Internal numbers and the external access code are supplied by your System Coordinator.

### Making and answering a second call

The M7100 telephone allows you to have two calls active at the same time. ' By using  you can switch between calls.

*To answer a second **call** while on another call*

1. Press  to put the first call on hold.  
The second call automatically comes onto the line.

*To hold a call and make a second call*

1. Press  to put the first call on hold.
2. Dial the telephone number for the second call.

*To return **to the first call***

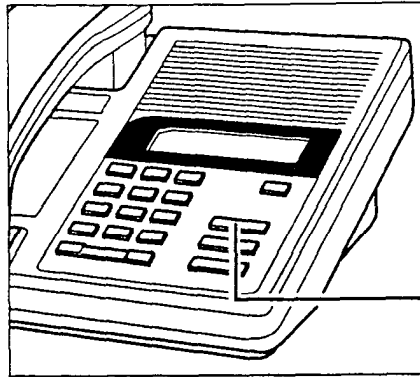
1. Press  again to return to the first call on hold.  
The second call is automatically put on hold.

*To hold a **call***

1. Press .
2. Press  again to return to the call on hold.  
Check the display for confirmation or additional information.

## Programming the memory button

About the memory button



The memory button can store a telephone number or feature code to give you one touch dialing or feature activation. You can change the memory button by programming it with a new number or feature code.

Memory button

Remember: Press  \*  to check the memory button.

Programming memory buttons

### External autodial

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Dial the external number.
4. Press  to store the number.
5. Label your new button.

### Internal autodial

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Dial the internal number.
4. Label your new button.

### Features

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press  and the feature code.
4. Label your new button.

### Erasing memory buttons

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press  to erase the button.



## Your Norstar M7208 telephone

**Display** —————  
shows the time, date, call information and guides you while using Norstar\* features.

**Indicators** —————  
appear beside active lines and features.

**Feature button** —————  
starts or ends a feature.

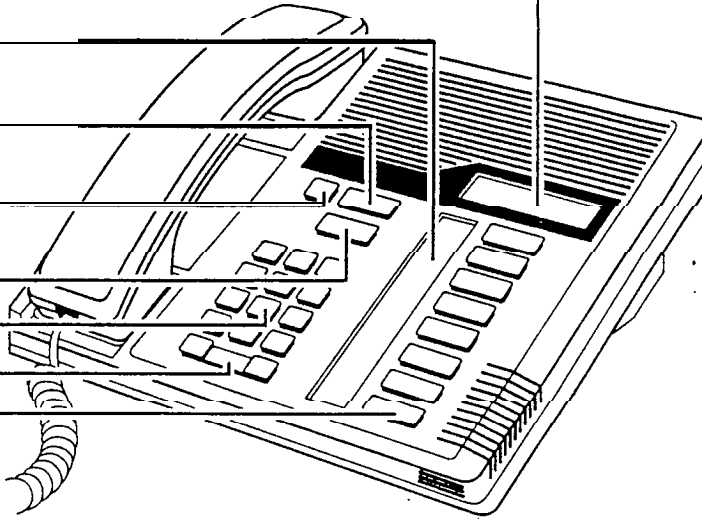
**Release button** —————  
cancels active calls.

**Hold button** —————

**Dial pad** —————

**Volume control** —————

**Memory and line buttons** —————  
are buttons with indicators for one touch dialing, feature operation or line access.



### Button Inquiry

Confirm that your memory and line buttons have the correct snap-on caps by checking their programming.

1. Release all calls and open lines with dial tone.
2. Press **Feature** \* **Q**.
3. Press the button you want to check.
4. Read the display,
5. Press **Feature** when finished.

### Adjusting display contrast

1. Press **Feature** \* **7**.
2. Press a number on the dial pad for the contrast level you want, the higher the number the higher the contrast level.

### Selecting a Ring Type and volume level

1. Press **Feature** \* **6**.
2. Press **1**, **2**, **3** or **Q** to hear the different types of rings.
3. While the telephone is ringing, press **Volume** to adjust the volume.
4. Press **Feature** to store the ring.

### Adjusting receiver or telephone 'speaker' volume

1. Press **Volume** when using the receiver or the speaker.

\* Meridian and Norstar are trademarks of Northern Telecom

## User cards

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

Line 1

#### *Infernal calls using Intercom buttons*

1. Pick up the receiver.
2. If ► appears beside an Intercom' button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### *External calls using numbered Line buttons*

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

*Note:* Internal numbers are supplied by your System Coordinator.

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#### *Internal calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside an extension button, then dial.

#### *External calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside the extension button, dial **9** (or your system's external line access code) and the number.

Hold

#### *Holding Calls*

1. Press **Hold** ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call.  
Check the display for confirmation or additional information.

#### *Automatic hold*

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### *Making calls*

1. Press **Handsfree** instead of picking up the receiver.

#### *Switching between **Handsfree** and handset*

1. Press **Handsfree** and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### *Using Mute*

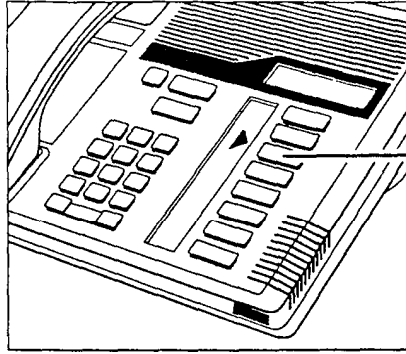
1. Press **Handsfree** to turn the microphone OFF.
2. Press **Handsfree** again to turn the microphone ON.

### Dialing without lifting the handset

1. Press a line button without ►, then dial your call.
2. When answered, pick up the receiver, or press **Handsfree**.
3. If the call is not answered, or the line is busy, press **Rls**.

## Programming memory buttons

About memory buttons



Memory buttons are the buttons with indicators other than line or Handsfree buttons. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation. You can change what a memory button does by just programming it with a new number or feature. You cannot program a line or Handsfree button.

*Remember:* Press  \*  to check a memory or line button.

Programming memory buttons

### *External autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Dial the external number.
5. Press  to store the number.
6. Label your new button.

### *Internal autodial*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

### *Features*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press a memory button.
4. Press  and the feature code.
5. Label your new button.

### *Erasing memory buttons*

1. If you are on a call or an open line with dial tone, press  or .
2. Press  \* .
3. Press the memory button you want to erase.
4. Press  to erase the button.

User cards

## Your Norstar M7310 telephone

Shift button \_\_\_\_\_  
for using the top function of a dual-memory button.

Display \_\_\_\_\_  
shows the time, date, call information and guides you while using Norstar\* features.  
The lower line of the display is reserved for display button instructions.

Dual-memory buttons \_\_\_\_\_  
store any two features and/or autodial numbers.

Display buttons \_\_\_\_\_

Feature button \_\_\_\_\_  
starts or cancels a feature.

Release button \_\_\_\_\_  
cancels active calls.

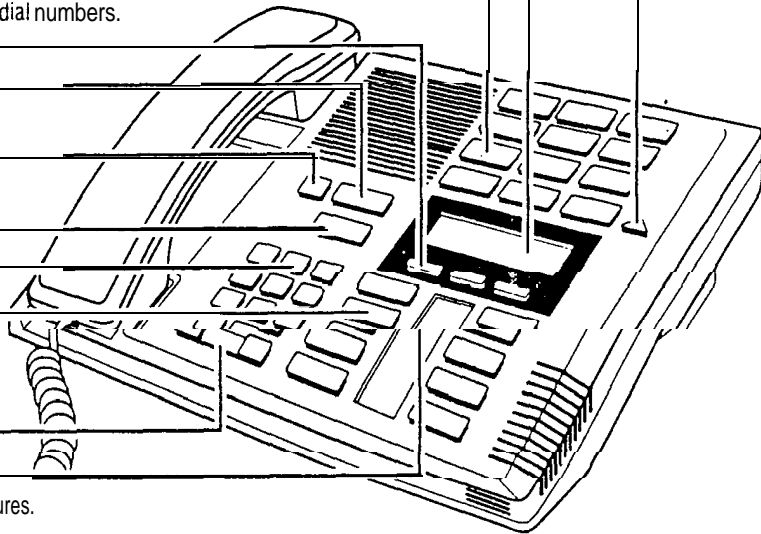
Hold button \_\_\_\_\_

Dial pad \_\_\_\_\_

Memory and line buttons \_\_\_\_\_  
are buttons with indicators for  
one touch dialing, feature  
operation or line access.

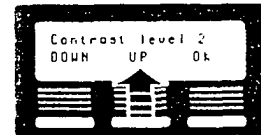
Volume control \_\_\_\_\_

Indicators \_\_\_\_\_  
appear beside active lines and features.



Using display  
buttons

Display buttons change with each feature you use.  
The labels for display buttons appear in capital  
letters directly above them on the second line of  
the display. A display button with an "OK" label  
above it is represented as OK in this card.



