LinkPlus Interface Guide
Inter-Tel Axxess and Axxent

Link Wireless Telephone System
NetLink Wireless Telephone

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Issue B

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1. About LinkPlus

SpectraLink is the market leader in multi-cellular wireless telephone systems for the workplace. We manufacture a range of products to suit any size installation. All SpectraLink products use our LinkPlus digital integration technology to integrate with various digital switch platforms. Using LinkPlus technology, Wireless Telephones emulate digital telephone sets to deliver advanced capabilities such as multiple line appearances and LCD display features. This document explains the programming or administration required to use the host digital switch with the following SpectraLink products:

Link Wireless Telephone System (Link WTS)– Link 3000 MCU
The Link WTS 3000 supports up to 3,200 Wireless Telephones and up to 1,000 Base Stations. Up to 25 shelves can be interconnected for maximum system capacity.

Link Wireless Telephone System (Link WTS) – Link 150 MCU
Designed for smaller installations supporting up to 64 Wireless Telephones and up to 16 Base Stations. Up to four MCU controllers can be interconnected for maximum system capacity.

NetLink Telephony Gateway
The NetLink Telephony Gateway is a wireless telephony product that provides high quality packetized voice communications using the Internet Protocol (IP).

1.1 Contacting SpectraLink

SpectraLink wants you to have a successful installation. If you have questions please contact our **Customer Support Hotline at (800) 775-5330.** The Hotline is open Monday through Friday, 6:00 AM to 6:00 PM Mountain Time.

1.2 Icons and Conventions

This manual uses the following icons and conventions.

Caution! Follow these instructions carefully to avoid danger.

Note these instructions carefully.

NORM This typeface indicates a key, label, or button on SpectraLink hardware.

2. Plan the Interface

The system administrator programs the telephone system for use with the Wireless Telephone System using the normal administration terminal or procedures. Programming can be done after the Wireless Telephones are registered.

Recommended programming includes assigning extension numbers to the Wireless Telephones and programming features on the telephone system so they are easily accessible from the Wireless Telephones.

For analog interfaces, macro codes are in the document relating to configuring the system. See *Link 3000 MCU: Operator's Console*, *Link 150 M3 MCU: Installation and Operation*, or *NetLink Telephony Gateway: Setup and Maintenance.*

The following information will help the system administrator set up the SpectraLink Wireless Telephones to operate in a way that feels familiar and comfortable to users.

2.1 Plan Programming

Digital Interface programming for the Wireless Telephone System will be faster if it is planned in advance by verifying the parameters and features on the current telephone system and wired phones. The system administrator must assign extension numbers to the Wireless Telephones and plan the functions (trunk access, toll restrictions, system features, ringing options etc.) to be programmed for the Wireless Telephones.

One of these scenarios concerning how the Wireless Telephones are programmed should apply to this site:

- **All Wireless Telephones are programmed alike** – All Wireless Telephones will be programmed exactly the same. Depending on the capabilities of the switch, the system administrator can often program one Wireless Telephone and use it as a model for all other Wireless Telephones.
- **Groups of Wireless Telephones are programmed alike** –Wireless Telephones are grouped into classes that are programmed alike. Depending on the capabilities of the switch, the system administrator can program "model" Wireless Telephones then use the model as a template to program the other Wireless Telephones.
- **All Wireless Telephones are different** – All Wireless Telephones are programmed differently, so each Wireless Telephone will be programmed individually.

Before installation, the parameters of the wired phones should be verified to plan the parameters required for the Wireless Telephones.

Extension Assignment – what extension numbers will be assigned to the Wireless Telephones?

Outgoing Trunk Access - Which trunk group will be selected when the user goes off-hook?

System Forwarding – if this system supports forwarding, what is the forwarding path and forwarding conditions for this telephone? Does it belong to a hunt group?

Toll Restrictions – to which toll restriction class of service should this station be assigned?

Mailboxes – what are the parameters of this station's voice mailbox ?

Programmable Keys - Determine which features, if any, should be programmed on the Wireless Telephones. These assignments may emulate assignments on the user's wired set.

