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## Announcing ISDN for Strata DK424

We are very pleased to announce another exciting new enhancement for the Strata DK424 Business Telephone System, **Integrated Services Digital Network (ISDN)** compatibility. Release 4 brings ISDN capabilities that include both Primary Rate Interface (PRI) and Basic Rate Interface (BRI). These new capabilities open the door to many important new multimedia applications.

Release 4 ISDN BRI features apply to all sizes of Strata DK424. Release 4 processors RCTUA4, RCTUBA3/BB4, RCTUC3/D4, and RCTUE3/F4 contain these powerful new BRI features. Like T1, ISDN PRI is not supported on the RCTUA4 small system processor.

In addition to ISDN, System Open Architecture Interface (OAI) and several other important new features enhance overall Strata DK424 operation.

Your customers will receive the benefits of wider choices in public network connection and the many useful services and applications that go with them.

You will receive the benefits of having powerful new ISDN features that make the Strata DK424 more valuable and easier to sell than ever.

## Phased New Product Introduction

To bring you these new capabilities as soon as possible, we will introduce them in multiple releases. This approach makes the new features available as developed. This also includes a Release 3.2 software version as an interim step between now and when Release 4.0 becomes available.

**Release 3.2** provides these important new capabilities which are scheduled for availability April, 1998:

- ♦ System OAI and several other new features have been added.
- ♦ Enhancements to several existing features are provided to improve overall operation.

**Release 4** ISDN capabilities will be released in three phases:

- ♦ Release 4.0 will support **ISDN PRI** and the other general new features. This is in beta test now and is scheduled to become available in June, 1998.
- ♦ Release 4.1 will support **ISDN S/T BRI** capabilities. This is scheduled to become available a few weeks after Release 4.0.
- ♦ Release 4.2 will support **ISDN U BRI** and some additional PRI services. This is scheduled to become available a few months after Release 4.1.

**Toshiba America Information Systems, Inc.**

Telecommunication Systems Division  
9740 Irvine Blvd., Irvine, CA 92618-1697 (714) 583-3700

## ISDN Product Description

The Strata DK424 Release 4 enables you to access the public network using ISDN network services. Both PRI and BRI interfaces are supported to the National ISDN NI-2 BellCore specifications.

### Primary Rate Interface (PRI)

PRI, the larger capacity ISDN interface, provides 23 simultaneous voice or data connections. PRI uses the 23B+D transmission format which is defined as twenty-three 64 kbps bearer channels and one 64 kbps data (control) channel, with total bandwidth of 1.536 Mbps.

ISDN PRI is designed as the bulk trunk interface to the ISDN network. PRI connects the Strata DK424 telephone system to an intra- or inter-LATA communication provider. PRI can be used to send and receive voice and data. More importantly, PRI can save money by enabling the multiple use of the channels on the PRI link for a variety of services on demand, such as Direct Inward Dialing (DID), tie, FX, WATS, 800, etc. This capability to support multiple services and dynamically allocate channel use as needed is known as the Call-by-Call feature and is described in more detail later in the ISDN Features section of this bulletin. PRI lines also support Calling Number ID Services and are described in the ISDN Features section.

### Basic Rate Interface (BRI)

BRI, the smaller capacity ISDN interface, provides two simultaneous voice or data connections with a single interface. BRI uses the 2B+D transmission format which is defined as two 64 kbps bearer channels and one 16 kbps data (control) channel. The two B-channels can also be combined for data transmission at speeds up to 128 kbps. The D-channel carries call setup control data and can also be used as a third connection for packet data transmission when using an external NT1.

The Strata DK424 BRI card supports both station-side and trunk-side connections.

ISDN BRI services are designed mostly for end user station interfaces. The Strata DK424 connects ISDN instruments such as a group IV fax, PC, computer terminal or port, a LAN bridge, videoconferencing terminal, or other devices that can benefit from an all digital transmission link.

The Strata DK424 system also supports BRI interface from the public network as CO line service. The station-side connection supports multi-point multiple device connection to the same BRI circuit. BRI applications that are supported include video conferencing, remote access servers, faster Internet access, high speed data connections from ISDN stations to the public ISDN network, as well as typical voice and fax connections. Like PRI, BRI provides Calling Number ID Services, DID, Direct Inward Lines, and other data access services for connecting data networks and accessing the Internet.

