

Components

Features

IntraMail

Specifications
and Parts

DSX

Product Description Manual

P/N 1093093

Rev 2, June 2006

Printed in U.S.A.

01.00.00

This manual has been developed by NEC Unified Solutions, Inc. It is intended for the use of its customers and service personnel, and should be read in its entirety before attempting to install or program the system. Any comments or suggestions for improving this manual would be appreciated. Forward your remarks to:

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DSX

SOPHISTICATION SIMPLIFIED



INNOVATIVE

DSX from NEC takes the lead with state-of-the-art innovations sure to make your business communications more efficient, profitable, and enjoyable.

Innovation starts with the new sleek DSX telephones. All models feature the same thin, floating design, two position angle adjustment for effortless viewing, and built in wall mounting. The 22-Button Display offers a large 3-line-by-24 character display, four interactive soft keys, and a built in speakerphone. The 34-Button Display is enhanced with a backlit display and illuminated dial pad (for improved low light viewing), as well as additional feature keys. A 34-Button Display advanced model provides a built-in half-duplex speakerphone.

The 34-Button Super Display has all the features of the advanced 34-Button and additionally offers the user a 9-line-by-24-character display and 12 interactive soft keys. Rounding out the line, the DSX Cordless Telephone provides mobility and flexibility for those who spend much of the workday away from their desk. Complemented by 4 fully programmable Feature Keys, the DSX Cordless Telephone achieves a whole new level of convenience and mobility.

Innovations don't stop with the DSX telephones. Right out of the box the system has a two-port Automated Attendant with no optional equipment required. The capability for full-featured IntraMail Voice Mail with Automated Attendant is inherent in the system and only requires an IntraMail flash card to activate. Program on-site from the telephone or from a PC connected to the system's ethernet or USB port. PC remote programming is available through the ethernet port or built-in modem.

AFFORDABLE

NEC designed DSX from the ground up with affordability in mind. Economy per port is maximized by high-density circuitry. All DSX telephones have a speakerphone and display for increased functionality and total lower station cost. Native support for ISDN PRI and T1 provides maximum connectivity for low initial investment. Since DSX is simple to install and easy to use, the expenses of configuration, programming, and post-installation training are minimized.

The cost-effective IntraMail provides sophisticated Voice Mail and Automated Attendant features previously available only with expensive add-ons or costly external units. It is available in two configurations: 4 port/8 hour and 8 port/16 hour. The IntraMail Automated Attendant includes the call answering features you demand such as dial access to extensions, unique day, night, and holiday answering (Flexible Answering Schedules), the ability for two companies to share the same IntraMail (Multiple Company Greetings), and the capability to dial employees by entering their names instead of extension numbers (Directory Dialing).

IntraMail Voice Mail is much more than simple messaging. Advanced IntraMail features allow you to automatically place a return call to the message sender (Caller ID with Return Call), screen your incoming calls (Call Screening), forward a message to a co-worker (Message Forward), and send a call to a co-worker's mailbox (Transfer to a Mailbox).

DSX is sized right, starting with the economical 40-port DSX-40, growing into the 80-port DSX-80, and culminating in the 160-port DSX-160. To maintain the value of your investment, all the components of a DSX-80 can be used in DSX-160 just by adding a DSX-160 cabinet. Even when growing from the DSX-40, your investment in programming, telephones and other station equipment is retained.

RELIABLE

Over a decade of intense feature development ensures that the core DSX call processing features are mature, efficient, and reliable – yet intuitive and easy to use. Combined with end-to-end Quality Assurance and state-of-the-art circuit design (which achieves new standards for efficiency and economy), you are assured that DSX will be your reliable business partner for years to come.

Innovative leadership and longevity are a rare combination among technology companies. Founded in 1899, NEC has grown to a nearly \$50 billion enterprise that produces 15,000 products in 126 manufacturing plants worldwide. NEC pioneered the development of telephones and switching systems early in the 20th century, and has maintained a leadership position in communications and networking ever since.

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Components

DSX Telephones

22-Button Display Telephone with Speakerphone

At a Glance	P/Ns 1090020 (Black) and 1090025 (White)	
	Display: 3 line x 24 character	Speakerphone: Built-in, half-duplex
	Soft Keys: 4	Wall Mount: Built-in
	Feature Keys: 12	Angle Adjustment: 2 position built-in
	Fixed Function Keys: 12	Backlit: No
	Speed Dial Bin Keys: 10	Dual LEDs: Yes
	Headset jack: RJ-10 built-in	



The 22-Button Display Telephone features a large 3 line-by-24 character alphanumeric display with 4 Interactive Soft Keys for intuitive feature access. It also provides 10 Personal Speed Dial bin keys, 12 programmable Feature Keys and 12 fixed function keys for streamlined operation. Additionally, this telephone offers a headset jack and built-in speakerphone. Unique features include dual LEDs, a Ring/Message Lamp (to show ringing, Caller ID, and voice mail messages), built-in wall mounting, and an innovative two position angle adjustment.

34-Button Backlit Display Telephone with Speakerphone

At a Glance	P/Ns 1090021 (Black) and 1090026 (White)	
	Display: 3 line x 24 character	Speakerphone: Built-in, half-duplex
	Soft Keys: 4	Wall Mount: Built-in
	Feature Keys: 24	Angle Adjustment: 2 position built-in
	Fixed Function Keys: 12	Backlit: Yes
	Speed Dial Bin Keys: 10	Dual LEDs: Yes
	Headset jack: RJ-10 built-in	



The 34-Button Display Telephone features a large 3 line-by-24 character backlit alphanumeric display with 4 Interactive Soft Keys for intuitive feature access. It also provides 10 Personal Speed Dial bin keys, 24 programmable Feature Keys and 12 fixed function keys for streamlined operation. Additionally, this telephone offers a backlit keypad, a headset jack, and built-in speakerphone. Unique features include dual LEDs, a Ring/Message Lamp (to show ringing, Caller ID, and voice mail messages), built-in wall mounting, and an innovative two position angle adjustment.

34-Button Backlit Display Telephone with Full-Duplex Speakerphone

At a Glance	P/Ns 1090022 (Black) and 1090027 (White)	
	Display: 3 line x 24 character	Speakerphone: Built-in, full-duplex
	Soft Keys: 4	Wall Mount: Built-in
	Feature Keys: 24	Angle Adjustment: 2 position built-in
	Fixed Function Keys: 12	Backlit: Yes
	Speed Dial Bin Keys: 10	Dual LEDs: Yes
	Headset jack: RJ-10 built-in	



This feature-rich 34-Button Display Telephone features a large 3 line-by-24 character backlit alphanumeric display with 4 Interactive Soft Keys for intuitive feature access. It also provides 10 Personal Speed Dial bin keys, 24 programmable Feature Keys and 12 fixed function keys for streamlined operation. Additionally, this telephone offers a built-in full duplex speakerphone (with no external speaker or microphone required), a backlit keypad, and a headset jack. Unique features include dual LEDs, a Ring/Message Lamp (to show ringing, Caller ID, and voice mail messages), built-in wall mounting, and an innovative two position angle adjustment.

