

NEC

Basics

Components

Features

**Specifications and
Parts List**

Glossary

DS1000/2000

Product Description

(03.**)**

This manual has been developed by NEC America, 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:

NEC America, Inc., Corporate Networks Group

4 Forest Parkway
Shelton, CT 06484
eng.nec.com

Nothing contained in this manual shall be deemed to be, and this manual does not constitute, a warranty of, or representation with respect to, any of the equipment covered. This manual is subject to change without notice and NEC America, Inc. has no obligation to provide any updates or corrections to this manual. Further, NEC America, Inc. also reserves the right, without prior notice, to make changes in equipment design or components as it deems appropriate. No representation is made that this manual is complete or accurate in all respects and NEC America, Inc. shall not be liable for any errors or omissions. In no event shall NEC America, Inc. be liable for any incidental or consequential damages in connection with the use of this manual. This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied or reproduced without prior written consent of NEC America, Inc.

©2003 by NEC America, Inc. All Rights Reserved.
Printed in U.S.A.

Section 1: Basics	1
Introducing DS1000/2000 — The STANDARD for COMMUNICATIONS	1
All new system architecture	1
Integrated Voice Mail Helps Increase Productivity and Savings . . .	2
A family of telephones that sets the new standard in office	
communications	2
DS1000/2000 Feature Overview	2
Calling a Co-Worker	2
Outside Calls	2
Handling and Rerouting Your Calls	2
When Your Call Can't Go Through	3
Placing Calls Quickly	3
When You Work in Groups	3
Have a Telephone Meeting	3
Customizing Your Telephone's Operation	3
Managing The System	3
Other Powerful System Options	3
Section 2: Components	5
The Telephones	5
34-Button Super Display Telephone (P/N 80673)	5
34-Button Display Telephone (P/N 80663)	6
22-Button Display Telephone (P/N 80573)	6
22-Button Telephone (P/N 80570)	6
Other Station Equipment	7
110-Button (P/N 80555) and 24-Button (P/N 80556)	
DSS Consoles	7
2-OPX Module (P/N 92177A)	7
Analog Door Box (P/N 92245)	8
Wall Mount Kit (P/N 80579)	8
REJ Recording Jack Module (P/N 80175)	8
Labelmaker	8
DS2000 Common Equipment	9
4-Slot Cabinet (P/N 80000)	9
8-Slot Cabinet (P/N 80001)	9
Power Supply (P/Ns 80005B and 80005C)	10
PC Card with Software (P/N 80052-V**.* ***)	10
Blank PC Card (P/N 85880)	10
DS2000 PCBs	10
Expanded Memory CPU Central Processing Unit	
PCB (P/N 80025B)	10
16DSTU Digital Station PCB (P/N 80021A)	11
8ASTU 8 Port Analog Station PCB (P/N 80041B)	11
4ASTU 4 Port Analog Station PCB (P/N 80040B)	12

8ATRU 8 Port Analog Trunk PCB (P/N 80011B)	12
4ATRU 4 Port Analog Trunk PCB (P/N 80010B)	12
T1 Trunk PCB (P/N 80061)	13
DS1000 Common Equipment	13
DS1000 Cabinet (P/N 80200A).	13
DS1000 Expansion Board (P/N 80221)	14
IntraMail.	15
IntraMail Voice Mail with Automated Attendant (P/Ns 80044 and 80088)	15
UltraMail	16
UltraMail and UltraMail 2000.	16
Miscellaneous and Optional Equipment.	17
DS1000/2000 Update Utility (P/N 80250A-V**,**,**).	17
DS1000/2000 PC Program (System Administrator) (P/N 80053)	17
DS2000 Adaptor Box (P/N 80890)	18
RJ61X 8-Conductor Cable (P/N 80891)	18
DB9 Female to Mod-8 Adaptor (P/N 85980)	20
DB25 Male to Mod-8 Adaptor (P/N 85981).	21
DS2000 Installation Cable (P/N 80892)	21
Replacement Parts	21
DS2000 System Configuration.	22
DS2000 Default Configuration	22
DS2000 Configuration Guidelines	22
DS2000 Load Factor Calculations	22
DS1000 System Configuration.	24
DS1000 Default Hardware Configuration.	24
DS1000 Load Factor Calculations	24
Default Feature Configuration	25

Section 3: Features 27

Account Codes	27
Optional (Unforced) Account Codes.	27
Forced Account Codes	27
Verified Account Codes	28
Using Account Codes and Speed Dial	28
Using Account Codes with Last Number Redial and Save.	28
Account Codes and Emergency Calls	28
DSS Console Account Code Key	28
Alphanumeric Display	29
Attendant Call Queuing	29
Operator Call Key	29
Attendant Position	30
Auto Redial.	30
Automatic Handsfree	31
Automatic Slot Configuration	32
Background Music	32
Barge In (Intrusion)	33
Battery Backup.	33

Call Coverage Keys	34
Call Forwarding	35
Call Forwarding Chaining	35
Call Forwarding Cancel	35
Call Forwarding Key	35
Call Forwarding Off Premise	36
Call Timer	37
Call Waiting / Camp-On	38
Callback	38
Caller ID	39
Single and Multiple Message Format Compatibility	39
Caller ID Logging	39
Caller ID on the SMDR Report	39
Caller ID Integration with Voice Mail	40
Second Call Caller ID (Extension Level Call Waiting Caller ID)	40
Third Party Caller ID Check	40
Caller ID Display Separator	40
Caller ID Alert Lamp	40
Caller ID Notes	40
Central Office Calls, Answering	41
Answering Priority	41
Overflow	41
Central Office Calls, Placing	42
Check Key	43
Class of Service	43
Conference	48
Delayed Ringing	48
Dial Number Preview	49
Dial Tone Detection	49
Direct Inward Dialing	50
Direct Inward Line	51
Overflow for Direct Inward Lines	51
Direct Station Selection (DSS)	52
Direct Station Selection (DSS) Console	52
Direct Trunk Access	55
Directed Call Pickup	55
Directory Dialing	56
Distinctive Ringing	56
Do Not Disturb	57
Do Not Disturb BLF for Hotline and Call Coverage Keys	58
Do Not Disturb Override	59
Door Box	59
Door Box Call Coverage	60
Expanded Database	60
Extended Ringing	60
Extension Hunting	61
Circular Hunting	61
Terminal Hunting	61

Uniform Call Distribution (UCD) Hunting	62
Extension Locking	63
Flash	63
Flash for Single Line Extensions	63
Flexible Numbering Plan	64
Forced Trunk Disconnect	64
Group Call Pickup	65
Group Listen	65
Group Ring	66
Overflow for Group Ring Calls	66
Handsfree and Handsfree Answerback	67
Handsfree	67
Handsfree Answerback and Forced Intercom Ringing	67
Headset Compatibility	68
Headset Key	69
Off-Hook Signaling and Headsets	69
Hold	69
System (Regular) Hold	70
Exclusive Hold	70
Automatic Hold	70
Intercom Hold	70
Distinctive Flash Rate on Recall	70
Hotline	71
Interactive Soft Keys	71
Intercom	72
Handsfree Answerback and Forced Intercom Ringing	72
Key Ring	72
Overflow for Key Ring Calls	73
Last Number Redial	73
Enhanced Last Number Redial	73
Line Keys	74
Answering Priority	75
Loop Keys	75
Switched Loop Keys	75
Fixed Loop Keys	75
Answering Priority	76
Meet-Me Conference	76
Message Waiting	77
Microphone Mute	78
Handsfree Reply Soft Key	78
Modem Cut-Through	78
Monitor / Silent Monitor	79
Multiple Directory Numbers	79
Music On Hold	79
Names for Extensions and Trunks	80
Night Service / Night Ring	80
Off-Hook Signaling	81
Off-Hook Signaling for Trunk Calls	81

Off-Hook Signaling for Intercom Calls	82
Off-Premise Extensions / On-Premise SLT Extensions.	82
Ringing For Incoming Calls	82
One-Touch Keys.	83
Paging.	83
Internal Paging	83
External Paging	83
Page Relay Support	84
Trunk Ringing Over External Page.	84
Intercom Ring Over External Page	84
Door Chime Over External Page.	84
Background Music Over External Page	84
Park.	85
Distinctive Flash Rate on Park Recall.	85
Enhanced Personal Park Orbit Recall Display	85
Enhanced System Park Orbit Recall Display	86
PBX/Centrex Compatibility	86
PBX/Centrex Access Codes	86
Prime Line Preference	87
Idle Prime Line	87
Intercom Prime Line	87
Prime Line vs. Ringing Line Preference	87
Privacy	88
Privacy Release Groups	88
Private Line	89
Programmable Function Keys	89
Pulse to Tone Conversion.	92
Removing Trunks and Extensions From Service.	93
Reverse Voice Over	93
Ring Groups	94
Ringdown Extension	94
Ringing Line Preference.	95
Prime Line vs. Ringing Line Preference	96
Save Number Dialed	96
Selectable Display Messaging	97
Silent Monitor.	98
Single Line Telephones	98
Soft Keys	98
Speed Dial	99
System Speed Dial	99
Personal Speed Dial	99
Unique Speed Dial Entries	99
Storing Trunk Routing in a Speed Dial Bin	99
Centrex Compatibility.	99
Split (Alternate)	101
Station Message Detail Recording.	101
System Programming Backup and Restore	102
DS2000 PC Cards	102

Data Base Compatibility	102
DS1000 Database Transfer Utility	102
System Programming Password Protection	103
System Timers	103
System Timers, Stations	105
System Timers, Trunks	108
T1 Trunking	111
ANI/DNIS Support	111
Tandem Trunking / Unsupervised Conference	112
Tie Lines	113
Time and Date	113
Toll Restriction	113
Transfer	114
Distinctive Flash Rate on Transfer Recall	115
Enhanced Recall Display	115
Handsfree Transfer	115
Trunk Group Routing	115
Trunk (Line) Queuing / Trunk Callback	116
Trunk Queuing	116
Trunk Callback	116
Trunk Queuing Priority	116
Trunk Groups	117
Trunk Timers	117
User Programmable Features	117
Voice Mail	118
Call Forwarding to Voice Mail	118
Leaving a Message	118
Transferring to Voice Mail	119
Conversation Record	119
Personal Answering Machine Emulation	119
Voice Mail Overflow	119
Message Center Mailbox	119
Interactive Soft Key Shows New Messages	120
Improved Handling of Extensions in Do Not Disturb	120
Voice Over	121
Volume Controls	122
Enhanced Volume and Contrast Control	122
Walking Class of Service	123
Year 2000 Compliance	123
Section 4: Specifications and Parts List	125
Specifications	125
System Capacities	125
Environmental Requirements	126
Power Requirements	126
Environmental Specifications	126
Electrical Specifications	127
Relay Contacts	128

External Paging	128
BGM/MOH Music Source Input.	128
Mechanical Specifications.	128
DS1000 FCC Registration Information.	129
DS2000 FCC Registration Information.	129
Cabling Requirements	130
Parts List.	131
The Telephones	131
Other Station Equipment.	131
DS2000 PCBs	132
IntraMail	132
DS2000 Common Equipment	132
DS1000 Common Equipment	133
Miscellaneous and Optional Equipment	133
UltraMail	133
Replacement Parts	134
Glossary	135
Index	

Section 1

Basics

1

Introducing DS1000/2000 — The STANDARD for COMMUNICATIONS



**All new system architecture . . .
. . . built for the 21ST century**

NEC's legendary reliability and quality standards are evident in the DS1000/2000 innovative 32-bit architecture. This new concept features Digital Signal Processor (DSP) Technology, on-board flash memory, and field software upgradeability. The compact DS1000 starts with 3 lines, 8 stations, and 4 analog ports. It expands to 6 lines, 16 stations and 8 analog ports just by plugging in a single expansion board. The basic DS2000 system is available with 4 slots and 64 ports. It is easily expandable to 8 slots and 112 ports by upgrading to a 112 port cabinet. You can grow the system as you grow your business — while keeping your initial investment in common equipment intact.

Integrated Voice Mail Helps Increase Productivity and Savings

The DS family of products offers an integrated voice mail system called IntraMail in two different models: a 4 port/4 hour system; or an 8 port/8 hour system. Both systems can have up to 160 mailboxes and offer Interactive “Soft” Keys on display telephones.

IntraMail has features such as Automated Attendant, which helps incoming calls get answered and routed quickly and efficiently, and Fax Detection, which maximizes use of your telephone lines. Conversation Record lets you record a conversation when you can't take notes fast enough. Answering Machine Emulation lets you screen calls to filter out unimportant calls before you answer. Caller ID with Return Call lets you call back the person that left you a voice mail as easily as pressing one key.

The DS2000 with T1 capability lets you take advantage of the cost savings often available when using a T1 digital transmission connection from your serving telephone company. It can also give you the flexibility of Direct Inward Dialing (DID) or E&M Tie Line signaling.

The DS family has just added the time-saving convenience of PC programming. This feature can save time and money because you can perform system programming remotely through an external modem. The systems continue to have phone programming so Moves, Adds and Changes can be handled quickly.

The NVM-Series Voice Mail with Automated Attendant also integrates with the DS family. In addition, the DS2000 is compatible with the UltraMail “in-skin” Voice Mail with Automated Attendant.

A family of telephones that sets the new standard in office communications

All models offer 10 One-Touch (Speed Dial) Keys, Dual Color LEDs, and built-in Handsfree Speakerphone. All 2-line display models feature 4 Interactive Soft Keys for intuitive, automated feature operation. In addition, the 34-button sets are available with an optional 24- or 110-Button Direct Station Selection (DSS) console.

DS1000/2000 Feature Overview

Calling a Co-Worker

Easily get in touch with co-workers over the Intercom. The party you call can have their phone ring, or they can respond without touching the phone using Handsfree Answerback. With a Hotline button, you can Intercom frequently called co-workers, Transfer a call and even see at a glance when they're busy. When you must get through to an associate right away, you can Barge In to get through even if they are talking with another caller.

Outside Calls

You can answer Outside Calls that ring your phone or flash your line/loop keys. You can customize the way incoming calls ring your phone. For example, they can ring during the day and just flash at night. Caller ID can show your caller's number and optional name before you answer their call. While you're on a call, use Reverse Voice Over to talk privately to a co-worker without putting your call on Hold.

Place Outside Calls by pressing your line/loop keys, dialing simple codes or just lifting the handset. Once your call goes through, the Call Timer shows how long you're on the phone.

Handling and Rerouting Your Calls

Use Hold to have your call wait at your phone, or Park it in orbit for a co-worker. Don't know where a co-worker is? Use Paging to locate them. When you leave your desk, forward your calls to a co-worker or to your IntraMail voice mailbox.

In a hurry? Leave your co-worker a Message Waiting, or use IntraMail to record a voice message for them. Enable Conversation Record to have your voice mailbox record your own conversations.

When Your Call Can't Go Through

Don't just hang up when your call can't get through to a co-worker! Use Call Waiting to wait without hanging up. Send your co-worker Off Hook Signals to let them know you're waiting, or use Voice Over for a private announcement. With Voice Over, you can talk to a busy user while they keep talking to their initial caller. If you don't have time to wait, leave a Callback request that automatically rings you when they become free. You can optionally just lift the handset to have your call go through.

Placing Calls Quickly

Use Personal Speed Dial to store numbers you call often and easily dial them with just a few key presses. To quickly retry the number you just dialed, use Last Number Redial, or Save a number for quick redialing later on. With Directory Dialing, select a co-worker or outside call from a list of names, rather than dialing the phone number.

When You Work in Groups

If you and your co-workers handle each other's calls, set up an Extension Hunting group. To answer a call ringing a co-worker's phone, use Group Call Pickup, Directed Call Pickup or a Call Coverage key. When you're on a call and want others in your area to listen in on the conversation, activate Handsfree or Group Listen.

Have a Telephone Meeting

Conference allows you to quickly set up a telephone meeting. Use Meet Me Conference to set up a meeting which lets others join if they choose.

Customizing Your Telephone's Operation

The User-Programmable Features let you set up your telephone to meet your own unique requirements. For example, you can set ringing options for your line keys, Group Call Pickup keys and Call Coverage keys. Also, you can program your Speed Dial numbers, assign Hotline and DSS keys, and set up your Off-Hook Signaling options. You even have access to your Prime Line Assignment and Ringing Line Preference options.

Managing The System

Set up Toll Restriction to block those expensive, unnecessary long distance calls. To monitor traffic patterns, have Station Message Detail Recording print a record of your system's calls. Control the power and flexibility of system extensions through Class of Service. Some sites have unique numbering considerations, like matching phone numbers to room numbers in a school. If yours does, you'll appreciate Flexible System Numbering.

Other Powerful System Options

Use analog Single Line Telephones to set up a traditional PBX-type system. With the 2-OPX Module, you can connect Single Line Telephones or off-premise extensions to the same common equipment used for digital phones. The system analog ports also lets you connect to fax machines and modems.

The system allows you to connect a music source for Background Music and Music on Hold, and provides an audio output for External Paging.

Section 2 Components

2

The Telephones

The total number of telephones, other station equipment, and trunks you can connect to your system depends on several configuration requirements. Turn to *DS2000 System Configuration* on page 22 and *DS1000 System Configuration* on page 24 for more on these requirements. Also, for your convenience there is a complete *Parts List* on page 131 at the end of this manual.

34-Button Super Display Telephone (P/N 80673)

The 34-Button Super Display Telephone is the system's premier telephone instrument. It features an 8-line, 20-character display with 12 interactive keys that provide intuitive call processing. The Super Display also offers 24 user-programmable function keys for one-button access to a host of sophisticated features. The 14 fixed feature keys provide quick access to the vast array of standard features. The Super Display has a built-in speakerphone and desk stand, offers Dual Color LEDs and is compatible with the optional REJ Recording Jack.



 **34-Button Super Display Telephone P/N 80673 at a glance —**

Display 8 x 20	Soft Keys Yes	Dual Color LEDs Yes
Function Keys 24	Speed Dial Keys 10	Feature Keys 14
Handsfree Yes	DSS/REJ Compatible Yes	

34-Button Display Telephone (P/N 80663)

The 34-Button Display Telephone features a 2-line, 20 character display with 4 Interactive Soft Keys for intuitive feature access, 10 Personal Speed Dial bin keys, 24 user-programmable function keys and 14 fixed feature keys. It also offers a built-in speakerphone, Dual Color LEDs, and a built-in desk stand. The 34-Button Display Telephone is compatible with the optional REJ Recording Jack.



34-Button Display Telephone P/N 80663 at a glance —

Display 2 x 20	Soft Keys Yes	Dual Color LEDs Yes
Function Keys 24	Speed Dial Keys 10	Feature Keys 14
Handsfree Yes	DSS/REJ Compatible . . Yes	

22-Button Display Telephone (P/N 80573)

The 22-Button Display Telephone provides a 2-by-20 alphanumeric display with 4 Interactive Soft Keys for intuitive feature access, 10 Personal Speed Dial bin keys, 12 user-programmable function keys and 14 fixed feature keys. It also offers a built-in speakerphone, Dual Color LEDs and a built-in desk stand.



22-Button Display Telephone P/N 80573 at a glance —

Display 2 x 20	Soft Keys Yes	Dual Color LEDs Yes
Function Keys 12	Speed Dial Keys 10	Feature Keys 14
Handsfree Yes	DSS/REJ Compatible . . No	

22-Button Telephone (P/N 80570)

The economical 22-Button Telephone also has 10 Personal Speed Dial bin keys, 12 user-programmable function keys and 14 fixed feature keys. It also provides a built-in speakerphone, Dual Color LEDs and a built-in desk stand. It does not, however, have a display or Interactive Soft Keys.



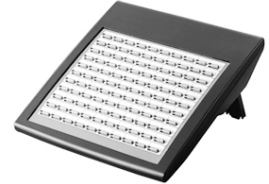
22-Button Telephone P/N 80570 at a glance —

Display No	Soft Keys No	Dual Color LEDs Yes
Function Keys 12	Speed Dial Keys 10	Feature Keys 14
Handsfree Yes	DSS/REJ Compatible . . No	

Other Station Equipment

110-Button (P/N 80555) and 24-Button (P/N 80556) DSS Consoles

The 110-Button DSS Console gives a 34-Button Super Display or 34-Button Display user a 110-button Busy Lamp Field (BLF) and one-button access to extensions, trunks, and selected system features. The 110-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 110-Button 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.



110-Button DSS Console P/N 80555 at a glance —

DSS/BLFKeys	110
Installs only in 34-Button Super Display and 34-Button Display Telephones.	

2

The compact 24-Button DSS Console is identical in operation to the 110 button model — but provides 24 keys (instead of 110). By default, the 24-Button DSS Console provides Hotline keys for system extensions.



24-Button DSS Console P/N 80556 at a glance —

DSS/BLFKeys	24
Installs only in 34-Button Super Display and 34-Button Display Telephones.	

You can install up to 4 DSS Consoles maximum. Depending on your system configuration, the number of DSS Consoles you can install may also be limited by the System Load Factor. See *DS2000 System Configuration* on page 22 and *DS1000 System Configuration* on page 24 for more.

2-OPX Module (P/N 92177A)

The 2-OPX Module provides two 2500 type analog circuits for connecting single line sets, modems and fax machines. It is also a handy way to connect Voice Mail ports in DS2000 systems without separate ASTU PCBs. (See page 11 for more on ASTU PCBs.) The 2-OPX Module is a stand-alone unit with its own internal DTMF receivers, ring generator and power supply. Since the 2-OPX Module is a true OPX, it can connect to telco OL13 B/C OPX circuits. Even though it provides 2 analog circuits, the 2-OPX Module connects to a *single* digital port. The 2-OPX Module is wall-mountable using the provided wall mount brackets.



The number of 2-OPX Modules you can install may also be limited by the System Load Factor. See *DS2000 System Configuration* on page 22 and *DS1000 System Configuration* on page 24 for more.

2-OPX Module P/N 92177A at a glance —

Analog 2500 type circuits	2	Connects to a single digital port.
---------------------------------	---	------------------------------------

Analog Door Box (P/N 92245)

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 Analog Door Box call button (like a door bell). The Analog Door Box then sends chime tones to all extensions programmed to receive chimes. To answer the chime, the called extension user just lifts the handset. This lets the extension user talk to the visitor at the door. The Analog Door Box is convenient to have at a delivery entrance, for example. It adds security by allowing you to answer the door at your desk.



- The Analog Door Box is only available in DS1000 (2 maximum). An Analog Door Box plugs into one of the dedicated Door Box ports (DOOR1 or DOOR2).
- The Analog Door Box can be mounted outside.

Any extension that receives Analog Door Box alerts can also activate a control relay. If the relay is connected to electric door strike circuits, an extension user can press FLASH or a soft key to remotely lock and unlock the entrance door. There are two relays in DS1000, one for each Analog Door Box.

Analog Door Box P/N 92245 at a glance (DS1000 Only) —

Connects to a dedicated Analog Door Box port (2 max.).	Control relay available for each Analog Door Box.
---	--

Wall Mount Kit (P/N 80579)

Use the snap-on Wall Mount Kit to attach any key telephone to the wall or a standard wall plate. The wall mount kit includes a mounting bracket, wall mount screws and a handset hanger.

REJ Recording Jack Module (P/N 80175)

Use the REJ Recording Jack to connect a Super Display or 34-Button Display Telephone to an external tape recorder or amplifier. The REJ broadcasts both sides of the conversation (i.e., the extension user's voice and the caller's voice) whenever the user lifts the handset. The REJ does not broadcast Paging announcements or activate for Handsfree calls.



The REJ provides a standard AUX level output through a mono sub-miniature jack.

REJ Recording Jack Module P/N 80175 at a glance —

Output Level AUX	Connector Mono Sub-miniature
Installs only in 34-Button Super Display and 34-Button Display Telephones.	

Labelmaker

The DS1000/2000 Labelmaker consists of template software which, in combination with separately available pre-cut forms, allows you to make custom key labels for each key telephone. These custom key labels can include Speed Dial names and Programmable Function Key descriptions.

The Labelmaker requires:

- A Windows-compatible sheet fed laser or ink jet printer.
- Microsoft Windows 95/98/2000/XP

DS2000 Common Equipment

4-Slot Cabinet (P/N 80000)

The 4-Slot Cabinet houses the CPU, 4 universal PCB slots and the system's power supply. It provides 64 ports and can connect up to 56 trunks, 32 digital extensions, and 24 analog extensions. 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.



Make a note of the following...

- You must install a 16DSTU PCB into the first universal slot of the 4-Slot Cabinet.

Be sure to review *DS2000 System Configuration* on page 22 for more on setting up the 4-Slot cabinet.

4-Slot Cabinet P/N 80000 at a glance —

Universal Slots	4	Ports	64
Trunks (maximum)	56	Digital Extensions (maximum)	32
Analog Extensions (maximum)	24		

8-Slot Cabinet (P/N 80001)

The 8-Slot Cabinet contains the CPU slot, 8 universal PCB slots and up to 3 system power supplies (depending on Load Factor requirements). It provides 112 ports and can connect up to 64 trunks, 96 digital extensions, and 56 analog extensions. Just like the 4-slot model, the 8-Slot Cabinet is wall-mountable, has a flip off cover and removable side panel for easy access. The 8-Slot Cabinet also has a translucent panel in the cover for getting essential system status and troubleshooting at a glance.



Make a note of the following...

- You must install a 16DSTU PCB into the first universal slot of the 8-Slot Cabinet.
- Install a power supply for every 2 16DSTU PCBs.

Be sure to review *DS2000 System Configuration* on page 22 for more on setting up the 8-Slot Cabinet.

8-Slot Cabinet P/N 80001 at a glance —

Universal Slots	8	Ports	112
Trunks (maximum)	64	Digital Extensions (maximum)	96
Analog Extensions (maximum)	56		

Power Supply (P/Ns 80005B and 80005C)

The power supply provides the various DC voltages required to power the system's PCBs. The 4-Slot Cabinet requires a single power supply. The 8-Slot Cabinet requires up to 3 power supplies, depending on system configuration.

Make a note of the following...

- You can mix P/Ns 80005B and 80005C in the same system.
- In an 8-Slot Cabinet, you must have a power supply for every 2 16DSTU PCBs installed.
- If the system uses UltraMail or UltraMail 2000, you **must** install only power supply P/N 80005C.



Be sure to review *DS2000 System Configuration* on page 22 for help on deciding how many power supplies your 8-Slot Cabinet requires.

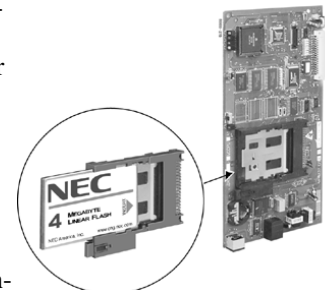
PC Card with Software (P/N 80052-V**.**.**)

The PC Card with Software allows you to easily upgrade your system's software without removing system PCBs or powering down your system. Just insert the PC Card, flip a switch, and reboot your system with the latest software enhancements fully installed. You **cannot** use PC Card with Software P/N 80052-V**.**.**) to store system databases.

Blank PC Card (P/N 85880)

Use the Blank PC Card to store up to 16 system databases. Unlike the PC Card with Software above, the Blank PC Card does not contain system software. You cannot use it to field-upgrade your system's software.

Note that version 02**.**) databases **are not** compatible with version 03**.**) databases.



DS2000 PCBs

Expanded Memory CPU Central Processing Unit PCB (P/N 80025B)


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

- PC Card interface
- Conference circuits, DTMF receivers and DTMF generators
- External music input
- External Paging output
- External relay
- Real Time Clock
- Battery for short term (14 day) backup of the customer's site-specific data
- Diagnostic and status LEDs



Make a note of the following...

- When connecting a music source, an External Paging system, or a device controlled by the CPU relay, make sure the connected device is compatible with the CPU input and output specifications. Review your system's *Hardware Manual* for more.

 **CPU P/N 80025B at a glance —**

Music Inputs	1	Page Outputs	1
Relay Contacts	1 set	DTMF Receivers and Generators	Yes

16DSTU Digital Station PCB (P/N 80021A)

Each 16DSTU PCB connects 16 digital extensions (i.e., keysets). You can also connect 2-OPX Modules. The 16DSTU has a Mode Switch (for taking the PCB out of service). It also has a status LED that indicates proper PCB operation — as well as a port activity LED that flashes faster as traffic on the PCB increases. You can install up to 2 16DSTU PCBs in a 4-Slot Cabinet. You can install up to 6 16DSTU PCBs in an 8-Slot Cabinet. See *DS2000 System Configuration* on page 22 for more.



Make a note of the following...

- When connecting 2-OPX Modules, always observe the System Load Factor. See page 22 for more.
- You must install a separate power supply for every 2 16DSTU PCBs installed.
- In all systems, you must install a 16DSTU PCB in the first universal slot.
- You can install 16DSTU PCBs in any universal slot.

 **16DSTU PCB P/N 80021A at a glance —**

Digital Station Ports	16	Installs in any universal slot.
---------------------------------	----	---------------------------------

8ASTU 8 Port Analog Station PCB (P/N 80041B)

The 8ASTU PCB connects 8 analog extensions. These can include single line telephones, fax machines, modems or Voice Mail ports. Just like the 16DSTU PCB, the 8ASTU PCB has a Mode Switch (for taking the PCB out of service), a status LED indicating proper PCB operation, and a port activity LED to indicate traffic on the PCB. The number of 8ASTU PCBs you can install depends on system configuration. Turn to *DS2000 System Configuration* on page 22 for more.



Make a note of the following...

- The 8ASTU PCB provides high voltage message waiting for single line sets with high voltage message waiting lamps.
- The 8ASTU PCB also provides Caller ID to single line sets.
- You can install 8ASTU PCBs in any universal slot except the first.

 **8ASTU PCB P/N 80041B at a glance —**

Analog Station Ports	8	Installs in any universal slot but slot 1.
Provides high voltage message waiting.		Also provides Caller ID to single line sets.

4ASTU 4 Port Analog Station PCB (P/N 80040B)

The 4ASTU PCB is identical to the 8ASTU PCB, except that it provides connection for only 4 analog extensions. The 4ASTU PCB has a Mode Switch (for taking the PCB out of service), a status LED indicating proper PCB operation, and a port activity LED to indicate traffic on the PCB. The number of 4ASTU PCBs you can install depends on system configuration. Turn to *DS2000 System Configuration* on page 22 for more.

Make a note of the following...

- The 4ASTU PCB provides high voltage message waiting for single line sets with high voltage message waiting lamps.
- The 4ASTU PCB also provides Caller ID to single line sets.
- You can install 8ASTU PCBs in any universal slot except the first.

 **4ASTU PCB P/N 80040B at a glance —**

Analog Station Ports	4	Installs in any universal slot but slot 1.
Provides high voltage message waiting.		Also provides Caller ID to single line sets.

8ATRU 8 Port Analog Trunk PCB (P/N 80011B)

The 8ATRU PCB supports 8 analog loop start CO trunks. The PCB has a Mode Switch (for taking the PCB out of service), a status LED indicating proper PCB operation, and a port activity LED that indicates traffic on the PCB. The number of 8ATRU PCBs you can install depends on system configuration. Turn to *DS2000 System Configuration* on page 22 for more.