No supplementary services are offered with this release of BRI.

### PCs and ISDN to the Desktop

BRI ISDN is often thought of as ISDN to the desktop, because it can provide the functionality of ISDN to the small end user. BRI, supported by ISDN terminals, brings simultaneous voice and data transmission capability directly to the desktop at higher speeds, greater data accuracy, and faster call setup times than ever possible over the analog network.

As the number and variety of end user computing applications increase, and processing power continues to move away from the central host to the individual desktop, the need has emerged for a device that integrates voice and data while communicating in multiple protocols with a variety of other processing elements (mainframes, minicomputers, and PCs). Because of its diverse capabilities, the PC acting as an integrated voice/data terminal workstation is well suited for the role of desktop integrator within an ISDN environment.

## ISDN Benefits

With ISDN the Strata DK424 can provide many benefits:

- ♦ **Faster Call Setup Times:** ISDN call connections are almost instantaneous, because of the nature of ISDN signaling and messaging during the call setup request sequence. A digital message, passed between the CO and customer premise equipment, is used versus the tone progress format used with analog systems. Since there is no delay for tones, the setup request and connection process is almost instantaneous.
- ♦ **Immediate Caller ID:** Caller ID is provided immediately on ISDN calls, because Caller ID is transmitted with each call setup message. This makes Caller ID information immediate rather than waiting for this information to be sent after starting the ringing process as with analog lines.
- ♦ **Shared Use of Lines:** Shared use of lines for voice, data, fax, and video enables each channel on ISDN services to be used for multiple purposes based upon the setup request. Lines can be used for many services without the need for modems or other devices. Sharing the channels for a variety of services can save you money in monthly service charges, compared to the dedicated lines required using traditional analog lines for each service.
- ♦ **Higher Speed Data Connections:** Higher speed digital data connectivity up to 128 kbps is possible on a BRI connection to the ISDN network.
- ♦ **DID-type Functionality:** DID-type functionality enables direct incoming calls to be routed and ring at designated telephones according to the number dialed. This provides DID functionality over ISDN lines without the additional expense of purchasing a block of numbers from the telephone company and subscribing to DID service.

## Selling Advantages

The strengths of the Strata DK424 ISDN capabilities provide you with many additional selling advantages over your competition:

- ♦ Comprehensive PRI and BRI capabilities enable you to meet the need of a variety of ISDN customer applications.
- ♦ Several other telephone system manufacturers support PRI, but very few support BRI. You can provide both, offering your customers greater capabilities, and putting you ahead of your competition.
- ♦ BRI connections can be used on the CO and/or the station side, providing greater flexibility.
- ♦ Caller ID is available on ISDN lines, but not on T1 lines.
- ♦ Services such as AT&T's Megacom™ is only available on PRI lines and are not available on T1 lines.
- ♦ Call-by-call service saves customers money.
- ♦ ACD/MIS can be enhanced by the use of System OAI CTI applications.

## Release 4 ISDN Features

The Strata DK424 Release 4.0 includes some exciting new ISDN features:

- ♦ **Call-by-Call Service Selection:** Call-by-Call service selection permits the grouping of individual PRI B-channels to be shared among various types of services specified by the customer, instead of having to dedicate each channel to a particular type of service. For example, when using Standard (POTS), DID, tie, FX, WATS, 800, etc., line circuits, individual or groups of B-channels of a PRI circuit can be designated to these various services dynamically on a call-by-call basis. B-channels can be dynamically allocated among services on a demand basis, depending on varying requirements for outgoing and incoming calls. This could also be used for voice or data on demand, or to switch between AT&T Megacom™ service and Megacom 800 service if the user has both.

This dynamic allocation of service can reduce the number of circuits required to access various services, especially if different services have peak busy periods at different times of the day. You can also assign a minimum and maximum number of B-channels allocated to any type of service.

With Release 4.2, Call-by-Call minimums and maximums will be implemented in the Strata DK424 with three settings available by time of day.