34-Button Backlit Super Display Telephone with Half-Duplex Speakerphone

At a Glance	P/Ns 1090030 (Black) and 1090031 (White)	
	Display: 9 line x 24 character	Speakerphone: Built-in, half-duplex
	Soft Keys: 12	Wall Mount: Built-in
	Feature Keys: 24	Angle Adjustment: 2 position built-in
	Fixed Function Keys: 12	Backlit: Yes
	Speed Dial Bin Keys: 10	Dual LEDs: Yes
	Headset jack: RJ-10 built-in	



The Super Display Telephone is the system's most sophisticated telephone instrument. It features a large 9 line-by-24 character backlit alphanumeric display with 12 Interactive Soft Keys for intuitive feature access. It also provides 10 Personal Speed Dial bin keys, 24 programmable Feature Keys and 12 fixed function keys for streamlined operation. Additionally, this telephone offers a built-in full duplex speakerphone (with no external speaker or microphone required), a backlit keypad, and a headset jack. Unique features include dual LEDs, a Ring/Message Lamp (to show ringing, Caller ID, and voice mail messages), built-in wall mounting, and an innovative two position angle adjustment.

60-Button DSS Console

At a Glance	P/Ns 1090024 (Black) and 1090029 (White)	
	Feature Keys: 60	Wall Mount: Built-in
	Fixed Function Keys: 3	Angle Adjustment: 2 position built-in
	Dual LEDs: No	



The 60-Button DSS Console provides a display keyset with a 60-button Busy Lamp Field (BLF) and one-button access to extensions, trunks, and selected system features. Enhanced by Answer, Release, and Transfer fixed function keys, the 60-Button DSS Console is a great time saver for users that do a lot of call processing (such as operators or dispatchers). By default, the DSS Console is set up with Hotline keys to extensions and 14 feature keys for quick access to Page, Park and the system Night Mode

Note: DSX80/160 supports DS1000/2000 telephones if the system has a DSTU Card (P/N 80021A) installed.

DTH-1-1 Single Line Telephone

At a Glance	P/N 780034 (Black)	
	Fixed Function Keys: 5	Message Waiting: Yes
	Speed Dial Bin Keys: 4	Ring/Message Waiting Lamp: Yes
	Selectable Ring Tones: Yes	Wall Mount: Built-in



Components

The DTH-1-1 is a cost-effective analog single line telephone that offers 5 fixed feature keys, 4 Speed Dial bin keys and Message Waiting. The built-in Message Waiting lamp will flash for incoming calls or when the user has a message. To simplify working in groups, The DTH-1-1 provides 3 selectable ring tones.

DTR-1-1 Single Line Telephone

At a Glance	P/Ns 780020 (Black) and 780021 (White)	
	Fixed Function Keys: 5	Message Waiting: Yes
	Speed Dial Bin Keys: None	Ring/Message Waiting Lamp: No
	Selectable Ring Tones: Yes	Wall Mount: Built-in
	Handsfree Monitor: No	



The DTR-1-1 is a stylish yet rugged analog single line telephone with 5 fixed feature keys and Message Waiting. Similar to the DTH-1-1, the DTR-1-1 has a built in Message Waiting lamp that will flash for incoming calls or when the user has a message. The DTR-1-1 offers programmable ring pitch and volume. Built-in wall mounting and a bridged data jack for connecting a modem or answering machine are standard.

DTR-1HM-1 Single Line Telephone

At a Glance	P/Ns 780025 (Black) and 780026 (White)	
	Fixed Function Keys: 7	Message Waiting: Yes
	Speed Dial Bin Keys: 8	Ring/Message Waiting Lamp: Yes
	Selectable Ring Tones: Yes	Wall Mount: Built-in
	Handsfree Monitor: Yes	



The DTR-1HM-1 provides all the features of the DTR-1-1 in addition to two additional fixed function keys (for Hold and Speaker/Monitor) and 8 Speed Dial bin keys. For convenient on-hook dialing and call monitor, the DTR-1HM-1 also offers Handsfree Monitor.

DSX Cordless Telephone

DSX Cordless Lite II

At a Glance	P/N 730087	
	Display: 2 line x 16 character	Transmission: 900 MHz Narrow Band FM
	Status Icons: 4	Range: 350 feet (site dependent)
	Feature Keys: 4	Max Units Per Site: 30 (12 in close proximity)
	Fixed Function Keys: 8	Battery Life: Up to 7 hours talk time
	Channels: 30	



The DSX Cordless Lite II Telephone (P/N 730087) is a 900 Mhz digital narrow band FM cordless telephone that provides mobility, flexibility and convenience for those who spend much of the workday away from their desk. Fully integrated with the DSX system, the DSX Cordless Lite II Telephone offers many standard features such as Call Forwarding, Call Coverage, Hotline, and Voice Mail. Complemented by 4 fully programmable function keys (with LEDs), the DSX Cordless Lite II Telephone achieves a whole new level of convenience and mobility. An easy-to-read 16-character by 2-line LCD display (with four status icons), volume controls, a rechargeable Nickel Metal Hydride Battery Pack, and a handy belt clip round out the elegant and affordable DSX Cordless Lite II Telephone.

The Cordless II Lite Telephone includes the following:

- Base Unit
- Base Unit AC Adaptor (P/N 630618)
- Base Wall Mount Bracket (P/N 730608)
- Base Line Cord
- Handset
- Handset Charger (P/N 730632)
- Handset Charger AC Adaptor (P/N 730619)
- Handset Charger Wall Mount Bracket (P/N 730633)
- Handset Battery (P/N 730631)
- Belt Clip (P/N 730634)

Corded Headsets for DSX Keysets and DTR/DTH SLTs

The following corded headsets are compatible with DSX keysets and the DTR/DTH single line telephones. Check with your supplier for their latest offerings.

NEC / Plantronics Headsets

NEC / Plantronics Amplified Headsets				
NEC P/N	Description	Style	Microphone Type	Plantronics Model Number
-	Polaris Starset	In-the-Ear	Voice Tube	P31
			Noise Canceling	P31N
750631	Polaris Mirage	On-the-Ear	Voice Tube	P41
-			Noise Canceling	P41N
750632	Polaris Supra Monaural	Over-the-Head	Voice Tube	P51
750636			Noise Canceling	P51N
-	Polaris Supra Binaural	Over-the-Head	Voice Tube	P61
750633			Noise Canceling	P61N
750630	Polaris TriStar	In-the-Ear	Voice Tube	P81
-			Noise Canceling	P81N
750634	Polaris Encore Monaural	Over-the-Head	Voice Tube	P91
-			Noise Canceling	P91N
-	Polaris Encore Binaural	Over-the-Head	Voice Tube	P101
760635			Noise Canceling	P101N
-	DuoSet Convertible	Over-the-Head, On-the-Ear	Voice Tube	P141
			Noise Canceling	P141N
-	DuoPro	On-the-Ear	Voice Tube	P151
			Noise Canceling	P151N
-	DuoPro	Over-the-Head	Voice Tube	P161
			Noise Canceling	P161N
-	DuoPro Convertible	Over-the-Head,	Voice Tube	P171
-	DuoPro Convertible	Over-the-Head,	Noise Canceling	P171N
-	DuoPro	Behind-the-Head	Voice Tube	P181
-	DuoPro	Behind-the-Head	Noise Canceling	P181N
750643	Polaris/SupraPlus Monaural	Over-the-Head	Voice Tube	P251
750644	Polaris/SupraPlus NC Monaural		Noise Canceling	P251N
-	Polaris/SupraPlus NC Binaural	Over-the-Head	Voice Tube	P261
750645	Polaris/SupraPlus NC Binaural		Noise Canceling	P261N
-	SupraPlus SL Monaural	Over-the-Head	Voice Tube	P351
			Noise Canceling	P351N
-	SupraPlus SL Binaural	Over-the-Head	Voice Tube	P361
			Noise Canceling	P361N