Each 8ATRU PCB also provides 2 power failure cut-through circuits. When commercial AC power fails, the PCB automatically cuts through 2 trunk circuits to 2 power failure telephones.

Make a note of the following...

- The 8ATRU PCB provides built-in Caller ID.

 **8ATRU PCB P/Ns 80011B at a glance —**

Analog Loop Start Trunks	8	Installs in any universal slot but slot 1.
Provides built-in Caller ID.		

4ATRU 4 Port Analog Trunk PCB (P/N 80010B)

The 4ATRU PCB is identical to the 8ATRU PCB except that it supports only 4 analog loop start CO trunks. Just like the 8ATRU PCB, the 4ATRU PCB has a Mode Switch (for taking the PCB out of service), a status LED indicating proper PCB operation, and a port activity LED that indicates traffic on the PCB. The number of 4ATRU PCBs you can install depends on system configuration. Turn to *DS2000 System Configuration* on page 22 for more.

Each 4ATRU PCB also provides 2 power failure cut-through circuits. When commercial AC power fails, the PCB automatically cuts through 2 trunk circuits to 2 power failure telephones.

Make a note of the following...

- The 4ATRU PCB provides built-in Caller ID.

 **4ATRU PCB P/N 80010B at a glance —**

Analog Loop Start Trunks4	Installs in any universal slot but slot 1.
Provides built-in Caller ID.	

T1 Trunk PCB (P/N 80061)

The T1 Trunk PCB provides advanced digital trunking and gives the DS2000 a maximum of 24 trunks in a single PCB slot. It offers the advantages of advanced digital trunking as well as conserving PCB slots. The available T1 trunk 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)



Make a note of the following...

- The T1 PCB can connect directly to the telco's T1 smart jack. However, the local telco may require the installation of a separately-purchased Channel Service Unit (CSU) between the smart jack the T1 PCB.
- The T1 PCB connects to the telco's T1 smart jack or your CSU using a standard straight-through CAT 5 cable.

 **T1 Trunk PCB P/N 80061 at a glance —**

T1 Trunks24	Installs in any universal slot but slot 1.
-----------------------	--

DS1000 Common Equipment

DS1000 Cabinet (P/N 80200A)

The compact, wall-mountable DS1000 main equipment cabinet contains all the system's common control circuitry and provides connection for trunks (outside lines), extensions, Door Boxes and other peripherals. *Without* the plug in Expansion Board installed, the DS1000 cabinet supports:

- 3 trunks
- 8 digital extensions
- 4 analog extensions
- 1 Analog Door Box
- 1 Analog Door Box Control Relay that can alternately be used for External Paging amplifier control
- 1 External Paging output
- 1 Music input



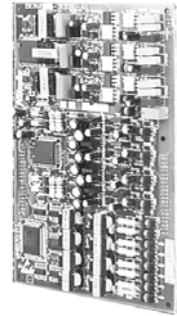
DS1000 Expansion Board (P/N 80221)

By removing the main equipment cabinet cover and snapping in the Expansion Board, the DS1000 can accommodate *an additional*:

- 3 trunks
- 8 digital extensions
- 4 analog extensions
- 1 Analog Door Box
- 1 Analog Door Box Control Relay that can alternately be used for External Paging amplifier control

With the Expansion Board installed, the *total system capacity* is:

- 6 trunks
- 16 digital extensions
- 8 analog extensions
- 2 Analog Door Boxes
- 2 Analog Door Box Control Relays
- 1 External Paging output
- 1 Music input



IntraMail

IntraMail Voice Mail with Automated Attendant (P/Ns 80044 and 80088)

IntraMail is a plug-in “in-skin” full-featured, DSP-based integrated Voice Mail with Automated Attendant for DS1000 and DS2000. It is available in two models:

- P/N 80044 with 4 Voice Mail ports, 4 hours of message storage, and up to 160 mailboxes.
- P/N 80088 with 8 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.



2

IntraMail components at a glance —

P/N 80044	IntraMail, 4 Port, 4 Hour
P/N 80088	IntraMail, 8 Port, 8 Hour

IntraMail Specifications		
	80044	80088
Ports	4	8
Mailboxes	66 in DS1000, 160 in DS2000	
Storage Hours	4 Hours	8 Hours
Answer Tables	8	
Dial Action Tables	16	
Programming Interface	DS1000/2000 telephone programming or DS1000/2000 PC Program	
Remote Programming Access	Via customer-provided modems and DS1000/2000 PC Program	
Voice Storage Media	Flash Card (on IntraMail PCB)	
Languages	1 (English Mnemonic)	

UltraMail

UltraMail and UltraMail 2000

UltraMail and UltraMail 2000 are PCB-based, digitally-linked, “in-skin” Voice Mail with Automated Attendant systems for DS2000. UltraMail uses flash memory storage and provides up to 8 voice mail ports, 200 mailboxes, and 3 hours of message storage. UltraMail 2000 is hard disk based and provides up to 8 voice mail ports, 1000 mailboxes, and at least 130 hours of message storage.



Make a note of the following...

- For additional information on the UltraMail and UltraMail 2000, refer to the Aspire Mail and UltraMail System Guide (P/N 17710SWG**).

UltraMail and UltraMail 2000 components at a glance —

P/N 17712	UltraMail, 2 Port, 3 Hour, 200 Mailboxes (Flash memory based)
P/N 17714	UltraMail, 4 Port, 3 Hour, 200 Mailboxes (Flash memory based)
P/N 17744	UltraMail 2000, 4 Port, 130 Hour minimum, 1000 Mailboxes (Hard disk based)
P/N 0891044	UltraMail 2 Port to 4 Port Software Upgrade
P/N 0891045	UltraMail 4 Port Expansion PCB for UltraMail P/Ns 17712 and 17714.
P/N 0891034	UltraMail 2000 4 Port Expansion PCB for UltraMail 2000 P/N 17744.

UltraMail and UltraMail 2000 Specifications		
	UltraMail	UltraMail 2000
Ports	2 expandable to 8	4 expandable to 8
Mailboxes	200	1000
Storage Hours	3 Hours	130 Hours (Minimum)
Answer Schedule Tables	16	
Dial Action Tables	100	
Distribution Lists	100	
Programming Interface	Serial Port (using cable P/N 80893 and adaptor P/N 85980)	Serial Port, LAN connection, or Modem Mailbox
Remote Programming Access	Customer-provided modem connected to serial port	LAN or Modem Mailbox

UltraMail and UltraMail 2000 Specifications (Continued)		
	UltraMail	UltraMail 2000
Voice Storage Media	Flash Card	Hard Disk
LAN Connection	No	Yes
Modem Mailbox (internal modem)	No	Yes
Languages	1 (English Mnemonic)	4 (any 2 can be active) English Mnemonic English Numeric French Spanish

2

Miscellaneous and Optional Equipment

DS1000/2000 Update Utility (P/N 80250A-V**.**.*)

Use the Update Utility installed on a PC or laptop connected to your system to upgrade your system's software. The Update Utility, along with the latest system software files, is available on the System Document CD (P/N 80200DCD**) that is provided with each system. The Update Utility and system software files are also available on the web at <http://ws1.necii.com/ds2000>.

DS1000/2000 PC Program (System Administrator) (P/N 80053)



The PC Program is a Windows™-based application you can use for programming the telephone system and maintaining site databases, instead of using the conventional telephone programming. The PC Program provides:

- **On-Line Programming (Direct Connection)**
With the PC connected to the telephone system's serial port, you can make immediate changes to the telephone system programming. While connected, the PC Program also allows you to save your new data to a file on the PC hard disk, or upload a "template" database from your PC to the system.
- **Remote Programming (Modem Connection)**
Using a modem connected to your PC and the remote system, you can customize a customer's system without leaving your office. Remote Programming requires customer-provided modems and an available trunk circuit at the remote site.
- **Off-Line Programming**
With Off-Line Programming, the PC Program allows you to set up a database on your PC off line, connect to the telephone system, and upload the entire custom configuration.
- **Database Save and Restore**
Use the PC Program to save a site's data to your PC hard disk. You can easily restore the saved data later on, if required.

The DS1000/2000 has the following requirements:

- Windows NT, Windows 2000, Windows XP, and above.
- P133 with 32 MB RAM minimum.
- 256 color 800 x 600 display (1240 x 1024 is optimal).
- Do not use large fonts.
- 40 MBytes of available hard disk space.

DS2000 Adaptor Box (P/N 80890)

The DS2000 Adaptor Box has two 8-conductor (RJ61X) modular jack inputs and 8 2-conductor modular jack (RJ11) outputs. When used with the RJ61X 8-Conductor Cable below (P/N 80891), it can connect up to 8 extensions, 8 trunks, or 4 of each. You can also use the Adaptor Box for the CPU audio and relay connections. The Adaptor Box is intended for DS2000 testing and demo systems.



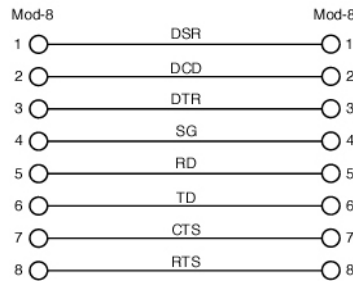
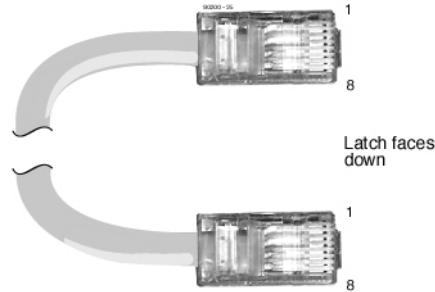
RJ61X 8-Conductor Cable (P/N 80891)

In DS2000, use the RJ61X 8-Conductor Cable to connect DSTU PCBs, ASTU PCBs, ATRU PCBs, or the CPU audio and relay connections to Adaptor Box P/N 80890. Each Adaptor Box requires 2 RJ61X 8-Conductor Cables.

In DS1000, you can use the RJ61X 8-Conductor Cable to connect:

- A modem to the system's RS-232-C serial port. This application also requires DB25 Male to Mod-8 Adaptor P/N 85981. Note that you can also use a standard Mod-8 Patch Cord in lieu of 8-Conductor Cable P/N 80891.

- A PC or laptop to the system's RS-232-C serial port. Use the PC or laptop to collect call history, view Station Message Detail Recording (SMDR) data, use the Update Utility to upgrade system software, or use the PC Program. These applications also require DB9 Female to Mod-8 Adaptor P/N 85980. Note that you can also use a standard Mod-8 Patch Cord in lieu of 8-Conductor Cable P/N 80891.

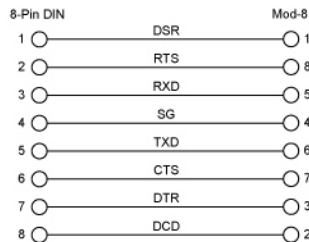
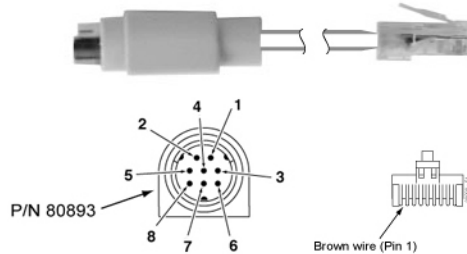


2

DS2000 8-Pin DIN to Mod-8 Cable (P/N 80893)

The 8-Pin DIN to Mod-8 Cable is intended for connecting a modem, PC, or SMDR collection device to the DS2000 RS-232-C serial port.

- Use cable P/N 80893 along with the DB9 Female to Mod-8 Adaptor (P/N 85980) below when connecting to a PC or laptop.
- Use cable P/N 80893 along with the DB25 Male to Mod-8 Adaptor (P/N 85981) below when connecting to a modem.

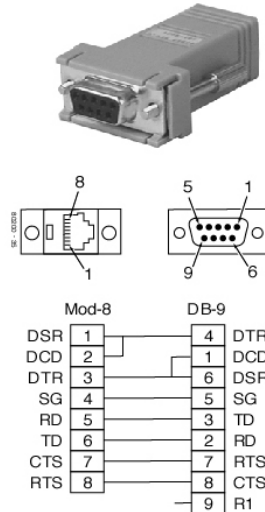


DB9 Female to Mod-8 Adaptor (P/N 85980)

In DS2000, use DB9 Female to Mod-8 Adaptor P/N 85980 along with 8-Pin DIN to Mod-8 Cable P/N 80893 to connect a PC or laptop to the DS2000 RS-232-C serial port.



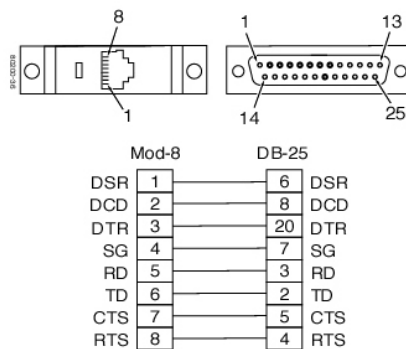
In DS1000, use DB9 Female to Mod-8 Adaptor P/N 85980 along with RJ61X 8-Conductor Cable P/N 80891 (or a standard Mod-8 Patch Cord) to connect a PC or laptop to the DS1000 RS-232-C serial port.



DB25 Male to Mod-8 Adaptor (P/N 85981)

In DS2000, use DB25 Male to Mod-8 Adaptor P/N 85981 along with 8-Pin DIN to Mod-8 Cable P/N 80893 to connect a modem to the DS2000 CPU RS-232-C serial port.

In DS1000, use DB25 Male to Mod-8 Adaptor P/N 85981 along with RJ61X 8-Conductor Cable P/N 80891 (or a standard Mod-8 Patch Cord) to connect a modem to the DS1000 RS-232-C serial port.



DS2000 Installation Cable (P/N 80892)

Installation Cable P/N 80892 makes it easy to connect the DS2000 system PCBs to standard 66M1-50 connecting blocks. This 25-pair cable has 6 8-pin modular connectors on one end and is unterminated on the other.

Replacement Parts

Turn to *Parts List* on page 131 for a complete list of all system components and replacement parts.

DS2000 System Configuration

DS2000 Default Configuration

Automatic Slot Configuration automatically sets up your system's PCBs when you initially power up the system. There is no longer a factory-installed default configuration, and you don't have to use system programming to activate PCBs after you plug them in. **Remember, you should always plug a 16DSTU PCB into slot CN1.**

DS2000 Configuration Guidelines

The total number of components you can install and connect depends on power supply capacity and the System Load Factor. Review the *DS2000 Configuration Guidelines* table and *DS2000 Load Factor Calculations* below when configuring your system.

DS2000 Configuration Guidelines
<p><u>4 Slot Cabinets</u></p> <ul style="list-style-type: none"> • Do not install more than 2 16DSTU PCBs under any circumstances. • The first 16DDSTU PCB you install must be in the first slot (CN1). • Maximum configuration is 64 ports. • The total of all extensions and trunks cannot exceed 64. • Always use the System Load Factor table to check your system configuration.
<p><u>8 Slot Cabinets</u></p> <ul style="list-style-type: none"> • Do not install more than 2 16DSTU PCBs for each power supply. (Install your power supplies in the following order: slot CN10<u>1</u>, slot CN10<u>3</u>, slot CN10<u>2</u>.) • The first 16DSTU PCB you install must be in the first slot (CN1). • The total of all extensions and trunks installed cannot exceed 112. • Maximum configuration is 112 ports. • Always use the System Load Factor table to check your system configuration.

DS2000 Load Factor Calculations

The combination of trunks, extensions, 2-OPX Modules and DSS Consoles you can connect to your DS2000 system may be limited by the System Load Factor. Use the *DS2000 System Load Factor Calculations* chart on the next page to verify your system's configuration. When entering data on the chart, for each installed item 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 PCB, DSS Console, and 2-OPX Module installed in the **Qty** column.
The number of keysets and single line sets does not affect the System Load Factor.
2. For each item for each Load Type, multiply the **Qty** times the **Load** and enter the value in the **Total** column.
For example, two 16DSTU PCBs have a load of 6 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.

DS2000 System Load Factor Calculations					
Description	Qty	Load Type			
		5 VDC		40 VDC	
		Load	Total	Load	Total
CPU PCB	1	6	6	0	0
16DSTU PCB		3		20	
4ASTU PCB		3		5	
8ASTU PCB		5		8	
4ATRU PCB		4		0	
8ATRU PCB		8		0	
T1 PCB		8		0	
UltraMail PCB (FMS)		19		0	
UltraMail 2000 PCB (VMS)		0		5	
Telephones (Keysets and SLTs)		0		0	
110-Button DSS Console		0		2	
24-Button DSS Console		0		1	
2-OPX Module		0		3	
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"> • A 4-slot cabinet can only have 1 power supply. • An 8-slot cabinet can have up to 3 power supplies. You <i>cannot</i> have more than two 16DSTU PCBs 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. • Total DSS Consoles installed cannot exceed 4. • In a 4-slot cabinet, the total of all station, trunk, and UltraMail ports cannot exceed 64. • In an 8-slot cabinet, the total of all station, trunk, and UltraMail ports cannot exceed 112. 					

DS1000 System Configuration

DS1000 Default Hardware Configuration

Using the factory installed default configuration, your DS1000 system provides:

	Base	Expansion	Total
Trunks	3	3	6
Digital Extensions	8	8	16
Analog Extensions	4	4	8
Analog Door Boxes	1	1	2
Relays	1	1	2
Page Output	1		1
Music Input	1		1

DS1000 Load Factor Calculations

The combination of extensions, 2-OPX Modules, and DSS Consoles you can connect to your system may be limited by the System Load Factor. Use the *DS1000 System Load Factor Calculations* chart on the next page to verify your system's configuration.

To check your system configuration:

1. Indicate the quantity for each item installed in the **Qty** column.
2. For each item, multiply the **Qty** times the **Load Factor** and enter the value in **Total Load**.
3. Add all the values in the **Total Load** column and enter the value in **Item 1**.
4. Compare the entry in **Item 2** to your entry 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 System Load Factor total (Item 1)
exceeds the allowable load of 30 (Item 2).

DS1000 System Load Factor Calculations			
Description	Load Factor	Qty	Total Load
Digital Telephone	1		
Analog Telephone	1		
Analog Door Box	0		
24-Button DSS Console	1		
110-Button DSS Console	2		
Total DSS Consoles installed cannot exceed 4			
2-OPX Module	3		
Item 1: Total load for this configuration			
Item 2: Maximum allowable load			30

2

Default Feature Configuration

This is how your system operates on initial power-up:

Trunks

In DS1000, trunks 1-6 (if installed) ring line keys 1-6 and single line telephones.

- Trunks 4-6 will only work if you have an Expansion Board installed.

In DS2000, trunks 1-12 ring on line keys 1-12 for extensions 300-315.

- All other extensions are lamp-only for trunks 1-12 on line keys 1-12.
- Trunks 13-64 do not appear on line keys.
- Single line sets do not ring for incoming trunk calls.

All trunks (outside lines) on ATRU PCBs are loop start DTMF.

- If you have Dial Pulse lines, you'll have to reprogram the trunk circuit type. For T1 trunks, see the *Software Manual* on your *System Document CD*.

Keysets

The circuit types for extensions are automatically set when the extension is plugged in.

Keyset users can place outside calls by pressing a line key and dialing the outside number.

- In DS1000, all extension users can also place outside calls by dialing 9 plus the outside number.

At the attendant's extension (300), key 11 is the Night Key and the last key on the phone (12 or 24 - depending on telephone model) is the Operator Call Key.

- Pressing the Night Key puts the system in the night mode.
- Use the Operator Call Key to answer incoming Intercom calls queued at the attendant's extension.

Section 3

Features

3

Account Codes

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

Availability: All versions.

Account Codes are user-dialed codes that help categorize and/or restrict trunk 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 a trunk 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 a trunk call, their conversation continues uninterrupted while they enter an Account Code.

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

Forced Account Codes

Forced Account Codes require an extension user to enter an Account Code every time they place a trunk call. If the user doesn't enter the code, the system prevents the call. The system can require Forced Account Codes for all trunk 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.

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 trunk for a Last Number Redial or Saved call.

Account Codes and Emergency Calls

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

DSS Console Account Code Key

A keyset user can have an Account Code key on their DSS Console. It works the same as a keyset Account Code key with the following exceptions:

- The DSS Console key flashes quickly red while the user is entering their Account Code. (The keyset Account Code key flashes quickly green.)
- The DSS Console key lights red while the user is on a call for which they have entered an Account Code. (The keyset Account Code key lights green.)

Feature Quick Steps

To enter an Optional (Unforced) Account Code:

1. Place or answer outside call + Press Account Code key, soft key, or dial # (if enabled).
2. Enter Account Code + Press Account Code key, soft key, or dial # (if enabled).
3. (Outgoing calls only) Dial outside number.

To enter a Forced Account Code:

1. Access line for outside call + Listen for 3 beeps + enter Account Code
2. Press Account Code key, soft key, or dial # (if enabled) + Dial outside number.

Alphanumeric Display

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

Availability: All versions.

The 22- and 34-Button Display Telephones have a two-line, 20-character per line alphanumeric display. The first line displays the date and time (while idle) and feature status messages. The second line displays the Soft Key definitions.

The 34-Button Super Display Telephone has an eight-line, 20-character per line alphanumeric display. The first line displays the data and time (while idle) and feature status messages, just like the 22- and 34-Button Display Telephones. Lines 2-8 are the comprehensive Super Display Telephone soft key definitions.

- To learn more about the Soft Keys, see *Soft Keys* on page 98.

To adjust the display contrast:

1. While your keyset is idle, press **VOL ▲** and **VOL ▼**.

Attendant Call Queuing

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

Availability: All versions.

An unlimited number of Intercom 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 programmable 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.

Feature Quick Steps

To answer a call flashing the Operator Call Key:

1. Press the flashing Operator Call Key.

Attendant Position

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

Availability: All versions.

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 29)
Incoming Intercom calls from co-workers queue for the attendant. The callers never hear busy tone.
- **Barge In (Intrusion)** (page 33)
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 Trunk Access** (page 55)
Direct Trunk Access lets the attendant user dial a code to access an individual trunk. This option is enabled in the attendant's Class of Service (COS 1).
- **Forced Trunk Disconnect** (page 64)
In an emergency, the attendant can release (disconnect) another user's active trunk call. This option is enabled in the attendant's Class of Service (COS 1).
- **Night Service / Night Ring** (page 80)
An attendant with a Night key can put the system in the night mode. This option is enabled in the attendant's Class of Service (COS 1).
- **Removing Trunks and Extensions From Service** (page 93)
The attendant can remove problem trunks from service —then return them to service once the problem is corrected. This option is enabled because the attendant has Direct Trunk Access enabled in their Class of Service (COS 1).
- **Trunk (Line) Queuing / Trunk Callback** (page 116)
The attendant can Camp On (queue) for a busy trunk. This option is enabled in the attendant's 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 24-Button or 110-Button Direct Station Selection (DSS) Console helpful when processing calls.

Feature Quick Steps

To call the attendant:

1. Press **ICM + Dial 0** (or 01-04 if the system has multiple attendants).

Auto Redial

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

Availability: All versions.

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 **SPK**.
- Presses **SPK** 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).

Feature Quick Steps

To use Auto Redial:

1. Place outside call + Receive busy tone + Press **Auto Redial (ALND)**.

Automatic Handsfree

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

Availability: All versions.

Automatic Handsfree allows a keyset user to place or answer a call Handsfree by just pressing a key — without lifting the handset or pressing **SPK** 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 (**ICM** key)
- Last Number Redial (**LND** key)
- Paging keys
- Park keys
- Personal Speed Dial bin keys
- Personal and System Speed Dial keys

The system always provides Automatic Handsfree for:

- Dial Number Preview
- Directory Dialing

Automatic Slot Configuration

The DS2000 automatically installs PCBs when you power up the system.

Availability: DS2000 only.

Automatic Slot Configuration automatically sets up station and trunk PCBs when you initially power up the system. This simplifies DS2000 installation because you no longer have to use system programming to activate station and trunk PCBs after you

plug them in.

Here's how Automatic Slot Configuration works:

- **With power off, install your station and trunk PCBs.**

With the system powered down, install the station and trunk PCBs from left to right in the order you want your extension and trunk numbers set up.

 - Be sure to install a 16DSTU PCB in the first slot (CN1).
 - You don't have to group your station and trunk PCBs together, although it may be more convenient to do so. For example, when setting up a 16x32 system, you can install the 2nd DSTU PCB and your two ATRU PCBs in any slot, in any order. Automatic Slot Configuration will properly handle the numbering.
- **Power up the system.**

On power up, the system scans the PCBs from left to right and sets up the extension and trunk numbering as follows.

 - Extension numbers will begin with 300 in the first slot and increment from left to right.
 - Trunk numbers will begin with 101 (starting from the first installed ATRU PCB) and will also increment from left to right.
 - For example, in a 16x32, the numbering will be:
 - 1st 16DSTU PCB = Extensions 300-315.
 - 2nd 16DSTU PCB = Extensions 316-331.
 - 1st 8ATRU PCB = Trunks 101-108.
 - 2nd 8ATRU PCB = Trunks 109-116.

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.

Availability: All versions.

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 music source.

The system provides a single external music input source. Background Music and Music on Hold share the same external source. For example, if Music on Hold uses a customer-provided program from CD, Background Music uses this source as well. In DS2000, the external music source connects to the CPU's 8-pin mod jack. In DS1000, the external music source connects to the AUDIO jack. For more on connecting a customer-provided music source, refer to the system's Hardware Manual.

Note: In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers (ASCAP) or other similar organizations, if radio, television broadcasts or music other than material not in the public domain are transmitted through the Background Music feature of telecommunications systems. NEC America, Inc., hereby disclaims any liability arising out of the failure to obtain such a license.

Feature Quick Steps

To turn Background Music on and off:

1. Do not lift handset or press **SPK** + Press **HOLD**.

Barge In (Intrusion)

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

Availability: All versions.

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 a trunk call. By default, only the attendant can use Barge In.

!! CAUTION !!

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

Feature Quick Steps

To Barge-In on a call:

1. Call busy extension or access busy trunk + Dial 4.
2. Join the conversation in progress.

Battery Backup

The CPU PCB provides temporary backup of system memory and the time and date.

Availability: All versions.

In the event of commercial AC power failure, the battery on the CPU PCB provides short-term backup of system memory and the system time and date (Real Time Clock). This battery will hold memory and time and date 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 the 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. When sizing a UPS unit, keep in mind that the DS2000 requires 165 VA per power supply, and the DS1000 requires 66 VA. Refer to the system's *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.

Availability: All versions.

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 press the Call Coverage key to call the covered extension. An extension can have as many Call Coverage Keys as they have available Programmable keys on their telephone.

Call Coverage Key Busy Lamp Indications	
When the key is:	The covered extension is:
Off	Idle or not installed
On	Busy
Flashing slowly	Ringing
Flashing fast	In Do Not Disturb

Call Coverage Keys will intercept Key Ring and ringing Intercom calls.

Feature Quick Steps

To answer a call ringing or flashing a Call Coverage Key:

1. Press flashing Call Coverage Key.

To place a call from an idle Call Coverage Key to the covered extension:

1. Press Call Coverage Key + Speak with co-worker at the covered extension.

User Programmable Feature: # R A C

Select Call Coverage Key ringing mode.

Call Forwarding

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

Availability: All versions.

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 ringing the extension forward when not answered.
- **Call Forwarding when Busy or Not Answered**
Calls ringing 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.

Call Forwarding Chaining

Extension users 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 ICM 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.
Wink off	Call Forwarding is enabled at the extension

An extension's Call Forwarding is reinstated after a power down or system reset.

Feature Quick Steps

To activate or cancel Call Forwarding:

1. Press **ICM** + Dial ***3**.
2. Dial Call Forwarding type:
0 = Cancel your extension's Call Forwarding
2 = Call Forwarding Busy/No Answer
4 = Call Forwarding Immediate
6 = Call Forwarding No Answer
3. Dial destination extension or press **MW** (to forward to your mailbox).
4. Dial **2** to forward all calls or **8** to forward just trunk calls.

User Programmable Feature: # C C

Clears (cancels) all Call Forwarding system-wide (only available at the attendant by default)

Call Forwarding Off Premise

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

Availability: All versions.

Off Premise 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 Premise Call Forwarding automatically forward their calls while they are away from the office. To set up Off Premise Call Forwarding, the user selects the trunk or trunk 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 trunk or group and then outdials the stored number.

Off Premise Call Forwarding reroutes:

- Intercom calls
- Transferred calls
- Direct Inward Lines
- UTRF (unscreened transfer) calls routed from the Voice Mail Automated Attendant
- Circular and Terminal Extension Hunting calls

Off Premise 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 Hunting Calls (i.e., calls to a UCD master number)
- Ringing Call Coverage key calls

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

Feature Quick Steps**To activate Off Premise Call Forwarding:**

1. Press **ICM** + Dial ***3 3**.
2. To select a Personal Speed Dial bin:
Press **Speed Dial Bin (Bin)** + Dial bin number (701-720) + **HOLD**.
To enter a number (which will be stored in bin 720):
Press **Number (Num)** + Follow normal Speed Dial Programming
3. Dial **2** to forward all calls or **8** to forward just trunk calls.

To cancel Off Premise Call Forwarding:

1. Press **ICM** + Dial ***3 0**.

Call Timer

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

Availability: All versions.

Call Timer lets a keyset user with a Call Timer key time their trunk 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 trunk calls. When a display keyset with an Automatic Call Timer key places or answers a trunk call, the Call Timer automatically starts when that trunk 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.

Feature Quick Steps**To time your trunk call if you have an Automatic Call Timer key:**

1. Place or answer trunk call. The Call Timer starts automatically.

To time your call if you have a Manual Call Timer key:

1. Place or answer Intercom or trunk call + Press Manual Call Timer key.

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.

Availability: All versions.

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, 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 beeps periodically repeat while the call waits. The call goes through when the extension becomes free.

If an extension has more than one caller waiting, they queue on a first-in/first-out basis (FIFO). The extension will not hear Camp-On beeps for additional waiting calls.

Feature Operation

To Camp-On to a busy extension:

1. Call busy extension + Dial 2 (do not hang up).
If you hang up, the system converts your Camp-On to a Callback.
2. Speak to your co-worker when they answer their Camp-On ring.

Callback

With Callback, a user does not have to repeatedly call a busy extension back, hoping to find it idle.

Availability: All versions.

When an extension user calls a busy co-worker, they can leave a Callback request for a return call.

The system services Callback requests as follows:

- Caller at extension A leaves a Callback at extension B.
- When extension B becomes idle, the system rings extension A. This is the Callback ring.
- Once caller A answers the Callback ring, the system rings (formerly busy) extension B.
- As soon as extension B answers, the system sets up an Intercom call between A and B.