- ♦ **Non-facility Associated Signaling:** Non-facility Associated Signaling increases traffic handling on PRI lines. A single 64 kbps D-channel on one PRI line can be used to handle the signaling for two PRI lines on the DK424 system, instead of the usual signaling that requires one 64 kbps D-channel for each PRI line. This is very important when using the Call-by-Call feature to enable trunk groups larger than the 23 B-channels available on one PRI line. This also extends the number of B-channels on the second (non-signaling) PRI line from 23 to 24. This provides better performance and cost savings in high-volume ISDN PRI applications.
- ♦ **Calling Number Services:** Calling Number Services are provided through the D-channel function of ISDN's out-of-band signaling format. The ISDN link sends the Caller ID for the service originating the call. This number can be the listed DN, DID number, or a private-line number used for billing as well as identification to the called location. Caller ID blocking and screening are available options. Incoming calls receive the Caller ID from the caller and is used in Strata DK424 like ANI.

## ISDN Applications

The ISDN features can be employed in many applications.

- ♦ **Calling Number Services:** The Signaling System 7 (SS7) communications backbone network supports ISDN PRI trunks across various Central Office (CO) switching systems. ISDN depends upon SS7 out-of-band D-channel signaling control to provide end-to-end digital connectivity. In a calling number service application, for example, this extends calling number information across the entire public switched telephone network by passing this information across the various CO switching system nodes. Calling number information is very important in Computer Telephony Integration (CTI) applications.

- ♦ **High Speed Data:** Performance improvement (speed and accuracy) and connectivity is a major factor in ISDN data-related applications. For example, computer database interface works well on ISDN lines for large capacity file transfer, high resolution graphics transfer, on-line transaction processing, and information retrieval applications. ISDN provides better performance for these applications which require faster call setup and network response times than older, more restrictive analog networks can provide. ISDN also provides higher data accuracy than today's analog network.
- ♦ **Video Conferencing:** Color video transmission requires greater bandwidth and flexibility for video conferencing and related applications. Video conferencing systems integrate cameras, displays, CODEC, and control units. The CODEC can set up various transmission rates between 64 kbps and 1.5 mbps, as required.
- ♦ **Video Telephones:** Video phones can transmit voice and image simultaneously. ISDN makes transmission of still images at high speeds easy, as well as color video communication among several parties. This integrates a telephone, a video camera with an image sensor, and a small color Liquid Crystal Display (LCD).
- ♦ **Multi-device Connection:** Multiple devices (up to eight) can share one ISDN BRI line using station-side connections. For example, one line can accommodate two telephones and multiple PCs or fax machines, two of which can be used at the same time, making simultaneous voice or data calls possible over one ISDN line. The station interface is limited to two Directory Numbers (DNs). With conventional analog service, two lines are required to transmit data by PC and talk on the telephone at the same time, unless a Data Interface Unit (DIU) enables data switching of voice and data simultaneously over the same analog line between one telephone and one PC. BRI multi-device connection saves the customer money by sharing CO line resources, while providing the benefits of higher speed.
- ♦ **Multiple LAN Link:** Linking multiple LANs together, using ISDN, is very efficient at the 64 kbps high-speed rates, and data transmission over the all digital network provides extremely high data accuracy. This would replace the typical LAN bridge and modems in use today, which are much slower, and provide less data accuracy via the analog network. The DK424 supports BRI station-side connection of access router devices used in these applications.
- ♦ **High Speed Fax:** G4 Facsimile via ISDN offers high-speed and high-image quality. G4 Fax machines do not have to be isolated within a stand-alone system. Many G4 Fax machines can also communicate with G3 Fax machines because the connection with existing networks is handled by the ISDN side.
- ♦ **Telecommuting:** The idea of employees working at home is a much more effective and practical option with ISDN services. ISDN can provide employees working at home access to office technology necessary to make them work almost as effectively at home as in the office.
- ♦ **PRI Static Integrated Network Access:** PRI static integrated network access is designed to eliminate the cost of maintaining separate access lines for private-line services and switched services. The traffic over the two types of access lines can be combined over the same access line. For example, a user can access AT&T's ACCUNET™ private-line services, Software Defined Data Network, and ACCUNET™ Switched Digital services all over the same line.
- ♦ **ISDN BRI through Centrex:** ISDN BRI through Centrex is offered by many local exchange carriers, who offer both Centrex and ISDN lines. Blending the calling features of Centrex with BRI provides many customized capabilities. Examples are Caller ID, and the ability to set up data calls between parties using the 64 kbps B-channel without the need for lower speed modems.