Headsets

NEC / Plantronics Non-Amplified Headsets ¹				
NEC P/N	Description	Style	Microphone Type	Plantronics Model Number
-	StarSet	In-the-Ear	Voice Tube	H31
			Noise Canceling	H31N
-	Mirage	On-the-Ear	Voice Tube	H41
			Noise Canceling	H41N
-	Supra Monaural	Over-the-Head	Voice Tube	H51
			Noise Canceling	H51N
-	Supra Binaural	Over-the-Head	Voice Tube	H61
			Noise Canceling	H61N
-	TriStar	In-the-Ear	Voice Tube	H81
			Noise Canceling	H81N
-	Encore Monaural	Over-the-Head	Voice Tube	H91
			Noise Canceling	H91N
-	Encore Binaural	Over-the-Head	Voice Tube	H101
			Noise Canceling	H101N
-	Freehand Monaural	In-the-Ear	Voice Tube	H131
			Noise Canceling	H131N
-	DuoSet Convertible	Over-the-Head, On-the-Ear	Voice Tube	H141
			Noise Canceling	H141N
-	DuoPro	On-the-Ear	Voice Tube	H151
			Noise Canceling	H151N
-	DuoPro	Over-the-Head	Voice Tube	H161
			Noise Canceling	H161N
-	DuoPro Convertible	Over-the-Head, On-the-Ear	Voice Tube	H171
			Noise Canceling	H171N
-	DuoPro	Behind-the-Head	Voice Tube	H181
			Noise Canceling	H181N
-	SupraPlus Monaural	Over-the-Head	Voice Tube	H251
			Noise Canceling	H251N
-	SupraPlus Binaural	Over-the-Head	Voice Tube	H261
			Noise Canceling	H261N
-	SupraPlus SL Monaural	Over-the-Head	Voice Tube	H351
			Noise Canceling	H351N
-	SupraPlus SL Binaural	Over-the-Head	Voice Tube	H361
			Noise Canceling	H361N

¹ Requires Vista M12 Amplifier and Handset/Headset Switch



GN Netcom Headsets

GN Netcom Non-Amplified Headsets ¹			
Model Number	Description	Microphone Type	Style
GN 2110 STD01	2100 Sound Tube Monaural	Sound-Tube	Over-the-Head
GN 2120 NCD01	2100 Flex Monaural	Noise-Canceling	Over-the-Head
GN 2115 STD01	2100 SoundTube Binaural	Sound-Tube	Over-the-Head
GN 2125 NCD01	2100 Flex Binaural	Noise-Canceling	Over-the-Head
GN 2117 STD01	2100 SoundTube Monaural	Sound-Tube	On-the-Ear
GN 2127 NCD01	2100 Flex Monaural	Noise-Canceling	On-the-Ear
GN 2110 ST	2100 SoundTube Monaural	Sound-Tube	Over-the-Head
GN 2120 NC	2100 Flex Monaural	Noise-Canceling	Over-the-Head
GN 2115 ST	2100 SoundTube Binaural	Sound-Tube	Over-the-Head
GN 2125 NC	2100 Flex Binaural	Noise-Canceling	Over-the-Head
GN 2127 ST	2100 SoundTube Monaural	Sound-Tube	On-the-Ear
GN 2127 NC	2100 Flex Monaural	Noise-Canceling	On-the-Ear
405-SF	Surefit Monaural	Voice-Tube	3-Way Convertible: Over-the-Head, Ear- hook, Earloops
405-FLEX-SF	Surefit Monaural	Noise-Canceling	
405-UNC-SF	Surefit Monaural	Noise-canceling	
ADP-I	ADDvantage Plus Monaural	Noise-Canceling	Over-the-Head
ADP-II	ADDvantage Plus Binaural	Noise-Canceling	Over-the-Head
GN 2200	2200 Omega Monaural	Noise-Canceling	Over-the-Head
GN 2225	2200 Omega Binaural	Noise-Canceling	Over-the-Head
OG-I	Orator-G Monaural	Noise-Canceling	Over-the-Head
OG-II	Orator-G Binaural	Noise-Canceling	Over-the-Head
Contour LX-G	Contour LX-G Monaural	Noise-Canceling	On-the-Ear
Stratus Ultra-G	Stratus Ultra-G Monaural	Noise-Canceling	On-the-Ear
805-Flex	805-Flex Binaural	Noise-Canceling	Under-the-Chin or Behind-the-Neck

¹ Requires GN8000 MPA Amplifier and Headset Switch.

Headsets

Headsets for DSX Cordless Lite II Telephone

At a Glance	P/N 750637 (M175)	P/N 750642 (MX150)
	 A black headband-style headset with a boom microphone and a flexible earpiece. The boom microphone is positioned in front of the earpiece. A coiled cable extends from the back of the headset, ending in a standard telephone connector.	 A black earloop-style headset with a boom microphone and a hook-style earpiece. The boom microphone is positioned in front of the earpiece. A coiled cable extends from the back of the headset, ending in a standard telephone connector.

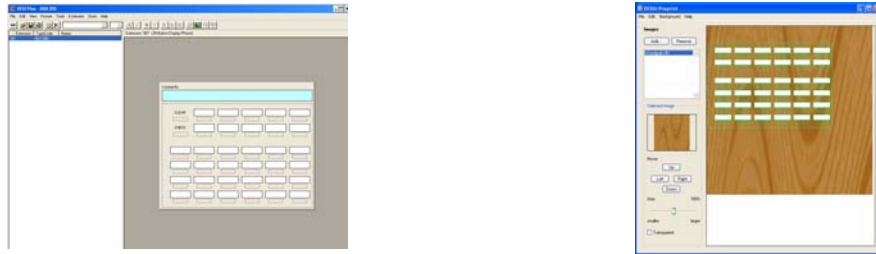
The following headsets are available for the DSX Cordless Lite II Telephone:

- M175 Headband Style (P/N 750637)
- MX150 Earloop Style (P/N 750642)

DESI Labeling Software

At a Glance

DESI Labeling Software



Components

DESI Labeling Software is a Windows-compatible application for printing customized key data on specially designed DESI telephone labels. Use DESI Labeling Software to create quick, professional custom labels that can be printed on virtually any office ink jet or laser printer. DESI Labeling Software features:

- Automatic extension numbering
- Label templates that can be saved for later use
- Copy and paste functions
- Perforated and die cut labels for a perfect fit
- Choice of fonts and font colors
- Space for incorporating company logo
- User-printable background graphics (using DESI Preprint)

DESI labeling software is provided on the DSX System Document CD included with each telephone system.