An extension user can leave a Callback at many extensions simultaneously. The system processes the Callbacks as the extensions become free. In addition, many extensions can leave a Callback at the same extension. The system processes these Callbacks on a first-in/first-out (FIFO) basis.

If an extension user leaves a Callback request and then fails to answer within four rings, the system cancels the Callback.

Feature Quick Steps

To place a Callback:

1. Call busy extension + Dial 2 and hang up.
Stay on the line without hanging up if you want to Camp-On instead.
2. Lift handset to answer when Callback calls you back.
3. Speak to your co-worker when call goes through.

Caller ID

Caller ID automatically displays the phone number and optional name for incoming trunk calls.

Availability: All versions.

Caller ID allows a display keyset to show an incoming caller's telephone number (called Directory Number or DN) and optional name. Caller ID supports the telco's Called Number Identification (CNI) and Called Number Delivery (CND) service, when available. These services provide the Caller ID information (i.e. messages) between the first and second ring burst of an incoming call.

Caller ID provides the following features:

Single and Multiple Message Format Compatibility

There are two types of Caller ID message formats currently available: Single Data Message Format (SDMF) and Multiple Data Message Format (MDMF). With Single Message Data Format, the telco sends only the caller's phone number (DN). The DN is up to 10 digits long. In Multiple Data Message Format, the telco sends the DN and the caller's name. The DN for this format is also up to 15 digits long and the name provided consists of up to 15 ASCII characters. If no DN is received, no number or error message displays.

Caller ID Logging

Caller ID Logging stores a record of the caller's number and name (if provided by the telco) for each outside call that rings an extension. This allows an extension user to easily review and redial their calls. The system call log records directly to an extension or to one of 8 Caller ID Logging Groups. All extensions in the same Logging Group share the same Caller ID records. Each extension or Logging Group can store up to 99 Caller ID records. DS2000 stores up to 1000 Caller ID records (allocated among all extensions and Logging Groups). DS1000 stores up to 500 records. By default in DS1000, all keyset extensions (300-315) are in Caller ID Logging Group 1. By default in DS2000, extensions 300-315 are set up for personal logging and can log up to 10 calls each. Logging is disabled at all other extensions.

Caller ID on the SMDR Report

Caller ID data prints on the SMDR report. SDMF prints a single line which shows just the incoming number. MDMF records print on two lines, with the first line showing the number and the second line showing the name. Unlike the telephone display, the SMDR report can show the entire 15 digits in the DN, if required.

Following is a sample SMDR report showing Caller ID data. The first two lines of the report show a complete MDMF record with both the caller's number and name. The last two lines of the report show two Caller ID error messages: Private Number and Out of Area. the "IN" in the type column indicates that the records shown are for incoming calls. If no DN is received, no number or error message displays.

Station Message Detail Recording
05/07/1999 09:10P

Sta	Lin	Number Dialed	Account	Start	Duration	T
301	02	2139261000		11:11:39A	00:01:13	IN
301	02	ANDERSON ALLEN		11:11:39A	00:01:13	IN
301	02	Private Number		09:12:13P	00:01:12	IN
301	02	Out of Area Number		09:12:07P	00:01:20	IN

Caller ID Integration with Voice Mail

Caller ID fully integrates with IntraMail, UltraMail, and NVM-Series Voice Mail systems. This enables Voice Mail features such as Make Call with Caller ID. Make Call allows the Voice Mail subscriber to return a call to someone who left them a message without knowing the calling party's phone number.

Second Call Caller ID (Extension Level Call Waiting Caller ID)

While a display keyset user is busy on a call, the system can show the Caller ID information for a waiting call. If the busy extension is programmed to receive Camp On tones or Off-Hook Ringing from the waiting call, the system will send the Caller ID data to the busy telephone's display. If the busy extension does not receive Camp On tones or Off-Hook Ringing, it will also not receive the waiting call's Caller ID. (Note that Caller ID data from a Camp On is displayed only once, corresponding to the single Camp On beep.) *This is an internal system feature and does not use the telco's Call Waiting Caller ID.*

Third Party Caller ID Check

Third Party Caller ID Check allows a keyset user to display the Caller ID data for another trunk. The trunk that the user checks can be ringing or busy.

Caller ID Display Separator

An extension's display can optionally show a calling party number separator. The separator is a dash after the area code and after the local exchange on a 7 or 10 digit number.

Caller ID Alert Lamp

An extension's Class of Service can enable or disable the Ring/Message Lamp for Caller ID. If enabled, the lamp will flash whenever the extension receives new Caller ID logs. If disabled, the lamp will not flash for Caller ID.

Caller ID Notes

- Caller ID is built in.
- Caller ID is available at single line extensions (if enabled in programming).
- Caller ID is not available at 2-OPX ports.
- In DS2000, be sure to use ATRU PCBs 80010B or 80011B or higher.

Feature Quick Steps

To cancel the Caller ID display and return your phone to its normal display:

1. Press **CLEAR**.

To turn the Caller ID display back on (after you press CLEAR to cancel it):

1. Press **CHECK**.

To display the Caller ID data for the third party's call (i.e., use Third Party Caller ID Check):

1. Press **ICM + CHECK**.
2. Press the key for the call you want to check.

You can press a line key, loop key, Hotline key or Call Coverage key:

 - Press a line key while the call is ringing or connected to the third party.
 - Press a loop key while the call is ringing the third party.
 - Press a Hotline key while the call is connected to the third party.
 - Press a Call Coverage Key while the call is ringing the third party.
3. Hang up when you are done.

To redial a logged call:

1. At a Super Display Telephone:
Press **CALLS + VIEW ALL** + Scroll to record + **CALLBACK**.
At a 22- or 34-Button Telephone:
Press **CL + ALL** + Scroll to record + **CLEAR + CALL**.

3

Central Office Calls, Answering

The system allows trunk calls to ring and be answered at any combination of system extensions.

Availability: All versions.

The system provides flexible routing of incoming CO (trunk) calls to meet the exact site requirements.

Answering Priority

When multiple calls ring an extension simultaneously, the system services the ringing calls in the following order:

1. **ICM** Key
2. Line Key (from lowest to highest)
3. Loop Key (from lowest to highest)

Overflow

Refer to *Overflow for Key Ring Calls* on page 73 for details on the overflow options.

Feature Quick Steps

To answer an incoming trunk call:

1. Lift handset.

If you have Ringing Line Preference, lifting the handset answers the call.
2. Press flashing line or loop key.

User Programmable Feature: # R A L

Assigns line key ringing mode.

Central Office Calls, Placing

Customize the call placing options to meet the site requirements and each individual's needs.

Availability: All versions.

The system provides flexibility in the way each extension user can place outgoing trunk calls. A user can place a call by:

- **Pressing a Line Key**
Any keyset can have line keys for one-touch access to specific trunks. See *Line Keys* on page 74 for more.
- **Pressing a Loop Key**
Loop Keys provide a user with one-touch access to the assigned Loop Group. Loop Groups can consist of one or more Trunk Groups. See *Loop Keys* on page 75 for more.
- **Using Line Dial-Up**
With Line Dial-Up, a user can select a specific trunk by pressing **ICM** and dialing the Line Dial-Up code (#9) followed by the trunk number (1-16).
- **Using Direct Trunk Access**
Direct Trunk Access allows a user to access a trunk by pressing **ICM** and dialing the trunk's extension number (e.g., 101 for trunk 1, 102 for trunk 2. etc.). See *Direct Trunk Access* on page 55 for more.
- **Dialing a Trunk Group Access Code**
User's can also place trunk calls by pressing **ICM** and dialing a Trunk Group Access Code (90-98). See *Trunk Groups* on page 117 for more.
- **Trunk Group Routing**
If the system has Trunk Group Routing enabled, users get the first available trunk when the press **ICM** and dial **9**. See *Trunk Group Routing* on page 115 for more.

Feature Quick Steps

To place a call over a specific trunk using a line key:

1. Lift handset + Press line key + Dial outside number.

To place a call over a specific trunk (using Line Dial-up or Direct Trunk Access):

1. Lift handset + Press **ICM**.
2. **For Line dial-up:** Dial **#9** followed by the trunk number (e.g., #901 for trunk 1).
OR
For Direct Trunk Access: Dial **4** plus the trunk number (e.g., 101 for trunk 1).
3. Dial outside number.

To place a call over a trunk group:

1. Lift handset + Press **ICM**.
2. Dial trunk group code (90-98) + Dial outside number.

User Programmable Feature: # R A L

Assigns line key ringing mode.

Check Key

Quickly check keypad and DSS Console Programmable Function Key assignments.

Availability: All versions.

A display telephone user can use the **CHECK** key to check keypad and DSS Console Programmable Function Key assignments and Personal Speed Dial bin names.

Feature Quick Steps

To check a Programmable Function Key assignment:

1. Press **CHECK** + Press the Programmable Function Key
2. Press another key or **SPK** to exit the check mode.

To check a Personal Speed Dial bin name:

1. Press **CHECK** + Press the Personal Speed Dial Key once to display the name for the lower numbered bin (e.g., 701).
2. Press the Personal Speed Dial Key a second time to display the number stored in the lower numbered bin.
3. Press the Personal Speed Dial Key a third time to display the name for the higher numbered bin (e.g., 711).
4. Press the Personal Speed Dial key a fourth time to display the number stored in the higher numbered bin.
5. Press another key or **SPK** to exit the check mode.

3

Class of Service

Customize features and dialing options for extensions.

Availability: All versions.

Class of Service (COS) sets various features and dialing options for extensions. The system allows any number of extensions to share the same Class of Service.

The table below shows each Class of Service option. Refer to the individual features referenced in the table for more.

Table 1: Class of Service Options

Option	Description
Off Premise Call Forward	Use this option to enable or disable an extension's ability to use Off Premise Call Forwarding. <ul style="list-style-type: none"> • See <i>Call Forwarding</i> on page 35 for more.
Barge In (Intrusion)	Use this option to enable or disable an extension's ability to Barge In on a co-worker. <ul style="list-style-type: none"> • See <i>Barge In (Intrusion)</i> on page 33 for more.

Table 1: Class of Service Options

Option	Description
Camp-On to Busy Extension	Use this option to enable or disable an extension’s ability to Camp-On to a busy extension. • See <i>Call Waiting / Camp-On</i> on page 38 for more.
Internal Call Forwarding	Use this option to enable or disable an extension’s ability to use Internal Call Forwarding. • See <i>Call Forwarding</i> on page 35 for more.
System Speed Dial Access	Use this option to enable or disable an extension’s ability to access System Speed Dial. • See <i>System Speed Dial</i> on page 99 for more.
Extended Ring	Use this option to enable or disable Extended Ringing at the extension. • See <i>Extended Ringing</i> on page 60 for more.
Privacy	Use this option to enable or disable Privacy at the extension. • See <i>Privacy</i> on page 88 for more.
Trunk (Line) Queuing Priority	Use this option to enable or disable Trunk (Line) Queuing Priority at the extension. If more than one extension with Priority is queued on a busy trunk, the system services the Priority extensions on a first-queued, first-served basis. • See <i>Trunk Queuing Priority</i> on page 116 for more.
Forced Trunk Disconnect	Use this option to enable or disable an extension’s ability to use Forced Trunk Disconnect. • See <i>Forced Trunk Disconnect</i> on page 64 for more.
Camp-On to Busy Line	Use this option to enable or disable an extension’s ability to Camp-On to a busy trunk. • See <i>Trunk (Line) Queuing / Trunk Callback</i> on page 116 for more.
Initiate All Call Page	Use this option to enable or disable an extension’s ability to make an All Call Paging announcement. • See <i>Paging</i> on page 83 for more.
Access Page Zone 1	Use this option to enable or disable an extension’s ability to make a Paging announcement into zone 1. • See <i>Paging</i> on page 83 for more.
Access Page Zone 2	Use this option to enable or disable an extension’s ability to make a Paging announcement into zone 2. • See <i>Paging</i> on page 83 for more.
Access Page Zone 3	Use this option to enable or disable an extension’s ability to make a Paging announcement into zone 3. • See <i>Paging</i> on page 83 for more.
Access Page Zone 4	Use this option to enable or disable an extension’s ability to make a Paging announcement into zone 4. • See <i>Paging</i> on page 83 for more.

Table 1: Class of Service Options

Option	Description
Access Page Zone 5	Use this option to enable or disable an extension's ability to make a Paging announcement into zone 5. • See <i>Paging</i> on page 83 for more.
Access Page Zone 6	Use this option to enable or disable an extension's ability to make a Paging announcement into zone 6. • See <i>Paging</i> on page 83 for more.
Access Page Zone 7	Use this option to enable or disable an extension's ability to make a Paging announcement into zone 7. • See <i>Paging</i> on page 83 for more.
Silent Monitor	Use this option to enable or disable an extension's ability to use Silent Monitor. • See <i>Monitor / Silent Monitor</i> on page 79 for more.
Flash for Single Line Sets	Use this option to enable or disable Flash for single line telephones. This option only applies to single line telephones. • See <i>Flash</i> on page 63 for more.
Single Ring for Single Line Sets	Use this option to enable or disable single ring for single line telephones. This option only applies to single line telephones. • See <i>Off-Premise Extensions / On-Premise SLT Extensions</i> on page 82 for more.
Automatic Hold	Use this option to enable or disable Automatic Hold at an extension. • See <i>Hold</i> on page 69 for more.
Activate Night Mode	Use this option to enable or disable an extension's ability to activate Night Service. • See <i>Night Service / Night Ring</i> on page 80 for more.
Direct Trunk Access	Use this option to enable or disable an extension's ability to use Direct Trunk Access. Note that enabling Direct Trunk Access allows the user to bypass Toll Restriction. • See <i>Direct Trunk Access</i> on page 55 for more.
Soft Keys	Use this option to enable or disable a display set's Interactive Soft Keys. • See <i>Interactive Soft Keys</i> on page 71 for more.
Conversation Record	Use this option to enable or disable an extension's ability to record conversations into their Voice Mail mailbox. If enabled, the user can press either their Conversation Record key or RECORD soft key to initiate recording. • See <i>Voice Mail</i> on page 118 for more.
CLID Display	Use this option to enable or disable an extension's ability to display Caller ID data. • See <i>Caller ID</i> on page 39 for more.
2nd Call CLID	Use this option to enable or disable an extension's ability to show the 2nd Call Caller ID (Extension Level Call Waiting Caller ID). • See <i>Caller ID</i> on page 39 for more.

Table 1: Class of Service Options

Option	Description
3rd Party Caller ID	Use this option to enable or disable an extension’s ability to show 3rd Party Caller ID. <ul style="list-style-type: none"> • See <i>Caller ID</i> on page 39 for more.
Caller ID Display Separator	Use this option to enable or disable the Caller ID display separator (-). <ul style="list-style-type: none"> • See <i>Caller ID</i> on page 39 for more.
Forced Account Codes	Use this option to enable or disable Forced Account Codes. If disabled, Optional Account Codes are still available. <ul style="list-style-type: none"> • See <i>Account Codes</i> on page 27 for more.
Verified Account Codes	Use this option to enable or disable Verified Account Codes. If enabled, the system compares the Account Code the user dials to the entries in the Account Codes Table. <ul style="list-style-type: none"> • See <i>Account Codes</i> on page 27 for more.
Forced Account Codes for Toll Calls Only	Use this option to enable or disable Forced Account Codes for toll (long distance) calls. If disabled, Forced Account Codes apply to all outgoing trunk calls. <ul style="list-style-type: none"> • See <i>Account Codes</i> on page 27 for more.
Ring Type Configuration	Use this option to enable or disable ring Type Configuration. If enabled, the extension user can customize the sound of their Ring Types. <ul style="list-style-type: none"> • See <i>Distinctive Ringing</i> on page 56 for more.
Extension Ring Override	Use this option to enable or disable an extension’s ability to customize the Distinctive Ringing for Day Ring, Night Ring and Delay Ring trunk calls on line keys. <ul style="list-style-type: none"> • See <i>Distinctive Ringing</i> on page 56 for more.
Key Ring Override	Use this option to enable or disable Key Ring Override. If enabled, this option allows an extension to customize the Distinctive Ringing of individual Call Coverage, Group Call Pickup, and line keys. <ul style="list-style-type: none"> • See <i>Distinctive Ringing</i> on page 56 for more.
SLT Special Dial Tone	Use this option to enable or disable SLT Special Dial Tone. <ul style="list-style-type: none"> • See <i>Message Waiting</i> on page 77 for more.
SLT High Voltage Message Waiting	(DS2000 Only) Use this option to enable or disable High Voltage Message Waiting for single line ports. (If both this option and FSK Message Waiting are enabled, the system uses FSK Message Waiting.) <ul style="list-style-type: none"> • See <i>Message Waiting</i> on page 77 for more.
SLT FSK Message Waiting	Use this option to enable or disable FSK Message Waiting for single line ports. <ul style="list-style-type: none"> • See <i>Message Waiting</i> on page 77 for more.

Table 1: Class of Service Options

Option	Description
SLT Loop Disconnect	Use this option to enable or disable the ability of the system to send a loop supervision disconnect signal (i.e., drop pulse) to single line ports. <ul style="list-style-type: none"> See <i>Off-Premise Extensions / On-Premise SLT Extensions</i> on page 82 for more.
Enhanced LND	Use this option to enable or disable Enhanced Last Number Redial. If enabled, the extension has the 5 number redial buffer and the enhanced operation. <ul style="list-style-type: none"> See <i>Last Number Redial</i> on page 73 for more.
Day Walking Class of Service	Use this option to enable or disable Walking Class of Service for the extension while the system is in the day mode. <ul style="list-style-type: none"> See <i>Walking Class of Service</i> on page 123 for more.
Night Walking Class of Service	Use this option to enable or disable Walking Class of Service for the extension while the system is in the night mode. <ul style="list-style-type: none"> See <i>Walking Class of Service</i> on page 123 for more.
Extension Locking	Use this option to enable or disable Extension Locking for the extension. <ul style="list-style-type: none"> See <i>Extension Locking</i> on page 63 for more.
DND Override	If enabled, an extension user can dial 1 or press their DND Override soft key to override an extension's Do Not Disturb. <ul style="list-style-type: none"> See <i>Do Not Disturb</i> on page 57 for more.
Unsupervised Conference	Use this option to enable or disable Unsupervised Conference for the extension. <ul style="list-style-type: none"> See <i>Tandem Trunking / Unsupervised Conference</i> on page 112 for more.
Allow DID Calls	Use this option to enable or disable the extension's ability to receive DID calls. <ul style="list-style-type: none"> See <i>Direct Inward Dialing</i> on page 50 for more.
DID Camp-On	Use this option to enable or disable the ability of a DID caller to Camp On to the extension when it is busy. <ul style="list-style-type: none"> See <i>Direct Inward Dialing</i> on page 50 for more.
Caller ID Alert Lamp	Use this option to enable or disable the Ring/Message Lamp for Caller ID. <ul style="list-style-type: none"> See <i>Caller ID</i> on page 39 for more.

Conference

A user can set up a multiple-party telephone meeting.

Availability: All versions.

Conference lets an extension user add additional inside and outside callers to their conversation.

The following table shows the system's Conference capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Quick Steps

To establish a Conference:

1. Set up first call + Press **CONF**.
Dial extension, place or answer trunk call, or retrieve call from Park Orbit.
2. Set up second call.
Dial extension, place or answer trunk call, or retrieve call from Park Orbit.
3. Press **CONF** to set up the Conference.
4. Repeat steps 2 and 3 to add additional parties to your Conference.

To exit a Conference without affecting the other parties:

1. Hang up.

Delayed Ringing

Delayed Ringing helps co-workers cover each other's unanswered calls.

Availability: All versions.

Delayed Ringing allows a trunk to start ringing a preset interval *after* the call starts flashing a line key. This is helpful for co-workers that cover each other's calls. For example, a secretary can have Delayed Ringing for the trunks that ring the boss's telephone. If the boss doesn't answer after the Delayed Ringing interval, the call will start ringing the secretary's extension.

Dial Number Preview

Dial Number Preview helps the user avoid dialing errors.

Availability: All versions.

Dialing Number Preview lets a display keyset user dial and review a number before the system dials it out.

Feature Quick Steps

To dial using Dial Number Preview:

1. Do not lift the handset, or press **SPK** or press **ICM** + Dial *.
2. Dial the number you want to call + Press line key to dial previewed number.

To correct the displayed digits before dialing them out:

1. Use **VOL ▲** and **VOL ▼** until the cursor replaces the digit you want to change.
VOL ▲ moves the cursor to the left. VOL ▼ moves the cursor to the right.
2. Dial the digit that you want to replace the cursor.
3. Press **VOL ▲** and **VOL ▼** to place the cursor over any other digits you want to edit.
OR
Press **VOL ▼** until the entire number displays to the left of the cursor.
The system will only dial the digits to the left of the cursor.
4. Press a line key.

3

Dial Tone Detection

You can set up the system to detect CO (outside line) dial tone.

Availability: All versions.

The system can optionally detect precise CO dial tone for automatically dialed trunk calls (such as Speed Dial and Auto Redial calls). With Dial Tone Detection enabled for a trunk, the system will monitor the trunk when initially seized for valid dial tone or stutter dial tone. If valid EIA/TIA dial tone is detected, the system outdials the call on the trunk. If dial tone is not detected within 2 seconds, the system will try the next available trunk in the same trunk group to which the initial trunk belongs. If another trunk in the group is not available, the user hears busy tone. Dial Tone Detection *does not* apply to manually dialed trunk calls. If Dial Tone Detection is disabled, the system waits 500mS after trunk seizure and then outdials the number.

If enabled, Dial Tone Detection applies to the following types of trunk calls:

- Auto Redial (initial trunk seizure)
- Caller ID (callbacks)
- Last Number Redial
- Call Forwarding Off Premise
- Save
- Speed Dial

Direct Inward Dialing

Directly dial system extensions from outside the system.

Availability: DS2000 only.

Direct Inward Dialing (DID) lets outside callers directly dial system extensions. DID saves time for callers who know the extension number they wish to reach. To place a DID call, the outside caller dials the local exchange (NXX) and additional digits to ring the telephone system extension. For example, DID number 926-5400 can directly ring extension 400. The caller does not have to rely on an attendant or receptionist to handle the call. Direct Inward Dialing is an efficient way to handle incoming calls, since callers can reach a large block of extensions over a relatively small number of DID trunks. Direct Inward Dialing requires a T1 PCB and T1 DID service and a block (range) of DID numbers from the telco.

In addition to direct dialing of system extensions, DID provides:

- **DID Dialed Number Translation**

The system provides a 100-entry DID Translation Table. This table gives you more flexibility when buying DID service from the telco. If you can't buy the exact block of numbers you need (e.g., 301-456), use the translation table to convert the digits received. For example, a translation table could convert digits 501-599 to extension numbers 301-399.
- **Flexible DID Service Compatibility**

You can program the system to be compatible with DID service of varying lengths (up to 8 digits). DID service is typically 3 or 4 digits long. With 4 digit service, the telco sends 4 digits to the system for translation. With 3 digit service, the telco sends 3 digits to the system for translation. Be sure to set up your system for compatibility with the provided telco service. Additionally, the system is compatible with Dial Pulse (DP) and DTMF DID signaling. DID trunks can be either wink start or immediate start.
- **DID Intercept**

DID Intercept automatically reroutes DID calls under certain conditions. There are 3 types of DID Intercept:

 - Busy/DND Intercept

If a caller dials an extension that is busy or in Do Not Disturb, the system routes the call to the extension's programmed overflow destination.
 - Ring No Answer Intercept

If a caller dials an extension that is unanswered, the system routes the call to the extension's programmed overflow destination.
 - Busy/DND and Ring No Answer Intercept

If a caller dials an extension that is busy, in Do Not Disturb, or is unanswered, the system routes the call to the extension's programmed overflow destination.
- **DID Camp-On**

DID Camp-On sets what happens to DID calls to busy extensions when you have Busy/DND Intercept disabled. With DID Camp-On enabled, a call to a busy extension camps-on to the extension. Without DID Camp-On, the caller to the busy extension just hears busy tone (or follows the intercept programming if enabled).

For outgoing calls, DID trunks operate identically to loop start trunks.

Direct Inward Line

A DIL lets an employee know which calls are just for them.

Availability: All versions.

A Direct Inward Line (DIL) is a trunk that directly rings an extension, Ring Group master number, or UCD Group master number (including Voice Mail). Since DILs only ring one extension, employees always know which calls are for them. For example, a company operator can have a Direct Inward Line for International Sales Information. When outside callers dial the DIL's phone number, the call rings the operator on the International Sales line key. The DIL does not ring other extensions.

Assigning a DIL to an extension automatically provides immediate ringing and incoming access for the trunk, with no additional programming required.

The extension to which the trunk is terminated controls the night mode of the trunk. For example, if extension 301 has trunk 1 assigned as a DIL, the user can press **DND** to switch trunk 1 to its night routing destination. Switching trunk 1 to night mode at extension 301 has no effect on the night mode of the system. This flexibility could allow a service dispatcher with several DILs to independently send trunks to their night destinations without affecting the night mode of the entire system.

A DIL can ring:

- An extension number (including the attendant's extension)
- A Ring Group master number
- A UCD Group master number (including the Voice Mail master number)

Overflow for Direct Inward Lines

If unanswered, Direct Inward Lines can route to a programmed overflow destination. The overflow destination can be an extension, Ring Group, UCD Group or Voice Mail (i.e., DIL destination's mailbox). You can set up separate DIL overflow destinations for the day mode and at night. If unanswered at the overflow destination, the call diverts to Key Ring.

Feature Quick Steps

To answer a call on your Direct Inward Line:

1. Lift handset.

To place all your DILs into Night Mode

1. Press **DND**.

This also enables Do Not Disturb at the extension.

Direct Station Selection (DSS)

Quickly place and Transfer calls to co-workers, without having to look up or dial extension numbers.

Availability: All versions.

Programmable Function Keys *automatically* become Direct Station Selection (DSS) keys when the user presses **ICM**. Direct Station Selection provides an extension user with one-button Intercom access and Transfer to co-workers. Each DSS key also provides a Busy Lamp Field (BLF) for the assigned co-worker.

When the DSS/BLF key is:	The covered extension is:
Off	Idle
On	Busy or ringing
Flashing fast	In Do Not Disturb

For an alternate feature that also provides one-button Intercom access and Transfer, turn to *Hotline* on page 71.

Feature Quick Steps

To place a call to a co-worker using a DSS key:

1. Lift handset + Press **ICM** + Press DSS key for co-worker you want to call.

To Transfer a call to a co-worker using a DSS key:

1. Place or answer trunk call + Press **ICM** + Press DSS key for co-worker.
2. Hang up to have the Transfer go through unscreened.

OR

Wait for the called party to answer if you want them to screen the Transfer.

User Programmable Feature: # B L F

Assigns co-workers to DSS keys.

Direct Station Selection (DSS) Console

DSS Consoles provide one-touch access to extensions, trunks and system features.

Availability: All versions.

The DSS Console gives a 34-Button Display or 34-Button Super Display user a Busy Lamp Field (BLF) and one-button access to extensions, trunks, and selected system features. This saves time for users that do a lot of call processing (such as operators or dispatchers). There are two DSS Consoles types: the 24-Button (P/N 80556) and the 110-Button (P/N 80555).

Figure 1: 24-Button and 110-Button DSS Consoles



The system allows you to install 4 DSS Consoles maximum. In addition, System Load Factor may further reduce the number that you can install. You cannot connect multiple DSS Consoles to the same keyset. DSS Consoles do not use a station port and do not require their own power supply.

The system provides four unique DSS configurations (called blocks). If you want your DSS Consoles to have unique key configurations, assign them to different blocks. If you want your consoles to share the same configuration, assign them to the same block. Note that DSS Console Personal Speed Dial bins are the same as the extension to which the console is attached. This means that DSS Consoles that share the same block number still have unique Personal Speed Dial.

You can assign DSS Console keys to the following functions:

• Account Code	• ICM Directory	• Save
• Call Coverage (immediate, delayed or no ring)	• Message Center	• Speed Dial, Personal
• Call Forwarding	• Night Key	• Speed Dial, System
• Group Pickup (immediate, delayed or no ring)	• Page Zones	• Split
• Headset Key	• Park Orbit	• Trunks (line keys)
• Hotline	• Reverse Voice Over	• Voice Mail Record

Feature Quick Steps

To use your Account Code key:

1. Place or answer trunk call + Press Account Code key + Enter Account Code + Press Account Code key to return to call.

To use your DSS Console Call Coverage key:

1. Press key to call covered extension or pick up ringing call.
You can set up the Call Coverage key for immediate ring, delayed ring, or no ring.

To use your DSS Console Call Forwarding key:

1. Press the Call Forwarding key instead of pressing **ICM** and dialing *3.

To use your DSS Console Group Call Pickup key:

1. Press key to answer call ringing Pickup Group.
You can set up the Group Call Pickup key for immediate ring, delayed ring, or no ring.

To use your DSS Console Headset key:

1. Press the Headset key to enable or disable the Headset mode.

To use your DSS Console Hotline key:

1. Press key to call Hotline partner.

To use your DSS Console ICM Directory key:

1. Press key to access Intercom Directory Dialing.

To use your DSS Console Message Center key:

1. Press key to see how many messages are waiting in the Message Center.
OR
Press **SPK** (or lift the handset) + key to call Message Center mailbox.

To use your DSS Console Night key:

1. Press key to put the system in the night mode.

To use your DSS Console Page Zone key:

1. Press key to Page into assigned zone.

To use your DSS Console Park key:

1. Press DSS Console Park key to Park or retrieve call.

To use your DSS Console Reverse Voice Over key:

1. While on a handset call, press key to place Private Intercom call to covered extension.

To use your DSS Console Save key:

1. While on a call, press key to Save the number you just dialed.
OR
While idle, press key to redial a previously saved number.
Save keys provide no BLF.

To use your DSS Console Personal Speed dial key:

1. Press key to dial stored number.
Personal Speed Dial keys provide no BLF.

To use your DSS Console System Speed dial key:

1. Press key to dial stored number.
System Speed Dial keys provide no BLF.

To use your DSS Console Split key:

Turn to the Split feature on page 101.

To use your DSS Console trunk (line) key:

1. Press the DSS Console trunk key.

To use your DSS Console Voice Mail Record key:

1. Press key to record conversation in mailbox.
You must have Voice Mail installed to use this key. A voice prompt and a periodic beep will remind you that your calls are being recorded.

User Programmable Feature: # H L

Assigns Hotline partners to DSS Console Hotline keys.

Direct Trunk Access

Priority users can access trunks directly. Direct Trunk Access also lets maintenance personnel access and test individual trunks.

Availability: All versions.

Direct Trunk Access lets an extension user access (seize) an individual trunk. After seizing the trunk, the user can dial any outside telephone number without restriction. An extension's Class of Service allows or denies Direct Trunk Access. Direct Trunk Access is normally only provided for attendants, priority users

and maintenance personnel.

Feature Quick Steps

To place a call over a specific trunk using Direct Trunk Access:

1. Lift handset + Press **ICM**.

2. Dial **4** plus the trunk number (e.g., 101 for trunk 1).

If you hear busy tone, you may be able to dial 2 to queue for the busy trunk. See Trunk (Line) Queuing / Trunk Callback on page 116 for more.