- ♦ **Resource Sharing:** ISDN lines can support local network functions such as printer sharing and modem sharing by connecting these devices through terminal adapters. This enables users to share equipment, regardless of location. It also eliminates the need for dedicated connections, since all network resources are available on a dial-up basis.
- ♦ **Carrier Gateway:** This is the general “catch all” category that would be used to connect any device to any device over the public network. Using ISDN for this purpose provides speed, accuracy, and connectivity advantages for applications like Internet connection, E-Mail, Telex, Voice Mail, and Fax forwarding.

## Release 4 Additional Features

The Strata DK424 Release 4.0 also includes some important new additional features:

- ♦ **Hotline Service (also called Emergency Ringdown):** Analog single-line telephones can be programmed so that when the user goes off-hook, they will automatically ring a designated extension without dialing. The receiving station or attendant console will display the station name/number of the off-hook calling station. This feature is very useful for hotel/motel applications, in which lobby or public area telephones either do not have dial access, or for convenience, automatically call the front desk. This feature is also very useful for healthcare applications, in which if a station is left off-hook and fails to complete the dialing of a valid number within a programmable time period, continuous ringing will occur at a designated extension. This feature is not available with digital or electronic telephone sets.
- ♦ **T1 DID and Ground Start Hookswitch Flash:** This compatibility provides hookswitch flash operation on T1 two-way DID, ground start, and tie lines. This improves DID functionality in T1 applications. This feature requires the new RDTU2 T1 card. The RDTU1 card can also be firmware chip upgraded to support this feature.
- ♦ **Software Station Ports:** Software station ports are used more efficiently in Release 4.0. DID and tie lines do not require any station ports in software. This provides higher potential capacities when using either digital or analog DID or tie lines. The new Strata DK424 General Description provides charts and details.
- ♦ **E911 CAMA Trunk Direct Interface:** E911 CAMA Trunk Direct Interface enables cost-effective connection of the Enhanced 911 locator services without requiring expensive third-party adjunct equipment. This is done through a new Strata DK424 CO line card called the CAMA Trunk Interface Unit (RMCU). This unit supports CAMA trunk circuits with a subassembly that attaches to it called the CAMA Trunk Subassembly (RCMS). These are described in more detail in the New Hardware section later in this bulletin.

## Release 3.2 New Features

The Strata DK424 Release 3.2 provides the following new capabilities. With the exception of System OAI, which is not available on the RCTUA processor, all these new features are available on all processor models.

- ♦ **System Open Architecture Interface (OAI):** System OAI connects the Strata DK424 to an application processor computer for system-wide CTI ACD applications. This system-wide CTI capability is designed specifically for ACD applications, in which a computer running third-party software provides applications such as screen pop-ups, call routing, telemarketing, etc., or custom applications can be developed. OAI data is available only for ACD agents.

The proprietary RS-232 OAI port sends call information including ANI, DNIS, and Caller ID call data for ACD calls only from the DK424 to an application computer. The interface also provides a method for controlling and routing calls. The RS-232 OAI port requires the RSIU card and the RKYS4 feature key.

Detailed OAI information for software developers is only available through the Customized CTI Developer's Program. Details will be provided later.