DESI Telephone Labels

At a Glance

Labels for DSX Telephones

Labels for NEC Single Line Telephones



The following DESI labels are available for DSX telephones.

- For standard “replacement” applications:
 - 22-Button Display Standard
 - 34-Button Display Standard
 - 34-Button Super Display Standard
 - 60-Button DSS Console Standard

The following DESI labels are available for the NEC analog single line telephones.

- For DTR-1-1
 - Black (P/N 780400)
 - Metallic green (P/N 780401)
 - Metallic silver (P/N 780402)
 - Lime green (P/N 780403)
 - Preprint (blank) (P/N 780459)

DESI Telephone Label System

- For DTR-1HM-1
 - Black (P/N 780404)
 - Metallic green (P/N 780405)
 - Metallic silver (P/N 780406)
 - Lime green (P/N 780407)
 - Preprint (blank) (P/N 780460)
- For DTH-1-1
 - Metallic silver (P/N 780450)

DSX-80 4-Slot KSU

At a Glance

P/N 1090002

Slots: 4	Analog extensions (max.): 48
Ports: 80	Analog lines (max): 48
Digital extensions (max.): 32	Digital (T1) lines (max.): 64

- Capacities determined by System Load Factor.
- Always install a 16ESIU Card in the first universal slot.



Components

The DSX-80 4-Slot KSU contains the CPU, 4 universal card slots and the system's power supply. It provides 80 ports. It is wall-mountable, has a flip off cover and removable side panel for easy access. The cabinet has a handy translucent panel in the cover that allows you to get essential system status and troubleshooting information at a glance, without removing the cover.

DSX-160 8-Slot KSU

At a Glance

P/N 1090003

Slots: 8	Analog extensions (max.): 112
Ports: 160	Analog lines (max): 64
Digital extensions (max.): 96	Digital (T1) lines (max.): 64

- Capacities determined by System Load Factor.
- Always install a 16ESIU Card in the first universal slot.
- Install one power supply for every two 16ESIU Cards.



The DSX-160 8-Slot KSU contains the CPU slot, 8 universal card slots and up to 3 system power supplies (depending on Load Factor requirements). It provides 160 ports. Just like the DSX-80 4-Slot KSU, the DSX-160 is wall-mountable, has a flip off cover and removable side panel for easy access. The DSX-160 also has a translucent panel in the cover for getting essential system status and troubleshooting at a glance.

DSX-80/160 Power Supply

At a Glance

P/N 1091008

DSX-80 Qty: 1	DSX-160 Qty: 3 (max.)
---------------	-----------------------

- Quantity required in DSX-160 determined by System Load Factor.
- In DSX-160, Install one power supply for every two 16ESIU Cards.



The power supply provides the various DC voltages required to power the DSX-80/160 Cards. The DSX-80 4-Slot KSU requires a single power supply. The DSX-160 8-Slot KSU requires up to 3 power supplies, depending on system configuration.

DSX-80/160 CPU Card

At a Glance

P/N 1090010

Audio Inputs: 2

RS 232 connector: Yes (for SMDR)

Audio outputs: 1

Ethernet port: Yes

USB connector: Yes

CompactFlash interface: Yes



The CPU Card is the system's control center. It provides the system's Linux operating system, central processing, stored program, and memory for the customer's site-specific data. Every system requires a CPU Card. In addition, it also provides:

- CompactFlash card interface (for IntraMail, software loading, and database backup)
- Conference circuits, DTMF receivers and DTMF generators
- Real Time Clock
- NAND Flash for storing the system database
- Battery for short term (14 day) backup of the Real Time Clock and station parameters
- Two audio inputs for Background Music and Music on Hold (1/8" mono minijacks)
- One audio output for External Paging (1/8" mono minijack)
- Ethernet and USB ports for local and remote PC Programming
- RS-232 serial port for Station Message Detail Recording
- Built-in V.32BIS 14.4K BPS modem for remote maintenance

The CPU also has a reset switch that provides the following three functions:

1. System reset (when momentarily pressed).
2. System initialization (when held down as power is turned on).
3. Software update (when held down for six seconds while software update CompactFlash card is installed).

Tips to remember:

- When connecting to the CPU audio inputs or outputs, make sure the connected device is compatible with the CPU audio specifications. See *Specifications and Parts* (page 139) for more.

DSX-80/160 16 Port Digital Station (16ESIU) Card

At a Glance	P/N 1091004	
	Digital station ports: 16	Status LED: Yes
	Mode switch: Yes	Activity LED: Yes
	Max. installed in DSX-80: 2 (32 station ports)	Max. installed in DSX-160: 6 (96 station ports)



Each 16ESIU Card connects 16 digital extensions (i.e., DSX keysets). The 16ESIU has a Mode Switch (for taking the card out of service). It also has a status LED that indicates proper card operation — as well as a port activity LED that flashes faster as traffic on the card increases. You can install up to two 16ESIU Cards in a DSX-80. You can install up to six 16ESIU Cards in a DSX-160. See *System Configuration* (page 19) for more.

Tips to remember:

- In DSX-160, you must install a separate power supply for every two 16ESIU Cards installed.
- In both DSX-80 and DSX-160, you must install a 16ESIU Card in slot 1.
- You can install additional 16ESIU Cards in any slot.

DSX-80/160 16 Port Analog Station (16SLIU) Card with HV Message Waiting

At a Glance	P/N 1091007	
	Analog station ports: 16	Activity LED: Yes
	High Voltage Message Waiting: Yes	Mode switch: Yes
	Max. installed in DSX-80: 3 (48 station ports)	Status LED: Yes
	Max. installed in DSX-160: 5 (80 station ports)	



The 16SLIU Card connects 16 analog extensions which are typically used for single line telephones and fax machines. Just like the 16ESIU Card, the 16SLIU Card has a Mode Switch (for taking the card out of service), a status LED indicating proper card operation, and a port activity LED to indicate traffic on the card. See *System Configuration* (page 19) for more.

Tips to remember:

- The 16SLIU Card provides high voltage message waiting for single line sets with high voltage message waiting lamps.
- The 16SLIU Card also provides Caller ID to single line sets.
- You can install a 16SLIU Card in any slot except slot 1.