3. Dial outside number.

3

Directed Call Pickup

Directed Call Pickup allows co-workers to answer each other's calls.

Availability: All versions.

Directed Call Pickup permits an extension user to intercept any type of call ringing another extension.

With Directed Call Pickup, an extension user can pick up:

- Trunk (Key Ring) calls ringing an extension
- Direct Inward Lines
- Transferred trunk calls
- Ringing Intercom calls.
- Recalls (e.g., Hold recall)
- Ring Group Calls (by dialing either the ringing extension's number or the Ring Group master number)
- Ringing Call Coverage key calls
- Ring Group Call Pickup key calls
- Calls ringing the operator's Call Queue key

Feature Quick Steps

To use Directed Call Pickup to intercept a call ringing a co-worker's extension:

1. Lift handset + Dial * *.

2. Dial number of extension whose call you want to intercept.

Directory Dialing

Allows users to place Intercom or Speed Dial calls from a displayed list of names.

Availability: All versions.

Directory Dialing allows a display keyset user to select a co-worker, UCD Hunting Group master number, Ring Group master number, or Speed Dial number from a list of names, rather than dialing the phone number.

There are three types of directory Dialing:

- **C** –System (Company-Wide) Speed Dial names.
- **I** –Intercom names (including extension, Ring Group and UCD Group names).
- **P** –Personal Speed Dial names.

Feature Quick Steps

To place a call using Directory Dialing:

1. Do not lift handset or press **SPK**.
2. Dial **3** + Dial the type of Directory Dialing (C, I or P).
*To scroll alphabetically through the selected directory, press **VOL ▲** or **VOL ▼**. To call the displayed name, just press **DIAL**.*
3. Dial the first letter of the desired name.
For example, dial 4 if the first letter in the name begins with G, H or I.
4. Look at your phone's display and dial the digit for the letter/number you want to call.
In the example above, if the name begins with G, dial 1. If the name begins with H, dial 2. If the name begins with I, dial 3.
5. Press **VOL ▲** or **VOL ▼** to scroll through all the names/numbers that begin with the letter/number you selected.
OR
Skip to the next step if the displayed name/number is the one you want to call.
6. Press **DIAL** to have the system dial your call.

To exit Directory Dialing at any time.

1. Press **SPK**.

Distinctive Ringing

Customize a keyset's ringing so the user knows which calls are just for them.

Availability: All versions.

Distinctive ringing allows the installer or keyset extension user to customize keyset ringing. This permits the user to determine the type of call just by listening to their keyset ring. There are four different types of ringing calls: Intercom, Ring Group, Recall, and trunk. For each ring type, there are a possible 10 ring tones (or sounds) and 10 ring cadences (or patterns), providing up to 100 possible combinations for each type.

Distinctive Ringing provides the following:

- **Distinctive Ring Configuration at Each Keypad**
A keypad user can follow intuitive soft key menus to set up distinctive ringing for their phone. Their phone will even play back the new ring tones as the distinctive rings are being set up. This option is controlled by the extension's Class of Service.
- **Trunk Override (Distinctive Ringing by Trunk and Ringing Mode)**
Each trunk can have its own distinctive ringing for each ring mode (day, night, or delay). This allows a keypad user, for example, to easily differentiate between new ringing calls and calls that are ringing their phone after a delay.
- **Extension Ring Override**
Each keypad extension can additionally override a trunk's distinctive ringing with the extension's own unique settings. Extension Ring Override helps identify ringing phones in large, open work areas. This option is controlled by the extension's Class of Service.
- **Key Ring Override**
A keypad extension can set up unique ringing for each of its Call Coverage, Group Call Pickup, and Line keys. If a user needs to know what type of call is ringing their phone, Key Ring Override will help. The ability to set up this option is controlled by the extension's Class of Service.
- **Unique Ringing for UCD Hunting Groups and Ring Groups**
UCD Hunting and Ring Groups can have their own distinctive rings. This allows a user to tell the difference between Intercom calls ringing their phone and UCD or Ring Group Calls.
- **Fully Customizable Ring Tones**
The tones that comprise ringing are fully customizable.
- **Distinctive Ringing Administration**
The Distinctive Ringing Administration (Admin) features allow a keypad extension user to store the unique ring settings they set up at their phone. *Super Display users* can also save their settings in the system so they are available to other keypad users.

Feature Quick Steps

To set up Distinctive Ringing:

1. Press **PROGRAM (PGM) + RING**.

*Refer to the DS1000/2000 Multibutton Feature Handbook (P/M 8000MFH**) for details on setting up Distinctive Ringing.*

Do Not Disturb

Work by the phone undisturbed by incoming calls and announcements.

Availability: All versions.

Do Not Disturb (DND) blocks incoming calls, Off-Hook Signaling and Paging announcements. An extension user can activate DND anytime while on a call or while their phone is idle. Once activated, incoming trunk calls still flash the line keys. The user may use the phone in the normal manner for placing and processing calls.

Do Not Disturb provides the following 4 DND options:

- (1) Incoming trunk calls blocked
- (2) Incoming Intercom calls blocked
- (3) All incoming calls blocked
- (0) Cancel Do Not Disturb

Do Not Disturb Options	
This DND option:	Blocks these calls:
(1) Incoming Trunk Calls Blocked	Ringing for outside calls, including: <ul style="list-style-type: none"> • Key Ring calls • Off Hook Ringing • Call Coverage Keys • Group Call Pickup keys • Transferred trunk calls • Hold, Park, and Transfer recalls • Extension Hunting calls • DILs to the extension (if the extension is the night mode termination) • DILs to a Ring Group master number (if the extension is in the group)
(2) Incoming Intercom Calls Blocked	<ul style="list-style-type: none"> • Incoming Intercom calls • Transferred calls • Paging announcements • Ringing from Intercom calls to the Ring Group master number (if the extension is in the group) • Extension hunting calls that normally ring the extension
(3) All Incoming Calls Blocked	<ul style="list-style-type: none"> • All calls blocked by Option 1 <i>and</i> Option 2.
(0) Cancel Do Not Disturb	<ul style="list-style-type: none"> • Options 0 cancels Do Not Disturb

Do Not Disturb BLF for Hotline and Call Coverage Keys

The following chart shows the Do Not Disturb Busy Lamp Field flash rates for Hotline and Call Coverage keys.

Hotline and Call Coverage Key Busy Lamp Indications	
When the key is:	The covered extension is:
Off	Idle or not installed
On	Busy
Flashing slowly ¹	Ringing
Wink off	In DND for trunk calls (option 1)
Flashing fast	In DND for Intercom calls (option 2) or All Calls (option 3)
¹ Available on Call Coverage key only.	

Note: When transferring a trunk call to an extension in DND, the Transfer will be blocked if the extension has enabled DND for all calls (type 3) or DND for trunk calls (type 1). The Transfer will be allowed if the extension has enabled DND for Intercom calls (type 2).

Feature Quick Steps**To activate or cancel DND at your extension:**

1. Press **DND** + DND type (1 = External, 2 = Intercom, 3 = All, 4 = Off or cancel).

Do Not Disturb Override

Easily override a co-worker's Do Not Disturb.

Availability: All versions.

Do Not Disturb Override lets an extension user override another extension's Do Not Disturb. This allows a priority employee (such as a supervisor or executive) to get through to a co-worker right away while the co-worker's phone is in Do Not Disturb.

DND Override is available to all extensions that have DND Override set in their Class of Service. It is also available to any extension that has a Hotline key for a co-worker, even without the Class of Service option enabled.

Feature Quick Steps**To use Do Not Disturb Override:**

1. Dial co-worker in DND + Press **DND OVERRIDE (OVRD)** or dial **1**.

3**Door Box**

Use a Door Box to remotely monitor an entrance door.

Availability: Requires DS1000.

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 Analog Door Box call button (like door bell). The Analog Door Box then sends chime tones to all extensions programmed to receive chimes. To answer the chime, the called extension user just lifts the handset. 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.

- The Analog Door Box is only available in DS1000 (2 maximum). An Analog Door Box plugs into one of the dedicated Door Box ports (DOOR1 or DOOR2).
- The Analog Door Box can be mounted outside. Turn to *Specifications* on page 125 for more on the Door Box specifications.



Any extension that receives Door Box alerts can also activate a control relay. If the relay is connected to electric door strike circuits, an extension user can press **FLASH** or a soft key to remotely lock and unlock the entrance door. There are two relays in DS1000, one for each Analog Door Box.

The system uses Ring Groups to control Door Box chimes. When a visitor at the door presses the Door Box call button, the Door Box will alert (chime) all the extensions in the Ring Group to which the Door Box belongs. For example, if the Door Box and extensions 301 and 302 are in Ring Group 1, pressing the call button alerts 301 and 302.

Door Box Call Coverage

If a Door Box uses Door Chime type 0 (normal ring), you can set up Call Coverage keys for the Door Box Ring Group. This allows extensions that are not members of the Ring Group to answer Door Box calls. Extensions with Call Coverage keys to the Door Box Ring Group can also activate the relay.

Feature Quick Steps

To place a call to the Door Box:

- Lift handset and press **ICM** + Dial the Door Box extension number.

To answer the Door Box chimes from a keyset:

- Lift handset or press **SPK**.

To control the CPRU relay which in turn controls the door strike.

- To open the relay, press **FLASH** key or **OPEN** soft key.
To close the relay, Press **FLASH** key or **CLOSE** soft key.

Expanded Database

New database method provides new features like IntraMail and PC Program.

Availability: All versions.

The Expanded Database is a new database method that provides database records (memory) for all possible extensions, trunks, Hunt Groups, Ring Groups, and Voice Mail ports. This new capability allows for:

- Automatic Slot Configuration in DS2000.
- Simplified installation of Voice Mail, Hunt Groups, and Ring Groups.
- Support for built-in UltraMail (DS2000 only) and IntraMail Voice Mail
- Introduction of the DS1000/2000 PC Program.

Extended Ringing

Lets calls ring longer than usual to assist co-workers that can't readily get to their phones.

Availability: All versions.

Extended Ringing forces an unanswered call to ring a telephone an extended number of times before rerouting. This helps users that cannot get to their phones quickly to pick up calls (such as a warehouse worker).

Extended Ringing is available with the following features:

- **Call Forwarding**
A call rings an extension with RNA call forwarding enabled for an extended period before routing to the forwarded destination.

- **Direct Inward Line**
DILs ring for an extended period before routing to the overflow destination.
- **Transfer**
Transferred trunks ring for an extended period before recalling the transferring extension.

Extension Hunting

Automatically route calls to co-workers that work closely together.

Availability: All versions.

Extension Hunting routes calls to a predefined group of hunt group member extensions. A call rings in sequence through the hunt group until answered at a member extension. Extension Hunting is helpful, for example, for a group of co-workers that share responsibility for answering calls. Each call cycles through the group until an available member picks it up.

There are three types of Extension Hunting:

- Circular Hunting
- Terminal Hunting
- Uniform Call Distribution (UCD) Hunting

Circular Hunting

A Circular Hunting group consists of a group of extensions programmed into a Circular Hunting list. A call unanswered at a member extension rings the next extension in the programmed list. If unanswered, the call will continue to cycle through the hunt group. Depending on the hunt type (see below), Circular Hunting will occur for transferred trunk calls, DILs to a hunt group member, and ringing Intercom calls. Hunting does not occur for Key Ring and Ring Group calls.

There are four types of Circular Hunting:

- **Ring No Answer Trunk** (Option 1)
Hunting will occur for unanswered trunk calls. Hunting will not occur for unanswered ringing Intercom calls or while the member extension is busy.
- **Busy/Ring No Answer Trunk** (Option 2)
Hunting will occur for unanswered trunk calls and for trunk calls to the member extension while it is busy. Hunting will not occur for ringing Intercom calls.
- **Busy/Ring No Answer All Calls** (Option 3)
Hunting will occur for unanswered trunk and ringing Intercom calls, and for trunk and ringing Intercom calls to the member extension while it is busy.
- **Busy Trunk** (Option 4)
Hunting will occur for trunk calls to the member extension while it is busy. Hunting will not occur for unanswered trunk and ringing Intercom calls.

Terminal Hunting

A Terminal Hunting group consists of a group of extensions programmed into a Terminal Hunting list. A call unanswered at a member extension rings the next extension in the programmed list. The call will cycle through the group once, until it reaches the last extension in the list. Unlike Circular Hunting, the call will not cycle back to the top of the hunt list. Depending on the hunt type (see below), Terminal Hunting will occur for transferred trunk calls, DILs to a hunt group member, and ringing Intercom calls. Hunting does not occur for Key Ring and Ring Group calls.

Just like Circular Hunting, there are four types of Terminal Hunting:

- **Ring No Answer Trunk (Option 1)**
Hunting will occur for unanswered trunk calls. Hunting will not occur for unanswered ringing Intercom calls or while the member extension is busy.
- **Busy/Ring No Answer Trunk (Option 2)**
Hunting will occur for unanswered trunk calls and for trunk calls to the member extension while it is busy. Hunting will not occur for ringing Intercom calls.
- **Busy/Ring No Answer All Calls (Option 3)**
Hunting will occur for unanswered trunk and ringing Intercom calls, and for trunk and ringing Intercom calls to the member extension while it is busy.
- **Busy Trunk (Option 4)**
Hunting will occur for trunk calls to the member extension while it is busy. Hunting will not occur for unanswered trunk and ringing Intercom calls.

Uniform Call Distribution (UCD) Hunting

Like Circular and Terminal Hunting, a UCD Hunting group also consists of a group of extensions programmed into a hunt list. The system routes calls into a UCD group according to the frequency of use of the member extensions. The first extension rung is the member that has been idle the longest. The last extension rung is the member that has been idle the shortest.

Each member of the group is additionally associated with a UCD Master Extension Number. To activate UCD hunting, an incoming call must route to the UCD master number. This is done by placing an Intercom call to the master number, transferring a call to the master number or setting up a DIL to the master number. When all members of the UCD Hunting group are busy, the call can route to the programmed UCD Overflow destination.

A UCD Hunting group member can dial a code to temporarily remove themselves from their UCD group. They no longer have to put their phone in DND to stop getting UCD group calls.

Feature Quick Steps

To send a call to a Terminal or Circular Hunting group:

The options available depend on the type of hunting set up.

- Transfer a trunk call to a hunt group member.
- Set up a DIL to a hunt group member.
- Place a ringing Intercom call to a hunt group member.
- Set up a hunt group member as a trunk's overflow destination.

To send a call to a UCD Hunting group:

- Transfer a call to the UCD master number.
- Set up a DIL to the UCD master number.
- Place an Intercom call to the UCD master number.

To temporarily install or remove your extension from your UCD group:

1. Press **ICM** and dial ***5**.
2. Dial **4** to return your extension to your UCD group, or Dial **6** to remove your extension from your UCD group.

Extension Locking

When they leave the office, a user can secure their phone to prevent unauthorized use.

Availability: All versions.

Extension Locking allows an extension user to secure their phone when they leave the office. The user may want to do this if their phone has Toll Restriction and Class of Service options enabled that could be easily abused. **While locked, the restrictions set up in Class of Service 15 and Toll Level 7 are in force at the extension.** When the user returns, they just unlock their extension to return it to normal operation. You'll need to program the restrictions in Class of Service 15 and Toll Level 7 separately. See the *Class of Service* and *Toll Restriction* features for more.

Walking Class of Service overrides Extension Locking.

Feature Quick Steps

To lock your extension:

1. Press **ICM** and dial **##5**.

To unlock your extension:

1. Press **ICM** and dial **##5** + Enter your pin number + **HOLD**.

3

Flash

Extension users can access certain CO and PBX features by interrupting trunk loop current.

Availability: All versions.

Flash allows an extension user to access certain CO and PBX features by interrupting trunk loop current. Flash lets an extension user take full advantage of whatever features the connected telco or PBX offers. You must set the Flash parameters for compatibility with the connected telco or PBX.

Flash for Single Line Extensions

Class of Service allows you to enable or disable hookflash for analog single line extensions and 2-OPX Modules. If enabled, a single line extension can hookflash normally and use any of the associated system features. If disabled, hookflash is prevented. This means the analog extension can not use any features that require a hookflash (such as Hold, Conference, or Transfer). This may be helpful for lobby phones and single line Ringdown Extensions that should not have access to system features. The option is ignored for Voice Mail ports.

In addition, when enabled:

- A single line extension user cannot seize a trunk and hookflash without dialing. If they do, the system will disconnect the initial trunk call.
- If a single line extension user hookflashes to place their current trunk call on Hold and then hangs up, the trunk call will immediately recall the extension.

Feature Quick Steps

1. Press **FLASH** (if applicable) + Dial the code for the desired CO/PBX feature.

At a single line telephone, hookflash and dial #3 to flash a trunk.

Flexible Numbering Plan

Change the digits users dial for co-workers and other features.

Availability: All versions

The system's Flexible Numbering Plan allows you to change the digits users dial to reach the attendant, other co-workers and trunks. The following chart shows the areas of the system number plan you can change.

For this feature:	You can change the digits a user dials to:	These digits are normally:
Attendant Position	Reach the system operator(s)	0 or 01-04
Intercom	Call a co-worker over the Intercom	300-333 in DS1000, 300-427 in DS2000
Direct Trunk Access	Directly access a trunk	101-106 in DS1000. 101-164 in DS2000
Central Office Calls, Placing	Access a Trunk Group	90-98

Forced Trunk Disconnect

Disconnect a co-worker's outside call in an emergency.

Availability: All versions

Forced Trunk Disconnect allows an extension user to disconnect (release) another extension's active trunk call. Forced Trunk Disconnect lets a user access a busy trunk in an emergency, when no other trunks are available. Maintenance technicians can also use Forced Trunk Disconnect to release a trunk on which there is no conversation. This can happen if a trunk does not properly disconnect when the outside party hangs up.

!! CAUTION !!

Forced Trunk Disconnect abruptly terminates the active call on the trunk. Only use this feature in an emergency and when no other trunks are available.

Feature Quick Steps

1. Access busy trunk + Dial # to disconnect the line.

Group Call Pickup

Easily answer a call ringing your Pickup Group, even if you don't know which extension is ringing.

Availability: All versions.

Group Call Pickup allows an extension user to answer a call ringing an extension in their assigned Pickup Group. This permits co-workers in the same Pickup Group to easily answer each other's ringing calls. The user can intercept the ringing call by dialing a code or pressing a programmed Group Call Pickup key. The system has a maximum of eight Pickup Groups, with an unlimited number of extensions in each group. However, an extension can be a member of only one pickup group.

Group Call Pickup can answer the following types of calls:

- Ringing Intercom calls
- Transferred calls
- Direct Inward Lines
- Calls on trunks assigned to the Pickup Group

To simplify picking up calls, an extension can have Programmable Function Keys assigned as Group Call Pickup keys. There are three types of Group Call Pickup keys: immediate ring, no ring (lamp only) or delayed ring.

Feature Quick Steps

To answer a call ringing a phone in your Pickup Group:

1. Lift handset + Press flashing Group Pickup or dial *#.

User Programmable Feature: # R A P

Assigns Group Call Pickup key ringing mode.

3

Group Listen

Use Group Listen to talk to an important client or customer and have your co-workers listen in on the meeting.

Availability: All versions.

Group Listen permits a keyset user to talk on the handset and have their caller's voice broadcast over the telephone speaker. This lets the keyset user's co-workers listen to the conversation. Group Listen turns off the keyset's Handsfree microphone so the caller does not hear the co-worker's voices during a Group Listen. When a keyset user sets up Group Listen, they hear their caller's voice over the telephone speaker as well as their handset.

Feature Quick Steps

To initiate Group Listen:

1. Place or answer call using the handset + Press **SPK** twice (but do not hang up).

To talk handsfree after initiating Group Listen:

1. Press **SPK** twice + Hang up.

To cancel Group Listen and return to your handset:

1. Do not hang up + Press flashing **SPK**.

Group Ring

Use Group Ring to call a group of co-worker's simultaneously.

Availability: All versions.

Group Ring allows you to arrange extensions into Ring Groups for answering calls. When a call comes into the Ring Group master number, all extensions in the group ring simultaneously. Any user in the Ring Group can answer the call just by lifting the handset. The ringing call can be:

- A Direct Inward Line to the Ring Group (i.e., terminated to the Ring Group master number)
- A trunk call transferred to the Ring Group master number
- An intercom call to the Ring Group master number

The system provides up to 8 Ring Groups (1-8). The Ring Group master number can be any valid extension number not already in use.

Overflow for Group Ring Calls

If unanswered, DILs to a Ring Group can route to a programmed overflow destination. The overflow destination can be an extension, another Ring Group, UCD Group or Voice Mail. You can set up separate DIL overflow destinations for the day mode and at night. If unanswered at the overflow destination, the call diverts to Key Ring. Note that a Ring Group DIL goes into the night mode when any extension with night mode capability presses their Night key. See *Night Service / Night Ring* on page 80 for more.

Feature Quick Steps

To make an Intercom call to a Ring Group:

1. Lift handset + Press **ICM** + Dial Ring Group number (e.g., 350) + Wait for co-worker to answer.

To Transfer your trunk call to a Ring Group:

1. Press **ICM** + Dial Ring Group number (e.g., 350) + Wait for answer or hang up.

To answer a call that rings your Ring Group:

1. Lift handset or press flashing line/loop key.

To answer a call that is ringing another group (of which you are not a member):

1. Lift handset and press **ICM** + Dial ** and the Ring Group number (e.g., 350).

Handsfree and Handsfree Answerback

Handsfree

*Talk over the phone
Handsfree, using the built-in
speaker and microphone.*

Availability: All versions.

Handsfree allows a keyset user to process calls using the speaker and microphone in the telephone (instead of the handset). Handsfree is a convenience for workers who don't have a free hand to pick up the handset. For example, a terminal operator could continue to enter data with both hands while talking on the phone.

Handsfree Answerback and Forced Intercom Ringing

*With Handsfree
Answerback, answer an
Intercom call by just
speaking toward your
phone.*

Availability: All versions.

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the phone, without lifting the handset. Like Handsfree, this is a convenience for workers who don't have a free hand to pick up the handset. Incoming Intercom calls alert with two beeps if the extension has Handsfree Answerback — a single beep if it does not.

Forced Intercom Ringing causes an Intercom call to ring the destination extension. You can enable Forced Intercom Ringing system-wide (for all extensions), or a user can dial a code to have their Intercom call ring the destination.

Feature Quick Steps

Handsfree

To use Handsfree instead of lifting the handset:

1. Press **SPK**.

To change a Handsfree call into a handset call:

1. Lift handset.

Handsfree Answerback

1. Operation is automatic if enabled in system programming.

User Programmable Feature: # V A

Enables Intercom voice announcements or Forced Intercom Ringing.

Headset Compatibility

Have the privacy of a handset call without having to hold the handset

Availability: All versions.

A keyset user can utilize a customer-provided headset in place of the handset. Like using Handsfree, using the headset frees up the user's hands for other work. However, the headset provides privacy not available from Handsfree. An example of compatible

headsets are GN Netcom Orator-G or Plantronics Mirage. The headset you choose should have a noise-canceling microphone.

Headset Compatibility also provides the following features. (Note that while an extension is in the Headset mode, the system ignores all hookswitch depressions.)

- **Background Music**
If programmed and connected, Background Music will broadcast over the telephone speaker while the extension is in the Headset mode.
- **Central Office Calls, Answering**
An extension user in the Headset mode can press **VOL ▲** and **VOL ▼** while idle to control the volume of any call ringing their phone.
- **Handsfree and Handsfree Answerback**
An extension in the Headset mode can receive normal voice-announced Intercom calls. The extension user can respond to the voice-announced call by speaking toward the phone (just like non-headset extensions). To answer the voice-announced call in the headset, the user just presses **SPK** after hearing the voice-announcement.
- **Microphone Mute**
While on a headset call, the extension user can press **MIC** to mute (i.e., turn off) the headset microphone. While responding to an Intercom call using Handsfree Answerback, pressing **MIC** mutes the Handsfree microphone.
- **Off-Hook Signaling**
Trunk Calls
An extension in the headset mode can receive either Camp-On beeps or Off-Hook Ringing for incoming trunk calls (just like non-headset extensions).

Intercom Calls
An extension in the headset mode can receive either Camp-On beeps or Voice Over announcements from a co-worker (just like non-headset extensions).

Hotline Calls
An extension in the headset mode can receive either Camp-On beeps or Voice Over announcements from their Hotline partner.
- **Paging**
Internal Paging announcements broadcast over the telephone speaker while the extension is in the Headset mode.
- **Transfer**
Screened and unscreened transfers work just like non-headset extensions. For example, if a headset extension user presses **SPK** to answer a screened transfer, the call will connect to their headset when the transferring party hangs up.

Handsfree Transfers always connect to the headset extension's headset, not speakerphone.
- **Volume Control**
While on a headset call, the extension user can press **VOL ▲** and **VOL ▼** to adjust the receive volume in the headset.

Headset Key

A keyset user can have a key on their telephone or DSS Console assigned as a Headset key. The user presses the key to enable or disable the headset mode, as an alternative to using the **#HL** User Programmable Feature. The key lights while the extension is in the Headset mode, and is off while the Headset mode is disabled.

If an extension user is on a call, pressing the Headset key automatically switches the active call to the headset. Pressing the Headset key again switches the call back to Handsfree.

Off-Hook Signaling and Headsets

Outside Calls (transfers and DILs)

If the extension is set up to receive Camp-On tones for waiting (transferred) outside calls, the user will hear the Camp-On tones in their headset. They will also hear Camp-On tones in their headset for a waiting Direct Inward Line (DIL). The extension will not, however, receive Camp-On tones for Key Ring calls ringing the phone while it is in the headset mode.

An extension in the headset mode will not hear Off-Hook Ringing.

Intercom Calls

If the extension is set up to receive Camp-On tones for waiting Intercom calls, the user will hear tones in their headset when a co-worker dials 2 to wait in line.

An extension in the headset mode will not receive a Voice Over.

Feature Quick Steps

To install the headset:

1. Unplug the handset but leave it in the handset cradle + Plug in the headset or headset adaptor.

When in the headset mode:

- Press a line key to place or answer a trunk call, press **ICM** to get Intercom dial tone, or, if on a call, press **SPK** to hang up.

User Programmable Feature: # H S

Enables or disables the headset mode.

Hold

Have a call wait on Hold, then pick it up to continue the conversation.

Availability: All versions.

Hold lets an extension user put a call in a temporary waiting state. The caller on Hold hears silence or Music on Hold, not conversation in the extension user's work area. While the call waits on Hold, the extension user may process calls or use a system feature. Calls left on Hold too long recall the extension that placed them on Hold. If the recall is unanswered, the call diverts to Key Ring.

There are four types of Hold:

System (Regular) Hold

With System Hold, an outside call a user places on Hold flashes the line key (if programmed) at all other keysets. Any keyset user with the flashing line key can pick up the call. An extension user can pick up a trunk on System Hold at another extension if they know the trunk number.

Exclusive Hold

When a user places a call on Exclusive Hold, only that user can pick up the call from Hold. The trunk appears busy to all other keysets that have a key for the trunk. Exclusive Hold is important if the user doesn't want a co-worker picking up their call on Hold.

Automatic Hold

Automatic Hold allows a user to be on a trunk call, activate a feature and automatically place the call on Hold without first pressing the HOLD key. The system places a call on Hold automatically when the user presses CONF or ICM, a Call Coverage Key or a Hotline key.

Intercom Hold

A user can place an Intercom call on Hold. The Intercom call on Hold does not indicate at any other extension.

Distinctive Flash Rate on Recall

System Hold and Exclusive Hold recall feature a distinctive flash rate for line keys. This allows the keyset extension user to easily differentiate new calls that are ringing from Held calls that are recalling.

Feature Quick Steps

To place a trunk call on System Hold:

1. Press **HOLD** + Hang up.

To place a trunk call on Exclusive Hold:

1. Press **HOLD** twice + Hang up.

To pick up a trunk call on Hold:

1. Press flashing line key.

To pick up a trunk on Hold at another extension:

1. Press **ICM** + Dial ***4** followed by the trunk number (e.g., 01 for trunk 1).

To place an Intercom call on Hold:

1. Press **HOLD** + Hang up.

To pick up a call on Intercom Hold:

1. Lift handset + Press **HOLD**.

Hotline

Hotline provides partner extensions with one-button calling and Transfer.

Availability: All versions.

Hotline gives a keyset user with a programmed Hotline key one-button calling and Transfer to another extension (the Hotline partner). Hotline helps co-workers that work closely together. The Hotline partners can call or Transfer calls to each other just by pressing their Hotline key. In addition, the Hotline key shows the status of the partner's extension:

Hotline Busy Lamp Indications	
When the key is:	The covered extension is:
Off	Idle or not installed
On	Busy or ringing
Flashing fast	In Do Not Disturb

For an alternate feature that also provides one-button Intercom access and Transfer, turn to *Direct Station Selection (DSS)* on page 52.

Feature Quick Steps

To place a call to your Hotline partner:

1. Press Hotline key.

To Transfer your trunk call to your Hotline partner:

1. Press Hotline key + Announce call or hang up.

To answer a call from your Hotline partner:

1. Speak toward phone.

User Programmable Feature: # H L

Assigns Hotline partners to Hotline keys.

Interactive Soft Keys

Use advanced telephone features just by pressing a soft key, without remembering feature codes.

Availability: All versions.

Interactive Soft Keys provide intuitive feature access for display keyset users. It is no longer necessary to remember feature codes to access the telephone's advanced features because the function of the soft keys change as the user process calls. For example, while on a trunk call a display keyset user can press the **PARK** soft key to Park their call in orbit.

For additional information on Interactive Soft Key operation, refer to the DS1000/2000 Soft Key Glossary (P/N 80000GLO**).

Intercom

Use Intercom to call any co-worker.

Availability: All versions.

Intercom gives extension users access to other extensions. This provides the system with complete internal calling capability.

Handsfree Answerback and Forced Intercom Ringing

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the phone, without lifting the handset. Like Handsfree, this is a convenience for workers who don't have a free hand to pick up the handset. Incoming Intercom calls alert with two beeps if the extension has Handsfree Answerback — a single beep if it does not.

Forced Intercom Ringing causes an Intercom call to ring the destination extension. You can enable Forced Intercom Ringing system-wide (for all extensions), or a user can dial a code to have their Intercom call ring the destination.

For more on Handsfree Answerback and Forced Intercom Ringing, see *Handsfree and Handsfree Answerback* on page 67.

Feature Operation

To place an Intercom call:

1. Lift handset and press **ICM** + Dial extension number.
To call the operator, dial the operator's extension number or dial 0 or 01-04 (depending on how your system is set up).
If your call voice-announces the destination, you can dial 1 to force the call to ring.