If possible, identify a wired set that is programmed exactly or close to the way the Wireless Telephones should be programmed. This set can be used to copy the programming to the new Wireless Telephones.

2.2 Assign Extension Numbers

The wire contractor should inform the system administrator which port numbers have been designated for the Wireless Telephones.

The system administrator may use the *Extension Assignments Worksheet* at the end of this document to track the port numbers, extensions, users, and features assigned to Wireless Telephones.

2.3 The SpectraLink Wireless Telephone Display

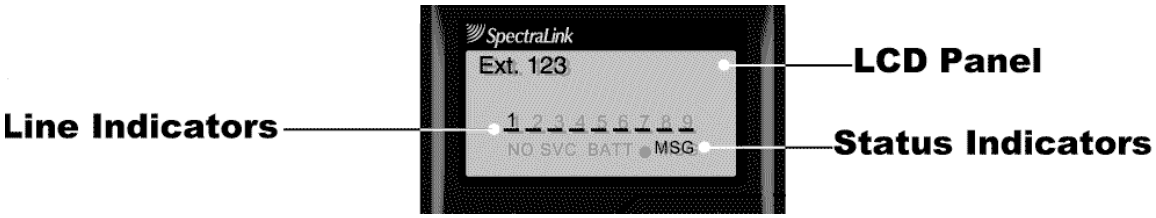
The Wireless Telephone has a two-line, 16-character alphanumeric display.

Certain characters may be used by the system that are not implemented in the Wireless Telephone. Flashing characters are not implemented on the Wireless Telephone, nor is rolling or scrolling of text.

Although some desksets do not have a display, any display information sent by the system will be displayed on the Wireless Telephone.

Wireless Telephone Icons

The Line Indicators are associated with line access keys. The Status Indicators are associated with Voice Mail (**MSG**), low battery function (**BATT**), and service interruption (**NO SVC**). In addition, a left or right arrow is displayed when the screen can be toggled either left or right to display more characters as described above.



The Wireless Telephone icons indicate trunk or intercom usage. The following table outlines the icons and their related Digital Keyset LED indication.

Wireless Telephone Icon	Description	Keyset LED Equivalent
Off	On hook or not in use	Off
On Steady	I/C or Trunk in use	Slow Blink or Steady Light
Slow Blink	I/C or Trunk is re-calling from Hold or Transfer	Medium Blink
Fast Blink	I/C or Trunk is ringing or camped on	Fast Blink
Wink	I/C or Trunk is on Hold	Flutter

2.4 Feature Programming Requirements

When planning the interface, the following information must be taken into account:

Line Sequences

The Wireless Telephone uses two types of key sequences to access PBX features and multiple lines. Line sequences are those where the user presses the **LINE** button and then a number button. The key-map design designates "line" keys that should be programmed for line appearance so that they correspond to line sequences on the Wireless Telephone.

The line icon on the Wireless Telephone will reflect activity on the corresponding deskset key. For this reason, it is recommended that line appearance keys be used only for line access. If only one line is assigned to a particular Wireless Telephone, leave the other designated line keys identified on the key maps unassigned. The corresponding Wireless Telephone **Line**+ key sequences will then have no function.

Function Sequences

Function sequences are those where the Wireless Telephone user presses the **FCN** button and then a number button. Designated "function" deskset keys programmed to system features such as Transfer and Conference may have their corresponding menu items display on the Wireless Telephone function menu. See the key map diagram for the function keys that are available for feature programming.

Function Menu Programming

Link 3000 MCU

The function menu text defaults for the Wireless Telephones associated with the Link 3000 MCU can be changed via the SpectraLink Operator's Console.

Link 150 MCU

For the Link 150 MCU, the Wireless Telephone function menu text can only be changed via remote configuration through the services of SpectraLink's Customer Support.

NetLink Telephony Gateways

Function menu text options can be changed in the Administration Console of the NetLink Telephony Gateways.