- ♦ **RKYS4 Feature Key:** The RKYS4 feature key includes all the capabilities of the RKYS3 (Built-in Auto Attendant and ACD with MIS channel) plus System OAI support. The OAI port and RKYS4 is compatible with the RCTUBA/BB, RCTUC/D, and RCTUE/F processors. The OAI port and RKYS4 is not compatible with the RCTUA processor.
- ♦ **Station Control of Ground/Loop Start CO Line Call Forward:** Station control of ground- and loop-start CO line Call Forward enables assignment of which station controls call forward for each ground- and loop-start line. The station that controls CO line call forward must be the only station assigned to ring for that line. The ringing assignment (Immediate, Delay1, or Delay2) in which a CO line call forwards is designated in system programming independently for the Day, Day2, and Night Ring modes. Once assigned, the CO line follows the call forward setting (Busy, No Answer, etc.) of the designated control station. This feature does not apply to tie, DID ANI, or DNIS lines which ring to a particular DN and follow the call forward setting of the DN.
- ♦ **Standard Telephone Tandem CO Line Connection - with Drop Out:** This feature enables standard telephones and Voice Mail/Auto Attendant ports to setup a conference with two CO lines and then drop out of the conference leaving the two CO lines connected. The station that sets up the two-line connection can reconnect to the tandem connection by dialing a pickup code. If more than one tandem connection is setup by a station, the pickup code reconnects that station to the tandem connection that has the lowest CO line number as a priority. Prior to Release 3.2 software, standard telephones could set up two-line conferences, but they could not drop out of the connection. The pickup code function applies only to the station that sets up the tandem connection. A station cannot pick up a tandem connection which was set up by another station.
- ♦ **Fixed Call Forward Destination Enhancements:** Enables Distributed Hunt and Phantom DNs (PhDNs) to be assigned as a station's Fixed Call Forward destination. Prior to Release 3.2 software, only Primary DNs (PDNs) could be assigned as a station's Fixed Call Forward destination.
- ♦ **Ring Transfer Privacy Mode Enhancement:** This feature provides the capability that if Transfer Privacy is enabled, a call that is blind transferred to a multiple appearing DN or CO Line button only rings on the DN of the prime station of a PDN or the owner station of a PhDN. The transferred call rings on all stations having the transferred-to DN before the transferring station releases (hangs-up) the call, but rings only on the prime or owner station after the call is released. Prior to Release 3.2 software, a transferred call would ring all stations having the transferred-to DN even after the transferring station released the call.
- ♦ **Voice Mail Control during Conference Calls:** This feature enables Toshiba digital and electronic telephones to transmit DTMF tones during CO line conference calls. The basic application of this feature is to enable a user to call voice mail during a conference call and play messages to all parties in the conference. The DTMF tones can be sent from any Strata DK424 station in the conference.

When DTMF tones are sent, all parties in the conference (CO lines and telephones) receive the tones. Prior to Release 3.2, DTMF tones could not be sent during any type of conference call.

- ♦ **Camp-on Tone during I-Hold or Exclusive Hold:** This feature provides a camp-on tone to be sent to a telephone when the telephone receives any type of call while having the DN that should receive the call on hold. The camp-on tone consists of two muted ring tones three seconds apart. Prior to Release 3.2, if a DN received a call while it was on hold there would be no audible or visual indication that another call was camped onto the DN. This assumes that there were no idle appearances of the DN, which would ring if called, while another appearance of the DN was on hold.
- ♦ **Disable Hold Display Scroll Option:** Provides disabling or enabling the Hold Display Scroll feature independently for each telephone. When more than one call is on hold on a telephone, the Hold Display Scroll feature enables a user to scroll through the held lines. When scrolling held lines, the selected held line flashes at a faster rate than the other held lines and the selected held line number displays on the telephone LCD. The flashing rate difference between held lines is confusing to some users, so by using this option to turn off the Hold Display Scroll feature, held lines all flash at the same rate unless the held line recalls the telephone. Prior to Release 3.2 software, Hold Display Scroll was enabled on all telephones and could not be disabled.
- ♦ **Selective Pickup of All Call Page:** This feature enables pickup of All Call Page (and External Page depending on programming) exclusive of internal station-to-station ringing call pickup. If this option is on, the pickup code picks up All Call and External Page only, and does not pick up ringing DNs. Prior to Release 3.2, the pickup code would pick up a ringing DN as a priority over All Call Page if the internal station-to-station call was ringing at the same time the All Call or External Page needed to be picked up.
- ♦ **Call Transfer Music or Ringing Option:** This feature enables music or ringing to be heard by the caller when a call is transferred, depending upon system programming. Prior to Release 3.2, callers heard music during the transfer process and no ringing option in programming was available.