DSX-80/160 Station Cards

DSX-80/160 8 Port Analog Station (8SLIU) Card with HV Message Waiting

At a Glance	P/N 1091010	
	Analog station ports: 8	Activity LED: Yes
	High Voltage Message Waiting: Yes	Mode switch: Yes
	Max. installed in DSX-80: 3 (24 station ports)	Status LED: Yes
	Max. installed in DSX-160: 7 (56 station ports)	

The 8SLIU Card connects 8 analog extensions which are typically used for single line telephones and fax machines. The 8SLIU Card has a Mode Switch (for taking the card out of service), a status LED indicating proper card operation, and a port activity LED to indicate traffic on the card. See *System Configuration* (page 19) for more.

Tips to remember:

- The 8SLIU Card provides high voltage message waiting for single line sets with high voltage message waiting lamps.
- The 8SLIU Card also provides Caller ID to single line sets.
- You can install a 8SLIU Card in any slot except slot 1.

DSX-80/160 T1/E1/PRI Line Card

At a Glance	P/N 1091006	
	Line ports: 24	Activity LED: Yes
	Mode switch: Yes	Diagnostic LEDs: Yes
	Status LED: Yes	CSU required: Yes
	Max. installed in DSX-80: 3 (64 line ports in 3 T1/E1/PRI Cards, with 8 T1 circuits disabled in programming)	Max. installed in DSX-160: 3 (64 line ports in 3 T1/E1/PRI Cards, with 8 T1 circuits disabled in programming)



The T1/E1/PRI Line Card provides T1 advanced digital calling and gives the DSX-80/160 a maximum of 24 trunks in a single card slot. The available T1 line types include:

- Loop Start (DTMF and Dial Pulse)
- Ground Start (DTMF and Dial Pulse)
- Direct Inward Dialing (DID) Wink Start (DTMF and Dial Pulse)
- Direct Inward Dialing (DID) Immediate Start (DTMF and Dial Pulse)
- E&M Tie Line Wink Start (DTMF and Dial Pulse)
- E&M Tie Line Immediate Start (DTMF and Dial Pulse)

Tips to remember:

- Normally you connect the T1/E1/PRI Card to a separately-purchased Channel Service Unit (CSU). Use a standard straight-through CAT 5 cable to connect the T1/E1/PRI Card to the CSU. The CSU in turn connects to the telco smart jack.
- The T1/E1/PRI Card also provides 32E1 support. E1 is not used in North America.
- PRI is currently not available.
- You can install a T1/E1/PRI Card in any slot except slot 1.

DSX-80/160 16 Port CO Line (16COIU) Card with Caller ID

At a Glance	P/N 1091005	
	Line ports: 16	Status LED: Yes
	Mode switch: Yes	Activity LED: Yes
	Power Failure ports: 2	Caller ID: Built in
	Max. installed in DSX-80: 3 (48 lines in 3 16COIU Cards)	Max. installed in DSX-160: 4 (64 line ports in 4 16COIU Cards)



The 16COIU Card supports 16 analog loop start CO lines. The card has a Mode Switch (for taking the card out of service), a status LED indicating proper card operation, and a port activity LED that indicates traffic on the card. Each 16COIU Card also provides two power failure cut-through circuits. When commercial AC power fails, the Card automatically cuts through two line circuits to two power failure single line telephones. See *System Configuration* (page 19) for more.

Tips to remember:

- The 16COIU provides built-in Caller ID.
- You can install a 16COIU Card in any slot except for slot 1.

DSX-80/160 8 Port CO Line (8COIU) Card with Caller ID

At a Glance	P/N 1091009	
	Line ports: 8	Status LED: Yes
	Mode switch: Yes	Activity LED: Yes
	Power Failure ports: 2	Caller ID: Built in
	Max. installed in DSX-80: 3 (24 line ports in 3 8COIU Cards)	Max. installed in DSX-160: 7 (56 line ports in 7 8COIU Cards)

The 8COIU Card supports 8 analog loop start CO lines. The card has a Mode Switch (for taking the card out of service), a status LED indicating proper card operation, and a port activity LED that indicates traffic on the card. Each 8COIU Card also provides two power failure cut-through circuits. When commercial AC power fails, the card automatically cuts through two line circuits to two power failure single line telephones. See *System Configuration* (page 19) for more.

Tips to remember:

- The 8COIU provides built-in Caller ID.
- You can install a 8COIU Card in any slot except for slot 1.

DSX IntraMail 8 x 16

At a Glance	P/N 1091013	
	Ports: 8	Storage Hours: 16
	Routing Mailboxes: 16	Subscriber Mailboxes: 128
	Ring Group Mailboxes: 8	UCD Group Mailboxes: 8
	Total Mailboxes: 160	



DSX IntraMail 4 x 8

At a Glance	P/N 1091011	
	Ports: 4	Storage Hours: 8
	Routing Mailboxes: 16	Subscriber Mailboxes: 128
	Ring Group Mailboxes: 8	UCD Group Mailboxes: 8
	Total Mailboxes: 160	



IntraMail is a plug-in “in-skin” full-featured, DSP-based integrated Voice Mail with Automated Attendant for DSX. It is available in two models:

- P/N 1091013 with 8 Voice Mail ports, 16 hours of message storage, and up to 160 mailboxes.
- P/N 1091011 with 4 Voice Mail ports, 8 hours of message storage, and up to 160 mailboxes.

The IntraMail Automated Attendant answers incoming calls and routes them quickly and efficiently. Integrated Voice Mail features include Conversation Record, Answering Machine Emulation, and Caller ID with Return Call. Interactive Soft Keys guide the display telephone user through the extensive IntraMail feature set.

Tips to remember:

- After plugging in the IntraMail CompactFlash card, IntraMail automatically installs on power-up.

Miscellaneous Cards and Optional Equipment

DSX Analog Door Box

At a Glance	P/N 922450	
	Requires 2PGDAD Module connected to DSX Digital Station (16ESIU) PCB.	DSX-80/160: No built-in Door Box ports.



The Analog Door Box is a self-contained Intercom unit typically used to monitor an entrance door. A visitor at the door can press the Door Box call button (like a door bell). The Door Box then sends chime tones to all extensions programmed to receive chimes. To answer the chime, the called extension user just lifts the hand-set. This lets the extension user talk to the visitor at the Door Box. The Door Box is convenient to have at a delivery entrance, for example. It is not necessary to have company personnel monitor the delivery entrance; they just answer the Door Box chimes instead.

Tips to remember:

- The Analog Door Box is a weather-tight unit and can be mounted outside.
- The maximum number of DSX Analog Door Boxes you can install is determined by the number of 2PGDAD Modules, which in turn is limited only by the availability of 16ESIU station ports.

DSX 2PGDAD Module

At a Glance	P/N 0891027	
	Provides connection and relays for two DSX Analog Door Boxes.	Connects to port on DSX Digital Station (16ESIU) PCB.



The DSX 2PGDAD Module provides connection and relays for two DSX Analog Door Boxes. This module connects to an available port on a DSX Digital Station (16ESIU) PCB.

Tips to remember:

- The maximum number of DSX Analog Door Boxes you can install is determined by the number of 2PGDAD Modules, which in turn is limited only by the availability of 16ESIU station ports.