Button inquiry

Confirm that your memory and line buttons have the correct snap-on caps by  
checking their programming.

1. Release all calls or open lines with dial tone.
2. Press Feature \* 0 .
3. Press the button(s) you want to check and read the display.
4. Press Feature when finished.

Adjusting display  
contrast

1. Press Feature \* 7 .
2. Press UP or DOWN for the level you want.
3. Press OK when finished.

Selecting a ring type  
and volume level

1. Press Feature \* 6 .
2. Press 1, 2, Q or 4 to hear the different types of rings.
3. While the telephone is ringing, press softer or louder to adjust the volume.
4. Press OK to store the ring.

\* Meridian and Norstar are trademarks of Northern Telecom.

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

Line 1

#### **Internal** calls using *Intercom buttons*

1. Pick up the receiver.
2. If ► appears beside an intercom button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### External calls using *numbered Line buttons*

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

**Note:** Internal numbers are supplied by your System Coordinator.

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#### *Internal calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside an extension button, then dial.

#### *External calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside the extension button, then dial 9 (or your system's external line access code) and the number.

Hold

#### *Holding Calls*

1. Press **Hold** ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call.  
Check the display for confirmation or additional information.

#### *Automatic hold*

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### *Making calls*

1. Press **Handsfree** instead of picking up the receiver.

#### *Switching between Handsfree and handset*

1. Press **Handsfree** and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### *Using Mute*

1. Press **Handsfree** to turn the microphone OFF.
2. Press **Handsfree** again to turn the microphone ON.

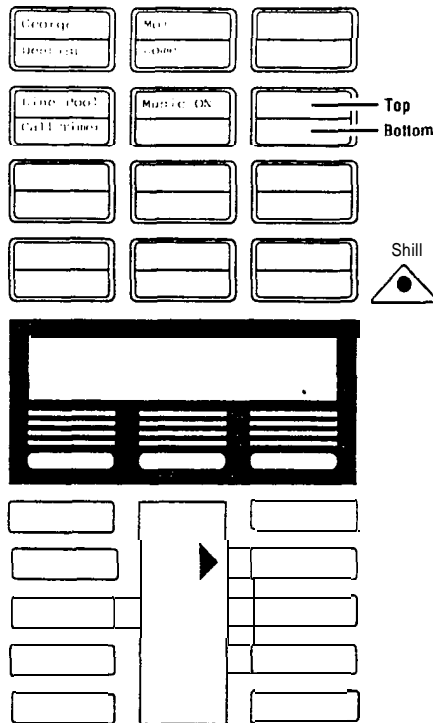
### Dialing without lifting the handset

1. Press line button without ►, then dial your call.
2. When answered, pick up the receiver, or press **Handsfree**.
3. If the call is not answered, or the line is busy, press **Ris**.

### User cards

## Programming memory buttons

About memory buttons



There are two types of memory buttons: single-memory and dual-memory. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation.

### Dual-memory buttons

To use the bottom function, press the dual-memory button.  
To use the top function, press the shift button, then press the dual-memory button.

### Single-memory buttons

Single-memory buttons are the buttons with indicators other than line or Handsfree buttons.

Remember: Press **Feature** \* **0** to check a memory or line button.

Programming memory buttons

### External *autodial*

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press a memory button.
4. Dial the external number.
5. Press OK to store the number.
6. Label your new button.

### Internal *autodial*

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **2**.
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

### Features

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **3**.
3. Press a memory button.
4. Press **Feature** and the feature code.
5. Label your new button.

### Erasing memory buttons

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press OK to erase the button.

User cards

## Your Norstar M7324 telephone

### Memory and line buttons

are buttons with indicators for one touch dialing, feature operation or line access.

### Display

shows the time, date, call information and guides you while using Norstar\* features. The lower line of the display is reserved for display button instructions.

### Display buttons

### Dial pad

### Volume control

### Feature button

starts or ends a feature.

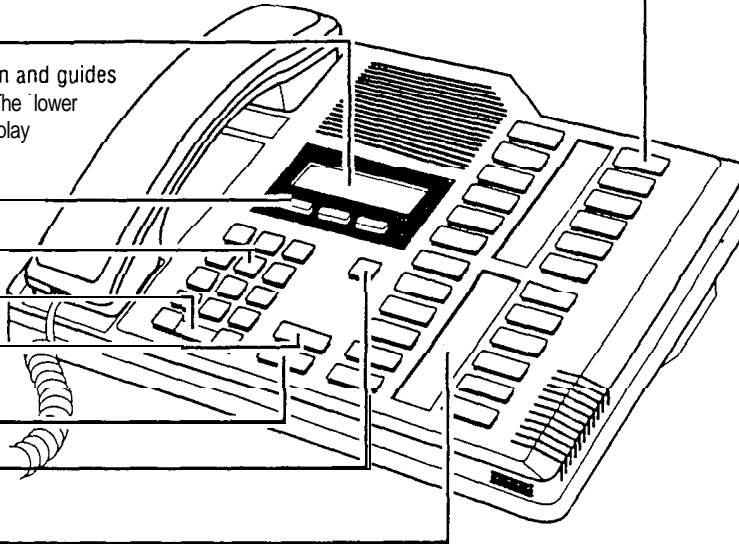
### Hold button

### Release button

cancels active calls.

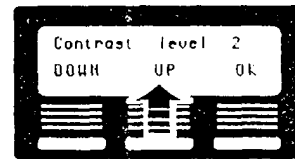
### Indicators

appear beside active lines and features.



### Using display buttons

Display buttons change with each feature you use. The labels for display buttons appear in capital letters directly above them on the second line of the display. A display button with an "OK" label above it is represented as **OK** in this card.



### Button inquiry

Confirm that your memory and line buttons have the correct snap-on caps by checking their programming.

1. Release all calls or open lines with dial tone.
2. Press **Feature** \* **0**.
3. Press the button(s) you want to check and read the display.
4. Press **Feature** when finished.

### Adjusting display contrast

1. Press **Feature** \* **7**.
2. Press **UP** or **DOWN** for the level you want.
3. Press **OK** when finished.

### Selecting a ring type and volume level

1. Press **Feature** \* **6**.
2. Press **1**, **2**, **3** or **4** to hear the different types of rings.
3. While the telephone is ringing, press **softer** or **louder** to adjust the volume.
4. Press **OK** to store the ring.

\* Meridian and Norstar are trademarks of Northern Telecom.

## User cards

## Making calls

### About line buttons

Norstar systems can have different types of line buttons. Match the line buttons on your telephone with the ones below for instructions on how to use them.

Intercom

Line 1

#### *Internal calls using intercom buttons*

1. Pick up the receiver.
2. If ► appears beside an Intercom button, then dial.  
OR  
Press an Intercom button without ►, then dial.

#### *External calls using numbered Line buttons*

1. Pick up the receiver.
2. When ► appears beside a numbered Line button, then dial.  
OR  
Press a numbered Line button without ►, then dial.

**Note:** Internal numbers are supplied by your system coordinator.

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#### *Internal calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside an extension button, then dial.

#### *External calls using extension buttons*

1. Pick up the receiver.
2. When ► appears beside the extension button, then dial  (or your system's external line access code) and the number.

Hold

#### *Holding Calls*

1. Press  ► flashes beside the line on hold.
2. Press the line button with the flashing ► to return to the call.  
Check the display for confirmation or additional information.

#### *Automatic hold*

Calls are put on hold automatically when you switch from one line to another.

Handsfree

This button operates the telephone's built-in microphone and speaker in place of the receiver. Your System Coordinator can program Handsfree to your telephone.

#### *Making calls*

1. Press  instead of picking up the receiver.

#### *Switching between Handsfree and handset*

1. Press  and replace the handset to switch to Handsfree.
2. Pick up the receiver to switch back.

#### *Using Mute*

1. Press  to turn the microphone OFF.
2. Press  again to turn the microphone ON.

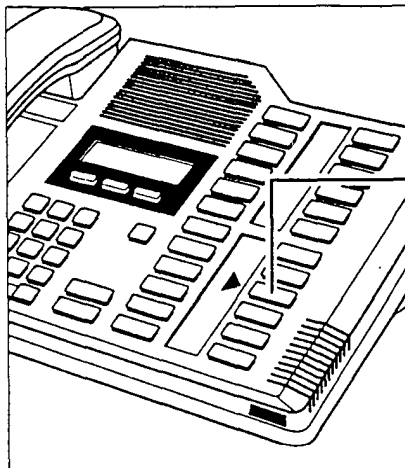
### Dialing without lifting the handset

1. Press a line button without ►, then dial your call.
2. When answered, pick up the receiver, or press .
3. If the call is not answered, or the line is busy, press .



## Programming memory buttons

### About memory buttons



Memory buttons are the buttons with indicators other than line or Handsfree buttons. Memory buttons store telephone numbers or feature codes to give you one touch dialing or feature activation. You can change what a memory button does by just programming it with a new number or feature.