To answer an Intercom call (if you hear two beeps and your phone has Handsfree Answerback):

1. Speak toward phone, or lift the handset for privacy.

To answer an Intercom call (if you hear one beep and your phone does not have Handsfree Answerback):

1. Lift the handset.

To answer an Intercom call (if you hear ringing):

1. Lift the handset.

User Programmable Feature: # V A

Enables Intercom voice announcements or Forced Intercom Ringing.

Key Ring

So they are not forgotten, unanswered calls automatically ring co-worker's extensions.

Availability: All versions.

A Key Ring trunk rings an extension according to the settings in *Program 1805 - Ring Assignments*. Multiple extensions can be enabled to ring immediately or after a programmed delay for each incoming trunk call. In addition, under certain conditions other types of trunk calls divert to Key Ring if unanswered. The following conditions also initiate Key Ring:

- **Direct Inward Line**
An unanswered DIL diverts to Key Ring if unanswered at the extension to which it is terminated (see *Direct Inward Line* on page 51 for more).
- **Hold**
Calls left on Hold too long recall the extensions that initially placed them on Hold. If still unanswered, they divert to Key Ring.
- **Park**
Calls parked in orbit recall the extension that initially parked them. If unanswered, the call diverts to Key Ring.
- **Transfer**
An unanswered Transfer recalls the extension that initially transferred it. If still unanswered, the trunk diverts to Key Ring.

Overflow for Key Ring Calls

If unanswered, Key Ring calls can route to a programmed overflow destination. The overflow destination can be an extension, Ring Group, UCD Group or Voice Mail. You can set up separate Key Ring overflow destinations for the day mode and at night. If unanswered at the overflow destination, the call again diverts to Key Ring. Note that a Key Ring trunk goes into the night mode when any extension with night mode capability presses their Night key. See *Night Service / Night Ring* on page 80 for more.

3

Last Number Redial

Quickly redial the last number dialed.

Availability: All versions.

Last Number Redial allows an extension user to quickly redial the last outside number dialed. For example, a user may quickly recall a busy or unanswered number without manually dialing the digits. Last Number Redial saves in system memory the last outside number dialed (up to 32 digits). The number can be any combination of digits 0-9, # and *. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk as for the initial call. However, if that trunk is busy and is part of a trunk group, Last Number Redial will automatically select the next trunk in the group. The user can also preselect a specific trunk if desired.

Enhanced Last Number Redial

In enabled, Enhanced Last Number Redial allows the extension user to select from the last 5 outside numbers dialed. When the user places a trunk call, the number dialed is stored in the Enhanced Last Number Redial buffer. This buffer saves the 5 most recent numbers (including Speed Dial calls), with the most recent call at the top of the buffer and the oldest number at the bottom of the buffer. Old calls get pushed off the bottom of the buffer to make room for new calls at the top. If a user dials a number that is already stored in the buffer, the system inserts the number at the top of the buffer and deletes the duplicate entry.

The numbers stored in the Enhanced Last Number Redial buffer are retained if the system resets or is powered down.

Enhanced Last Number Redial is only available at display telephones.

Automatic Hyphenation in the Enhanced Last Number Redial Display

The system will automatically insert hyphens in the Enhanced Last Number Redial display for the types of calls listed below. All other calls are displayed without hyphens.

- NNX + xxxx calls (e.g., 926-5400)
- NPA + NNX + xxxx calls (e.g., 203-926-5400)
- 1 + NPA + NNX + xxxx calls (e.g., 1-203-926-5400)

If the call is placed on a PBX trunk, and the PBX access code is dialed, the display shows the PBX access code, a space, followed by the dialed number using the same hyphenation as shown above (e.g., 9 1-203-926-5400). If the PBX access code is not dialed, the number is displayed without hyphens.

Feature Quick Steps

To redial your last call:

1. Lift the handset + (Optional) Press an idle line key to preselect a trunk + Press **LND**.

To redial your last call using Enhanced Last Number Redial:

1. At a Super Display Telephone
Press **LND** + Soft key for the number you want to redial.
At a 22- or 34-Button Display Telephone
Press **LND** + **VOL ▲** or **VOL ▼** to the number you want to redial + **DIAL**.

Line Keys

Press a line key for one-touch access to an outside line.

Availability: All versions.

A line key provides an extension user with one-button access to trunks. The extension user just presses a line key to place or answer a call on the trunk. There is no need to dial codes to access or intercept trunk calls. In addition, a line key provides a Busy Lamp Field (BLF) for the trunk to which it is assigned (see the table below).

Line Key BLF Indications	
When the key is:	The trunk is:
Off	Idle or not installed
On (red)	In use or on Exclusive Hold at a co-worker's extension
On (green)	In use at your extension
Winking on (red)	On System Hold at a co-worker's extension
Winking on (green)	On System Hold or Exclusive Hold at your extension
Flashing slowly (red)	Ringing into the system

Line Key BLF Indications (Continued)	
Flashing slowly (green)	Ringing or recalling directly to your extension

Answering Priority

When multiple calls ring an extension simultaneously, the system services the ringing calls in the following order:

1. ICM Key
2. Line Key (from lowest to highest)
3. Loop Key (from lowest to highest)

Feature Quick Steps

To place a call over a specific trunk using a line key:

1. Lift handset + Press line key + Dial outside number.

To answer an incoming trunk call:

1. Lift handset + Press flashing line key.

User Programmable Feature: # R A L

Assigns line key ringing mode.

3

Loop Keys

Loop keys simplify answering and placing calls.

Availability: All versions.

Loop keys are programmable keys that simplify the way extension users place and answer outside calls. There are two types of loop keys: Switched Loop keys and Fixed Loop keys.

Switched Loop Keys

For incoming calls, Switched Loop keys provide an appearance for any trunk *not* assigned to a line key for which the extension has access and ringing. Switched Loop keys insure that there is a visual appearance for trunks that do not ring an extension's line keys.

For outgoing calls, Switched Loop keys provide convenient access to the "dial 9" trunk groups. For example, instead of pressing ICM and dialing 90 for trunk group 0, the user can just press the Switched Loop key and dial 0 instead.

Fixed Loop Keys

For incoming calls, the Fixed Loop key works just like a Switched Loop key. It provides an appearance for any trunk not assigned to a line key for which the extension has access and ringing.

For outgoing calls, a Fixed Loop key is a loop key assigned to a specific trunk group. When the extension user presses the Fixed Loop key for an outgoing call, they get the first trunk in the group assigned to the key.

Answering Priority

When multiple calls ring an extension simultaneously, the system services the ringing calls in the following order:

1. ICM Key
2. Line Key (from lowest to highest)
3. Loop Key (from lowest to highest)

Feature Operation

To answer a call on a Loop Key:

1. Lift handset + Press Switched Loop Key.

To place a call on a Loop Key:

1. Lift handset + Press Loop Key + Dial trunk group code (0-8) + Dial outside number.

Meet-Me Conference

Set up a multiple-party telephone conversation with your co-workers.

Availability: All versions.

With Meet-Me Conference, an extension user can set up a telephone meeting with their co-workers. Each party joins the Conference by dialing a Meet-Me Conference code. Meet-Me Conference lets extension users have a telephone meeting — without leaving the office. Users must join the meeting within the Meet-Me Conference interval.

The system has two Meet-Me Conference codes (#11 and #12). After a Meet-Me Conference is set up and the Meet-Me Conference interval expires, the code used becomes available for a new meeting. Since Meet-Me Conference is a type of Conference, the system's Conference capacity determines:

- The number of users that can join a Meet-Me Conference
- and*
- The number of simultaneous conferences.

The following table shows the Conference capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Quick Steps**To set up a Meet-Me Conference:**

1. Page parties and announce the Meet-Me Conference code (#11 or #12) + Do not hang up.
2. Press **ICM** + Dial announced Meet-Me Conference code (#11 or #12).

To join a Meet-Me Conference:

1. Listen for paged invitation to join the Conference + Press **ICM**.
2. Dial announced Meet-Me Conference code (#11 or #12).

Message Waiting

Leave a Message Waiting request for a return call.

Availability: All versions

An extension user can leave a Message Waiting indication at a busy or unanswered extension requesting a return call. The indication is a flashing MW key at the called extension. Answering the Message Waiting automatically calls the extension which left the indication. Message Waiting ensures that a user will not have to recall an unanswered extension. It also ensures that a user will not miss calls when their extension is busy or unattended.

Additionally, Message Waiting lets extension users scroll through their Messages Waiting and select a co-worker to call back.

An extension user can leave Messages Waiting at any number of extensions. Also, any number of extensions can leave a Message Waiting at the same extension.

Feature Quick Steps**To leave a Message Waiting:**

1. Place Intercom call to co-worker + Press **MW** + Hang up.
MW flashes fast at the extension you call.

To answer a Message Waiting:

1. Lift handset + Press **MW**.

To review your Messages Waiting and then select a message for a return call:

1. Do not lift the handset + Press **MW**.
*The first extension that left a message displays. Press **MW** repeatedly to display additional Messages Waiting, if any.*
2. When the extension you want to call displays, lift the handset + Press **MW**.

Microphone Mute

Talk to a co-worker in your office without your caller hearing the conversation

Availability: All versions.

Microphone Mute lets a keyset user turn off their phone's handset or Handsfree microphone at any time. While the extension is on-hook, Microphone Mute mutes the Handsfree microphone. While off-hook, Microphone Mute mutes the handset microphone. Once activated, Microphone Mute prevents the caller from hearing conversations in the user's work area. The user can turn off the Handsfree or handset microphone while their telephone is idle, busy on a call, in DND or while a call is ringing. The microphone stays off until the user turns it back on.

While an extension has their microphone muted, incoming Intercom calls announce with a single beep (rather than the normal two beeps). The calling party hears this single beep also when the called extension's microphone is muted.

Handsfree Reply Soft Key

Display keyset users can press their **HF REPLY (HFRP)** soft key to turn off their telephone's Handsfree microphone for incoming Intercom calls.

Feature Quick Steps

To activate or deactivate Microphone Mute:

1. Press **MIC**.

Modem Cut-Through

Maximize modem throughput speeds and obtain power failure cut-through on the same port.

Availability: DS1000 only.

The unique DS1000 Modem Cut-Through feature allows a modem connected to the system's analog modem port to achieve maximum throughput speeds on outside calls. In addition, a single line set plugged into the modem is a fully functional internal analog telephone at extension 316. This same single line set is also the system's power-failure telephone. It directly connects to an outside line if there is a commercial power failure.

If you are using Modem Cut-Through or a power-failure telephone, do not use extension 316 for Voice Mail.

Monitor / Silent Monitor

Monitor a co-worker's phone conversation without them knowing you are on the phone.

Availability: All versions.

Monitor lets an extension user listen to the conversation at a busy extension. To implement Monitor, an extension user just calls a busy extension and dials the Monitor code. The busy extension and their caller have no indication of the intrusion. There are no tones heard and there is no visual indication that monitoring is occurring. For example, Monitor could help the supervisor of a service department. The department supervisor could listen to the questions that callers ask without disturbing the service call.

!! CAUTION !!

Monitor provides no warning tones prior to intrusion.
Monitor may be interpreted as an invasion of privacy.

Feature Quick Steps

1. Call busy extension + Dial **6** + Listen to the conversation in progress.

3

Multiple Directory Numbers

See *Call Coverage Keys* on page 34.

Music On Hold

Callers can listen to music while waiting for their call to go through.

Availability: All versions.

Music on Hold (MOH) plays music to calls on Hold, parked calls, and transferred calls. The music lets the caller know that their call is waiting, not forgotten. Without Music on Hold, the system provides silence to these types of calls. Music on Hold is available from three sources: two internal beep tones and an external source connected to the CPU music input terminals. The external source typically connects to a customer-provided music source (such as a digital announcer, CD player or FM receiver).

The system provides a single external music input source. Background Music and Music on Hold share the same external source. For example, if Music on Hold uses a customer-provided program from CD, Background Music uses this source as well. In DS2000, the external music source connects to the CPU's 8-pin mod jack. In DS1000, the external music source connects to the AUDIO jack. For more on connecting a customer-provided music source, refer to the system's Hardware Manual.

With Music on Hold enabled, transferred callers can optionally listen to ringback or MOH while their call waits at the transfer destination.

Note: In accordance with U.S. copyright law, a license may be required from the American Society of Composers, Authors and Publishers (ASCAP) or other similar organizations, if radio, television broadcasts or music other than material not in the public domain are transmitted through the Music on Hold feature of telecommunications systems. NEC America, Inc., hereby disclaims any liability arising out of the failure to obtain such a license.

Names for Extensions and Trunks

Names help identify trunks and extension.

Availability: All versions.

Extensions and trunks can have names instead of just circuit numbers. These names show on a keyset's display when the user places or answers calls. Extension and trunk names make it easier to identify callers. The user does not have to refer to a directory when processing calls. Extension and trunk names can consist of upper and lower case letters, spaces and punctuation. Extension and trunk names can be up to 15 characters long.

Extension names display when placing or answering Intercom calls. Trunk names display when using the following features:

- Central Office Calls, Answering
- Central Office Calls, Placing
- Direct Inward Line
- Direct Trunk Access
- Directed Call Pickup
- Last Number Redial
- Line Keys
- Loop Keys
- Night Service / Night Ring
- Park
- Speed Dial
- Transfer

Night Service / Night Ring

Use Night Service to reroute calls after hours.

Availability: All versions.

Night Service redirects trunk calls to their night mode destination. Typically, the attendant or supervisor activates Night Service after normal working hours, when most employees are unavailable to answer calls. There are two basic types of Night Service: Assigned Night Answer and Universal Night Answer.

Assigned Night Answer rings extensions directly at Night, providing specific answering points for Night Service calls. (For example, you can program trunks to ring the security station at night.)

Universal Night Answer (UNA) allows a user to dial a code to pick up a call ringing the system at night. With UNA, an employee can go to any telephone and dial a UNA code to answer the call. The extension does not need to have a line/loop key assigned for the ringing call.

Following are the four basic types of Night Service operation for a trunk. Note that only option 3 enables Universal Night Answer.

- **Option 1: Key Ring Day and Night**
The trunk is a Key Ring trunk during the day and at night. An extension's Night Key (if programmed) controls the day/night mode of the trunk. The trunk will not enable Universal Night Answer pickup.
- **Option 2: Key Ring During the Day, DIL at Night**
The trunk is a Key Ring trunk during the day and a DIL at night. An extension's Night Key (if programmed) controls the day/night mode of the trunk. The trunk will not enable Universal Night Answer pickup.
- **Option 3: DIL During the Day, Key Ring at Night**
The trunk is a DIL during the day and a Key Ring trunk at night. The DIL destination's DND key controls the night mode of the trunk. If the DIL destination is extension 300 (normally the attendant), pressing the DND key also enables Universal Night Answer pickup.
- **Option 4: DIL Day and Night**
The trunk is a DIL during the day and at night. The DIL destination's DND key controls the night mode of the trunk. During the day, the trunk rings the assigned DIL day mode destination extension. At night (after the user presses DND), the trunk rings the programmed DIL night mode destination. Pressing the DND key will not enable Universal Night Answer pickup.

By default, key 11 on attendant keyset is a Night key. This allows the attendant to activate the Night Mode system-wide.

Feature Operation

To activate or deactivate Night Service:

1. Do not lift the handset + Press the Night key.

To answer a call that rings a line or loop key at night:

1. Lift handset + Press flashing line or loop key.

To answer a call ringing the system at night (UNA Pickup):

1. Press **ICM** + Dial ****** followed by the UNA code (01-04).

Off-Hook Signaling

Off-Hook Signaling helps important callers get through.

Availability: All versions.

When a user is busy on a call, Off-Hook Signaling indicates that another caller is trying to get through. Off-Hook Signaling helps important callers get through, without waiting in line for the called extension to become free. After the user hears the off-hook signal, they can use other system features (such as Hold or Park) to process their active call and then answer the waiting call.

Off-Hook Signaling for Trunk Calls

While a keyset user is on a call, Off-Hook Signaling for trunk calls can be:

- While on a handset call, a flashing green Ring/Message lamp, line/loop key, and muted Off-Hook Ringing. (While Off-Hook Ringing is occurring, use **VOL ▲** and **VOL ▼** to adjust the volume of ringing.) This is the default setting.
OR
- While on a handset or Handsfree call, a flashing green line/loop key and Camp-On tones.

Single line telephone users cannot receive Off-Hook Ringing.

Off-Hook Signaling for Intercom Calls

While an extension user is on a handset call, they can receive Camp-On tones in the telephone handset from a co-worker that called them and dialed 2 to Camp-On. Turn to *Call Waiting / Camp-On* on page 38 for more on how to set this up. Off-Hook Ringing for Intercom calls is not available.

User Programmable Feature: # O H S

Sets up the Off-Hook Signaling options for an extension.

Off-Premise Extensions / On-Premise SLT Extensions

Connect analog devices such as single line telephones, fax machines and voice mail systems to the system.

Availability: All versions.

The system is compatible with 500 type (dial pulse) and 2500 type (DTMF) analog telephone devices. This includes telco OPX circuits, on-premise single line telephones (SLTs), fax machines, modems and Voice Mail ports.

In DS2000, off-premise SLTs can connect to 2-OPX Modules. On-premise SLTs can connect to 2-OPX Modules or ASTU PCBs. In DS1000, off-premise SLTs can connect to 2-OPX Modules. On-premise SLTs connect to dedicated analog ports in the main equipment cabinet.

DS2000 ASTU PCBs are available in two models, providing 4 and 8 ports, respectively. Each ASTU port provides power and ring voltage for the connected SLT. ASTU PCBs use system DTMF receivers. The CPU provides 10 DTMF receivers that are shared by all devices connected to ASTU ports. Both DS1000 and DS2000 support FSK Message Waiting lamps. The current version of DS2000 ASTU PCBs also provide support for high voltage Message Waiting lamps – while DS1000 does not.

Each 2-OPX Module provides two OPX ports. The first (primary) 2-OPX extension number is the same as the port's extension number. The second (secondary) 2-OPX extension number is set up in programming. In addition, the 2-OPX Module has its own DTMF receivers (one for each port), internal ring generator, and power supply to provide the connected SLT with power and ring voltage. The 2-OPX Module does not provide the signaling required to light SLT Message Waiting lamps.

Ringling For Incoming Calls

On- and Off-Premise single line extensions can ring directly for the following types of calls:

- **Direct Inward Line** (page 51)
- **Intercom** (page 72)
- **Group Ring** (page 66)
- **Ringdown Extension** (page 94)
- **Transfer** (page 114)

Feature Quick Steps

Refer to the Single Line Telephone Quick Reference Guide (P/N 80000SLT**).

One-Touch Keys

Available for Personal Speed Dial. Refer to *Speed Dial* on page 99.

Paging

Use Paging to broadcast announcements or quickly locate co-workers.

Availability: All versions.

Paging lets extension users broadcast announcements to other key-set users and to external Paging speakers. Paging allows a user to locate a co-worker or make an announcement without calling each extension individually. There are two types of Paging: Internal Paging and External Paging.

Internal Paging

Internal Paging allows extension users to broadcast announcements into 7 internal Paging Zones and All Call (all zone). When a user makes a zone page, the announcement broadcasts to all extensions assigned to the specified zone. If the user makes an All Call announcement, the announcement simultaneously broadcasts to extensions in all zones. All Call Paging automatically overrides any zone pages already in progress. A system timer can optionally limit the duration of Paging announcements.

To simplify Paging access, a keyset can have Programmable Function Keys assigned as Page keys.

Paging Key Busy Lamp Indications	
When the key is:	The zone is:
Off	Idle
On (red)	A co-worker is Paging into the assigned zone
On (green)	The extension user is Paging into the assigned zone.

External Paging

When a user pages into Internal All Call Page or Internal page Zone 1, the system simultaneously broadcasts the announcement into the External Paging Zone. In DS2000, access to the external zone is via pins on the CPU's 8-pin mod jack. In DS1000, access to the external zone is via the AUDIO jack in the main equipment cabinet. Refer to the system *Hardware Manual* for additional installation details.

Page Relay Support

Paging can activate system relays. In DS1000, Paging can activate the relay contacts in the DOOR1 and DOOR2 jacks. In DS2000, Paging can activate a single relay located on the CPRU.

Trunk Ringing Over External Page

Trunk ringing can optionally broadcast over External Paging speakers. For each trunk, the Paging speakers can broadcast ringing for all calls ringing the trunk, for calls ringing only at night, or for delay ring calls. While a trunk rings External Paging, any extension user can dial a code (**ICM + *0**) to pick up the call. If Door Box chimes, ringing, and Background Music are *all* programmed to output over External Paging, the system uses the following broadcast priority:

- Paging
- Door Box chimes (DS1000 only)
- Ringing
- Background Music

Note that External Paging can broadcast either extension ringing or trunk ringing, not both. In addition, External Paging requires additional customer-provided equipment.

Intercom Ring Over External Page

An extension's ringing can optionally broadcast over External Paging. If enabled, *any* type of call that rings the extension will broadcast over the Paging speakers. While an Intercom call rings External Paging, any extension user can dial a code (**ICM + *0**) to pick up the call.

Door Chime Over External Page

In DS1000, Door Box chimes can optionally broadcast over External Paging. While Door Box chimes broadcast over External Paging, any extension user can dial a code (**ICM + *0**) to answer the Door Box. After answering, a keyset user can press a soft key or **FLASH** to control the Door Box relay.

Background Music Over External Page

Background Music (BGM) can optionally play over the External Paging speakers while Paging is idle. BGM will automatically turn off while Paging, ringing or Door Box chimes (DS1000 only) broadcast from the external zone, and restart when the external zone again becomes idle.

Feature Quick Steps

To make an Internal Paging announcement:

1. Lift handset + Press **ICM**.
2. Dial ***1** and page zone number (1-7 or 0 for All Call) + Make announcement and hang up.
OR
1. Lift handset + Press Paging key + Make announcement and hang up.

To answer the call that is ringing over the Paging speakers:

1. Lift handset + Dial ***0**.

*While talking to a Door Box caller (DS1000 only), you can press the **FLASH** key or the **OPEN** and **RLS** soft keys to control the Door Box relays.*

User Programmable Feature: # V P

Enables or disables an extension's ability to receive Paging announcements.

Park

Park a call in orbit so a co-worker can pick it up. With Park, it is not necessary to locate a person to handle their calls.

Availability: All versions.

Park places a trunk call in a waiting state (called a Park Orbit) so that an extension user may pick it up. There are two types of Park: System and Personal. Use System Park when you want to have the call wait in one of 10 system orbits (60-69). Personal

Park allows you to Park a call at an extension so a co-worker can pick it up. After parking a call, a user can Page the person receiving the call and hang up. The paged party dials a code or presses a programmed System Park key to pick up the call. Many calls can be parked at the same extension, and are retrieved in LIFO (last-in, first-out) order.

A call parked in System Park Orbit for too long will recall the extension that initially parked it. The recall duration for System Park Orbits 60-67 is programmable. The recall for System Park Orbits 68 and 69 is permanently fixed at 5 minutes. If the recall remains unanswered, the call diverts to Key Ring. (See *Key Ring* on page 72 for more.)

A call parked in Personal Park Orbit for too long will initially recall to the extension at which it is parked. If unanswered there, it recalls to the extension that parked the call. If still unanswered, it diverts to Key Ring. (See *Key Ring* on page 72 for more.)

When an extension has System Park keys, the keys provide a Busy Lamp Field (BLF) for the orbit assigned to the key.

Park Key Busy Lamp Indications	
When the key is:	The Park orbit is:
Off	Idle
On (red)	A co-worker has parked a call in the orbit assigned to the key.
Single wink on (green)	The extension user has parked a call in the orbit assigned to the key.

Distinctive Flash Rate on Park Recall

Park recall features a distinctive flash rate for line keys. This allows the keyset extension user to easily differentiate new calls that are ringing from parked calls that are recalling.

Enhanced Personal Park Orbit Recall Display

The Personal Park Orbit recall display shows:

- *On all extensions that are ringing with the recall:*
- The type of recall (i.e., Personal Park).
- *On the extension at which the call is parked (while it is ringing):*
- The extension which initially parked the call.
- *On all other extensions as they are ringing with the recall:*
- The extension at which the call was initially parked.

Enhanced System Park Orbit Recall Display

The System Park Orbit recall display shows:

- The orbit from which the call is recalling (e.g., 60).
- The extension that initially parked the call (e.g., 301).

Feature Quick Steps

To Park a call in system orbit:

1. While on a trunk call, press **ICM** + Dial * + System Park Orbit (60-69) + Hang up.
OR
1. While on a trunk call, press Park key + Hang up.

To retrieve a call from system Park orbit:

1. Lift handset + Press **ICM** + Dial * + System Park Orbit (60-69).
OR
1. Lift handset + Press Park key.

To Park a call at an extension (using Personal Park):

1. While on a trunk call, press **ICM** + Dial * * + Number of extension at which you want to park the call (300-331) + Hang up.

To retrieve a call parked at an extension:

1. Lift handset + Press **ICM** + Dial * * + Number of extension at which the call is parked.

PBX/Centrex Compatibility

You can install the system behind a PBX or Centrex.

Availability: All versions.

PBX/Centrex Access Codes

PBX Access Codes are the digits PBX extension users must dial to obtain outside lines. When the DS1000/2000 is installed behind a PBX, DS1000/2000 users must dial these codes *before* the digits for their outside call. For example, if the PBX access code is 98, and the DS1000/2000 user wants to reach 203-926-5400, they must dial 98-1-203-926-5400. Normally, DS1000/2000 Toll Restriction and Forced Account Codes are applied to the digits dialed *after* the PBX Access Code. This is because any call dialed without the PBX access code is an *internal* PBX call, and usually won't require the restrictions imposed by Forced Account Codes and Toll Restriction.

To keep track of valid PBX Access Codes, the DS1000/2000 allows you to enter up to 10 PBX access codes in the PBX Access Codes Table. Each code is either 1 or 2 digits long, using the digits 0-9. You can use the * character as a wild card, which can be entered in any position in the PBX Access Codes Table. A wild card allows the user to dial any digit in that position. For example, the entry 7* represents entries 70, 71, 72, etc.

In addition to entering codes in the PBX Access Codes Table, you must also indicate in programming which DS1000/2000 trunks are PBX lines (i.e., connected to the PBX - not the Central Office).

Prime Line Preference

Place or answer an outside call on your Prime Line just by lifting the handset.

Availability: All versions.

Prime Line Preference allows a keyset user to place or answer a call by just lifting the handset. The user does not have to press a line key, loop key, or the ICM key first. This simplifies handling calls. In programming, you designate a line key, loop key, the ICM key, a trunk, or a trunk group as a Prime Line Key. With a line key, loop key, trunk, or trunk group, the associated trunk (or trunks) becomes your Prime Line. With the ICM key, you get Intercom dial tone when you lift the handset. Any number of extensions can have the same Prime Line assignment.

There are two types of Prime Line Preference: Idle Prime Line and Intercom Prime Line.

Idle Prime Line

Idle Prime Line lets a user place or answer a Prime Line call by just lifting the handset. An extension's Idle Prime Line can be any trunk or trunk group, regardless of whether the extension has a line or loop key for the trunk or group. (If Prime Line is for a trunk or group, the extension user cannot use the **#PLA** User Programmable Feature to customize the setting.)

Idle Prime Line to any trunk or trunk group is available at single line telephones.

Intercom Prime Line

With Intercom Prime Line, an idle extension user hears Intercom dial tone whenever they lift the handset or press **SPK**. Intercom Prime Line may help the extension user that most often uses Intercom functions or calls co-workers. If an extension's Busy Lamp Field is disabled (which is the default), the Programmable Function Keys do not go into the DSS mode when the user lifts the handset.

Prime Line vs. Ringing Line Preference

Ringing Line Preference has priority over Prime Line. For example, an extension with Ringing Line Preference will answer a ringing trunk, not get dial tone on their Prime Line. In addition, a Ringing Prime Line will have priority over any other ringing trunk. The seize priority is as follows:

- Ringing Prime Line
- Ringing non-Prime Line
- Prime Line

Feature Quick Steps

To place or answer a call on your Prime Line:

To bypass your Prime Line, press another key (e.g., a line or loop key) before lifting the handset.

1. Lift the handset.

User Programmable Feature: # P L A

Assigns a line, loop, or ICM key as the Prime Line key.

Privacy

Use Privacy to prevent interruptions at high priority extensions.

Availability: All versions.

An extension with Privacy blocks incoming Barge In attempts and Call Waiting (Camp-On) signals. Privacy helps extension users that don't want their conversations interrupted.

Note that if an extension with Privacy *enabled* is on a call with an extension with Privacy *disabled*, they are still subject to Barge In attempts and Call Waiting signals to the non-private extension.

Privacy Release Groups

Quickly join in a co-worker's outside call.

Availability: All versions.

You can program extensions into Privacy Release Groups to simplify sharing trunk calls. Co-workers in the same Privacy Release Group can easily join another group member's trunk call just by pressing the busy line key. The co-worker immediately joins in unannounced and uninvited. Privacy Release Groups are a quick alternative to Conference where control over the Conference is not required. In a Customer Service group, for example, a supervisor could just press a busy line key to monitor any agent's call.

If desired, an extension user can prevent other members of their Privacy Release Group from interrupting their active call. This ensures that group members will not interrupt confidential calls.

Any number of extensions can be in the same Privacy Release Group. However, an extension can only be in a single group. Members of the Privacy Release Group must have line keys and access to the trunks they want to share.

Privacy Release Groups utilizes a Conference circuit. The following table shows the Conference circuit capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Operation

To join a trunk call with a member of your Privacy Release Group:

1. Press line key.

To prevent a member of your Privacy Release Group from joining your call:

1. Place or answer trunk call on line key + Press line key
Press line key again to allow users to join your call.

Private Line

You can have a line reserved exclusively for your own use.

Availability: All versions.

A Private Line is a trunk reserved for a keyset for placing and answering calls. A user with a Private Line knows when important calls are for them. Additionally, the user has their own trunk for placing calls that is not available to others in the system.

There are three types of Private Lines:

- **Incoming Only**
The keyset has a Private Line only for incoming calls. The user cannot place a call on the Private Line. A customer service representative may want an incoming only Private Line to be sure customers can always get through.
- **Outgoing Only**
The keyset has a Private Line only for outgoing calls. The Private Line does not ring for incoming calls. A service dispatcher may want an outgoing only Private Line so they can always get in touch with field technicians.
- **Both Ways**
The keyset has a Private Line for both incoming and outgoing calls. An executive may want a both ways Private Line that is available only to them for placing and answering calls.

You can optionally set up shared Private Lines between co-workers that work closely together.

Feature Quick Steps

To answer an incoming call on your Private Line:

1. Lift handset.

To place a call over your Private Line:

1. Lift handset + Press line key + Dial outside number.

Programmable Function Keys

Programmable Function Keys simplify feature operation.

Availability: All versions.

Each keyset has Programmable Function Keys. These Programmable Function Keys simplify placing calls, answering calls and using certain features. You can customize the function of any keyset's Programmable Function Keys from the User Programmable Features.



The **22-Button Standard and Display Telephones** feature 12 Programmable Function Keys.