## New Hardware

The System OAI Option Key (RKYS4) provides support for ACD CTI applications:

- ♦ The RKYS4 feature key includes all the capabilities of the RKYS3 (Built-in Auto Attendant and ACD with MIS channel) plus System OAI support.
- ♦ The OAI port and RKYS4 is compatible with the RCTUBA/BB, RCTUC/D, and RCTUE/F processors. The OAI port and RKYS4 is not compatible with the RCTUA processor.

Release 4 ISDN and other new features are available in all four processor models of the Strata DK424:

- ♦ **RCTUA4** small system processor supports BRI, but does not support PRI or the OAI port.
- ♦ **RCTUBA3/BB4** medium system processor supports all Release 4.0 features.
- ♦ **RCTUC3/D4** large system processor supports all Release 4.0 features.
- ♦ **RCTUE3/F4** maximum system processor supports all Release 4.0 features.

The Primary Rate Interface Unit (RPTU) is a 24-channel PCB providing one data (control) channel and 23 bearer channels. PRI is supported in Release 4.0 software and the PRI hardware interface will also be available with Release 4.0.



- ♦ All B-channels appear and program as CO lines in the DK424 system and can be individually configured for local service, FX, WATS, DID, tie line, etc. service operation.
- ♦ Network connection using PRI interface requires a customer-supplied external CSU.

The following Basic Rate S/T Interface cards will be available with Release 4.1 software:

- ♦ The Basic Rate S/T Interface Unit (RBSU) provides two BRI S/T (four-wire) interfaces that can be used for network- or station-side connections. The RBSU has connectors for a two-port add-on subassembly.
- ♦ The Basic Rate S/T Interface Subassembly (RBSS) attaches to the RBSU to provide two additional BRI S/T interfaces that can be used for station-side connections only.
- ♦ The combination of the RBSU and the RBSS subassembly can provide four BRI S/T interfaces in one card slot.

**Note** Network connections using BRI S/T interface require a customer-supplied external NT1 device.

The following Basic Rate U Interface cards will be available with Release 4.2:

- ♦ The Basic Rate U Interface Unit (RBUU) provides two BRI U (two-wire) interfaces that can be used for network- or station-side connections. The RBUU has connectors for a two-port add-on subassembly.
- ♦ The Basic Rate U Interface Subassembly (RBUS) attaches to the RBUU to provide two additional BRI U interfaces that can be used for station-side connections only.
- ♦ The combination of the RBUU and the RBUS subassembly can provide four BRI U interfaces in one card slot.

The E911 CAMA Trunk Interface card and subassembly will be available in Release 4.0:

- ♦ CAMA Trunk Interface Unit (RMCU) provides two CAMA trunk circuits with one RCMS subassembly attached (RCMS added optionally).
- ♦ CAMA Trunk Subassembly (RCMS) attaches to the RMCU to provide two CAMA trunk circuits (RCMS added optionally).
- ♦ The combination of the RMCU and two RCMS subassemblies provides four circuits for CAMA trunk connection.

The new T1 Interface Unit (RDTU2) will be available in Release 4.0:

- ♦ The new T1 Interface Unit (RDTU2) supports the T1 DID and ground start hookswitch flash capability in Release 4.0.
- ♦ The original T1 Interface Unit (RDTU1) does not support T1 DID and ground start hookswitch flash in its original form, but can be firmware chip upgraded to support this capability.

**Note** The new RDTU2 T1 Interface Unit, in addition to providing enhanced functionality, is priced significantly lower than the RDTU1 was originally. See the new *Strata DK Price Book* for details.

## Product Line Strategy

Due to the short time that Release 3.2 will be available, between Release 3.1 and Release 4.0, Release 3.2 will only be available in upgrade kits. Strata DK424 processors will not be shipped with Release 3.2 software, because of the excessive cost of converting existing Release 3.1 processor inventory to Release 3.2 software for such a short time.

Release 3.2 makes System OAI and several other new feature enhancements available sooner than Release 4.0.

The System OAI feature key (RKYS4) is added to the Strata DK424 product line. There are now four DK424 feature keys that provide the following optional capabilities:

Features	RKYS1	RKYS2	RKYS3	RKYS4
Built-in Auto Attendant	x	x	x	x
ACD		x	x	x
ACD with MIS Channel			x	x
System OAI				x

Purchase of the RKYS4 will require proof of completion of the Strata OAI Advanced Development Course. Details of this extra cost course will become available soon.