DSX-80/160 System Load Factor

The combination of lines and extensions you can connect to your DSX system may be limited by the System Load Factor. Use the *DSX-80/160 System Load Factor Worksheet* on the next page to verify your system's configuration. When entering data on the worksheet, for each installed card make entries for each *Load Type*. There are two *Load Types* to consider: 5 VDC and 40 VDC.

To check your system configuration:

1. Indicate the quantity for each card installed in the **Qty** column.
 - The number of keysets, single line sets, and DSS Consoles does not affect the load factor.
2. For each item and for each Load Type, multiply the **Qty** times the **Load** and enter the value in the **Total** column.
 - For example, two 16ESIU Cards have a load of 16 for 5 VDC and 40 for 40 VDC.
3. Add up the entries in each **Total** column and enter the values in **Item 1: Load Type Totals**.
4. Review **Item 2: Power Supply Capacity** and determine the capacity of the power supplies installed in your system.
5. Compare the capacities in **Item 2** to your entries in **Item 1**. **Item 1** must always be equal to or less than the entry in **Item 2**.

Important
Do not operate your system if the total for either Load Type exceeds the Power Supply Capacity of your installation.

System Configuration

DSX-80/160 System Load Factor Worksheet					
Description	Qty	Load Type			
		5 VDC		40 VDC	
		Load	Total	Load	Total
CPU Card	1	12	12	0	0
16ESIU Card		8		20	
8SLIU Card		5		8	
16SLIU Card		10		16	
8COIU Card		3		0	
16COIU Card		6		0	
T1/E1/PRI Card		8		0	
Item 1: Load Type Totals (Cannot exceed Item 2: Power Supply Capacity.)					
Item 2: Power Supply Capacity					
If you have <u>one</u> power supply installed, the capacity is: 5 VDC = 40 40 VDC = 48					
If you have <u>two</u> power supplies installed, the capacity is: 5 VDC = 80 40 VDC = 80					
If you have <u>three</u> power supplies installed, the capacity is: 5 VDC = 120 40 VDC = 120					
Notes:					
<ul style="list-style-type: none"> • DSX-80 can only have 1 power supply. • DSX-160 can have up to 3 power supplies. You <i>cannot</i> have more than two 16ESIU Cards per power supply, regardless of System Load Factor calculations. • Exceeding the allowed Load Type Total (Item 1) will cause the system's power supplies to automatically shut down and/or cause erratic system operation. • The total of all station, line, DSS Console, and voice mail ports cannot exceed 160. 					

Introduction

How To Use This Chapter

This chapter provides detailed information on the system's features. The features in this chapter are in alphabetical order, like a dictionary.

Account Codes

Use Account codes to categorize and/or restrict outside calls.

Account Codes are user-dialed codes that help categorize and/or restrict outside calls. Account Codes are from 2-10 digits long, using any combination of the digits 0-9. There are three types of Account Codes:

- Optional (Unforced Account Codes)
- Forced Account Codes
- Verified Account Codes

Optional (Unforced) Account Codes

Optional Account Codes allow a keyset extension user to enter an Account Code while placing an outside call or any time while on a call. This type of Account Code is optional: the system does not require the user to enter it. If the keyset user is already talking on an outside call, their conversation continues uninterrupted while they enter an Account Code.

Single line telephone users can only enter an Account Code while placing their outside call.

Forced Account Codes

Forced Account Codes require an extension user to enter an Account Code every time they place an outside call. If the user doesn't enter the code, the system prevents the call. The system can require Forced Account Codes for all outside calls, or just for toll calls (as determined by Toll Restriction programming). Note that Forced Account Codes do not pertain to incoming calls.

Verified Account Codes

With Verified Account Codes, the system compares the Account Code the user dials with a list of codes programmed into the Verified Account Code Table. If the Account Code is in the table, the call goes through (provided it is not prevented by an extension's Toll Restriction programming). If the code is not in the table, the system prevents the call. Verified Account Codes, if enabled, apply only to Forced Account Codes.

Using Account Codes and Speed Dial

To simplify Account Code operation, Personal and System Speed Dial bins can contain Account Codes. Keep the following in mind when using Speed Dial and Account Codes:

- The Account Code can be either the first or last entry in the bin, and must be preceded and followed by the # character. For example, the Account Code 1234 must be entered as #1234#.
- The Speed Dial bin can contain an Account Code followed by an outside number, or just the Account Code. The Account Code must be preceded and followed by a # entry. If the bin contains just the Account Code, the user must be sure to press the bin key before dialing the outside number.
- If the system has Verified Account Codes enabled, the Account Code entered in the Speed Dial bin must match an entry in the Verified Account Code Table.
- If the Speed Dial bin does not contain an Account Code, the user must enter the Account Code manually. If Forced Account Codes are enabled, the system requires the user to enter the Account Code before it outdials the stored Speed Dial number.
- An extension user can preselect a line for a Speed Dial call.

Using Account Codes with Last Number Redial and Save

Last Number Redial and Save do not store Account Codes. This means that the user must manually enter an Account Code to have it included with a call dialed using Last Number Redial and Save. If Forced Account Codes are enabled, the system requires the user to enter the Account Code before it outdials the stored number saved by Last Number Redial or Save.

An extension user can preselect a line for a Last Number Redial or Save call.

Account Codes and Emergency Calls

Account Codes are never enforced for emergency (911 and 1+911) calls.

Alphanumeric Display

The Alphanumeric Display messages help the display telephone user process calls, identify callers and customize features.

The 22- and 34-Button Display Telephones have a three-line, 24-character per line alphanumeric display. The first line displays the date and time (while idle) and feature status messages. The second line is used extensively by IntraMail. The third line displays the Soft Key definitions.

The 34-Button Super Display Telephone has a nine-line, 24-character per line alphanumeric display. The first line displays the date and time (while idle) and feature status messages, just like the 22- and 34-Button Display Telephones. The second line is used extensively by IntraMail. Lines 4-9 are the comprehensive Super Display Telephone soft key definitions.

- To learn more about the display telephones:
 - see *22-Button Display Telephone* on page 4
 - see *34-Button Display Telephone* on page 5
 - see *34-Button Super Display Telephone* on page 6
- To learn more about the Soft Keys, see *Interactive Soft Keys* (page 50).

Attendant Call Queuing

Attendant Call Queuing helps minimize call congestion in systems that use the attendant as the overflow destination for unanswered calls.

An unlimited number of callers can queue for the attendant. The callers hear ringback while they wait for the attendant to answer — not busy tone. If you have the attendant as the overflow destination for Direct Inward Lines, for example, unanswered DILs will “stack up” at the attendant until they are answered.

Operator Call Key

The last Feature Key on an attendant telephone is permanently assigned as an Operator Call key. When the operator has Intercom calls waiting to be answered, the calls queue under this key. The key winks (on) when calls are queued.

The Operator Call key is a permanent assignment for all extensions assigned as operators. You cannot change this assignment. Attendant Call Queuing is a permanent, non-programmable feature.