Hold

The Hold feature should be programmed to the Hold key as shown on the Key-map Diagrams so that when the **HOLD** button is pressed on the Wireless Telephone, the call is placed on hold.

Mute

The Wireless Telephone Mute function is hard-coded in the Link WTS to **FCN**+**1**. This function sequence is recommended, but the system administrator can assign the Mute function to any available function key sequence or leave the function unassigned.

Voice Mail

The message-waiting icon (**MSG**) on the Wireless Telephone is activated with the message indication of the deskset. The voice mail feature on the deskset must be assigned

to the feature key as shown in the Key-map Diagrams. Do not assign any other feature to this key, since the associated LED is directly mapped to the message-waiting icon on the Wireless Telephone. This LED assignment must be used in order to support the message-waiting icon. Using this key for any other feature or for line access could cause unacceptable system performance.

Speakerphone

Because the Wireless Telephone has no speaker, speakerphone function and functions that require the use of the volume keys will not be made available on the Wireless Telephone. Disable all speakerphone features, particularly any hands-free features that activate the speaker with the telephone on-hook.

Ring Types

Wireless Telephone ring types (soft, normal, vibrator, etc.) are programmed by the Wireless Telephone user and are not accessible or changeable by the system switch. Whenever possible the audible ringer on the Wireless Telephone will follow the cadence provided by the system switch. Call progress tones provided by the host system will be passed through to the Wireless Telephone.

3. Interface Implementation

This section describes the recommended programming to use the Wireless Telephone System with an Inter-Tel Axxess or Axxent System. The procedures assume:

- The Axxess or Axxent system is installed and operational in an approved configuration. See the *Telephone Switch Interface Matrix* document for tested configurations.
- A trained Inter-Tel technician or system administrator will be on site with the SpectraLink installer to program the system.
- The Link WTS or NetLink Telephony Gateway is installed and the Wireless Telephones are available for programming.

The Inter-Tel Axxess digital interface to the Link Wireless Telephone system is licensed for use in the U.S. and Canada only.

3.1 Set the Switch Interface Type

Link 150 MCU

The Link 150 Master Control Unit requires the switch interface type to be configured using the front panel buttons. The configuration procedures are detailed in the Link 150 MCU *Installation and Operation* document.