If you have programmed a memory button with an internal number the indicator comes on when the number is busy.

Remember: Press **Feature** \* **0** to check a memory or line button.

### Programming memory buttons

#### *External autodial*

1. If you are on a call or an open line with dial tone, press **Hold** Or **Rls**.
2. Press **Feature** \* **1**.
3. Press a memory button.
4. Dial the external number.
5. Press OK to store the number.
6. Label your new button.

#### *internal autodial*

1. If you are on a call or an open line with dial tone, press **Hold** Or **Rls**.
2. Press **Feature** \* **2**.
3. Press a memory button.
4. Dial the internal number.
5. Label your new button.

#### *Features*

1. If you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **3**.
3. Press a memory button.
4. Press **Feature** and the feature code.
5. Label your new button.

#### *Erasing memory buttons*

1. if you are on a call or an open line with dial tone, press **Hold** or **Rls**.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press **OK** to erase the button.



## Busy Lamp Field User Card

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The Meridian Norstar\* Busy Lamp Field (BLF) is a device with indicators that turn ON individually when telephones in your office are in use. The BLF attaches to your M7310 telephone and is a welcome aid when you answer the telephone for co-workers or operate a message center. You can tell at a glance which telephones are in use and avoid interrupting people who are busy on calls.

The Busy Lamp Field  
attached to an  
**M7310** telephone



The Busy Lamp Field indicators are arranged to match up with the dual-memory buttons above the display of your M7310 telephone. Each half of a dual-memory button that has been programmed as an internal **autodial** button is matched with one half of a BLF indicator. The top portion of a BLF indicator turns ON when showing an active call on the top half of a dual-memory button; the bottom portion turns ON when showing an active call on the bottom half of a dual-memory button.

If you move an internal **autodial** number from one button to another, the BLF indicator moves automatically. BLF indicators corresponding to internal **autodial** buttons turn ON and OFF.

*The BLF indicator is ON*

- | When a call is active on a **Norstar** telephone
- OR
- | For those features that use indicators to show their ON or OFF status.

*The BLF indicator is OFF*

- | When there is no active call at that telephone
- OR
- | When a call is being held at a telephone and there is no other call active.

## Using the Busy Lamp Field

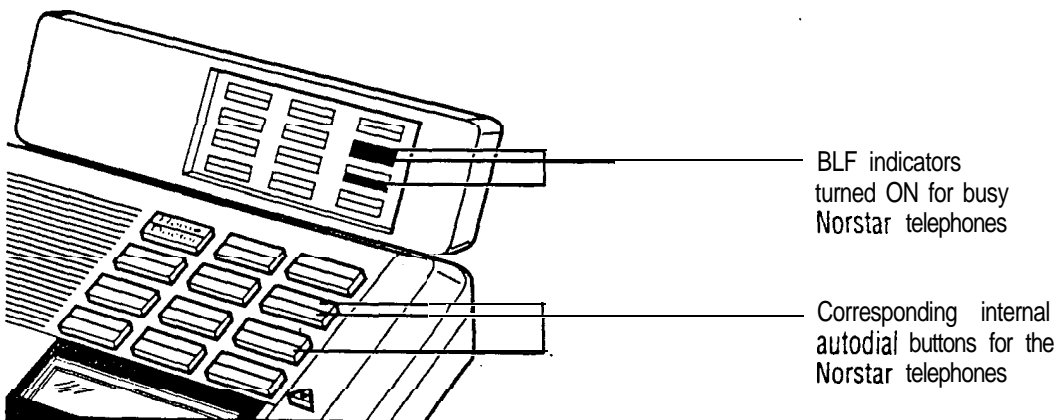
The BLF indicator shows you the busy/not busy status of any Norstar telephone within your office. When a call for one of your co-workers comes to your telephone, there are many possible ways to handle it. The lists below show some of these options. As soon as you learn who a call is for, check the appropriate indicator on the BLF.

*If the indicator is ON*

- Use Send Message
- OR
- Use Ring Again on Busy
- OR
- Try to call on an internal line. The person you call will hear a muted ringing.

*If the indicator is OFF*

- Transfer the incoming call immediately using the Transfer feature (if equipped)
- OR
- Announce your call using the Conference/Transfer or Transfer feature.



You will quickly become familiar with the layout of your internal **autodial** buttons and the matching layout of the Busy Lamp Field indicators. Remember, you can change any internal **autodial** number on a **dual-memory** button and the BLF automatically changes too.

Please be sure to read your *Norstar M7310 User Card* and your *Norstar Prime Telephone User Card* (if applicable). They contain information which shall help you to use **Norstar** features effectively with your BLF.

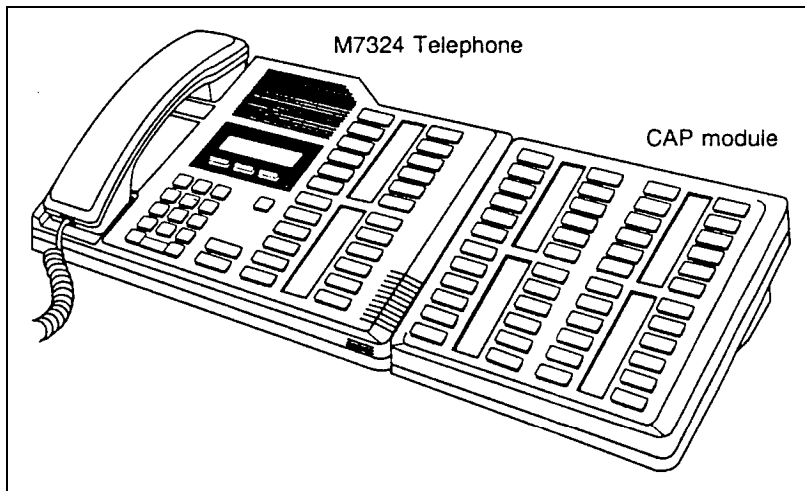
## The Central Answering Position (CAP)

**Why use the CAP?** The Meridian Norstar\* Central Answering Position (CAP) consists of a Norstar M7324 Telephone and one or two Norstar CAP modules. The CAP allows you to:

- answer calls made from outside your Norstar system
- check the busy/not busy or Do Not Disturb status of the telephones in your Norstar system
- transfer calls to your co-workers' telephones
- use many more features and autodial numbers with one-touch access.

**What is a CAP module?** A CAP module is an add-on device which provides 48 extra memory or line buttons for the M7324 Telephone. A CAP module is connected to the side of the M7324; a second CAP module can be connected to the first CAP module. See the *Norstar Central Answering Position Installer Card* for instructions on installation. When two CAP modules are connected to a Norstar M7324 Telephone, they provide a total of 96 extra memory or line buttons for the M7324 Telephone.

**Norstar M7324 Telephone with one CAP module attached**



By pressing a line button on your CAP module and lifting the receiver, you can answer a call made from outside your Norstar system. Pressing the appropriate programmed memory button allows you to automatically dial an internal or external number, or use a feature.

**Note:** A headset may be plugged into the bottom of the M7324 Telephone when Handsfree has been administered.

## Checking the pre-assigned CAP module buttons

About pre-assigned buttons

When one or two CAP modules are first plugged into your telephone, each CAP module button is pre-assigned either to select a line or dial an internal number.

If you have been assigned up to 12 lines, you can select them by pressing the buttons in the left-hand column of your M7324 telephone. Remaining lines are assigned to buttons on the CAP module(s), beginning at the top left-hand corner of the first CAP module and moving down.

After lines are assigned, any remaining buttons on your CAP module(s) become Internal **Autodial** buttons, starting with the lowest default internal number. These internal numbers can be between two and seven digits. The numbering length is controlled in Configuration programming.

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**Note:** In order for lines to be automatically assigned to buttons on your CAP module, your telephone must first be designated as a CAP in Configuration programming.

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Checking the pre-assigned CAP module buttons

1. Replace the receiver,
  2. Press  \* 0 .
  3. Press the buttons you want to check and read the display.
  4. Ensure that your pre-assigned line buttons and Internal Autodial buttons have the correct snap-on caps.
  5. Press  when you are finished.
- 

Customizing your CAP module

You can program any of the buttons on your CAP module that do not select lines. These buttons can be programmed to automatically dial internal or external numbers. You can also program features onto CAP module buttons. If you want more line buttons programmed, see your System Coordinator.

Your CAP module will be most effective if you use it along with the Call Park, Transfer, Conference/Transfer, Camp-On, Message, or Voice Call features. Make sure that these features are programmed on your CAP module buttons by following the steps presented in this card.

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User cards

## Programming CAP module buttons

### Programming CAP module buttons

#### *External Autodial*

1. Replace the receiver.
2. Press **Feature** \* **1**.
3. Press a CAP module button.
4. Dial the external number.
5. Press OK to store the number.
6. Label your new button.