When Release 4.0 is available, Release 4.0 RCTU processors will replace their Release 3 counterparts in the DK424 product line and become the standard processor version of software for all new Strata DK424 systems.

When Release 4.1 becomes available, Release 4.1 RCTU processors will become the standard processor version of software for all new Strata DK424 systems. When Release 4.2 becomes available, Release 4.2 RCTU processors will become the standard processor version of software for all new Strata DK systems.

## Upgrades

### Release 3.2

Existing Strata DK424 and DK280 Release 3.0 or 3.1 systems can be upgraded to Release 3.2. This enables you to take advantage of System OAI and other new capabilities without waiting for Release 4.0. All that is needed is a ROM chip upgrade kit and reprogramming of the system.

Toshiba will provide Release 3.2 upgrade kits at no charge for all existing Release 3.0 and 3.1 systems. This is accomplished by giving full credit for the cost of the upgrade kit for return of the 3.0 or 3.1 ROM chips to Toshiba.

### Release 4.0

Release 4.0 is also great news for existing DK424 and DK280 customers who can be upgraded to take advantage of the new ISDN capabilities. Existing systems with Release 3 RCTU processors can be upgraded to Release 4.0 and 4.1 in the future. All that is needed is a ROM upgrade kit and reprogramming of the system.

Toshiba will offer Release 4.0 upgrade kits at a very affordable price for existing Release 3.x processors. See the new *Strata DK Price Book* for details.

To make these upgrades easy, DKAdmin or DKBackup provides an efficient way to change ROMs without having to manually reprogram everything. These backup/restore and programming tools are easy to use with menu driven spreadsheet format and help screens.

**Important!** *When using DKAdmin or DKBackup to upgrade from Release 3 to Release 4, DKAdmin Release 4 or DK Backup Release 4 (which will be available by product release) must be used instead of their Release 3 counterparts to avoid corrupting the system database.*

## Compatibility

Release 4 ISDN processors work in either the DK424 or DK280 base cabinets. This makes the new processors compatible with existing installations.

The new Release 4 processors are compatible with all existing DK424 components, including the items that attach to the RCTU card. The existing RKYS1, 2, 3, and 4 are compatible with the new Release 4 processors. The same applies to the RRCS-4, 8, and 12 DTMF receivers. When you upgrade, just detach them from the older RCTU card and attach them to the Release 4 RCTU card.

## Training

Both technical and sales training curriculums for the Strata DK are being updated to include information on the new Strata DK424 Release 4 ISDN capabilities.

Release 4 ISDN technical training will be conducted in four-modular segments to provide an understanding of the technology and the components. The four-module ISDN training is currently in development, and each module is being made available as developed. Each module will contain the contents of the previous module. Modules include:

- ♦ Module 1 - ISDN Fundamentals (available now and previously distributed)
- ♦ Module 2 - How to order ISDN lines (available now and previously distributed)
- ♦ Module 3 - Testing and Troubleshooting (available now and previously distributed)
- ♦ Module 4 - ISDN in the Strata DK424 (available in early April)

The modular ISDN technical training will be conducted in both classroom and CBT formats.

### Classroom Training

Classroom ISDN training will be included in the updated five-day Strata DK Basic I&M Training course. This course is designed for technicians who need the complete Strata DK installation training and certification.

### Computer-based Training

For technicians already certified on the Strata DK424 or DK280 Release 3, Release 4 ISDN technical training will also be made available as a Computer Based Training (CBT) self-study course. This new four-module CD-ROM program is highly interactive and informative and represents a new generation of training tools. Each ISDN module will be available on CD-ROM as it is developed. A testing diskette will be available. When all four modules have been completed and the testing diskette is returned, upon receiving a passing grade, a Certificate of Completion will be issued.

**Note** Both classroom and CBT ISDN technical training will be available and conducted well in advance of the release of the Release 4 ISDN product. The process of ordering, testing and troubleshooting ISDN lines is very different and much more complex than T1 or any other services we have dealt with in the past. It is essential that your technicians understand this process and become prepared in advance. This will help your initial ISDN installations be more successful.