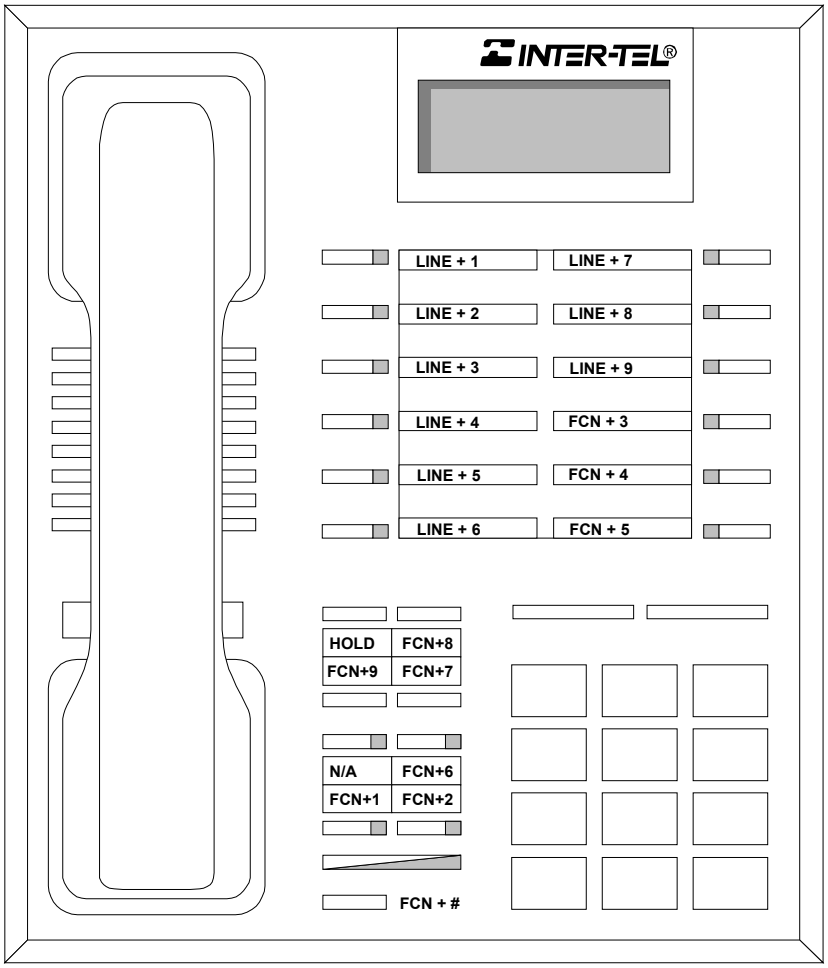
Link 3000 MCU

When configuring the Link 3000 MCU, the PBX interfaces are available as sub-menu selections when defining the Interface Module type using the Link 3000 MCU Operator's Console. Refer to the Link 3000 Master Control Unit *Operator Console* document for details on configuring the Interface Modules.

NetLink Telephony Gateways

Connect to the NetLink Telephony Gateway using the serial or modem interface. From the Main Menu, choose Gateway Configuration. Scroll to Telephone Switch Type and press enter to change this field, from the Submenu of PBX types, select Inter-Tel Axxess or Axxent. Refer to the *Setup and Maintenance* document for the NetLink Telephony Gateway for details on configuring the Telephone Switch Type.

3.2 Key-mapping the Wireless Telephone to Emulate Standard Digital Keyset Functionality



Standard Digital Keyset Key-mapping

The **FCN** [number] and **LINE** [number] labels represent the key sequence on the Wireless Telephone mapped to the corresponding key on the desk set.

The Wireless Telephone function menu has these default settings:

FCN + 1	MUTE	**FCN + 2**	FWD
FCN + 5	CNF	**FCN + 6**	MSG
FCN + 7	REDL	**FCN + 8**	TRANS
FCN + 9	SYSPD	**FCN + ***	EXIT MENUS
FCN + #	SPCL		(The Cancel function is mapped to FCN + * on the Wireless Telephone.)

Program Axxess or Axxent

Program the Inter-Tel system for use with the Wireless Telephone System using the Axxess PAL software package that is loaded on your programming PC.

Copy Settings from a Wired Set

If possible, copy the settings from an existing wired telephone with similar features and keys to create a "template" Wireless Telephone. Once this is done, you can program additional options on one Wireless Telephone, then copy the programming to other Wireless Telephones or groups of Wireless Telephones.

Station Features for Wireless Telephone

Program the features and keys on the Wireless Telephone in the Individual Station Programming area on your programming PC. Program the following as required for the parameters required on the Wireless Telephones: Account Codes, Mailboxes, Miscellaneous Flags, Miscellaneous Port Information, Miscellaneous Station Information, Programmable Keys, Special Purpose Station, System Forwarding, Toll Restrictions, and Voice Mail information.

- **Keyset map** – Select the standard key set map.
- **Ring Intercom** – This feature must be enabled. The default is no; change to yes.
- **Shared Speakerphone** – Disable this feature as it is not supported on the Wireless Telephone.

Copy Programming

After the Wireless Telephone or Wireless Telephones have been programmed, use the copy function to copy the programming to all "like" Wireless Telephones. The installer can now test the Wireless Telephones.

4. Extension Assignments Worksheet

Shelf: _____ Interface Module: _____

Phone #	Ext. #	Name	Interface Module Circuit #	Comment	Wireless Telephone Serial #
Phone 1			1		
Phone 2			2		
Phone 3			3		
Phone 4			4		
Phone 5			5		
Phone 6			6		
Phone 7			7		
Phone 8			8		
Phone 9			9		
Phone 10			10		
Phone 11			11		
Phone 12			12		
Phone 13			13		
Phone 14			14		
Phone 15			15		
Phone 16			16		