#### *Internal Autodial*

1. Replace the receiver.
2. Press **Feature** \* **2**.
3. Press a CAP module button,
4. Dial the internal number.
5. Label your new button.

#### *Erasing memory buttons*

1. Replace the receiver.
2. Press **Feature** \* **1**.
3. Press the memory button you want to erase.
4. Press OK to erase the button.

#### *Features*

1. Replace the receiver.
2. Press **Feature** \* **3**.
3. Press a CAP module button.
4. Press **Feature** and the feature code.
5. Label your new button.

#### *Moving external line buttons*

1. Replace the receiver.
2. Press **Feature** \* **8** **1**.
3. Press the line button which you want to move.
4. Press the memory button on your telephone or CAP module to which you want the line moved.
5. Label your new button.

### Monitoring Internal Autodial indicators

It is important that you pay attention to the indicators ► beside the internal **Autodial** buttons on your CAP module. This tells you the status of a **Norstar** telephone when you answer an external call.

#### *An indicator appears:*

- ⌋ When the telephone is active on an internal or external line  
OR
- ⌋ When the telephone is using the Do Not Disturb feature.

#### *No indicator appears:*

- ⌋ When the telephone is idle  
OR
- ⌋ When the telephone is ringing  
OR
- ⌋ When the telephone has one or more calls on hold, but is not connected to any active calls.

The status of a **Norstar** telephone cannot be monitored by your CAP module if an Internal **Autodial** button has not been programmed.

## Answering and transferring a call

Answering and transferring a call

Most of the telephone calls which you deal with should involve the following procedures:

1. Answer a call made from outside the Norstar system.
2. Determine whom the call is for.
3. Check the status of the destination Norstar telephone on the CAP module.
4. If the indicator is OFF, transfer the call to that telephone.

OR

If the indicator ► is ON, use the Send Message, Ring Again on Busy, or Camp-On feature.

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**Note:** If your telephone has been assigned as a CAP in Configuration programming, you can send up to 30 messages. If your telephone has not been assigned as a CAP, you can send up to four messages.

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Other Norstar documents

Please be sure to read your *Norstar M7324 Telephone User Card* and your *Norstar Prime Telephone User Card* (if applicable). They contain information which should help you to use Norstar features more effectively with your CAP.

# Glossary





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# Glossary

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## A

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**Access code:** A sequence of characters used to gain entry into any type of **Norstar** system programming.

**Administration:** A program that lets one person in your office (the System Coordinator) assign and maintain certain settings on the **Norstar** system.

**Administration access code:** To enter Administration programming, enter:  
 \* \* A D M I N. You will be asked for an Administration password.

**Administration password:** A one to six-digit password which is used to prevent unauthorized access to Administration programming. The Administration password can be assigned and changed in Administration programming.

**Alarm code:** A number which appears on the Alarm Telephone's display, informing you that the KSU has detected a fault in the system.

**Alarm Set (Alarm Telephone):** A telephone which is designated to receive reports of **Norstar** system problems. This function is usually assigned to a Prime Telephone, but this can be changed in Configuration programming.

**Analog Terminal Adapter (ATA):** A device which permits the connection of analog telecommunication devices such as FAX machines, answering machines, and single line telephones to the **Norstar** system. Programmed defaults for the ATA are automatically assigned by the **Norstar** system.

**Answer button:** A telephone button with an indicator which is used to monitor another telephone. The Answer button indicates incoming calls destined for the other telephone. Someone working at a telephone with Answer buttons (a receptionist, for example) can receive all ringing and visual indication of incoming calls for other telephones, and answer those calls when necessary.

One telephone can have up to four Answer buttons. An Answer button is automatically assigned to a telephone when that telephone is assigned an Answer DN.

**Answer DN:** The Directory Number (DN) of a telephone that is monitored by an Answer button. Up to four Answer DNs can be assigned to a telephone. This is done in Configuration programming.

**Answer mode:** In Configuration programming, this subheading allows you to set the way in which the **Norstar** system will answer incoming calls on loop start and E&M trunks. The alternatives are manual and auto.

**Answer with DISA:** In Configuration programming, this subheading allows you to set whether an auto-answer trunk will be answered with Direct Inward System Access.

**Autodial button:** A memory button which, if programmed, provides one-touch dialing of external or internal numbers.

**Auto-answer trunk:** A trunk on which calls are answered by the system. The system either routes the call to a target line, or provides system dial tone or stuttered dial tone (see Remote Access). How the call is handled is determined by the received digits which are all or part of the telephone number used to dial the call. See Manual-answer trunk.

**Auto DN:** The received number assigned to Norstar system dial tone. If a caller using an auto-answer trunk calls a number which is assigned as the Auto DN, the caller hears system dial tone and can use Remote Access features. See Remote Access. The Auto DN is assigned in Configuration programming.

**Automatic Dial:** A feature that allows you to dial without having to pick up the receiver or select a line. You must have a prime line to use Automatic Dial.

**Automatic Handsfree:** A feature which automatically activates Handsfree operation when you make or answer a call. Automatic Handsfree is assigned in Administration programming.

**Automatic Hold:** A feature which automatically places an active call on hold when you select another line. Automatic Hold is assigned in Configuration programming.

**Automatic Privacy:** See Privacy.

**Automatic Telephone Relocation:** A feature which lets a telephone retain its personal and system programming when it is plugged into a different Norstar modular jack. Automatic telephone relocation is enabled in Configuration programming.

**Auxiliary ringer:** A separate external telephone ringer or bell which can be programmed to ring when a line or a telephone rings. An auxiliary ringer may be programmed to ring only when the system is in a particular service mode. Programming of an auxiliary ringer is done in both Administration and Configuration programming.

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## B

**Background Music:** A feature which lets you hear music from the speaker of your Norstar telephone. It is available only if a music source has been attached to the KSU. Background music is set up in Configuration programming.

**B channels:** The **B1** and the **B2** channels are paths for transmitting digital voice or data. Each port number has one **B1** DN and one **B2** DN associated with it.

**Busy Lamp Field (BLF):** A device with a liquid crystal display (LCD) panel of indicators that shows the status of up to 24 telephones in the Norstar system. The BLF will show a telephone as busy if it is active on a call, has Do Not Disturb turned ON, or is being used for programming. The BLF attaches to the M7310 Telephone.

**Button caps:** Interchangeable plastic caps which fit over the buttons of Norstar telephones. They are used to indicate the features programmed onto each programmable memory button. Button caps are either pre-printed or have clear windows which allow you to label the buttons.

**Button Inquiry:** With this feature you can check the function of each programmable button on your Norstar telephone.

**Bypass Restrictions:** Overrides any Call Restrictions applied to specific System Speed Dial numbers. Bypass Restrictions can be turned on in Administration programming.

## C

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**Callback:** If you park, camp, or transfer a call to another telephone and it is not answered there, it will ring again at your telephone. How long the system will wait before Callback occurs is set in Configuration programming.

**Call Forward:** With this feature you can have all the calls arriving at your telephone forwarded to another telephone in your Norstar system. To have calls forwarded outside the system, use Line Redirection.

**Call Forward No Answer:** A feature which forwards all calls arriving at your telephone to another designated telephone in your Norstar system after a specific number of rings. Call Forward No Answer is assigned in Administration programming.

**Call Forward On Busy:** A feature which forwards all calls at your telephone to another designated telephone if your telephone is busy. This feature is assigned in Administration programming.

**Call Handling:** In Configuration programming, this heading covers a number of settings which affect how the Norstar system handles calls.

**Call Park:** With this feature you can place a call on hold so that someone can retrieve it from any other telephone in the Norstar system by selecting an internal line and entering a retrieval code. The retrieval code appears on the display of your telephone when you park the call. You can park up to nine calls on the system at one time.

**Call Park Callback:** See Callback.

**Call Park prefix:** The first digit of the retrieval code of a parked call. This digit cannot conflict with the first digit of any existing DNs, Line Pool access codes, the Direct-dial digit, or the external line access code. The default Call Park prefix digit is "1". It may be set to none, in which case Call Park is disabled. Call Park prefix is assigned in Configuration programming.

**Call Pickup Directed:** A feature which lets you answer a call ringing at any Norstar telephone by entering the internal number of that telephone before taking the call. Call Pickup Directed is activated in Configuration programming.

**Call Pickup Group:** See Pickup Group.

**Call Queuing:** If you have several calls waiting at your telephone, you can invoke the Call Queuing feature to answer them in order of priority. Priority is given to incoming calls, followed by callback and camped calls.

**Camp-On:** A feature which lets you re-route a call to a telephone even if all the lines on that telephone are busy. To answer a camped call, use Call Queuing or select a line if the camped call appears on your telephone. Priority is given to queued calls over camped calls.

**Camp timeout:** In Configuration programming, this subheading lets you set the length of a delay before a camped call is returned to the telephone which camped the call.