Attendant Position

The attendant is the system's call processing focal point.

The attendant is the focal point for call processing within the system. The system can have up to four attendants. In addition to the features of a standard keyset, the attendant also has the following unique capabilities (refer to the respective feature for details):

- ✦ *Attendant Call Queuing* (page 22)
Incoming Intercom calls from co-workers queue for the attendant. The callers never hear busy tone.
- ✦ *Barge In (Intrusion)* (page 25)
The attendant can break into another extension user's established call. This option is enabled in the attendant's Class of Service (COS 1).
- ✦ *Direct Line Access* (page 36)
Direct Line Access lets the attendant user dial a code to access an individual line. This option is enabled in the attendant's Class of Service (COS 1).
- ✦ *Forced Line Disconnect* (page 45)
In an emergency, the attendant can release (disconnect) another user's active outside call. This option is enabled in the attendant's Class of Service (COS 1).
- ✦ *Line Queuing / Line Callback* (page 53)
The attendant can Camp-On (queue) for a busy line. This option is enabled in the attendant's Class of Service (COS 1).
- ✦ *Night Service / Night Ring* (page 56)
An attendant with a *System Night* key can put the system in the night mode. This option is enabled in the attendant's Class of Service (COS 1).
- ✦ *Removing Lines and Extensions from Service* (page 65)
The attendant can remove problem lines from service — then return them to service once the problem is corrected. This option is enabled because the attendant has Direct Line Access enabled in their Class of Service (COS 1).

The attendant should use a 34-Button Display or 34-Button Super Display Telephone. In addition, most attendants should find a DSS Console helpful when processing calls.

Auto Redial

Instead of redialing, have Auto Redial periodically retry a busy outside number.

Auto Redial periodically redials a busy outside number. If a keyset user places an outside call and the call recipient is busy, the user can press a soft key to enable Auto Redial. The keyset user doesn't have to retry the number, hoping it will go through.

Auto Redial will periodically retry the number up to 15 times. Auto Redial cancels when the called party rings or answers, or when the extension:

- ✦ Places or answers another outside call.
- ✦ Receives an Intercom voice announcement or answers an Intercom call by lifting the handset or pressing **SPEAKER**.
- ✦ Presses **SPEAKER** to cancel Auto Redial.

-
- ✦ Presses any other fixed feature key except **MIC**.
 - ✦ Lifts and replaces the handset.
 - ✦ Presses the **CANCEL** soft key (Super Display only).

Automatic Handsfree

Automatic Handsfree is a convenience for workers who don't have a free hand to answer a call or use a feature.

Automatic Handsfree allows a keyset user to place or answer a call Handsfree by just pressing a key — without lifting the handset or pressing **SPEAKER** first. If enabled, the system provides Automatic Handsfree for:

- ✦ Call Coverage keys
- ✦ Central Office Calls (line and loop calls)
- ✦ Group Call Pickup keys
- ✦ Hotline Keys
- ✦ Intercom (**INTERCOM** key)
- ✦ Last Number Redial (**REDIAL** key)
- ✦ Paging keys
- ✦ Park keys
- ✦ Personal Speed Dial bin keys
- ✦ Personal and System Speed Dial Feature Keys

The system always provides Automatic Handsfree for:

- ✦ Dial Number Preview
- ✦ Directory Dialing

Automatic Slot Configuration

The system automatically installs PCBs when you power up the system.

Automatic Slot Configuration automatically sets up station and line PCBs when you initially power up the system. This simplifies installation because you don't have to use system programming to activate station and line PCBs after you plug them in.

Here's how Automatic Slot Configuration works:

1. With power off, install your station and line PCBs.
2. With the system powered down, install the station and line PCBs from left to right in the order you want your extension and line numbers set up.
 - Be sure to install a 16ESIU PCB in the first slot (CN1).
 - You don't have to group your station and line PCBs together, although it may be more convenient to do so.
3. Power up the system.
4. On power up, the system scans the PCBs from left to right and sets up the extension and line numbering as follows.
 - Extension numbers will begin with 300 in the first slot and increment from left to right.
 - Line numbers will begin with 101 (starting from the first installed line PCB) and will also increment from left to right.

System reset does not cause reconfiguration. Automatic Slot Configuration is temporarily disabled during a system reset.

Background Music

Broadcast music through the telephone speaker for a more pleasing work environment.

Background Music (BGM) sends music from a customer-provided music source to speakers in keysets. If an extension user activates it, BGM plays whenever the extension is idle. Incoming calls and Paging announcements temporarily override (turn off) Background Music. Background Music requires a customer-provided external music.

Barge In (Intrusion)

In an emergency, use Barge In to get through to a co-worker right away.

Barge In permits an extension user to break into another extension user's established call. This sets up a three-way conversation between the intruding extension and the two parties on the initial call. The user can Barge In on an Intercom call or outside call.

CAUTION

Unauthorized intrusion on calls using this feature may be interpreted as an invasion of privacy.

Battery Backup

The system provides permanent backup of system memory.

In the event of commercial AC power failure, the NAND Flash memory on the CPU PCB permanently maintains the site database. Additionally, an internal battery on the CPU provides short-term backup of the system date and time (Real Time Clock) and certain station parameters (such as the Caller ID log). The battery will hold the Real Time Clock and station parameters for up to 10-14 days. When commercial AC power is restored, the system restarts with all programming and the time and date intact.

Additional Battery Backup capability can be provided by a customer-supplied Uninterruptable Power Supply (UPS). The length of time the UPS will power the system when power fails depends on the capacity of the UPS unit. Consult with the UPS manufacturer for the specifics. Refer to the *Hardware Manual* for additional details.

Call Coverage Keys

Call Coverage keys allow an extension user to cover a co-worker's calls from their own telephone.

A keyset can have Call Coverage Keys for a co-worker's extensions, Ring Group master numbers and UCD Group master numbers. The Call Coverage Key lights when the co-worker's extension is busy, flashes slowly when the co-worker has an incoming call, and flashes fast when the co-worker is in Do Not Disturb. The Call Coverage Key can ring immediately when a call comes into the covered extension, ring after a delay or not ring at all. In addition, the keyset user can press the Call Coverage Key to intercept their co-worker's incoming call. They can also go off hook and press the Call Coverage key to call the covered extension. An extension can have as many Call Coverage Keys as they have available Feature Keys on their telephone.

Call Coverage Key Busy Lamp Indications	
When the key is:	The covered extension is:
Off	Idle or not installed

Call Coverage Key Busy Lamp Indications	
On	Busy
Slow Flash	Ringling
Medium Flash	Covered extension is in DND for outside calls (option 1).
Fast Flash	Covered extension is in DND for Intercom calls (option 2) or All Calls (option 3).

Call Coverage Keys *will* intercept the following types of calls:

- Key Ring Calls
- Ringling Intercom calls
- Calls to a UCD Group master number
- Calls ringling a Group Ring master number
- Transferred calls

Call Coverage Keys *will not* intercept a call ringling the attendant's Operator Call Key.