## Training Requirements

*You must have a technician complete the training on Release 4 ISDN before ordering ISDN PRI or BRI interface units from Toshiba. Because of the complexities of ISDN, you would encounter extreme difficulty in attempting an ISDN installation if not adequately trained.*

## Sales Training

Field sales training for Release 4 ISDN will begin on a regional basis in April, 1998. Also, the ISDN CBT self-study course is highly recommended for sales personnel as well as installation technicians.

## Pricing

The Strata DK424 Release 4.0 processors have slightly increased in price over the Release 3 processors. This is to compensate for higher costs of continued value-added enhancements. However, the price increase is very small and does not affect other existing equipment. When you add the increased processor cost to the overall cost of the whole system, the price difference is negligible. This enables Release 4.0 to take the place of Release 3 in the Strata product line with greater functionality and value at almost the same price. See the new *Strata DK Price Book* for details.

Also note that the new T1 Interface Unit (RDTU2), in addition to providing enhanced functionality, is priced significantly lower than the original RDTU1. This makes the Strata DK424 more cost effective than ever in T1 applications.

## Documentation

All existing Strata DK documentation is in the process of being updated to include the new Release 4 ISDN information.

New promotional materials include:

- ♦ A new brochure describes the Strata DK424 ISDN capabilities. It is a two-page supplement that can be used with the existing Strata DK424 brochure.
- ♦ A new *General Description* includes information on the Strata DK14, DK40, and DK424 with ISDN.

New documentation includes:

- ♦ Supplemental information for the existing *Strata DK Installation & Maintenance Manual* and *Programming Manual*.
- ♦ *User Guides and Quick Reference Guides* are being revised to include ISDN information.
- ♦ The *Strata DK Feature Description Manual* is also being revised to include ISDN and other new product information.

**Note** New documentation paper updates will be sent to each dealer office of record. New versions of the Strata DK Library CD-ROM will also be sent to registered CD-ROM holders. The Strata DK Library provides you electronic access to this valuable reference information. It enables you print these documents as you need them.

## Availability

To bring you these new capabilities as soon as possible, we will introduce them in multiple releases as developed.

Strata DK424 Release 3.2 ROM chip upgrade kits for Release 3.0 and 3.1 processors are scheduled to become available in April, 1998. Orders can now be placed. The part numbers for the Release 3.2 upgrade kits are:

- ♦ **RCTUE3/F3** Release 3.2 upgrade kit – RURF3.2
- ♦ **RCTUC3/D3** Release 3.2 upgrade kit – RURD3.2
- ♦ **RCTUBA3/BB3** Release 3.2 upgrade kit – RURB3.2
- ♦ **RCTUA3** Release 3.2 upgrade kit – RURA3.2

Strata DK424 Release 4 ISDN capabilities will be released in three phases:

- ♦ ISDN Release 4.0 processors and PRI hardware interfaces are scheduled for availability in June, 1998. Orders can be placed beginning 4-20-98.

**Note** You must have a technician complete the training on Release 4 ISDN before ordering ISDN PRI or BRI interface units from Toshiba. Because of the complexities of ISDN, you would encounter extreme difficulty in attempting an ISDN installation if not adequately trained. ***The orders will be filled only at such time that the installer of this equipment has successfully completed the CBT certification on all four modules of the ISDN CBT.***

- ♦ ISDN BRI S/T Release 4.1 processors and hardware interfaces are scheduled for availability a few weeks after Release 4.0. You will receive updated information on actual release and order dates later.
- ♦ ISDN BRI U Release 4.2 processors and hardware interfaces are scheduled for availability a few months after Release 4.1. You will receive updated information on actual release and order dates later.

Strata DK424 Release 4.0 ROM chip upgrade kits for Release 3 processors are scheduled to become available in June, 1998. Orders can be placed beginning 4-20-98. The part numbers for the Release 4.0 upgrade kits are:

- ♦ **RCTUE3/F3** Release 4.0 upgrade kit – RURF4.0
- ♦ **RCTUC3/D3** Release 4.0 upgrade kit – RURD4.0
- ♦ **RCTUBA3/BB3** Release 4.0 upgrade kit – RURB4.0
- ♦ **RCTUA3** Release 4.0 upgrade kit – RURA4.0