**Capabilities:** In Administration programming, this section heading covers the dialing filters, remote access packages, set abilities, and line abilities which can be assigned to Norstar lines, telephones, or Class of Service passwords.

**CAP assignment:** In Configuration programming, this subheading sets which Norstar telephones are Central Answering Positions. Up to five Central Answering Positions can be installed in a single Norstar system.

**Central Answering Position (CAP):** A CAP is an M7324 telephone which has been designated a CAP in Configuration programming. The CAP provides backup answering and can be used to monitor the telephones within a Norstar system. One or two CAP modules can be attached to a CAP to increase the number of lines it can handle.

**Central Answering Position (CAP) module:** A CAP module is connected to an M7324 telephone to provide 48 additional buttons which can be used as **Autodial** buttons or **Feature** buttons. A maximum of two CAP modules can be connected to a single M7324 Telephone.

**Centrex template:** This is one of the four Norstar system templates. The **Centrex** template assigns one unique external line to each telephone until the maximum number of lines is reached (example: Line 001 to telephone 2221, Line 002 to telephone 2222, and so on). Any remaining telephones do not receive a default line assignment.

**Class of Service (COS):** The set of **Norstar** features and lines available to the user for a call. The Class of Service for a call is determined by the Dialing Filters and Remote Access Packages assigned to the telephone in Administration programming. Class of Service for a call can be changed by entering a six digit Class of Service password. (Internal users cannot change their access to features with a COS password, only their dialing filters.) Class of Service and Class of Service passwords are assigned in Administration programming. See Remote Access.

Class of Service password: See Class of Service.

**Configuration:** A type of **Norstar** programming usually performed by the installer or service representative. It establishes the basic operation of trunks, lines, and telephones in a **Norstar** system.

Configuration access code: To start Configuration programming, enter:

Feature \* \* C O N F I G .

You must also enter an installer password before you can perform Configuration programming.

**Control Telephone:** A Control Telephone can place the lines for which it has responsibility in or out of a Service Mode. The Direct-dial Telephone is a Control Telephone for directing calls to the Extra **Direct-dial** Telephone. A telephone is made a Control telephone and has lines assigned to it in Administration programming.

**COS:** See Class of Service.

**Cursor:** A short horizontal line which appears on the **Norstar** telephone display to indicate that characters can be entered using the dial pad.

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## D

**Data Communications interface:** A **Norstar** device which lets you attach an **RS-232** data device to your **Norstar** system.

**Data terminal:** A device such as a modem which can be used to transfer data instead of sound over a telephone network. You cannot use **Norstar** programming to set up such devices. See the documentation that came with the device.

**Date:** See Show Time or Time and Date.

**DCI:** See Data Communications Interface.

**Defaults:** The settings for all **Norstar** features when the system is first installed. Defaults are determined by the template chosen at startup. Settings are changed from their defaults in Configuration and Administration programming. In this manual, default settings are shown in bold text.

**Delayed Ring Transfer (DRT) to Prime:** After a specified number of rings, this feature transfers an unanswered call on an external line, to the Prime Telephone associated with that line. This feature is activated in Configuration programming.

**Dialing filter:** Through a combination of restrictions and exceptions, dialing filters prevent certain telephone numbers from being dialed. Dialing filters can be applied to lines (line filters, remote filters), to sets (set filters), to specific lines on a set (line/set filters), and to Class of Service passwords (user filters, remote filters). The Norstar system can handle up to 100 dialing filters.

**Dial mode:** The dialing mode of a line can be either Tone or Pulse. Pulse is traditionally used by rotary dial telephones. Tone is also referred to as dual tone multifrequency (DTMF) tones. Dial mode can be changed in Configuration programming.

**DID trunk (Direct inward dialing trunk):** A trunk which permits a caller who dials a particular number to be connected directly to a target line in the Norstar system. This enables a caller to reach someone in your office without having to go through the receptionist. A DID trunk may also connect the caller to the Auto DN or the DISA DN. A DID trunk is used for incoming calls only. See Trunk and Target Line.

**Direct-dial:** A feature which lets you dial a designated telephone in your Norstar system with a single digit. As many as five direct dial sets can be established. Each telephone in the system is assigned to one Direct-dial telephone. There is a single, system wide digit for calling the assigned Direct-dial telephone of any telephone. Direct-dial telephones are established in Administration programming. Telephones are assigned to a Direct-dial telephone in Administration programming.

**Direct-dial #:** In Configuration programming, this subheading sets the system wide digit used to call a direct dial telephone.

**Direct-dial number:** The digit used to call the Direct-dial telephone.

**Direct Inward Dialing trunk:** See DID trunk.

**Direct Inward System Access (LISA):** The feature which lets remote users dial directly into the Norstar system and use Norstar features. Callers will hear stuttered dial tone and will be required to enter a Class of Service password to gain access to the system. See Remote Access.

**Directed Pickup:** See Call Pickup Directed.

**Directory Number (DN):** A unique number which is automatically assigned to each telephone or data terminal. The DN, also referred to as an internal number, is often used to identify a telephone when settings are assigned during programming. Default DN assignments start at 21 in a two-digit (non-expanded) system and 221 in a three-digit (expanded) system.

**Directory Number (DN) length:** The number of digits in a Directory Number. A non-expanded system can have a DN length of two to seven digits. An expanded system (a system with an Expansion Cartridge installed) can have a DN length of three to seven digits. All Directory Numbers for the system must be the same length. The default DN length is two digits for a non-expanded system and three digits for an expanded system. The DN length affects only internal DNs. Externally received numbers, including received numbers for Target lines and the Auto and DISA DNs, are governed by the Received Digit Length setting.

**DISA:** See Direct Inward System Access.

**DISA DN:** The received number assigned to the **Norstar** Direct Inward System Access facility. If a caller dials a number which is assigned to the **DISA DN**, the caller hears stuttered dial tone and must enter a Class of Service Password. Once the password is accepted, the caller hears system dial tone and can use Remote Access features. See Remote Access.

**Disconnect Supervision:** When disconnect supervision is assigned to a line, the **Norstar** system monitors the line to detect when an external caller hangs up. This allows the system to release the line for other uses. Disconnect supervision is assigned in Configuration programming.

**Display:** A liquid crystal display (LCD) on the **Norstar** telephone that guides you through feature operation and programming.

**Display button:** The **Norstar M7310 Telephone** and **M7324 Telephone** are each equipped with three buttons located directly beneath the display. During feature operation or programming, some or all of these buttons may be used to provide further options. If an option is available, it is shown in the bottom row of the two row display, directly above the corresponding display button. Display buttons are represented in this manual as underlined capital, e.g. OK.

**Display digits:** In Administration programming, this subheading lets you set whether an assigned name or the actual number will be displayed when someone uses a system speed dial code.

**DN:** See Directory Number.

**DRT delay:** The number of rings before a Delayed Ring Transfer occurs. This is assigned in Configuration programming.

**DRT to Prime:** See Delayed Ring Transfer to Prime.

## E

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**E&M trunk:** A trunk through which the Norstar system connects to a private telephone network. An E&M tie trunk can be used for both incoming and outgoing calls. E&M trunks are supported only on an expanded Norstar system.

**End-to-End Signaling:** See Host System Signalling.

**Emergency Telephone:** A single line telephone (also referred to as a 500/2500 telephone) that becomes active when there is no power to the Key Service Unit.

**Event message:** Event messages are stored in the system log and displayed during a Maintenance session. They record a variety of events and activities in the Norstar system.

**Exceptions:** One component of a Dialing filter. Exceptions are numbers you can dial even if they are forbidden by a more general Restriction. See Restrictions.

**Expanded system:** A **Norstar** system with an Expansion Cartridge.

**Expansion Cartridge:** A cartridge which connects Trunk modules and Expansion modules to the Key Service Unit. Expansion Cartridges are available with two or six ports.

**Expansion module:** Either a Trunk Module or a Station Module. See Trunk Module, Station Module, and Expansion Cartridge.

**External call:** A call to a destination outside the Norstar system.

**External Call Forward:** See Line Redirection.

**External code:** The number you dial to get an external line. By default it is 9, but this can be changed in Configuration programming. You do not always need an external code. It is primarily to support the M7100 Telephone and single line telephones using an Analog Terminal Adapter.

**External line:** A line on your Norstar telephone used for making calls to destinations outside the Norstar system.

**External music source:** See Music source.

**External paging:** A feature you can use to make voice announcements over an externally-mounted loudspeaker connected to the Key Service Unit. The external speaker is not a **Norstar** component and must be supplied by the customer.

**Extra-Dial set:** In Administration programming, this heading lets you assign an extra Direct-dial set when a service mode is active. You can have one Extra-Dial set for each of the three service modes.



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**F**


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**Feature** button: Many Norstar features are invoked by pressing the Feature button followed by a Feature code. The feature button is also used to exit a feature.