Call Forwarding

Call Forwarding ensures that the user's calls are covered when they are away from their work area.

Call Forwarding permits an extension user to redirect their call to another extension. The types of Call Forwarding are:

- **Call Forwarding when Not Answered**
Calls ringling the extension forward when not answered.
- **Call Forwarding when Busy or Not Answered**
Calls ringling the extension forward when not answered, and all calls forward while the extension is busy.
- **Call Forwarding Immediate**
All calls to the extension forward immediately.

You can set up Call Forwarding to reroute all calls or just outside calls. If an extension with forwarding set for outside calls only receives a screened Transfer, the initial voice-announcement broadcasts at the extension. When the caller hangs up to complete the transfer, the outside call forwards as programmed.

Call Forwarding Chaining

Extension user's can chain Call Forwards. For example, extension 301 can forward all calls immediately to 304, which in turn can forward all calls immediately to extension 302. Any co-worker calling 301 or 304 goes to 302 instead. If extension 302 is Call Forwarded to voice mail, callers to 301 or 304 go directly to 302's mailbox.

Call Forwarding Cancel

Call Forwarding cancel allows a keyset user to dial a code to simultaneously cancel all Call Forwarding system-wide. The extension must have access level 4 or 5.

Call Forwarding Key

A keyset user can have a key on their telephone or DSS Console assigned as a Call Forwarding key.

- *While the extension is idle*, pressing the key puts the extension in the Call Forwarding programming mode - the same as pressing **INTERCOM** and dialing ***3**.

- If the extension has Call Forwarding enabled, and the user presses the key and waits (for at least 6 seconds), Call Forwarding is automatically cancelled.
 - If the extension has Call Forwarding disabled, and the user presses the key and waits (for at least 6 seconds), the prior Call Forwarding mode is automatically enabled (if any).
- ✦ *While the extension is busy*, pressing the key switches Call Forwarding on and off.

Call Forwarding Key BLF	
This flash rate:	Means:
Off	Call Forwarding is disabled.
Fast flash	The extension is in the Call Forwarding programming mode.
Slow flash	Call Forwarding is enabled at the extension.

Call Forwarding Toggle in a Personal Speed Dial Bin

If an extension doesn't have an available Feature Key for a Call Forwarding key, the user can program a Personal Speed Dial bin for similar operation (without the BLF). To do this:

- ✦ While on hook, dial **#77**.
- ✦ Press the key for the Personal Speed Dial bin you want to program + **HOLD**.
- ✦ For **LINE/GRP/ICM**, press **INTERCOM** + **HOLD**.
- ✦ For **NUM**, dial ***3** + **HOLD**.
- ✦ For **NA**, enter a name of your choosing + **HOLD**.
- ✦ Press **SPEAKER** to exit.

While the extension is idle, pressing the bin key puts the extension in the Call Forwarding programming mode - the same as pressing **INTERCOM** and dialing ***3**.

- ✦ If the extension has Call Forwarding enabled, and the user presses the bin key and waits (for at least 6 seconds), Call Forwarding is automatically cancelled.
- ✦ If the extension has Call Forwarding disabled, and the user presses the bin key and waits (for at least 6 seconds), the prior Call Forwarding mode is automatically enabled (if any).

Call Forwarding Confirmation Tone

Keyset users will hear a single confirmation beep after enabling or cancelling Call Forwarding. Single line telephone users will hear Intercom dial tone after enabling or cancelling Call Forwarding.

Call Forwarding Off Premises

When a user is out of the office, they can send their calls to their home office or cell phone.

Off Premises Call Forwarding allows a keyset user to forward their calls to an off-site location (such as a cell phone or remote office) if allowed by their Class of Service. Keyset users can stay in touch by having Off Premises Call Forwarding automatically forward their calls while they are away from the office. To set up Off Premises Call Forwarding, the user selects the line or Line Group over which the call should route, as well as the number the system should dial. The number dialed can be from an extension's Personal Speed Dial bin containing an outside number, or the user can enter an outside number directly into their Personal Speed Dial bin 720. When a call rings the forwarded extension, the system selects the specified line or group and then outdials the stored number.

Off Premises Call Forwarding reroutes:

- ✦ Intercom calls
- ✦ Transferred calls
- ✦ Direct Inward Lines

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- ✦ UTRF (unscreened transfer) calls routed from the voice mail Automated Attendant
 - ✦ Circular and Terminal Extension Hunting calls

Off Premises Call Forwarding does not reroute:

- ✦ Key Ring calls
- ✦ Calls to a UCD Group master number.
- ✦ Group Ring calls (i.e., calls to a Ring Group master number)
- ✦ UCD Group Calls (i.e., calls to a UCD Group master number)
- ✦ Ringing Call Coverage key calls

You can set up Off Premises Call Forwarding to reroute all calls or just outside calls. If an extension with forwarding set for outside calls only receives a screened Transfer, the initial voice-announcement broadcasts at the extension. When the caller hangs up to complete the transfer, the outside call forwards as programmed.

Call Timer

Call Timer helps users that must keep track of their time on the phone.

Call Timer lets a keyset user with a Call Timer key time their outside calls on the telephone display. There are two types of Call Timer keys:

- ✦ **Manual Call Timer**
Any time while placing a call or while on a call, a display keyset user can press their Manual Call Timer key to start the Call Timer. The Call Timer will continue until the user hangs up or presses their Manual Call Timer key again.
- ✦ **Automatic Call Timer**
In addition to the features of the Manual Call Timer key, the Automatic Call Timer key provides automatic timing for outside calls. When a display keyset with an Automatic Call Timer key places or answers an outside call, the Call Timer automatically starts when that outside call connects. The Automatic Call Timer does not automatically start for Intercom calls. The Automatic Call Timer can also work like a Manual Call Timer key. There is no need to have a Manual and Automatic Call Timer key on the same phone.

The Call Timer feature also provides:

- ✦ **Review of Previously Timed Call**
Any time after hanging up from a timed call, a display keyset user can press their Manual or Automatic Call Timer key to review the duration of that call.
- ✦ **Timer Reset for Current Call**
While the display keyset user is timing their call, they can press CLEAR at any time to reset the Call Timer to 00:00:00.
- ✦ **Automatic Timer Stop**
The system assigns the Call Timer to the active call. When the user terminates the active call, the Call Timer automatically shuts down.
- ✦ **Wrap-up Timer Display**
After hanging up a timed call, a display keyset will show the Call Timer data for 6 seconds before returning the display to idle. This gives the extension user adequate time to make a record of the timed call, if desired.

Call Waiting / Camp-On

Call Waiting helps busy extension users know when they have additional waiting calls. It also lets callers wait in line for a busy extension without being forgotten.

With Call Waiting, an extension user may call a busy extension and wait in line (Camp-On) without hanging up. When the user Camps-On (by dialing 2), the system signals the busy extension with two beeps indicating the first waiting call. (The busy extension can be on a handset or Handsfree call.) The call goes through when the extension becomes free.