The **34-Button Display Telephone** features 24 Programmable Function Keys.



The **34-Button Super Display Telephone** also features 24 Programmable Function Keys.



The following chart lists the available Programmable Function Key assignments.

• Account Code	• Intercom Directory Dialing	• Park Orbit
• Call Coverage	• Line Key	• Reverse Voice Over
• Call Forwarding	• Loop Key, Fixed	• Save
• Call Timer	• Loop Key, Switched	• Speed Dial, Personal
• Group Pickup	• Message Center	• Speed Dial, System
• Headset key	• Night Key	• Split Key
• Hotline	• Page Zones	• Voice Mail Record Key

Feature Quick Steps**To use your Account Code key:**

1. Place or answer trunk call + Press Account Code key + Enter Account Code + Press Account Code key to return to call.

To use your Call Coverage key:

1. Press key to call covered extension or pick up ringing call.
You can set up the Call Coverage key for immediate ring, delayed ring, or no ring.

To use your Call Forwarding key:

1. Press the Call Forwarding key instead of pressing **ICM** and dialing *3.

To use your Call Timer key:

1. Press key to start or stop the Call Timer.
If you have an Automatic Call Timer Key, the timer will start automatically after you place or answer an outside call.

To use your Group Call Pickup key:

1. Press key to answer call ringing Pickup Group.
You can set up the Group Call Pickup key for immediate ring, delayed ring, or no ring.

To use your Headset key:

1. Press the Headset key to enable or disable the Headset mode.

To use your Hotline key:

1. Press key to call Hotline partner.

To use your ICM Directory key:

1. Press key to access Intercom Directory Dialing.

To use your line or loop key:

1. Press the key.

To use your Message Center key:

1. Press key to see how many messages are waiting in the Message Center.
OR
Lift the handset or press **SPK** + key to call Message Center mailbox.

To use your Night key:

1. Press key to put the system in the night mode.

To use your Page Zone key:

1. Press key to Page into assigned zone.

To use your Park key:

1. Press Park key to Park or retrieve call.

To use your Reverse Voice Over key:

1. While on a handset call, press key to place Private Intercom call to covered extension.

To use your Save key:

1. While on a call, press key to Save the number you just dialed.
OR
While idle, press key to redial a previously saved number.
Save keys provide no BLF.

To use your Personal Speed dial key:

1. Press key to dial stored number.
Personal Speed Dial keys provide no BLF.

To use your System Speed dial key:

1. Press key to dial stored number.
System Speed Dial keys provide no BLF.

To use your Split key:

Turn to the Split feature on page 101.

To use your Voice Mail Record key:

1. Press key to record conversation in mailbox.
You must have Voice Mail installed to use this key. A voice prompt and a periodic beep will remind you that your calls are being recorded.

User Programmable Feature: # K P

Assigns functions to Programmable Function Keys.

Pulse to Tone Conversion

Use special services (such as telephone banking) over dial pulse trunks.

Availability: All versions.

An extension can use Pulse to Tone Conversion while placing a trunk call to change the dialing mode from dial pulse to DTMF. For a system in a dial pulse area, this permits users to access DTMF services (such as telephone banking) from their DP area.

Pulse to tone conversion also helps dial pulse callers use another company's automated attendant dialing options. The user can, for example:

- Place a call to their bank over a DP trunk.
- After the banking service answers, wait 6 seconds. (The system automatically converts dialing to DTMF.)
- Dial additional banking options.

Refer to *Central Office Calls, Answering* on page 41 and *Central Office Calls, Placing* on page 42 for the specifics on setting up your trunk calling.

Feature Quick Steps

To convert your phone's dialing to DTMF after placing your call on a DP trunk:

1. Dial initial digits for call + Wait 6 seconds + Dial additional digits.

Removing Trunks and Extensions From Service

Temporarily remove problem extensions and trunks from service until they can be repaired.

Availability: All versions.

Supervisors and attendants can remove problem trunks and extensions from service. This helps ensure maximum system performance. For example, the attendant can busy-out a noisy trunk or problem extension until service personnel can repair the problem.

The trunk or extension then appears busy to all callers. Following repair, the attendant or supervisor can return the trunk to service.

The extension or trunk removed from service shows as busy on the appropriate key (e.g., line key or Hotline key). The port activity LED on the DS2000 ATRU PCB indicates that the trunk is busy.

Feature Quick Steps

To remove or return an extension or trunk to service:

1. Press **ICM** and dial #40.
2. Dial the number of the extension or trunk you want to remove or return to service.
3. Dial 4 to return or Dial 6 to remove + Press **SPK** to hang up.

3

Reverse Voice Over

Privately call a co-worker while you're busy on your handset.

Availability: All versions.

While on a handset call, Reverse Voice Over lets a busy keyset user make a private Intercom call to an idle co-worker. The busy user just presses and holds down a programmed Reverse Voice Over key to make a private call to the assigned co-worker. The initial caller cannot hear the Reverse Voice Over conversation. The private Intercom call continues until the Reverse Voice Over caller releases the key. The initial handset call can be a trunk call or an Intercom call. An extension can have Reverse Voice Over keys for more than one co-worker.

Reverse Voice Over could help a salesperson, for example, when placing a call to an important client. The salesperson can talk with the client and give special instructions to an assistant — without interrupting the initial call.

When the keyset is idle, the Reverse Voice Over key functions the same as a Hotline key. (You cannot, however, use it to Transfer calls.) The key also shows at a glance the status of the associated extension:

Reverse Voice Over Busy Lamp Indications	
When the key is:	The covered extension is:
Off	Idle or not installed
On	Busy or ringing
Flashing fast	In Do Not Disturb

Reverse Voice Over uses a system Conference circuit while it is active. The following table shows the system's Conference capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Quick Steps

To place a Reverse Voice Over call:

1. While on a handset call, press and hold your Reverse Voice Over key.

To return to your initial caller:

1. Release your Reverse Voice Over key.

To place a call to your assigned Reverse Voice Over destination:

1. While your telephone is idle, press your Reverse Voice Over key.

Ring Groups

Refer to *Group Ring* on page 66 for more information.

Ringdown Extension

Call another extension, group or Voice Mail just by lifting the handset.

Availability: All versions.

A Ringdown Extension automatically calls a co-worker, Voice Mail, a Ring Group or a UCD Hunting group when the user lifts the handset. The call automatically goes through — there is no need for the user to dial digits or press additional keys. Ringdown extensions are frequently used for lobby phones, where the caller just lifts the handset to get the information desk.

Feature Quick Steps

To use Ringdown Extension:

1. Lift handset or press **SPK**.

To bypass Ringdown (if your keyset is set up as a Ringdown Extension):

1. Before lifting the handset or pressing **SPK**, press **ICM**, a Line key or a Programmable Function Key

Ringling Line Preference

Simply lift the handset to answer a ringing call.

Availability: All versions.

Ringling Line Preference lets a keyset user answer a ringing call by just lifting the handset. For a user that primarily answers calls, Ringling Line Preference ensures that ringing calls have priority. The tables below show the interaction between Ringling Line

Preference and other features for both handset and headset calls.

Table 2: Ringling Line Preference for Handset Calls

Feature	Keyset		Attendant	
	RLP = Y	RLP = N	RLP = Y	RLP = N
	Does lifting the handset answer the ringing call?			
Intercom (page 72) Ringling Intercom calls	Yes	Yes	Yes ¹	Yes ¹
Key Ring (page 72) (Line/Loop Keys)	Yes	No	Yes	No
Transfer (page 114)	Yes	No	Yes	No
Direct Inward Line (page 51)	Yes	No	Yes	No
Group Ring (page 66)	Yes	Yes	N/A	N/A
Extension Hunting (page 61) (Call to UCD master)	Yes	Yes	No	No
Call Coverage Keys (page 34)	No	No	No	No
Group Call Pickup (page 65)	No	No	No	No

¹Ringling Line Preference will not answer a call ringing the Operator Call Key.

Table 3: Ringling Line Preference for Headset Calls

Feature	Keyset		Attendant	
	RLP = Y	RLP = N	RLP = Y	RLP = N
	Does pressing SPK while in the Headset mode answer the ringing call?			
Intercom (page 72) Ringling Intercom calls	Yes	Yes	Yes	Yes
Key Ring (page 72) (Line/Loop Keys)	Yes	No	Yes	No
Transfer (page 114)	Yes	No	Yes	No
Direct Inward Line (page 51)	Yes	No	Yes	No

Table 3: Ringing Line Preference for Headset Calls (Continued)

Feature	Keypset		Attendant	
	RLP = Y	RLP = N	RLP = Y	RLP = N
	Does pressing SPK while in the Headset mode answer the ringing call?			
Group Ring (page 66)	Yes	Yes	N/A	N/A
Extension Hunting (page 61) (Call to UCD master)	Yes	Yes	No	No
Call Coverage Keys (page 34)	No	No	No	No
Group Call Pickup (page 65)	No	No	No	No

When multiple calls ring an extension simultaneously, the system services the ringing calls in the following order:

1. **ICM** Key
2. Line Key (from lowest to highest)
3. Loop Key (from lowest to highest)

Prime Line vs. Ringing Line Preference

Ringing Line Preference has priority over Prime Line. For example, an extension with Ringing Line Preference will answer a ringing trunk, not get dial tone on their Prime Line. In addition, a Ringing Prime Line will have priority over any other ringing trunk. The seize priority is as follows:

- Ringing Prime Line
- Ringing non-Prime Line
- Prime Line

Feature Quick Steps

To use Ringing Line Preference:

1. Lift handset or press **SPK**.

To bypass Ringing Line Preference:

1. Before lifting the handset or pressing **SPK**, press **ICM**, a Line key or a Programmable Function Key.

User Programmable Feature: # R L P

Enables or disables Ringing Line Preference.

Save Number Dialed

Save the number you just dialed for quick redialing.

Availability: All versions.

Save Number Dialed permits an extension user to save their last outside number and easily redial it later on. For example, an extension user can recall a busy or unanswered number without manually dialing the digits. The system retains the saved number until the user stores a new one in its place.

Save Number Dialed saves in system memory a dialed number up to 32 digits. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk as for the initial call. However, if that trunk is busy and is part of a trunk group, Save Number Dialed will automatically select the next trunk in the group. The user can also preselect a specific trunk if desired.

Save Number Dialed requires a uniquely programmed Programmable Function Key or DSS Console Key.

Feature Quick Steps

To save the outside number you just dialed (up to 32 digits):

1. Press Save Number Dialed Key.

To redial a saved number:

1. (Optional) Press a line key to preselect a trunk for the call + Press Save Number Dialed key.

Selectable Display Messaging

While you're away from the phone, display telephone callers can receive personalized text messages you set up.

Availability: All versions.

An extension user can select a preprogrammed Selectable Display Message for their extension. Display keyset callers see the selected message when they call the user's extension. Selectable Display Messaging provides personalized text messaging. For example, an extension user could select the message "GONE FOR THE DAY." Any display keyset user calling the extension would see the message. Other than displaying the message, the system puts the call through normally.

There are 16 Selectable Display Messages (01-16), set up in system programming. Messages 01-09 are preset by default, but can be changed to meet the site requirements. Messages 10-16 are initially undefined. Any message can be appended by the extension user. For example, a user could select message 09 (OUT UNTIL) and append the time they are expected back (e.g., 5:00). The total length of the message *plus* any user appended entries cannot exceed 20. Selectable Display Messages cannot begin with numbers.

Following are the 16 default Selectable Display Messages.

Table 4: Selectable Display Messages

Option	Default
Message 01	CALL (plus 15 user entries)
Message 02	BACK BY (plus 12 user entries)
Message 03	MEETING IN ROOM (plus 4 user entries)
Message 04	OUT TO LUNCH (plus 7 user entries)
Message 05	GONE FOR THE DAY (plus 3 user entries)
Message 06	ON VACATION (plus 8 user entries)

Table 4: Selectable Display Messages (Continued)

Option	Default
Message 07	ON BUSINESS TRIP (plus 3 user entries)
Message 08	IN A MEETING (plus 7 user entries)
Message 09	OUT UNTIL (plus 10 user entries)
Message 10	Undefined (up to 20 characters)
Message 11	Undefined (up to 20 characters)
Message 12	Undefined (up to 20 characters)
Message 13	Undefined (up to 20 characters)
Message 14	Undefined (up to 20 characters)
Message 15	Undefined (up to 20 characters)
Message 16	Undefined (up to 20 characters)

Feature Quick Steps

To select a Selectable Display Message:

1. Press **ICM** + Dial ***38** + Message number (01-16).
*You can press **VOL ▲** or **VOL ▼** to scroll through the messages instead of dialing the message number.*
*You can also press **ICM** and dial ***38** and use your soft keys to select a message,*
2. Press **HOLD** + Enter any additional characters or digits + Press **HOLD** + Press **SPK** to hang up.

To cancel a Selectable Display Message:

1. Press **ICM** + Dial ***30** + Press **SPK** to hang up.

Silent Monitor

See *Monitor / Silent Monitor* on page 79.

Single Line Telephones

Refer to *Off-Premise Extensions / On-Premise SLT Extensions* on page 82 for more.

Soft Keys

See *Interactive Soft Keys* on page 71.

Speed Dial

Instead of dialing a long telephone number to reach a client or customer, use Speed Dial instead. Also, store Intercom digits for quick access to commonly used features.

Availability: All versions.

Speed Dial gives an extension user quick access to frequently called numbers. There are two types of Speed Dial: System and Personal. Speed Dial numbers can be up to 30 digits long, using 0-9, # and *. Every Speed Dial can have a programmed name up to 16 characters long. The name shows in the telephone display as the Speed Dial number dials out.

Speed Dial can store outside numbers and Intercom digits. The capability to store Intercom digits provides the user with “one-touch” access to features they use most often. For example, a user can have a Speed Dial bin that simplifies forwarding calls to Voice Mail or a co-worker.

System Speed Dial

System Speed Dial gives every extension access to the same set of stored numbers. The system provides up to 1000 System Speed Dial numbers. Depending on the system option selected, the system provides either 10, 100 or 1000 System Speed Dial numbers.

Personal Speed Dial

Personal Speed Dial provides extensions with 20 numbers stored privately for their own use. The Personal Speed Dial keys on a DSS Console access the same bins as the extension to which it is attached.

Unique Speed Dial Entries

In addition to the digits 0-9, # and *, you can enter the following for additional dialing options:

For this option	Use this key:
Pause	MIC
Flash	FLASH

Storing Trunk Routing in a Speed Dial Bin

When you program a Speed Dial bin, you can select either a trunk or a Trunk Group over which the call should route. For example, you can enter 1 for trunk 1 or 90 for Trunk Group 90.

Centrex Compatibility

Speed Dial offers unique compatibility with connected Centrex services. A Speed Dial number can accommodate *both* placing a new call *and* outdialing the stored Speed Dial number on an active Centrex trunk. This enables features such as Centrex Transfer and Conference. Refer to the *Speed Dial* feature in your *Software Manual* for more on this unique capability.

Feature Quick Steps

Personal Speed Dial

To Program a Personal Speed Dial Number:

1. Dial **#SP**.
2. Dial the Personal Speed Dial bin number (701-720). or
Press Personal Speed Dial Key (for bins 1-10), or
Press **DIAL** and the Personal Speed Dial Key for bins 11-20.
3. Press **HOLD**.
4. Enter the trunk number you want the system to use when dialing your stored number,

OR

Enter the Trunk Group number you want the system to use when dialing your stored number (e.g., 90 for Trunk Group 0)

OR

Skip this step if you want to enter Intercom codes.

5. Press **HOLD** + Enter the number you want to store (up to 30 digits long) + Press **HOLD**.
6. Enter a name for the Speed Dial number + Press **HOLD**.
7. Repeat from step 2 to program another bin number, or press **SPK** to exit.

To dial a Personal Speed Dial Number:

1. Press **ICM** and dial #.
2. Dial the Personal Speed Dial bin number (701-720).

For one-button access to your Personal Speed Dial numbers:

1. Press Personal Speed Dial Key for bins 1-10, or
Press **DIAL** then Personal Speed Dial key for bins 11-20, or
Press Programmable Function key for Personal Speed Dial bin.

System Speed Dial

To Program a System Speed Dial Number:

1. Dial **#SP**.
2. Dial the System Speed Dial bin number (normally 200-299) + Press **HOLD**.
3. Enter the trunk number you want the system to use when dialing your stored number,
OR
Enter the Trunk Group number you want the system to use when dialing your stored number (e.g., 90 for Trunk Group 0).
4. Press **HOLD** + Enter the number you want to store (up to 30 digits long) + Press **HOLD**.
5. Enter a name for the Speed Dial number + Press **HOLD**.
6. Repeat from step 2 to program another bin number, or Press **SPK** to exit.

To dial a System Speed Dial Number:

1. Press **ICM** and dial #.
2. Dial the System Speed Dial bin number (normally 200-299), or
Press Programmable Function Key for System Speed Dial bin.

User Programmable Feature: # S P

Allows user to program Personal and System Speed Dial numbers.

Split (Alternate)

Switch between active calls without Conferencing the calls together.

Availability: All versions.

With Split, an extension user can split (alternate) between a current call and a new call. Split lets the extension user easily alternate between the calls without joining (Conferencing) the parties together.

Feature Quick Steps

To Split between your current Intercom call and a new Intercom call:

1. Press **HOLD** to place your current Intercom call on Hold, then hang up.
2. Place or answer Intercom call + Press the Split key to switch between your two Intercom calls.

To Split between your current trunk call and an Intercom call:

1. Press **ICM** to place trunk call on Hold, then hang up.
2. Place or answer waiting Intercom call + Press the Split key to switch between the Intercom call and the trunk call.

To Split between your current Intercom call and a trunk call:

1. Press **HOLD** to place your current Intercom call on Hold.
2. Answer trunk call + Press the Split key to switch between your two calls.

To Split between your current trunk call and a waiting trunk call:

1. Press **ICM** to place your current trunk call on Hold, then hang up.
2. Place or answer new trunk call + Press the Split key to switch between your two calls.

3

Station Message Detail Recording

SMDR provides a printed record of your calls.

Availability: All versions.

Station Message Detail Recording (SMDR) provides a record of the system's trunk calls. Typically, the record outputs to a customer-provided printer, terminal or SMDR data collection device. SMDR allows you to monitor the usage at each extension and trunk. This makes charge-back and traffic management easier. SMDR includes both incoming and outgoing calls, and can be turned off system-wide or selectively for each trunk.

The SMDR call record outputs when the call completes. The system assigns the SMDR record to the last extension on the call. For example, if extension 306 answers the call, talks for 20 minutes, and then Transfers the call to extension 302, extension 302 "owns" the entire call record as soon as they hang up.

The system buffers 50 SMDR call records. When the SMDR buffer fills, new call records will overwrite previously buffered call records.

Sample SMDR Report

Following is a sample SMDR report:

Station Message Detail Recording
05/07/1999 09:10P

Sta	Lin	Number Dialed	Account	Start	Duration	T
306	01	12039265400		09:10:18P	00:00:05	OUT
306	01	19055072888		09:10:48P	00:01:13	OUT
301	02	-		09:12:13P	00:01:12	IN
304	01	-		09:12:07P	00:01:20	IN
306	01	18003651928		09:15:38P	00:00:14	OUT

System Programming Backup and Restore

Backup and restore site data.

Availability: All versions.

DS2000 PC Cards

The PC Card provides a permanent, non-volatile backup of all the site's programming. If you have backed up your site data to a PC Card, for example, you can easily restore all site programming after an extended power failure.

Use PC Card P/N 85880 to back up and restore your site data. Each PC card can store up to 16 complete data bases. In addition, you can assign a name (up to 10 characters long) to each stored data base. You cannot use PC Card P/N 80052-V**.**.* (with system software preloaded) to store site data. This PC Card contains only the system's operating software and the default data base.

Data Base Compatibility

*Software version 03.**.** databases are not compatible with any prior 02.**.** or 01.**.** versions.* You cannot restore a version 02.**.** database into an 03.**.** system.

DS1000 Database Transfer Utility

Use **9988 - DS1000 Database Transfer Utility** to transfer the contents of one DS1000 system (called the source) to another DS1000 system (called the destination). All programming is transferred, including user-set options such as Personal Speed Dial, Distinctive Ringing and custom Volume/Contrast Control settings. *Software version 03.**.** databases are not compatible with any prior 02.**.** versions.*

System Programming Password Protection

Control access to system programming.

Availability: All versions.

The system controls access to the programmable options according to the programming password the administrator enters.

There are three password levels:

Logging On with this Password:	Gives you access to these programs:
System Administrator 1 (level 1) Password = 0000	0302 - System Identification 1101 - System Speed Dial Numbers
System Administrator 2 (level 2) Password = 9999	0302 - System Identification 0801 - Selectable Display Messages 1101 - System Speed Dial 1701 - Programmable Function Key Assignments 1702 - Personal Speed Dial 1703 - DSS Key Assignment 1704 - DSS Console Key Assignments
Installer (level 3) Password - 372000	All

3

System Timers

Use the system-wide timers to tailor the system to the site's requirements.

Availability: All versions.

The system-wide timers allow the installer to tailor system performance to meet the specific application requirements. Review the table below for a description of each timer.

Option	Description
Park Orbit	Use this timer to set how long a call stays in System Park Orbit before it recalls the extension that parked it. This timer is for orbits 60-67 only. The recall for orbits 68 and 69 is fixed at 5 minutes.
Modem Reserve	Use this timer to set how long the system reserves a modem, once requested by an extension user, from the modem pool before returning in to the pool.

Option	Description
Transfer Recall	<p>Use this timer to set how long a transferred call rings an idle destination extension or Ring Group before recalling the extension from which it was initially transferred.</p> <p>In addition, use this timer to set how long a transferred call rings a busy operator extension before recalling the extension from which it was initially transferred.</p>
Intercom Inter-digit	<p>When an extension user places a call, they must dial each succeeding digit within this interval.</p>
Meet-Me Conference	<p>When a user initiates a Meet-Me Conference, the system waits this interval for the Paged party to join the call.</p>
Dialing Pause	<p>For Speed Dial, the system waits this interval when it encounters a pause in a Speed Dial bin.</p>
Page Duration	<p>Use this timer to set the maximum length of Page announcements.</p>
Door Unlock	<p>(DS1000 only) When a single line (2500 type) user hookflashes while talking to a visitor at a Door Box, the Door Box strike opens for this interval.</p>
DIL No Answer	<p>This timer sets how long a DIL to an extension rings before Key Ring or overflow occurs. Key Ring rings all extensions programmed to ring for that line.</p>
Trunk Revert	<p>This timer sets how long Hold Recall rings the extension that placed the call on hold before Key Ring occurs. Key Ring rings all extensions programmed to ring for that line.</p> <p>This timer also sets how long a DIL to a Ring Group master number rings before Key Ring or overflow occurs. Key Ring rings all extensions programmed to ring for that line.</p> <p>In addition, this timer sets how long a Transfer Recall rings the extension that initially transferred the call before Key Ring occurs.</p>
Trunk Delay Ring	<p>Use this timer to set how long the system waits before ringing an extension that has the Delayed Ringing option enabled.</p>
Trunk Overflow	<p>Not used.</p>
Centrex Type Feature Key Delay	<p>This timer sets how long the system waits when it finds a Centrex delay (i.e., D) programmed in a Centrex Feature Key.</p>
ACD/UCD Overflow	<p>This timer sets when UCD overflow occurs. When all UCD agents are busy, a queued call rings for this interval and then overflows to the UCD Overflow destination.</p>
Number of Password Attempts	<p>Use this option to set how many times the system allows a user to enter the incorrect programming password before locking them out.</p>
Program Lockout Time	<p>Not used.</p>

Option	Description
Force Program Exit	If a telephone in the programming mode is inactive longer than this interval, the system automatically cancels the programming mode and makes the telephone idle.

System Timers, Stations

Adjustable station timers allow the system to more precisely meet the site requirements.

Availability: All versions.

The system provides many station timers that the administrator can customize. Review the tables below for a description of each station timer.

Table 5: Station Timers

Option	Description
Hold Recall	Use this timer to set how long a call stays on Hold before it recalls the extension that initially placed it on Hold.
Exclusive Hold Recall	Use this timer to set how long a call stays on Exclusive Hold before it recalls the extension that initially placed it on Exclusive Hold.
Camp-On	Not used.
Call Forward Ring No Answer	When Call Forwarding Ring No Answer is enabled, this timer sets how long a forwarded call rings an unanswered extension before routing to the forwarding destination. In addition, use this timer to set how long a transferred call rings a busy non-operator extension before recalling the extension from which it was initially transferred. This timer also sets how long a call will ring an idle UCD Hunting group member before cycling to the next member of the group.
Call Waiting Tone Interval	Use this timer to set the interval between Call Waiting tones. Also use this timer to set the interval between Off-Hook Signaling alert tones.
Call Coverage Delay	For extensions with Delayed Ringing Call Coverage keys, this timer sets how long a call flashes the key at an extension before it starts to ring.
Hook Flash Transfer	Not used.
Hook Flash Disconnect	Not used.
Number of Extended Rings	If an extension's Class of Service enables Extended Ringing, use the timer to set the duration of the Extended Ringing.

3

Table 5: Station Timers

Option	Description
Drop Pulse Send	Use this timer to set the duration of the ASTU PCB drop pulse, which is sent to the connected analog device to initiate a disconnect.
DTMF Detect	Use this timer to set the DTMF detection threshold for single line (analog device) ports. If the analog device sends a DTMF signal longer than this interval, the system recognizes it as a valid DTMF tone and decodes it. If the DTMF signal is equal to or less than this interval, the system ignores it.
Ring No Answer Hunt	Use this timer to set the Extension Hunting Ring No Answer Time. A call will ring a hunt group member extension for this interval before automatically cycling to the next extension in the group.

Following is a summary of Analog Station Timers.

Table 6: Analog Station Timers

Option	Description
Loop Current	Use this option to set the maximum allowed loop current for the system's ASTU PCBs. Normally choose 25mA for short loops and 35mA for long loops. In general, a long loop is 3000 feet or longer and a short loop is less than 3000 feet.
Ringing Frequency	Use this option to define the AC ringing frequency for the system's ASTU PCBs. <i>Do not change this entry from its default value (20 Hz).</i>
Minimum Break Time	This timer defines the minimum amount of time the loop must be opened to properly decode the dial pulse digits sent from analog devices connected to ASTU PCBs. <i>Change this value only if the connected analog devices are set to dial at a rate other than 10 PPS.</i>
Maximum Break Time	This timer defines the maximum amount of time the loop must be opened to properly decode the dial pulse digits sent from analog devices connected to ASTU PCBs. <i>Change this value only if the connected analog devices are set to dial at a rate other than 10 PPS.</i>
Minimum Make Time	This timer defines the minimum amount of time the loop must be closed to properly decode the dial pulse digits sent from analog devices connected to ASTU PCBs. <i>Change this value only if the connected analog devices are set to dial at a rate other than 10 PPS.</i>
Maximum Make Time	This timer defines the maximum amount of time the loop must be closed to properly decode the dial pulse digits sent from analog devices connected to ASTU PCBs. <i>Change this value only if the connected analog devices are set to dial at a rate other than 10 PPS.</i>

Table 6: Analog Station Timers

Option	Description
Minimum Hookflash Time	For ASTU PCBs, this timer defines the minimum amount of time the loop must be opened before the system starts to detect a transfer or hang up sequence. Open loop intervals shorter than the setting are ignored by the ASTU PCB.
Maximum Hookflash Time	For ASTU PCBs, this timer defines the maximum amount of time the loop can be opened in order for the system to detect a Transfer sequence. Open loop intervals longer than the setting are interpreted as hang up.
Minimum Ground Flash Time	For ground start applications with ASTU PCBs, this timer sets the amount of time a ground must be applied before the system detects a transfer sequence. The ASTU uses this timer when analog telephones use ground Transfer instead of open loop Transfer. <i>This timer is not used in North America. Do not change this timer from its default value.</i>
Minimum Off-Hook Time	For ASTU PCBs, this timer defines how long a connected analog device must remain off-hook before the system recognizes the off-hook status.
Off-Hook Guard Time	The ASTU PCB waits this interval after an analog device hangs up before accepting any additional input from the device. This timer helps prevent erroneous detection due to hardware stabilization.
Dial Pulse Guard Timer	The ASTU PCB waits this interval between dial pulse digits before attempting to detect any additional DP digits. This timer helps prevent erroneous DP dialing due to hardware stabilization.
Loop Disconnect Time	When the far end disconnects, the ASTU PCB opens the loop to the connected analog device for this interval.
Ring/MW Wait Period Time	This timer determines the ringing sequence for the devices connected ASTU PCBs. Because of power consumption, it is not possible to ring all analog devices on an ASTU simultaneously. Instead, the card is divided into 4 groups with two ports in each group. Ringing cycles between the 4 groups, ringing each group for this interval.

System Timers, Trunks

Customize critical trunk timers for compatibility with the connected telco or PBX/Centrex.

Availability: All versions.

The system provides many trunk timers that the administrator can customize. Review the table below for a description of each timer.

Table 7: Trunk Timers

Option	Description
Camp-On	Not used.
Line Response	When the system fails to detect loop current on a trunk, it will wait this interval before marking the trunk as defective. Be sure the value you enter is compatible with the local telco. If you set this value too short, the system may mark properly functioning trunks as defective. If too long, defective trunks may be left in service.
Dial Tone Detect	When the system seizes a line to place a Speed Dial call, it waits this interval for dial tone before outdialing the call. The system requires that the first dial tone be at least 5 seconds long and the second dial tone to be at least 2.5 seconds long. Be sure the value you enter is compatible with the local telco. If you set this value too short, the system may not seize properly functioning trunks. If too long, there will be too long a delay before the system skips over a defective trunk.
PBX/Centrex Flash	Use this timer to set the Flash interval. When a user flashes a trunk (manually or in a Speed Dial number), the system opens the trunk circuit for this interval. For accurate flash function, be sure to set this interval for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the telco may not always register the flash. If too long, inadvertent disconnects may occur.
Flash Disconnect	Not used.
Force Idle (Trunk Guard Time)	Use this timer to set the guard time for trunks. When the system disconnects a trunk (e.g., after a user hang up), the system keeps the line idle until this timer expires. The Trunk Guard Time helps prevent call collisions. If you set this interval too short, call collisions may occur. If too long, there will be unnecessary delays before you can use the trunk for a new call.
PBX Pause	Not used.