**Feature Cartridge:** A replaceable cartridge containing the **Norstar** features. The Feature Cartridge, a combination of a Data Cartridge and a Software Cartridge, is inserted into the Key Service Unit.

**Feature code:** A number that is used to activate a particular feature.

**Forward:** See Call Forward.

**Forward delay:** The number of rings before an unanswered call is forwarded to another telephone when the Call Forward No Answer feature is ON. Forward delay is assigned in Administration programming.

**Forward No Answer:** See Call Forward No Answer.

**Forward On Busy:** See Call Forward On Busy.

**Full Autohold** (on idle line): When this feature is ON, if you select an available line, and then do something which selects another line, the first line is put on hold.

**Full Handsfree:** See Handsfree.

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**G**


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**Gain:** In Configuration programming, this subheading lets you change the transmission level for signals on an E&M trunk.

**Group Listening:** A feature which allows you to have others in your office hear a caller through your phone's speaker. The caller hears you only when you speak into the receiver and cannot hear other people in the office:

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**H**


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**Handsfree:** A feature you can use to make calls without using the telephone receiver. Full Handsfree is activated in Administration programming. When it is activated, a **Handsfree/Mute** button is automatically assigned to the telephone.

**Handsfree (HF) Answerback:** When activated, this feature automatically turns ON the microphone at a telephone receiving a Voice Call so that the person receiving the call can respond without lifting the receiver. It is activated in Administration programming.

**Handsfree/Mute** button: See **H a n d s f r e e** .

**Headset:** A head-mounted or ear-mounted telephone receiver that is used instead of the hand-held receiver. Headsets are not **Norstar** components and must be supplied by the customer.

**Held (Line) Reminder:** A Norstar telephone rings and displays the message He 1 d C 11 when an external call has been placed on hold for a certain period of time. The Held Line Reminder feature and Remind delay are set up in Configuration programming.

**HF Answerback:** See Handsfree Answerback.

**Hold button:** This button is used to suspend calls so that the person using the telephone can perform another task without disconnecting the caller.

**Hookswitch Flash:** See Link time.

**Host delay:** This feature allows you to assign the delay between the moment an external line is selected to make a call and the moment that digits or codes are dialed out on the line. The Host delay time is assigned in Configuration programming.

**Host System Signaling:** (Also referred to as End-to-End Signaling.) Norstar telephones can access a remote system or dial a number on an alternate carrier by means of Host feature activation, such as Link, Pause and Run/Stop.

**Hotline:** This feature automatically calls a pre-assigned number when the telephone's receiver is lifted or the **Handsfree/Mute** button is pressed. A Hotline number can be an internal or external number. Hotline is assigned in Administration programming.

**Hybrid template:** One of the four Norstar system templates. In the Hybrid template, Line 001 appears on each telephone, and each telephone has access to Line Pool A. The template is assigned in System Startup.

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## I

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**I/C:** An abbreviation of Intercom button. This appears in Configuration programming.

**Individual DNS:** In Configuration programming, this sub-heading is used to change the internal number of a Norstar telephone.

**Installer:** Someone who installs the Norstar equipment, and performs System Startup and Configuration programming. The Installer or the System Coordinator can program Administration settings.

**Installer password:** A 1 to 6 digit password used to prevent unauthorized access to Configuration programming. The default Installer password can be changed in Configuration programming.

**Intercom button:** A button which provides access to internal lines used for calls within a Norstar system and access to external lines through a Line Pool or external code. A telephone may be assigned zero to eight Intercom buttons. This is done in Configuration programming.

**Intercom keys:** See Intercom button.

**Internal line:** A line on your telephone dedicated to making calls to destinations inside your **Norstar** system. An internal line may still connect you with an external caller if you use it to access a line pool or to pick up a call using **Norstar** call handling features such as Call Park or Call Pickup Directed.

**Internal number:** A number (also referred to as a Directory Number or DN) that identifies a **Norstar** telephone or device.

**Internal user:** Someone using a **Norstar** telephone within a **Norstar** system.

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## K

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**Key Service Unit (KSU):** The central hardware component in the **Norstar** system. The KSU has its own processor and memory, and provides a physical point of connection for the various types of devices, telephones, and expansion modules used in **Norstar**. The KSU can function on its own as a basic system (with 24 **Norstar** telephones and 8 external lines), or with the addition of a Trunk Module (TM) which supports more external lines, or a Station Module (SM) which supports more **Norstar** telephones.

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## L

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**Line:** The complete path of a voice or data connection between one telephone (or other device) and another.

**Line abilities:** In Administration programming, the heading under which you assign Line Filters, Remote Filters, and Remote Access Packages to lines.

**Line Access:** In Configuration programming, the heading under which you assign an individual telephone's access to lines.

**Line assignment:** In Configuration programming, the subheading under which you define which lines are accessible to an individual telephone.

**Line Data:** In Configuration programming, the heading under which you assign certain settings of individual lines.

**Line filter:** See Dialing filter.

**Line names:** In Administration programming, this sub-heading allows you to assign names to external lines.

**Line number:** A number which identifies an external line. The total number of lines depends on how many Trunk Modules are installed and the number of Target lines.

**Line Pool:** A group of lines used for making external calls. Line Pools provide an efficient way of giving a telephone access to external lines without taking up many line buttons. A line is assigned to be a member of a Line Pool in Configuration programming.

**Line Pool access:** In Configuration programming, the sub-heading under which you assign the Line Pools that a telephone may access.

**Line Pool access code:** A number that identifies a Line Pool. Line Pool access codes are assigned in Configuration programming.

**Line Pool codes:** See Line Pool access codes.

**Line Profile:** A feature you can use to review the settings programmed to lines in Configuration and Administration programming. The settings cannot be changed with this feature. Line profile is available only on the M7310 and M7324 telephones.

**Line Redirection:** A feature which allows you to redirect all calls on an incoming line to a destination outside the Norstar system. Once a line is redirected it cannot be answered within the Norstar system. The system may be set up to give a brief ring when a call comes in on a redirected line. This feature differs from Call Forward in two ways. It redirects only external calls (not internal calls) and it redirects calls to destinations outside the system. Call forward redirects calls only to destinations inside the Norstar system. See Call Forward and Redirect Ring.

**Line type:** in Configuration programming, this setting controls whether a line is Public, Private, or a member of a Line Pool.

**Link time:** A specific time delay that allows access to PBX features through a Norstar system. Link time is also referred to as a "Hookswitch Flash" or "Recall". Link time is assigned in Configuration programming.

**Loop Start Trunk:** A type of telephone trunk that provides a connection to the public telephone network.

**Loop Start Trunk Cartridge:** This cartridge, when inserted into the Trunk Module, provides the connection to lines. See Trunk Cartridge.

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## M

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**M7100 Telephone:** A telephone with a single line display and one programmable memory button without an indicator.

**M7208 Telephone:** A telephone with a single line display and eight programmable memory buttons with indicators.

**M7310 Telephone:** A telephone which has a two line display, three display buttons, 10 programmable memory buttons with indicators, and 12 dual memory programmable buttons without indicators. An M7310 can be equipped with a Busy Lamp Field.

**M7324 Telephone:** A telephone with a two line display, three display buttons, and 24 programmable memory buttons with indicators. An M7324 telephone can be equipped with a CAP module.

**M7900 Telephone:** A telephone with a touch screen display which replaces the display and memory buttons of other Norstar telephones. It provides simplified access to Norstar Features and an interface to computer driven applications.

**Maintenance:** A type of programming you can use to diagnose and repair problems in the Norstar system. Maintenance requires no programmable settings.

**Manual-answer trunk:** A trunk on which calls are not automatically answered by the Norstar system, but ring at telephones in the usual way. See Auto-answer Trunk.

**Memory buttons:** Buttons which can be programmed to dial frequently used features or numbers automatically. See M7100, M7208, M7310, M7324 and M7900 telephone entries for their exact memory button configurations.

**Message:** If you call someone in your Norstar system and their telephone is busy, you can send them a message indicating that you called.

**Miscellaneous:** A section heading in Configuration programming that has a collection of assorted system-wide settings.

**Music source:** A radio or other source of music can be connected to the Key Service Unit to provide music for the Music on Hold and Background Music features. A music source is not part of the **Norstar** system and must be supplied by the customer.

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## N

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**Names:** Names can be assigned to System Speed Dial numbers, external lines, telephones, and Service Modes. This is done in Administration programming. You can use up to sixteen characters to name a System Speed Dial number, and seven characters to name a telephone, line, or Service Mode. If a Name has not been assigned, the line number or DN will appear on the display instead of a Name.

**Night Service:** See Service Modes.

**Norstar Programming Overlay:** A paper template which is placed over the top four memory buttons with indicators on the M7310 or M7324 Telephone during programming. The overlay labels indicate the special function that each of the four buttons takes on in programming.