Table 7: Trunk Timers

Option	Description
Minimum Ring Detection Timer	<p>Use this timer to set the threshold for ring detection. If the ring signal is longer than this interval, the system interprets the signal as valid ringing. If the signal is equal to or shorter than this interval, the system ignores the ringing.</p> <p>Be sure the value you enter is compatible with the local telco. If you set this value too short, the system may detect line spikes and anomalies as ringing. If too long, the system may not properly interpret a valid ringing signal.</p>
DP Make Timer	<p>Use this timer to set the duration of the Dial Pulse Make signal (i.e., relay closed). This is the “on” time in a Dial Pulse digit. Set this timer for compatibility with the connected telco or PBX/Centrex. Keep in mind that there are three components of a Dial Pulse digit: Make interval, Break interval and Interdigit interval. An improper setting may cause misdialing.</p>
DP Break Timer	<p>Use this timer to set the duration of the Dial Pulse Break signal (i.e., relay open). This is the “off” time in a Dial Pulse digit. Set this timer for compatibility with the connected telco or PBX/Centrex. Keep in mind that there are three components of a Dial Pulse digit: Make interval, Break interval and Interdigit interval. An improper setting may cause misdialing.</p>
DP Interdigit Timer	<p>Use this timer to set the duration of the Dial Pulse Interdigit signal (i.e., relay open time <i>between</i> each digit). Set this timer for compatibility with the connected telco or PBX/Centrex. Keep in mind that there are three components of a Dial Pulse digit: Make interval, Break interval and Interdigit interval. An improper setting may cause misdialing.</p>
Manual DTMF Tone On	<p>This timer sets the duration of DTMF digits for trunk calls manually dialed by an extension user. This is required because the system buffers the digits the user dials.</p> <p>Set this timer for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the telco or PBX/Centrex may not be able to properly detect the DTMF digit. If too long, outbound dialing is unnecessarily slowed down.</p>
Manual DTMF Tone Off	<p>This timer sets the duration of the interval between DTMF digits for trunk calls manually dialed by an extension user. This is required because the system buffers the digits the user dials. Note that this is the minimum DTMF Tone off time guaranteed by the system.</p> <p>Set this timer for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the telco or PBX/Centrex may not be able to set up to receive the next DTMF digit. If too long, outbound dialing is unnecessarily slowed down.</p>

Table 7: Trunk Timers

Option	Description
<p>Speed Dial DTMF Tone On</p>	<p>This timer sets the duration of DTMF digits for Speed Dial trunk calls automatically dialed by the system.</p> <p>Set this timer for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the telco or PBX/Centrex may not be able to properly detect the DTMF digit. If too long, outbound dialing is unnecessarily slowed down.</p>
<p>Speed Dial DTMF Tone Off</p>	<p>This timer sets the duration the quiet time between DTMF digits for Speed Dial trunk calls automatically dialed by the system.</p> <p>Set this timer for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the telco or PBX/Centrex may not be able to set up to receive the next DTMF digit. If too long, outbound dialing is unnecessarily slowed down.</p>
<p>Loop Current Detection Time</p>	<p>For loop start trunks, loop current must be present for this interval before the system seizes the trunk.</p> <p>Set this interval for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the system may inadvertently seize unstable trunks. If too long, the system may not properly seize a valid trunk.</p>
<p>Far End Disconnect</p>	<p>Use this timer to set the loop disconnect interval for trunk calls. If the system detects a loop current interruption longer than this interval it assumes the telco has disconnected the trunk. It then returns the trunk trunk to idle.</p> <p>Set this interval for compatibility with the connected telco or PBX/Centrex. If you set this interval too short, the system may inadvertently disconnect valid trunks. If too long, the system may leave trunks connected that it should tear down.</p>
<p>Minimum Single Ring Detection Timer</p>	<p>The system uses this timer to detect valid ringing signal from the connected telco or PBX. Valid single ring must be longer than this interval.</p>
<p>Minimum Double Ring Detection Off Timer</p>	<p>The system uses this timer to detect valid double ring from the connected PBX. Valid double ring must be longer than this interval.</p>
<p>Maximum Double Ring Detection Off Timer</p>	<p>The system uses this timer to detect valid double ring from the connected PBX. Valid double ring must be less than this interval.</p>
<p>Ringing Signal End Detect Timer</p>	<p>If the ringing signal on a trunk call is interrupted for longer than this interval, the system assumes ringing has stopped and terminates the call.</p> <p>Set this option for compatibility with the connected telco or PBX Centrex. If this interval is set to short, valid ringing will be inadvertently cut off. If too long, the system will leave the call set up even after ringing has stopped.</p>

Table 7: Trunk Timers

Option	Description
Caller ID Detection Timer	With DSP-based Caller ID, the Caller ID Detection Timer is the amount of time between the first and second ring bursts that the system can detect Caller ID digits. If this timer is set too long, the outside caller will hear ringing followed by reorder tone. If set too short, all the Caller ID digits may not be detected. This timer is not used with DS2000 daughter board-based Caller ID.
Ground Start Timer	Not used.
Pause Timer	Not used.
DP Mute Timer	Not used.
P.F. Recovery Detect Timer	When the ATRU PCB recovers from a power failure, it checks the power failure trunk (trunk 1) for loop current for the P.F. Recovery Detect interval. If loop current is detected, it assumes the Power Failure Telephone is still connected and does not tear down the call. If loop current is not detected, the ATRU PCB switches the trunk out of the power failure mode.

T1 Trunking

Provides advanced digital trunking and simplifies installation.

Availability: DS2000 only.

T1 trunking requires a unique T1 PCB (P/N 80061) and gives the system a maximum of 24 trunks in a single PCB slot. The available T1 trunk types include:

- Loop Start (DTMF and Dial Pulse)
- Ground Start (DTMF and Dial Pulse)
- Direct Inward Dial (DID) Wink Start (DTMF and Dial Pulse)
- Direct Inward Dial (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)

T1 gives the system the advantages of advanced digital trunking as well as conserving PCB slots. For example, you can set up a system with 12 loop start trunks, six tie lines, and six DID trunks and use only a single PCB slot. Additionally, the T1 PCB has its own on-board processor and DSP so it minimally impacts other system resources.

Note: Although the T1 PCB can connect directly to the telco's T1 smart jack, your telco may require that you purchase and install a separate Channel Service Unit (CSU). This unit installs between the smart jack and the T1 PCB.

ANI/DNIS Support

The system is compatible with telco's T1 Automatic Number Identification (ANI) and Dialed Number Information Service (DNIS) services. ANI/DNIS services can be provided on T1 loop start and DID trunks. ANI/DNIS Compatibility provides:

- **Selectable Receive Format**
You can set up the system for compatibility with any combination of ANI, DNIS and Dialed Number (Address) data provided by the telco.
- **Flexible Routing**
The system can route the incoming call based on the received DNIS data and the entries stored in the DID Translation Table.
- **Caller ID**
The system can use the received ANI data to display the caller's number on the called extension's display. The ANI data can be up to 10 digits long. (Note that the T1 PCB can also receive normal FSK-based Caller ID if provided by the telco.)

Tandem Trunking / Unsupervised Conference

Join two callers in Conference, leave the call and let their conversation continue.

Availability: All versions.

Tandem Trunking allows an extension user to join two outside callers in a trunk-to-trunk conference. The extension user can then drop out of the call, leaving the trunks in an Unsupervised Conference. The extension user that established the Conference is not part of the conversation. The Conference continues until either outside party hangs up.

Tandem Trunking uses a Conference circuit. The following table shows the system's Conference circuit capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Quick Steps

To set up a tandem call (Unsupervised Conference):

1. Establish trunk call + Press **CONF**.
2. Place or answer trunk call + press **CONF** to set up the Conference + Hang up.

To disconnect a tandem call (using Forced Trunk Disconnect):

1. Press line key for busy trunk. or Press **ICM** and dial the trunk's Direct Trunk Access code (e.g., 101 for trunk 1) + Dial # to disconnect the line.

To Barge In on a tandem call:

1. Press line key for busy trunk, or press **ICM** and dial the trunk's Direct Trunk Access code (e.g., 101 for trunk 1) + Dial **4**.

Tie Lines

Link two systems together for inter-system Intercom calling and other features.

Availability: DS2000 only.

Tie lines directly link a local DS2000 telephone system with one or more remote DS2000 systems. The link is independent of the telco's switched network. When a local system user seizes a tie line, they hear Intercom dial tone from the remote system. The user can then use whatever features are normally available to the remote system's single line telephones, including:

- Dialing Intercom extensions in the remote system.
- Using the remote system's trunks for outgoing calls.
- Accessing System Speed Dial bins in the remote system.
- Using the remote system's Paging.

Tie Lines require a T1 PCB and Tie Line service from the telco.

Feature Quick Steps

Tie Line callers can use many of the features available to on-premise analog single line extensions.

3

Time and Date

The time and date shows on telephone displays and prints on system reports.

Availability: All versions.

The system Time and Date appears on:

- Display Telephones
- Station Message Detail Recording reports

The System Administrator can change the time and date from the system programming mode. Although the data is entered in 24-hour format, it always displays in 12-hour format (e.g., 1300 = 1:00PM). The system can automatically adjust the time for Daylight Savings Time. The Time and Display is available in 8 different formats.

User Programmable Feature: # T D

Sets the system time and date.

Toll Restriction

Use Toll Restriction to help you control the costs of outgoing long distance calls.

Availability: All versions.

Toll Restriction limits the numbers an extension user may dial. By allowing extensions to place only certain types of calls, the System Administrator can control long distance costs. The system applies Toll Restriction according to an extension's Toll Restriction Level. For each of the 7 Toll Restriction Levels, the System Administrator can enable or disable the following options.

- **Active Dial Pad (Continuous Dialing)**
Active Dial Pad continuously enables the telephone dial pad. This is important if co-workers typically use dial-up services (such as automated banking) or frequently dial into Voice Mail systems. With Active Dial Pad disabled, the system disables the telephone dial pad 6 seconds after the user has dialed their last digit. Toll Restriction controls Active Dial Pad for both incoming and outgoing calls.
- **N11 Dialing**
N11 Dialing enables or disables an extension's ability to use N11 services such as directory assistance (411) and repair (611). Consider enabling this option if the connected telco charges by the call (i.e., meters) for these services. *Note that the system never restricts a user from dialing 911 or 1 + 911.*
- **0 + Dialing**
0 + Dialing enables or disables an extension's ability to manually dial 0 + (operator assisted) calls. These calls typically include collect calls and credit card calls. Be sure to disable this option if you don't want co-workers making these types of calls. The setting of 0 + Dialing does not affect the operation of International Dialing (see the option immediately following).
- **International (011) Dialing**
Use the International Dialing option to restrict extension access to high-cost International (011) Dialing. You can, for example, enable International Dialing for high priority users and executives while disabling International Dialing for all other co-workers.
- **Equal Access (1010 + XXX) Dialing**
Equal Access allows users to select long distance carriers other than your primary carrier. Your primary carrier is the long distance provider you access when you seize a trunk and dial 1. To reach another provider, dial 1010 and that provider's three-digit code (e.g., 1010220). The system does not restrict the numbers dialed after the Equal Access Code, but can prevent users from dialing specific Equal Access Codes.
- **1 + Dialing**
This type of Toll Restriction can restrict:
 - 1 + 3-digit (1 + NPA and 1 + NXX) dialing.
 - 1 + 6-digit (1 + NPA + NXX) dialing.
- **Dialing without a Leading 1**
This type of Toll Restriction can restrict:
 - 3-digit (NPA and NXX) dialing.
 - 6-digit (NPA + NXX) dialing.

Feature Quick Steps

Toll Restriction operation is automatic.

Transfer

Send the trunk call you are on to a co-worker.

Availability: All versions.

Transfer permits an extension user to send (i.e., extend) an active trunk call to any other extension in the system, a Ring Group, UCD Hunting Group or Voice Mail. With Transfer, any extension user can quickly send a call to the desired co-worker. A call a user transfers automatically recalls if not picked up at the destination extension. If still unanswered, the call diverts to Key Ring. This assures that users do not lose or inadvertently abandon their transfers.

The system allows the following types of transfers:

- **Screened Transfer**
The transferring user announces the call to the destination before hanging up.
- **Unscreened Transfer**
The transferring party extends the call without an announcement.

The system cannot Transfer Intercom calls.

Distinctive Flash Rate on Transfer Recall

Transfer recall features a distinctive flash rate for line keys. This allows the keyset extension user to easily differentiate new calls that are ringing from transferred calls that are recalling.

Enhanced Recall Display

The Transfer recall display identifies:

- The type of call recalling the extension.
- The extension to which the call was initially transferred.

Handsfree Transfer

Handsfree Transfer allows an extension user to Transfer a trunk call directly to the speakerphone of a co-worker.

Feature Quick Steps

To Transfer your call:

1. Do not hang up + Press **ICM**.
You can press your Call Coverage or Hotline key instead of ICM.
2. Dial your co-worker's extension, press a DSS key, dial a Ring Group master number, or dial a UCD Hunting group master number.
3. Announce call to make a Screened Transfer, or hang up to send the call through Unscreened.

To Transfer your call to a co-worker's mailbox:

1. Do not hang up + Press **ICM**.
You can press your Call Coverage or Hotline key instead of ICM.
2. Dial your co-worker's extension + Press **MW** + Hang up.

3

Trunk Group Routing

Dial a single code to place a call over the first available trunk in a trunk group.

Availability: All versions.

With Trunk Group Routing enabled, an extension user can just press **ICM** and dial 9 to place a trunk call. Trunk Group Routing automatically selects the first available trunk in the extension's programmed "dial 9" trunk group. This simplifies placing calls in

systems that have a lot of trunks for outgoing calls. Rather than press one of many line keys, the user just dials 9 instead.

Feature Quick Steps

To place a call over a trunk group:

1. Lift handset + Press **ICM** + Dial **9** + Dial outside number.

Trunk (Line) Queuing / Trunk Callback

Trunk Queuing

When all trunks are busy, Trunk Queuing lets a user wait in line for a trunk to become free.

Availability: All versions.

Trunk Queuing permits an extension user to queue (wait in line) off hook for a busy trunk or trunk group to become free. The system connects the queued extension as soon as the trunk is available. The user does not have to manually retry the trunk later.

Trunk Callback

Trunk Callback will automatically call the user back when a trunk is available.

Availability: All versions.

After queuing for a trunk, the extension user just hangs up to convert the Trunk Queue into a Trunk Callback. When the trunk becomes free, the system automatically recalls the extension. As soon as the extension user answers the callback ring, the system connects the extension to the trunk.

An extension user can leave a Trunk Callback for many trunks. The system processes the callbacks as the trunks become free. In addition, many extensions can leave a Trunk Callback for the same trunk. The system processes the Trunk Callbacks on a first-in/first-out (FIFO) basis.

If an extension user leaves a Trunk Callback request and then fails to answer the callback ring within four rings, the system cancels the Callback.

Trunk Queuing Priority

Selected extensions can have Trunk Queuing Priority enabled in their Class of Service. If more than one extension queues for a busy trunk, the system services the extension with Trunk Queuing Priority first. If more than one extension with priority is queued for the same busy trunk, the system services the priority extensions on a first-in/first-out (FIFO) basis.

Feature Quick Steps

Trunk (Line) Queuing

1. Access busy trunk + Dial **2**; do not hang up.
If you hang up, the system converts your queue to a Trunk Callback.
2. When the trunk becomes free, you are automatically connected + Place your outside call.

Trunk Callback

1. Access busy trunk + Dial **2** + Hang up.
2. When the trunk becomes free, the system recalls you.
3. Answer recall + Place your outside call.

Trunk Groups

Dial codes to access trunk groups for outgoing calls.

Availability: All versions.

Extension users can optionally dial trunk group access codes 90-98 to select trunk groups 90-98 for outgoing calls. This is helpful in applications that have different services arranged into trunk groups. For example, dialing 90 could access a group of DDD trunks for local calls, and dialing 91 could access a group of WATS trunks for long distance calls. Note that systems with **Trunk Group Routing** (page 115) enabled cannot also dial trunk group access codes 90-98.

When a user dials a trunk group access code (90-98), the system selects the lowest number in the group that is available. If that trunk is busy, it automatically selects the next highest trunk. If all trunks in the group are busy, the user can optionally queue for a trunk to become free. See *Trunk (Line) Queuing / Trunk Callback* on page 116 for more.

Systems using Trunk Groups or Trunk Group Access should use the hybrid FCC registration number (i.e., the number that ends in MF-E). Look at the label on the bottom of your equipment cabinet for more information.

A trunk can only be in one Trunk Group.

Feature Quick Steps

1. Lift handset + Press **ICM** + Dial trunk group code (90-98) + Dial outside number.

3

Trunk Timers

See *System Timers, Trunks* on page 108 for more.

User Programmable Features

Extension users can set up their telephones to meet their own unique requirements.

Availability: All versions.

User Programmable Features allow an extension user to customize their telephone to work just the way they want. With User Programmable Features, there is no need to rely on a System Administrator or Communications Manager to set up each phone.

The following list shows the system's User Programmable Features, including the user-dialable codes. For example, a user just dials **# H S** to access the Headset Mode option.

- **Call Forwarding Cancel: # B L F**
See *Call Forwarding* on page 35 for more.
- **Direct Station Selection (DSS) Assignment: # B L F**
See *Direct Station Selection (DSS)* on page 52 for more.
- **Headset Mode: # H S**
See *Headset Compatibility* on page 68 for more.
- **Hotline Key Assignment: # H L**

- See *Hotline* on page 71 for more.
- **Off-Hook Signaling Setup: # O H S**
See *Off-Hook Signaling* on page 81 for more.
- **Paging (Incoming): # V P**
See *Paging* on page 83 for more.
- **Prime Line Assignment: # P L A**
See *Prime Line Preference* on page 87 for more.
- **Programmable Function Key Assignment: # K P**
See *Programmable Function Keys* on page 89 for more.
- **Programmable Function Key Ringing:**
 - Call Coverage Keys: # R A C**
See *Call Coverage Keys* on page 34 for more.
 - Group Call Pickup: # R A P**
See *Group Call Pickup* on page 65 for more.
 - Line Keys: # R A L**
See *Line Keys* on page 74 for more.
- **Ring Line Preference: # R L P**
See *Ring Line Preference* on page 95 for more.
- **Speed Dial Bin Setup (Personal and System): # S P**
See *Speed Dial* on page 99 for more.
- **Time and Date: # T D**
See *Time and Date* on page 113 for more.
- **Voice Announce (for incoming Intercom calls): # V A**
See *Intercom* on page 72 for more.

Voice Mail

Voice Mail ends the frustration and cost of missed calls, inaccurate written messages and telephone tag, freeing up the company's receptionists and secretaries for more productive work.

Availability: All versions.

The system is fully compatible with the IntraMail, UltraMail, and NVM-Series Voice Mail with Automated Attendant Systems. These systems provide telephone users with comprehensive Voice Mail and Automated Attendant features. Automated Attendant automatically answers the system's incoming calls. After listening to a customized message, an outside caller can dial a system extension or use Voice Mail. Integrated Voice Mail enhances the telephone system with the following features:

Call Forwarding to Voice Mail

An extension user can forward their calls to Voice Mail. Once forwarded, calls to the extension connect to that extension's mailbox. The caller can leave a message in the mailbox instead of calling back later. Forwarding can occur for all calls immediately, for unanswered calls or when the extension is busy, or just for unanswered calls.

Leaving a Message

Voice Mail lets a keyset extension user easily leave a message at an extension that is unanswered, busy, or in Do Not Disturb. The caller just presses **MW** to leave a message in the called extension's mailbox. There is no need to call back later.

Transferring to Voice Mail

By using Transfer to Voice Mail, an extension user can Transfer a call to the user's own or a co-worker's mailbox. After the Transfer goes through, the caller can leave a message in the mailbox. The called extension can be idle, busy on a call, or in Do Not Disturb.

Conversation Record

While on a call, an extension user can have Voice Mail record the conversation. The keyset user just presses their Voice Mail Record Key. Once recorded, the Voice Mail stores the conversation as a new message in the user's mailbox. After calling their mailbox, a user can save, edit or delete the recorded conversation.

Personal Answering Machine Emulation

A keyset user can have their idle extension emulate a personal answering machine. This lets Voice Mail screen their calls, just like their answering machine at home. If activated, the extension's incoming calls route to the user's subscriber mailbox. Once the mailbox answers, the user hears two alert tones followed by the caller's incoming message. The keyset user can then:

- Let the call go through to their mailbox.
- Intercept the call before it goes to their mailbox.

Voice Mail Overflow

If Voice Mail automatically answers trunks, Voice Mail Overflow can reroute those trunks to an extension, Ring Group or UCD Hunting group when all Voice Mail ports are busy. During periods of high traffic, this prevents the outside calls from ringing Voice Mail for an inordinate amount of time. Without overflow, the outside calls ring Voice Mail until a port becomes available or the outside caller hangs up.

In addition, Voice Mail can be the *overflow destination* for the following types of calls (refer to the individual features for the specifics):

- **Direct Inward Line** (page 51)
A trunk that directly rings an extension can overflow to Voice Mail.
- **Extension Hunting** (page 61)
A trunk that rings an Extension Hunting group can overflow to Voice Mail.
- **Group Ring** (page 66)
A trunk that rings a group of extensions can overflow to Voice Mail.
- **Key Ring** (page 72)
A trunk ringing extension's line keys can overflow to Voice Mail.

Message Center Mailbox

A Message Center Mailbox is a mailbox shared by more than one extension. Any keyset that has a Message Center Key for the shared mailbox can:

- Listen to the messages stored in the mailbox.
- Transfer calls to the shared mailbox.
- Use many other Voice Mail features previously available only at an extension's individual mailbox.

A Message Center Mailbox helps co-workers that work together closely - such as members of the same Pickup Group. For example, the group supervisor can send important messages to the shared Message Center Mailbox, to which any group member can respond when time allows. Each group member's Message Center Key flashes when messages are waiting.

Interactive Soft Key Shows New Messages

The Display and Super Display Telephone interactive soft keys show the number of new messages in the user's mailbox. For example, if a Display Telephone user has 2 new messages in their mailbox, their soft key shows: **VM02**. If a Super Display Telephone user has 2 new messages in their mailbox, their Voice Mail soft key shows **V-MAIL 02**.

Improved Handling of Extensions in Do Not Disturb

To streamline handling of Automated Attendant UTRFs, a UTRF to an extension in DND or to an uninstalled extension will immediately recall the Voice Mail. In addition, an extension with Type 2 (Ring No Answer/Busy Trunk) or Type 3 (Ring No Answer/Busy All) hunting to Voice Mail can just press **DND** to send all their trunk calls to their mailbox. This includes calls transferred from the Automated Attendant.

Feature Quick Steps

To call your mailbox:

1. Press **MW**.
2. If requested by Voice Mail, enter your security code.

To leave a message in a mailbox of an unanswered extension:

1. Press **MW**.

To activate or cancel Call Forwarding to your mailbox:

1. Press **ICM** + Dial ***3**.
2. Dial Call Forwarding type: (0 = Cancel forwarding, 2 = Busy/No Answer, 4 = Immediate, 6 = No answer)
3. Press **MW**.
4. Dial **2** to forward all calls; **8** to forward just trunk calls.

To Transfer your active call to a mailbox:

1. Press **ICM** + Dial the number of the mailbox to receive the Transfer + Press **MW**.

To record your active call in your mailbox:

1. Press Voice Mail Record key.

To activate Answering Machine Emulation:

1. Press **ICM** + Dial ***3** + Dial **7**.
2. Dial **2** to forward all calls; **8** to forward just trunk calls.

To cancel Answering Machine Emulation:

1. Press **ICM** + Dial ***30** + Press **SPK** to hang up.

When Answering Machine Emulation broadcasts your caller's message, you can:

- Do nothing to have the caller's message automatically recorded in your mailbox,
- Lift the handset to intercept the call and speak to your caller.

To check your messages:

1. Press **MW**.

To use the Message Center

1. Press **SPK** or lift handset + Press the Message Center key.
2. If requested by Voice Mail, enter the security code for the Message Center mailbox.

Voice Over

Get through to a co-worker busy on a handset call — without interrupting their call.

Availability: All versions.

Voice Over lets a user get through to a keyset extension user busy on a handset call. With Voice Over, the busy keyset extension user hears an alert tone followed by the voice of the interrupting party. The keyset extension user can respond to the interrupting party without being heard by the original caller. If desired, the keyset extension user can easily switch between their original caller and the interrupting co-worker. The original caller and the interrupting party can never hear each other's conversation.

Voice Over could help a lawyer, for example, waiting for an urgent call. While on a call with another client, the lawyer's paralegal could announce the urgent call as soon as it comes in. The lawyer could then give the paralegal instructions on how to handle the situation — all without the original client hearing the conversation.

Either a keyset or SLT can initiate a Voice Over, but only a keyset can receive a Voice Over.

Voice Over uses a system Conference circuit. The following table shows the system's Conference circuit capacities:

Description	Capacity
Conference circuits	32
Maximum simultaneous users in Conference (total of all Conferences system-wide)	32
Maximum simultaneous conferences	8
Maximum parties in any one Conference (trunks and/or extensions)	8

The system's 32 Conference circuits are dynamically allocated as users request them.

Feature Quick Steps

To initiate a Voice Over to a busy extension:

1. Dial **9**.

To respond to a Voice Over alert tone to your extension:

1. Press and hold **MIC**.
Release MIC to talk to your initial caller.

Volume Controls

Easily adjust the volume of ringing, Paging and other features.

Availability: All versions

A keyset user can press **VOL ▲** and **VOL ▼** to adjust the volume of the following features while they are active. Note that the categories grouped together are the same control. For example, adjusting Intercom ringing also adjusts trunk ringing.

- Incoming Intercom and trunk ringing^{1,2}
- Background Music, Paging, Handsfree speaker, and incoming Intercom voice announcements broadcast through the telephone speaker¹
- Handset/headset receiver volume and incoming Voice Over Announcements¹
- Off-Hook Ringing^{1,2}
- Incoming Voice Over Announcement

¹These features retain the user-set volume levels.

²Additionally, these features retain the user-set volume levels after a system reset or power-down.

There are six steps in the Volume Control adjustment range. This makes it easier for the keyset user to set up just the right volume levels.

Enhanced Volume and Contrast Control

Volume Control

Enhanced Volume/Contrast control provides individual controls for:

- Intercom handset calls
- Intercom Handsfree calls
- Trunk handset calls
- Trunk Handsfree calls
- Paging receive volume
- Background Music
- Ringing
- Off-Hook Ringing

There are seven user-selectable values for each setting, and each of these settings is “remembered” by the system. In the event of a power down or system reset, each setting is automatically restored. The user can set the volume while the feature is active or by using the Volume Control Soft Key Menu (see Operation below).

Contrast Control

While a 22-Button or 34-Button Display Telephone is idle, pressing **VOL ▲** or **VOL ▼** adjusts the contrast of the display. There are seven user-selectable contrast control values. The value a user sets is “remembered” by the system and automatically restored in the event of a power down or system reset. Contrast Control is not available in Super Display Telephones.

Feature Quick Steps

To adjust the volume of a feature while it is active:

*While your keyset is idle, pressing **VOL ▲** and **VOL ▼** adjusts the keyset display contrast. Turn to *Alphanumeric Display* on page 29 for more.*

1. Press **VOL ▲** and **VOL ▼**.

Walking Class of Service

An extension user can temporarily use their Toll Restriction and Class of Service options at a co-worker's phone.

Availability: All versions.

Walking Class of Service allows an extension user to temporarily implement their Toll Restriction and Class of Service settings at a co-worker's phone. This is normally used to override dialing restrictions at a telephone. For example, an executive with an unrestricted phone can walk to any phone in the building, implement Walking Class of Service, and dial without restriction. *After the phone goes idle, Walking Class of Service remains in effect for 10 seconds.* This permits the user to make multiple calls before the phone returns to its normal restrictions.

Walking Class of Service overrides Extension Locking.

Feature Quick Steps

To enable Walking Class of Service at an extension:

1. Press **ICM + ##0 + Enter** your own extension number + **HOLD**
1. Enter your PIN number + **HOLD**.

Year 2000 Compliance

The system is fully Y2K (Year 2000) compliant.

Availability: All versions.

The system provides Year 2000 Compliance. The change of the date from one century to the next is handled by the system software and is no different than the change from one year to the next. The day following 12/31/99 will be 01/01/00. The system will process the leap year correctly and will not require an upgrade or reprogramming. In addition, the SMDR report will properly show the years in the 21st century.

Section 4

Specifications and Parts List

Specifications

System Capacities			
• Cabinets:	1		
• Talk Timeslots (Intercom/line):	Non-blocking		
• Ports:	<u>DS2000</u>		<u>DS1000</u>
	4 Slot:	64	N/A
	8 Slot:	112	
• Trunks (CO/PBX lines): ¹	<u>DS2000</u>		<u>DS1000</u>
	4 Slot:	64	Base: 3
	8 Slot:	64	Expansion: 3
			Total: 6
• Digital Telephones: ¹	<u>DS2000</u>		<u>DS1000</u>
	4 Slot:	32	Base: 8
	8 Slot:	96	Expansion: 8
			Total: 16
• Analog Telephones: ¹	<u>DS2000</u>		<u>DS1000</u>
	4 Slot:	24	Base: 4
	8 Slot:	56	Expansion: 4
			Total: 8
• DSS Consoles: ¹	1 max. per keyset, 4 max per system		
• Power Failure Telephones:	<u>DS2000</u>		<u>DS1000</u>
	2 per ATRU PCB		1

System Capacities (Continued)		
• Door Boxes (analog):	N/A	<u>DS1000</u> Base: 1 Expansion: 1 Total: 2
• External Paging Zones:		1
• Page Audio Output:		1
• Internal Paging Zones:		8 (7 and All Call)
• Music Input:		1
• Conference Circuits:	Conference circuits dynamically allocated, with 8 parties max. per Conference.	
• REJ Recording Jack Units:	1 max. per 34-Button or Super Display keyset	
¹ System Load Factor determines maximum allowable configuration.		

Environmental Requirements
Meeting established environmental standards maximizes the life of the system. Refer to the Standard Practices Manual for further information. Be sure that the telephone equipment is not:
<ul style="list-style-type: none"> • In direct sunlight or in hot, cold or humid places. • In dusty areas or in areas where sulfuric gases are produced. • In places where shocks or vibrations are frequent or strong. • In places where water or other fluids comes in contact with the main equipment. • In areas near high-frequency machines or electric welders. • Near computer, telexes, microwaves, air conditioners, etc. • Near radio antennas (including shortwave).

Power Requirements
<ul style="list-style-type: none"> • <u>DS2000</u>: A dedicated 110 VAC 60 Hz circuit located within 7 feet of the cabinet is required. • <u>DS1000</u>: A dedicated 110 VAC 60 Hz circuit located within 4 1/2 feet of the cabinet is required.