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## O

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**On hold:** In Configuration programming, this setting controls whether external callers hear music, periodic tones, or silence when they are placed on hold.

**Overlay:** See Norstar Programming Overlay.

## P

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**Page:** A feature you can use to make announcements over the Norstar system. You can choose Internal Page (announce over the telephone speakers), External Page (announce over an externally-mounted, customer-supplied loudspeaker), or both Internal and External Page.

**Page Zone:** An area in the office that receives internal Page announcements independently of the rest of the office. Each Page Zone is identified by a number. Telephones are assigned to Page Zones in Administration programming.

**Park prefix:** See Call park prefix.

**Park timeout:** The time before an unanswered parked call calls back to the telephone which parked it. Park timeout is defined in Configuration programming. See Call Park.

**Password:** A password is a specific sequence of digits that you enter to gain access to Norstar programming, to override dialing restrictions, or to use Remote Access with DISA. A password is required for System Startup and Configuration programming and may be required for Administration programming. See Class of Service password.

**Pause:** A character which inserts a 1.5 second delay in a dialing sequence on an external line.

**PBX template:** See Private Branch Exchange template.

**Personal Speed Dial:** Two-digit codes (71-94) can be programmed to dial external telephone numbers. Personal Speed Dial numbers are programmed for each telephone, and can be used only at the telephone on which they are programmed.

**Pickup Group:** A telephone can be placed into one of nine Call Pickup Groups. A call ringing at a telephone within a Pickup Group can be picked up at any other telephone within the same Pickup Group. A telephone is assigned to a Pickup Group in Administration programming.

**Pool:** See Line Pool.

**Port number:** The identification number of a specific point of connection at the Key Service Unit, Station Module, Trunk Module, or Expansion Cartridge. KSU ports are numbered 1 and 2. Expansion module ports are numbered from 3 to 8. The numbering of Trunk and Station module ports is dependant upon the KSU or Expansion Module port into which they are plugged.

**Pre-dial:** A feature that allows you to enter a number and check it on your telephone display before it is actually dialed. If the number is incorrect, you can edit it. The number is dialed only when you pick up the receiver or select a line.

**Prime line:** The line on your telephone which is automatically selected when you lift the receiver, press the Handsfree/Mute button or use an external dialing feature. A Prime Line is assigned to a telephone in Configuration programming.

**Prime Set (Prime Telephone):** A telephone which provides backup answering for incoming calls on external lines. The Prime Telephone for a line will ring for any unanswered calls on that line. A Prime Telephone is assigned to a line in Configuration programming.

**Priority Call:** A feature you can use to make a Voice call to a telephone which is idle, busy or has Do Not Disturb activated. This feature is enabled for a telephone in Administration programming.

**Privacy:** This feature determines whether a Norstar user may select a line in use at another telephone and join an established call. Privacy is assigned in Configuration programming, but can be turned ON and OFF by users during individual calls.

**Private Branch Exchange template:** One of the four Norstar System Startup templates. In the Private Branch Exchange (PBX) template, each telephone is assigned access to the first Line Pool.

**Private line:** See Private to.

**Private network:** A telephone network consisting of owned or leased telephone lines used to connect different offices of an organization independently of the public network.

**Private to:** In Configuration programming, this heading allows you to assign a line to one telephone as a Private line. The line cannot appear on any other telephone, except the Prime Telephone for that line. Private lines cannot be placed into Line Pools.

**Programming Overlay:** See Norstar Programming Overlay.

**Programming reminders:** Charts on which you can record some commonly-used settings from Administration and Configuration programming to keep the Norstar system's records up-to-date.

**Programming:** Setting the way the Norstar system will work. Programming includes system-wide settings and individual telephone and line settings.

**Public line:** An external line which can be assigned to any telephone and to many telephones. A line is assigned as Public in Configuration programming.

**Public network:** The regular telephone network which connects most homes and businesses.

## R

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**Radio Frequency (RF) Filter Kit:** A Norstar device designed to alleviate problems associated with radio frequency interference that may-be experienced when a headset or external auxiliary ringer is used with a telephone.

**Recall:** See Link time.

**Rec'd #:** In Configuration programming, this heading allows you to assign certain digits received by Norstar (that is, all or part of a telephone number dialed by an external caller or received over a network link), to a particular target line. This means that when an external caller dials this number, the target line will ring. Received digits may also connect the call to the Auto DN or the DISA DN, establishing a Remote Access call.

**Rec'd # length:** In Configuration programming, the subheading which allows you to set the number of digits received from an external source that will be used to route a call to a target line.

**Received digit length:** See Rec'd # length.

**Received digits:** See Rec'd #.

**Receiver:** The handset of a telephone.

**Redirect ring:** In Administration programming, this subheading allows you to set whether a line that has been redirected through Line Redirection will give a short ring on those sets on which the line appears.

**Remind delay:** When a call has been on hold for a set period, the telephone beeps and displays the message He 1 d C 11. This period is the Remind delay. It is set in Configuration programming.

**Remote access:** The ability to dial into a Norstar system from outside the system and make use of selected Norstar features. The lines, features, and dialing capabilities available to a remote user are determined by the Class of Service. If the remote access line is answered with DISA, the user must enter a Class of Service password to gain access to the Norstar system's features.

**Remote access dial filter:** See Remote filter.

**Remote access package:** In Administration programming, this subheading lets you set up access to Paging and Line Pools for remote users.

**Remote capability:** That subset of Norstar features which is available to users connected through remote access.



**Remote filter:** A dialing filter applied to a line in order to control which digits can be dialed during an incoming remote access call. It is the equivalent of a set filter for a remote user.

**Remote paging:** This feature allows remote users to use the **Norstar** paging feature. Access to this feature is governed by the Class of Service for the call. See Remote Access and Class of Service.

**Remote User:** Someone who calls into a **Norstar** system from a telephone outside that system and uses **Norstar** features or lines. See Remote Access.

**Restrictions:** One component of a Dialing filter. Restrictions are numbers you cannot dial when that dialing filter is in effect. See Exceptions.

**Ringing:** In Configuration programming, the heading which lets you assign a line to ring or not ring at a telephone. If a line has been assigned as "No ring", an incoming call is shown by a flashing indicator only.

**Ringing Sets (Ringing Telephones):** Those telephones which have been assigned to ring when a line has been placed into a Service Mode. Ringing Telephones are assigned in Administration programming.

**Rls** button: The Release button ends a call in the same way that hanging up the receiver does. It may also be used to end Startup, Configuration programming, Administration programming, Maintenance sessions and feature operations.

**Run/Stop:** A character which creates a breakpoint in a programmed external dialing sequence. When you press a programmed key, the system dials the number up to the run/stop. When you press it again, the system dials the digits following the run/stop.

---

## S

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**SAPS:** See Station Auxiliary Power Supply.

**Selective line redirection:** See Line Redirection

**Service Modes:** Certain features become active when one or more lines are placed into a Service Mode. This is usually done to provide special ringing and telephone access after normal office hours, or when there are few people available to answer calls. Service Modes settings are assigned in Administration programming.

**Set:** A telephone.

**Set ability:** In Administration programming, the subheading under which set filters, line/set filters, and a variety of system features are assigned to individual telephones.

**Set Copy:** in Configuration programming, Set Copy allows you to copy programmable settings from one telephone to another of the same type. Set Copy provides two options: duplicating System Data and User Data, or duplicating System Data only. Set Copy does not provide the same copy capability as the **COPY** display button, which is more selective of the settings that can be duplicated.

**Set filter:** See Dialing filter.

**Set lock (Telephone lock):** This feature allows you to limit the number of features that may be used or programmed at a telephone. Full set lock allows very few changes or features, Partial set lock allows some changes and features, and No set lock allows any change to be made and any feature to be used. Set lock is assigned in Administration programming.

**Set Names:** In Administration programming, this sub-heading allows you to assign Names of up to seven characters to telephones.

**Set Profile:** A feature you can use to review the settings programmed to telephones in Configuration and Administration programming. The settings cannot be changed with this feature. Set profile is available only on the M7310 and M7324 telephones.

**Set Relocation:** See Automatic Telephone Relocation.

**Shift button:** A small triangular button beside the dual memory buttons on the upper half of the M7310 Telephone. You press the shift button to store or access features on the top half of the dual memory buttons.

**Show Time:** While on a call, accessing this feature lets you see the current date and time on the Norstar telephone display.

**Signal:** In Configuration programming, this subheading allows you to change the type of signaling used by an E&M or DID trunk.

**Square template:** One of the four Norstar system templates. In the Square template, Lines 001 and 002 are assigned to each telephone. The Square template is the default during System Startup. All defaults shown in bold in this manual are those of the Square template.

**Station:** An individual telephone or other Norstar device.

**Station Auxiliary Power Supply (SAPS):** A device which provides power to a Norstar telephone that is connected more than 305 m (1000 ft) and less than 760 m (2500 ft) from the Key Service Unit, or to a CAP module.

**Station Module (SM):** An expansion module that allows you to connect the Norstar system to 16 more telephones or other devices. See Expansion Cartridge.

**Supervised line:** A line for which disconnect supervision is enabled. If an external caller hangs up, the Norstar system detects the disconnection and hangs up its line also. See Disconnect Supervision.

**Supervision:** In Configuration programming, the subheading under which you choose the time, in milliseconds, before a line disconnection is made on a supervised line.

**System Coordinator:** The person responsible for customizing the Norstar system through Administration programming and for helping co-workers use the Norstar system.

**System Data:** 1. An option in the Set Copy function. System Data refers to the system settings which apply to all telephones and lines. System Data consists of the programmable settings from System Startup, Configuration programming and Administration programming. 2. In Configuration programming, the heading under which you can change various settings associated with the directory numbers and received numbers of the Norstar system.

**System Speed Dial:** In Administration programming, a heading under which you can assign up to 70 numbers as system speed dial numbers.

**System Speed Dial Name:** In Administration programming, a subheading under which you can assign a name to a System Speed Dial Number.

**System Speed Dial Code:** A Two-digit code (01 to 70) that can be programmed to dial a telephone number up to 24 digits long. System Speed Dial codes are programmed for the entire Norstar system in Administration programming.

**System Startup:** When a Norstar system is first installed and powered up, System Startup must be performed before Configuration or Administration programming can be done. Startup initializes the system programming to defaults.

**System Startup access code:** To begin System Startup, enter:

Feature  \* \* S T A R T U P

An Installer password is required before System Startup can begin.

---

## T

**Tandem call:** A call established when a remote user dials into the Norstar system and uses the system to place an outgoing call. The combination of the incoming and outgoing calls forms a tandem call. See Remote Access.

**Target line:** A line dedicated to receiving calls from outside the Norstar system. Several Target Lines, each identified by a different received number, can be attached to a single trunk. You cannot make outgoing calls on a target line. Target lines require DID or auto-answer trunks.

**TCM line (Time Compression Multiplexing line):** A two-wire digital station loop joining the cross-connect at the Key Service Unit to a telephone.

**Template:** A system-wide setting assigned during System Startup. The most important effects of a template are the number of lines assigned to the telephones, and the assignment of Line Pool access. Templates will also assign other system-wide defaults, such as Prime line and Ringing line assignment. It is important to understand that a template is provided only as a convenience, and that any settings affected by a template can be changed. The four templates are Centrex, PBX, Hybrid, and Square.

**Tie line:** See E&M trunk.

**Time:** See Show Time or Time and Date.

**Time and Date:** The current Time and Date appear on the display of idle Norstar telephones. The Time and Date can be changed in Administration programming.

**Transfer:** A feature which lets you redirect a call to another telephone. There are four types of Transfer; Transfer using Hold, Transfer with Announcement, Transfer without Announcement, and transfer using Unsupervised Conference.

**Transfer Callback:** If a transferred call is not answered after a specific number of rings, the call will return to the telephone which made the transfer. The number of rings can be assigned in Configuration programming. Transfer Callback does not apply to calls transferred externally.

**Trk/Line data:** In Configuration programming, the heading under which the capabilities and characteristics of the Norstar system's lines and trunks are established.

**Trunk:** The physical connection between the Norstar system and the outside world using either the public telephone system or a private network. One trunk may provide connections for several lines. See Auto-answer trunk and Manual-answer trunk.

**Trunk Answer:** A feature you can use to answer a call on any line that has an active Service Mode, even if that line does not appear on your telephone. Trunk Answer is enabled in Administration programming.

**Trunk Cartridge (TC):** A Trunk Cartridge is inserted into a Trunk Module and provides connections for lines. Up to three cartridges can be used in one Trunk Module. Depending on your system and your needs, you may have any combination of Loop Start, DID or E&M Trunk Cartridges.

**Trunk data:** In Configuration programming, the subheading under which you set how the trunks of the Norstar system will operate.

**Trunk mode:** In Configuration programming, the heading under which you assign the mode of operation for a Loop Start trunk. There are two modes, supervised and unsupervised. See Disconnect Supervision.

**Trunk Module (TM):** An expansion module that provides up to 12 additional external trunks, depending on the number and type of Trunk Cartridges installed. See Expansion Cartridge.

## U

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**Unsupervised line:** A line for which disconnect supervision is disabled. If an external caller hangs up, the Norstar system does not detect the disconnection and does not hang up its line. See Disconnect Supervision.

**User Data:** User Data is an option in the Set Copy feature. User Data refers to the personal settings which are unique to an individual telephone, and are not programmed in Configuration or Administration programming. User Data is programmed at each telephone. These settings, for example, include Personal Speed Dial and the assignment of programmable memory buttons.

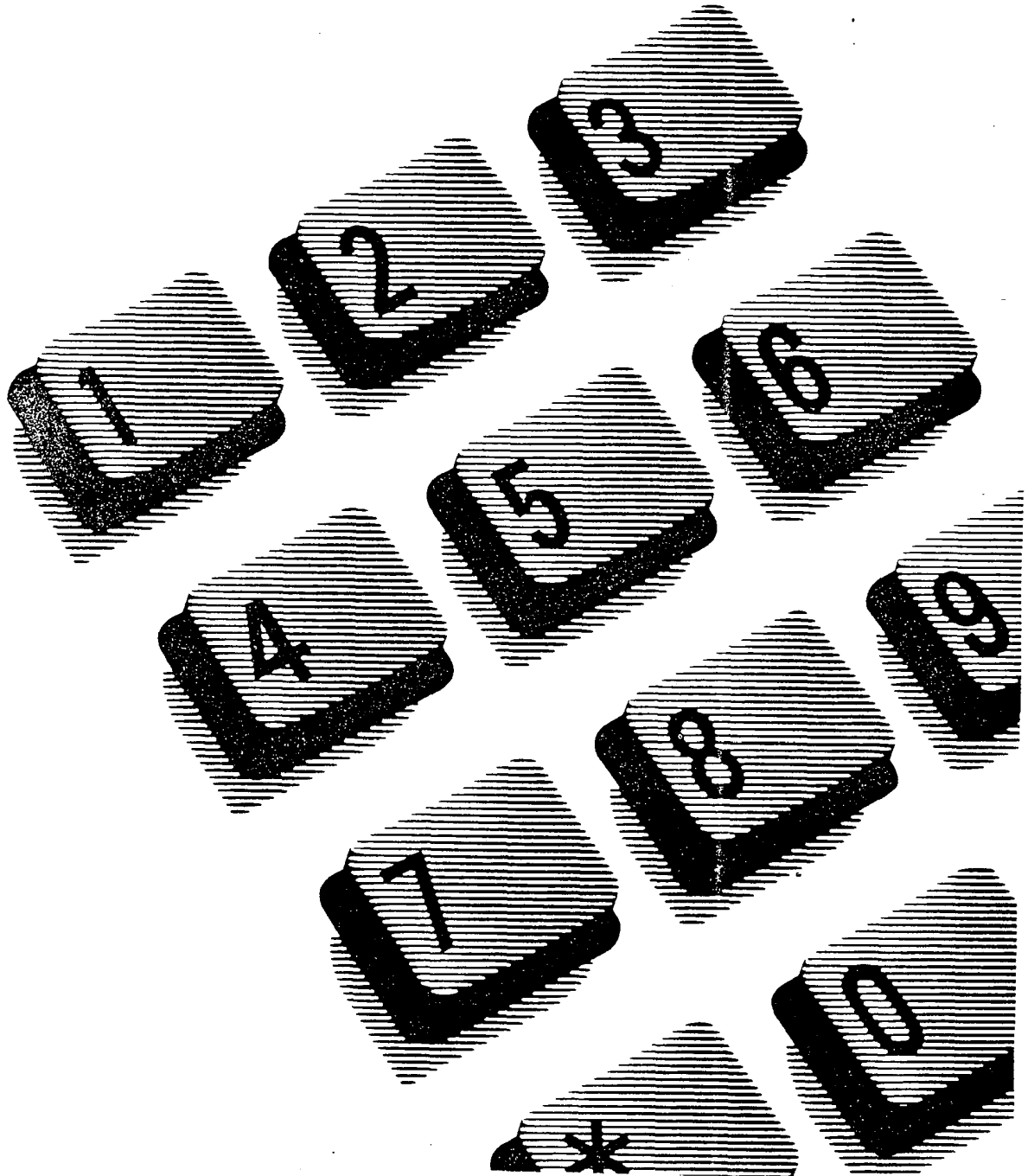
**User Filter:** See Dialing filter.

## V

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**Voice Call:** A feature you can use to make an announcement or begin a conversation through the speaker of another telephone in the Norstar system. The telephone you call will not ring. Instead, the person you call will hear a beep and then your voice. Their telephone will beep periodically to remind them that their microphone is open.

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