Environmental Specifications
Cabinets and Key Telephones
<ul style="list-style-type: none"> • Temperature: 0-45 C (32-113F) • Humidity: 10-95% (non-condensing)
Analog Door Box (DS1000 only)
<ul style="list-style-type: none"> • Temperature: -20-60C (4-140F) • Humidity: 10-95% (non-condensing)

Electrical Specifications	
The following specifications apply to each power supply installed.	
• Power Supply:	120 VAC \pm -10% @ 50-60 Hz
• Output Power:	<u>DS2000</u> : 91 Watts @ 100% full load <u>DS1000</u> : 35 Watts @ 100% full load
• Input Current:	<u>DS2000</u> : 1.50A @ 110 V <u>DS1000</u> : 550mA @ 110 V
• VA:	<u>DS2000</u> : 165 <u>DS1000</u> : 66
• Kwh:	<u>DS2000</u> : 0.165 <u>DS1000</u> : 0.066
• BTU:	<u>DS2000</u> : 563 <u>DS1000</u> : 225
• Grounding Requirements:	12 AWG copper wire

Telephone and Trunk Voltages	
Keyset Voltages	
DC voltage measured at the MDF (between tip and ring):	Minimum: 36 VDC Maximum: 44 VDC
Minimum operating DC voltage measured at station jack (between tip and ring):	24 VDC
Single Line Telephone Voltages	
DC voltage measured at the MDF (between tip and ring):	Minimum: 36 VDC Maximum: 44 VDC
Off-hook voltage:	6.5 VDC (typical – depending on telephone type and loop length)
Ringling voltage:	50-70 VAC, sine wave
High Voltage Message Waiting:	<u>DS2000</u> : 150 VDC <u>DS1000</u> : N/A
Trunk Voltages	
Ringling voltage:	42-103 VAC @ 20 Hz
Battery (from telco):	44-56 VDC

Mechanical Specifications				
Equipment	Width	Depth	Height	Weight
• 4-Slot DS2000 KSU:	10 3/4"	5 7/8"	13 11/16"	4 lbs. 5 oz.
• 8-Slot DS2000 KSU:	19 1/2"	5 7/8"	13 11/16"	6 lbs 12 oz.
• DS1000 KSU:	13 3/4"	2 1/2"	10 1/2"	4 lbs. 1 oz.
• Non-display Keyset:	7 1/4"	9"	2 7/8"	1 lb. 11 oz.
• Display Keyset:	7 1/4"	9"	2 7/8"	1 lb. 12 oz.
• Super Display Keyset:	7 1/4"	9"	2 7/8"	2 lb.
• 24-Button DSS Console:	2 1/2"	9"	2 3/4"	9 oz.
• 110-Button DSS Console:	7 7/8"	8 3/4"	2 3/4"	1 lb. 6 oz.
• Analog Door Box (DS1000 Only):	3 3/4"	1"	5"	6 oz.
• 2-OPX Module:	9 3/8"	7 3/8"	1 1/4"	3 lbs.

Relay Contacts		
• Contact Configuration:	Normally open	
• Maximum Load:	<u>DS2000</u> 60 mA @ 30 VDC 10 mA @ 90 VDC	<u>DS1000</u> 1A @ 24 VDC 0.5A @ 120 VAC
• Maximum Initial Contact Resistance:	<u>DS2000</u> 50 mOhms	<u>DS1000</u> 100 mOhms

External Paging	
• Output Impedance:	600 Ohm
• Output Level:	0 dBr at 1.0 KHz

BGM/MOH Music Source Input		
• Input Impedance:	10K Ohms	
• Input Level:	+18 dBr (+/-2dBr) @ 1.0 KHz	
• Music input:	<u>DS2000</u> Located on the CPU PCB.	<u>DS1000</u> Located in the AUDIO mod jack

DS2000 FCC Registration Information				
• Model:		DX7NA-112/48 (DS2000)		
• Manufacturer:		NEC Infrontia		
• FCC Part 15 Registration:		Class A		
• FCC Registration Number:		NIFMUL-43093-KF-E NIFMUL-43094-MF-E		
• Industry Canada Certificate (DOC) Number:		140-9522 A		
Reg. Status:	FIC:	Mfrs. Port Identifier:	Network Jacks:	
Original	02LS2	80010 80011	REN 0.6B	RJ11C RJ21X
Registered	OL13A	2OPX-A	SOC 9.0F	RJ21X
	OL13B	2OPX-A	SOC 9.0F	RJ21X
	OL13C	2OPX-A	SOC 9.0F	RJ21X

DS1000 FCC Registration Information				
• Model:		DX7NA-624M (DS1000)		
• Manufacturer:		NEC Infrontia		
• FCC Part 15 Registration:		Class A		
• FCC Registration Number:		NIFMUL-43095-KF-E NIFMUL-43096-MF-E		
• Industry Canada Certificate (DOC) Number:		140-10893 A		
Reg. Status:	FIC:	Mfrs. Port Identifier:	Network Jacks:	
Original	02LS2	80200	REN 0.6B	RJ11C

Cabling Requirements			
<ul style="list-style-type: none"> Do not run station cable parallel with the AC source, telex or computer, etc. If the cables are near cable runs to those devices, use shielded cable with grounded shields or install the cable in conduit. 			
<ul style="list-style-type: none"> When cables must be run on the floor, use cable protectors. 			
<ul style="list-style-type: none"> Cable runs for key telephones, single line telephones and Door Boxes must be a dedicated, isolated cable pair. 			
Device:	Cable Type:	Cable Run Length (ft.):	Notes:
<u>DS2000 Cabling Requirements</u>			
Key Telephone	2-wire 26 AWG	1300	
	2-wire 24 AWG	2000	
Single Line Telephone	2-wire 26 AWG	11,500	at constant 20 mA
		3150	at constant 35 mA
	2-wire 24 AWG	18,000	at constant 20 mA
		5050	at constant 35 mA
	2-wire 22 AWG	29,000	at constant 20 mA
		8000	at constant 35 mA
2-OPX Module	2-wire 24 AWG	1000	
<u>DS1000 Cabling Requirements</u>			
Key Telephone	2-wire 26 AWG	650	
	2-wire 24 AWG	1000	
Single Line Telephone	2-wire 26 AWG	8000	at constant 20 mA
	2-wire 24 AWG	12,000	at constant 20 mA
	2-wire 22 AWG	16,000	at constant 20 mA
Analog Door Box (DS1000 Only)	2-wire 24 AWG	330	
	2-wire 22 AWG	550	
2-OPX Module	2-wire 24 AWG	1000	

Parts List

The Telephones		
Description:	Part Number	Quantity
• 34-Button Super Display Telephone	80673	_____
• 34-Button Display Telephone	80663	_____
• 22-Button Display Telephone	80573	_____
• 22-Button Telephone	80570	_____
• Analog Telephone (customer-provided)	N/A	_____

Other Station Equipment		
Description:	Part Number	Quantity
• 110-Button DSS Console	80555	_____
• 24-Button DSS Console	80556	_____
• 2-OPX Module	92177A	_____
• Analog Door Box (DS1000 Only)	92245	_____
• Wall Mount Kit	80579	_____
• REJ Recording Jack Module	80175	_____
• 34-Button Super Display Laser Labels (Pkg of 10)	80625-S34	_____
• 34-Button Laser Labels (Pkg of 25)	80625-34	_____
• 22-Button Laser Labels (Pkg of 25)	80625-22	_____
• 110-Button DSS Console Laser Labels (Pkg of 10)	80625-DSS	_____
• 24-Button DSS Console Laser Labels (Pkg of 10)	80625-24DSS	_____

DS2000 Common Equipment		
Description:	Part Number	Quantity
• 4-Slot Cabinet	80000	_____
• 8-Slot Cabinet	80001	_____
• Power Supply	80005B 80005C ¹	_____
• PC Card with system software preloaded (**,** denotes the system software level).	80052-V**,**	_____
• Blank PC Card	85880	_____

¹ Required for UltraMail and UltraMail 2000.

DS2000 PCBs		
Description	Part Number	Quantity
• Expanded Memory CPU Central Processing Unit	80025B	_____
• 16DSTU Digital Station PCB	80021A	_____
• 8ASTU 8 Port Analog Station PCB	80041B	_____
• 4ASTU 4 Port Analog Station PCB	80040B	_____
• 8ATRU 8 Port Analog Trunk PCB (loop start)	80011B	_____
• 4ATRU 4 Port Analog Trunk PCB (loop start)	80010B	_____
• T1 Trunk PCB	80061	_____

IntraMail		
Description	Part Number	Quantity
• IntraMail 4 Port, 4 Hour Voice Mail with Automated Attendant	80044	_____
• IntraMail 8 Port, 8 Hour Voice Mail with Automated Attendant	80088	_____

UltraMail		
Description	Part Number	Quantity
• UltraMail, 2 Port, 3 Hour, 200 Mailboxes (Flash memory based)	17712	_____
• UltraMail, 4 Port, 3 Hour, 200 Mailboxes (Flash memory based)	17714	_____
• UltraMail 2000, 4 Port, 130 Hour Minimum, 1000 Mailboxes (Hard disk based)	17744	_____
• UltraMail 2 Port to 4 Port Software Upgrade	0891044	_____
• UltraMail 4 Port Expansion PCB for UltraMail P/Ns 17712 and 17714	0891045	_____
• UltraMail 4 Port Expansion PCB for UltraMail 2000 P/N 17744	0891034	_____

DS1000 Common Equipment		
Description:	Part Number	Quantity
• DS1000 Cabinet (3 x 8 x 4)	80200A	_____
• DS1000 Expansion Board (3 x 8 x 4)	80221	_____

Miscellaneous and Optional Equipment		
Description:	Part Number	Quantity
• DS1000/2000 Update Utility	80250A-V**.*.*.*	_____
• DS1000/2000 System Administrator	80053	_____
• DS2000 Adaptor Box	80890	_____
• RJ61X 8-Conductor Cable	80891	_____
• 8-Pin DIN to Mod-8 Cable (DS2000)	80893	_____
• DB9 Female to Mod-8 Adaptor	85980	_____
• DB25 Male to Mod-8 Adaptor	85981	_____
• DS2000 Installation Cable	80892	_____

Replacement Parts		
Description	Part Number	Quantity
• Noise Cancelling Handset	80150NC	_____
• Handset and Cord Assembly	80150	_____
• Handset Coil Cord - Black 9'	92297-9	_____
• Handset Coil Cord - Black 13'	92297-13	_____
• Handset Coil Cord - Black 25'	92297-25	_____
• Telephone Line Cord - Black 7'	82476-7	_____
• Telephone Line Cord - Black 14'	82476-14	_____
• 34-Button Super Display Clear Plastic Cover	80600-S34	_____
• 34-Button Clear Plastic Cover	80600-34	_____
• 22-Button Clear Plastic Cover	80600-22	_____
• 110-Button DSS Console Clear Plastic Cover	80600-DSS	_____
• 24-Button DSS Console Clear Plastic Cover	80600-24DSS	_____
• Directory Tray	92602	_____
• Wall Mount Handset Clip Holder	80578	_____

Glossary

2-OPX Module	<p>A true OPX station device that connects to a single digital station port and provides 2 analog circuits for connecting single line sets, modems, fax machines, and Voice Mail ports.</p> <p>Reference: <i>2-OPX Module (P/N 92177A)</i> on page 7.</p>
Account Codes	<p>User-dialed codes that help categorize or restrict outside calls.</p> <p>Reference: <i>Account Codes</i> on page 27.</p>
All Call Paging	<p>See <i>Paging</i> on page 148 in this glossary.</p>
Alphanumeric Display	<p>The keyset LCD display that shows date and time, feature status messages, and Soft Key definitions. The 22- and 34-button keysets have a 2-line, 20 character per line display. The Super Display keyset has an 8-line, 20 character per line display.</p> <p>Reference: <i>Alphanumeric Display</i> on page 29.</p>
Alternate	<p>See <i>Split (Alternate)</i> on page 151 in this glossary.</p>
ANI/DNIS	<p>The system is compatible with telco's T1 Automatic Number Identification (ANI) and Dialed Number Information Service (DNIS) services.</p> <p>Reference: <i>T1 Trunking</i> on page 111.</p>
Assigned Night Answer	<p>See <i>Night Service / Night Ring</i> on page 147 in this glossary.</p>

ATRU	Analog trunk port. Reference: <i>8ATRU 8 Port Analog Trunk PCB (P/N 80011B)</i> on page 12 and <i>DS1000 Cabinet (P/N 80200A)</i> on page 13.
ASTU	Analog station port. Reference: <i>8ASTU 8 Port Analog Station PCB (P/N 80041B)</i> on page 11 and <i>DS1000 Cabinet (P/N 80200A)</i> on page 13.
Attendant	The attendant is the system operator. A system can have up to 4 attendants. Normally, the attendant is set up with unique call processing capabilities. Reference: <i>Attendant Position</i> on page 30.
Attendant Call Queuing	The method by which Intercom callers queue for the attendant. Since the attendant is never considered busy for Intercom calls, these types of calls “stack up” under the attendant’s Operator Call Key. This key is permanently assigned on each attendant extension. Reference: <i>Attendant Call Queuing</i> on page 29.
Auto Redial	The system can periodically retry a busy outside number. Reference: <i>Auto Redial</i> on page 30.
Automatic Handsfree	A keyset user can place or answer a call by just pressing a key, without lifting the handset or pressing SPK first. Reference: <i>Automatic Handsfree</i> on page 31.
Automatic Hold	Allows an extension user to be on an outside (trunk) call, activate a feature, and automatically place the call on HOLD. See also <i>Exclusive Hold</i> on page 142, <i>Intercom Hold</i> on page 144, and <i>System Hold</i> on page 151 in this glossary. Reference: <i>Hold</i> on page 69.
Automatic Slot Configuration	The DS2000 automatically installs PCBs when you power up the system. Reference: <i>Automatic Slot Configuration</i> on page 32.

Background Music	<p>The music that plays over the telephone speakers while the phone is idle. Background Music requires a customer-provided music source that is connected to the telephone system.</p> <p>Reference: <i>Background Music</i> on page 32.</p>
Backup	<p>See <i>System Programming Backup and Restore</i> on page 151 in this glossary.</p>
Barge In	<p>The capability of an extension to join an existing conversation without being invited. This feature is usually invoked only in emergency or priority situations.</p> <p>Reference: <i>Barge In (Intrusion)</i> on page 33.</p>
Battery Backup	<p>The capability of the system to use its internal battery to back up system memory and the date and time. The battery typically holds memory and date and time for 10-14 days.</p> <p>Reference: <i>Battery Backup</i> on page 33.</p>
Call Coverage Keys	<p>A type of Programmable Function Key, assigned to a particular (i.e., covered) extension, that provides:</p> <ul style="list-style-type: none">• A Busy Lamp Field for the covered extension which shows on-hook (idle), off-hook (busy), Do Not Disturb, and ringing status of that extension.• One button intercept of calls ringing the covered extension.• One button Intercom calling to the covered extension while it is idle. <p>Reference: <i>Call Coverage Keys</i> on page 34.</p>
Call Forwarding	<p>Permits an extension user to redirect their calls to another extension.</p> <p>Reference: <i>Call Forwarding</i> on page 35.</p>
Call Forwarding Off Premise	<p>A keyset user can forward their calls to their home office or cell phone.</p> <p>Reference: <i>Call Forwarding Off Premise</i> on page 36.</p>
Call Timer	<p>A telephone display application that allows the keyset user to time their trunk calls.</p> <p>Reference: <i>Call Timer</i> on page 37.</p>

Call Waiting	<p>Provides a busy extension user with an audible indication (i.e., Camp-On tones in the telephone handset) that an additional call is waiting to be answered.</p> <p>Reference: <i>Call Waiting / Camp-On</i> on page 38.</p>
Callback	<p>With Callback, an extension can call a busy extension, dial the Callback code, hang up, and have the busy extension automatically call them back when it becomes free.</p> <p>Reference: <i>Callback</i> on page 38.</p>
Caller ID	<p>The capability of a display keyset to show an incoming trunk caller's number and optional name in the telephone display. Caller ID requires that telco provide Caller ID service on each trunk that should display the Caller ID data.</p> <p>Reference: <i>Caller ID</i> on page 39.</p>
Caller ID Logging	<p>The keyset can store the caller's name and phone number for easy review and redialing.</p> <p>Reference: <i>Caller ID</i> on page 39.</p>
Caller ID, Second Call	<p>Displays the Caller ID data for a waiting (i.e., second) trunk call while the display keyset user is busy on a call.</p> <p>Reference: <i>Caller ID</i> on page 39.</p>
Caller ID, Third Party Check	<p>Permits the display keyset user to press a line key, loop key, Call Coverage key or Hotline key to display the Caller ID data for a trunk that is not ringing their phone.</p> <p>Reference: <i>Caller ID</i> on page 39.</p>
Camp-On	<p>Allows an extension user to wait in line without hanging up for a busy extension to become free.</p> <p>Reference: <i>Call Waiting / Camp-On</i> on page 38.</p>
Central Office Calls	<p>Call placed or answered on trunks provided by the connected telephone company (telco).</p> <p>Reference: <i>Central Office Calls, Answering</i> on page 41 and <i>Central Office Calls, Placing</i> on page 42.</p>

Centrex Compatibility	<p>The system is compatible with PBX and Centrex services that require the user to dial an access code before the digits for their outside call.</p> <p>Reference: <i>PBX/Centrex Compatibility</i> on page 86.</p>
Check Key	<p>A unique key on a display telephone that allows the user to check key assignments and Personal Speed Dial programmed entries.</p> <p>Reference: <i>Check Key</i> on page 43.</p>
Circular Hunting	<p>A type of Extension Hunting in which a call unanswered at a member extension rings the next extension in the hunt group and, if unanswered, continues to cycle through all the members of the group (until it is answered or abandoned). See also <i>Terminal Hunting</i> on page 152 and <i>Uniform Call Distribution (UCD) Hunting</i> on page 154 of this glossary.</p> <p>Reference: <i>Extension Hunting</i> on page 61.</p>
Class of Service	<p>A table of feature and dialing options that can be customized and assigned to individual or multiple extensions. The system has 15 unique, customizable Class of Service tables.</p> <p>Reference: <i>Class of Service</i> on page 43.</p>
Conference	<p>A facility that allows an extension user to add multiple inside or outside callers into an existing telephone conversation.</p> <p>Reference: <i>Conference</i> on page 48.</p>
Date and Time	<p>See <i>Time and Date</i> on page 152 in this glossary.</p>
Delayed Ringing	<p>Allows a call to immediately flash a line or Call Coverage key and then ring after a programmed delay.</p> <p>Reference: <i>Delayed Ringing</i> on page 48.</p>
Dial Number Preview	<p>The ability of a display keyset user to dial and review a number on the telephone display before the system dials it out.</p> <p>Reference: <i>Dial Number Preview</i> on page 49.</p>
Dial Tone Detection	<p>The system can automatically detect outside line dial tone, and route to another trunk (or play busy) if it is not available.</p> <p>Reference: <i>Dial Tone Detection</i> on page 49.</p>

Direct Inward Dialing	Outside callers can directly dial system extensions. Reference: <i>Direct Inward Dialing</i> on page 50.
Direct Inward Line	An outside line (trunk) that directly rings an extension, Ring Group master number, or UCD Group master number (including Voice Mail). The DIL will not directly ring any other extensions in the system, although it may flash another extension's line key (depending on Programmable Function Key programming). Reference: <i>Direct Inward Line</i> on page 51.
Direct Station Selection (DSS)	A "second level" function of an extension's Programmable Function Keys that provides one-button Intercom access, call Transfer, and Busy Lamp Field for the extension assigned to the key. If enabled in programming, DSS keys automatically activate when the user presses the ICM key. Reference: <i>Direct Station Selection (DSS)</i> on page 52.
Direct Station Selection (DSS) Console	A unique station instrument that plugs into a 34-Button Display or 34-Button Super Display telephone that provides additional Programmable Function Keys. There are two models: 24-button and 110-button. The keys on a DSS Console can be programmed with many of the same functions available to a keyset's Programmable Function Keys. Reference: <i>Direct Station Selection (DSS) Console</i> on page 52.
Direct Trunk Access	The capability of an extension user to dial a specific code to access (seize) an individual outside line (trunk), and then dial without restriction. Reference: <i>Direct Trunk Access</i> on page 55.
Directed Call Pickup	The ability of an extension user to dial a specific code to intercept a call ringing another extension. Reference: <i>Directed Call Pickup</i> on page 55.
Directory Dialing	A dial-by-name facility of the telephone system that allows a display keyset user to select a co-worker or outside call from a list of displayed names. Directory Dialing can show a list of System Speed Dial names, Personal Speed Dial names, or Intercom names. Reference: <i>Directory Dialing</i> on page 56.
Display Messaging	See <i>Selectable Display Messaging</i> on page 150 in this glossary.

Distinctive Ringing	Keyset users can customize their telephone's ringing. Reference: <i>Distinctive Ringing</i> on page 56.
Do Not Disturb	Blocks incoming calls, Off-Hook Signaling, and Paging announcements at an extension. Reference: <i>Do Not Disturb</i> on page 57.
Do Not Disturb Override	An extension user can easily override a co-worker's Do Not Disturb. Reference: <i>Do Not Disturb Override</i> on page 59.
Door Box	A unique station instrument, typically placed next to an entrance door, that allows visitors at the door to communicate with selected internal extensions. The Door Box works like a door bell with an integral speaker and microphone. Reference: <i>Door Box</i> on page 59.
DSTU	Digital Station Port. Reference: <i>16DSTU Digital Station PCB (P/N 80021A)</i> on page 11 and <i>DS1000 Cabinet (P/N 80200A)</i> on page 13.
Expanded Database	New database method that provides for advanced features like IntraMail and DS2000 Automatic Slot Configuration. Reference: <i>Expanded Database</i> on page 60.
Expansion Board	Expands the capabilities of the DS1000 system. Reference: <i>DS1000 Expansion Board (P/N 80221)</i> on page 14.
Extended Ringing	Allows calls to ring specific extensions (such as warehouse telephones) for an extended number of rings before the calls follow the system's normal rerouting procedures. Reference: <i>Extended Ringing</i> on page 60.

Extension Hunting	<p>An internal system call routing facility that allows calls to route to a pre-defined group of hunt group member extensions. There are three types of extension hunting: Circular Hunting, Terminal Hunting, and Uniform Call Distribution (UCD) Hunting.</p> <p>Reference: <i>Extension Hunting</i> on page 61.</p>
Extension Locking	<p>To prevent unauthorized access, a keyset user can secure their phone when they leave the office.</p> <p>Reference: <i>Extension Locking</i> on page 63.</p>
Extension Ringdown	<p>See <i>Ringdown Extension</i> on page 150 in this glossary.</p>
External Paging	<p>See <i>Paging</i> on page 148 in this glossary.</p>
Exclusive Hold	<p>A type of Hold for outside (trunk) calls that allows only the extension that initially placed the call on Hold to retrieve it from Hold. See also <i>Automatic Hold</i> on page 136, <i>Intercom Hold</i> on page 144, and <i>System Hold</i> on page 151 in this glossary.</p> <p>Reference: <i>Hold</i> on page 69.</p>
Fixed Loop Keys	<p>See <i>Loop Keys</i> on page 146 in this glossary.</p>
Flash	<p>Allows an extension user to access certain CO and PBX features by interrupting (flashing) trunk loop current. Flash only has an effect if the additional features are provided by the CO or PBX.</p> <p>Reference: <i>Flash</i> on page 63.</p>
Flexible Number Plan	<p>Enables the system programmer to change the digits users dial to reach the attendant, other co-workers, and outside lines (trunks).</p> <p>Reference: <i>Flexible Numbering Plan</i> on page 64.</p>
Forced Account Codes	<p>An extension user <u>must</u> enter an Account Code each time they place a trunk call.</p> <p>Reference: <i>Account Codes</i> on page 27.</p>

Forced Intercom Ringing	<p>Causes all incoming Intercom calls to ring an extension.</p> <p>Reference: <i>Handsfree Answerback and Forced Intercom Ringing</i> on page 72.</p>
Forced Trunk Disconnect	<p>Lets an extension user dial specific codes to immediately disconnect (release) another extension's active outside (trunk) call.</p> <p>Reference: <i>Forced Trunk Disconnect</i> on page 64.</p>
Group Call Pickup	<p>Allows an extension to intercept (pick up) a call ringing another extension in the Pickup Group to which the extension belongs. The extension user can either dial a specific code or use a uniquely programmed Group Call Pickup Programmable Function Key.</p> <p>Reference: <i>Group Call Pickup</i> on page 65.</p>
Group Listen	<p>The capability of a keyset extension to allow the user to talk on a handset call conversation and simultaneously broadcast the other party's voice over the telephone speaker.</p> <p>Reference: <i>Group Listen</i> on page 65.</p>
Group Ring	<p>Allows the system programmer to arrange extensions into Ring Groups to control the ringing for incoming outside (trunk) calls. Ring Groups are based around a programmed Ring Group master number. When a call is directed to ring the master number, all extensions in the Ring Group simultaneously ring.</p> <p>Reference: <i>Group Ring</i> on page 66.</p>
Handsfree	<p>Gives the keyset user the ability to process calls using the speaker and microphone in the telephone, instead of the handset.</p> <p>Reference: <i>Handsfree and Handsfree Answerback</i> on page 67.</p>
Handsfree Answerback	<p>The capability of a keyset extension to broadcast an incoming Intercom caller's voice over the telephone speaker, and to additionally allow the receiving extension user to reply by using the microphone in the telephone (without lifting the handset).</p> <p>Reference: <i>Handsfree Answerback and Forced Intercom Ringing</i> on page 72.</p>
Handsfree, Automatic	<p>The ability of a keyset user to place or answer a call by pressing a key, without first lifting the handset or pressing SPK.</p> <p>Reference: <i>Automatic Handsfree</i> on page 31.</p>

Headset Compatibility

Enables a keyset user to plug in a customer-provided headset in lieu of the handset. Once the headset is enabled in programming, the keyset operation is uniquely modified to accommodate the headset.

Reference: *Headset Compatibility* on page 68.

Hold

Lets an extension user put a call in a temporary waiting state, hang up, and return to the call later on. See also *Automatic Hold* on page 136, *Exclusive Hold* on page 142, *Intercom Hold* on page 144, and *System Hold* on page 151 in this glossary.

Reference: *Hold* on page 69.

Hotline

A uniquely programmed Programmable Function Key that provides one-button calling, Transfer, and a Busy Lamp Field for the extension assigned to the key. The extension assigned to the key is called the Hotline partner.

Reference: *Hotline* on page 71.

Idle Prime Line

See *Prime Line Preference* on page 148 in this glossary.

Interactive Soft Keys

Interactive feature buttons that provide intuitive call processing. On a display keyset, the soft keys are the 4 buttons just beneath the telephone display that change in function as the user processes calls. The display area just above the buttons indicates the currently active feature function. On a Super Display Keyset, there are 12 soft key buttons; 6 to the left and 6 to the right of the display.

Reference: *Interactive Soft Keys* on page 71.

Intercom

The ability of any extension to call any other extension in the system, providing complete internal calling capability.

Reference: *Intercom* on page 144.

Intercom Hold

Permits an extension user to place an Intercom call on Hold, hang up, and return to the call later on. See also *Automatic Hold* on page 136, *Exclusive Hold* on page 142, and *System Hold* on page 151 in this glossary.

Reference: *Hold* on page 69.

Intercom Prime Line

See *Prime Line Preference* on page 148 in this glossary.

Internal Paging	See <i>Paging</i> on page 148 in this glossary.
IntraMail	<p>A plug-in “in-skin” full-featured, DSP-based integrated Voice Mail with Automated Attendant for DS1000 and DS2000.</p> <p>Reference: See <i>IntraMail Voice Mail with Automated Attendant (P/Ns 80044 and 80088)</i> on page 15 in this glossary.</p>
Intrusion	See <i>Barge In</i> on page 137 in this glossary.
Key Ring	<p>The system’s universal outside (trunk) call ringing facility, set up on an extension-by-extension basis in the system’s Ring Assignment programming. When a call rings in, Key Ring can cause multiple extensions to ring simultaneously or after a programmed delay. Key Ring is also the “overflow” destination for unanswered DILs and unanswered calls recalling from Hold, Park, or Transfer.</p> <p>Reference: <i>Key Ring</i> on page 72.</p>
Last Number Redial	<p>Allows an extension user to quickly redial the last outside (trunk) call they dialed. <i>Enhanced Last Number Redial</i> allows the user to select from the last 5 outside numbers dialed.</p> <p>Reference: <i>Last Number Redial</i> on page 73.</p>
Line Keys	<p>Uniquely programmed Programmable Function Keys that provide one-button access to an outside line (trunk) for placing and answering calls. The line key also provides a Busy Lamp field for the trunk to which it is assigned.</p> <p>Reference: <i>Line Keys</i> on page 74</p>
Line Queuing	See <i>Trunk (Line) Queuing / Trunk Callback</i> on page 153 in this glossary.
Load Factor	<p>A representation of the system’s power supply capacity that may limit the number of components that can be connected to the system.</p> <p>Reference: <i>DS2000 Load Factor Calculations</i> on page 22 and <i>DS1000 Load Factor Calculations</i> on page 24.</p>

Loop Keys	<p>Uniquely programmed Programmable Function Keys that provide an appearance for outside lines (trunks) not assigned to a line key. There are two types of Loop Keys: Switched Loop and Fixed Loop. For incoming calls, both Switched Loop and Fixed Loop Keys provide an appearance for any trunk not assigned to a line key. For outgoing calls, Switched Loop Keys simplify access to trunk groups. Fixed Loop keys provide access to a <i>specific</i> trunk group.</p> <p>Reference: <i>Loop Keys</i> on page 75.</p>
Meet-Me Conference	<p>A “telephone meeting” an extension user sets up with their co-workers at one of the two predefined Meet-Me Conference locations. The number of people that can join the Conference is limited only by the system’s Conference circuit capacity.</p> <p>Reference: <i>Meet-Me Conference</i> on page 76.</p>
Message Waiting	<p>An indication (flashing MW key) an extension user can leave at a busy or unanswered keyset requesting a return call. Message Waiting is only available in systems that don’t have Voice Mail installed.</p> <p>Reference: <i>Message Waiting</i> on page 77.</p>
Microphone Mute	<p>Permits a keyset user to press a key to turn off their phone’s Handsfree microphone at any time.</p> <p>Reference: <i>Microphone Mute</i> on page 78.</p>
Modem Cut-Through	<p>A unique DS1000 only feature that allows a modem connected to the system’s analog modem port to achieve maximum throughput speeds on outside (trunk) calls.</p> <p>Reference: <i>Modem Cut-Through</i> on page 78.</p>
Monitor / Silent Monitor	<p>Allows an extension user to listen to the conversation being held on another extension without providing any indication of the intrusion.</p> <p>Reference: <i>Monitor / Silent Monitor</i> on page 79.</p>
Multiple Directory Numbers	<p>See <i>Call Coverage Keys</i> on page 137 in this glossary.</p>
Music On Hold	<p>Provides music from a customer-provided music source to callers on Hold, parked callers and transferred callers.</p> <p>Reference: <i>Music On Hold</i> on page 79.</p>

Names for Extensions and Trunks

System extensions and trunks can have names programmed into system memory to help identify them. These names are visible to display keyset users during call processing.

Reference: *Names for Extensions and Trunks* on page 80.

Night Service / Night Ring

Redirects outside (trunk) calls to their night mode destination. Any extension user with a uniquely programmed Night key can activate Night Service by pressing that key. There are two types of Night Service: Assigned Night Answer and Universal Night Answer. Assigned Night Answer rings extensions directly at night. Universal Night Answer allows a user to dial a code to pick up a call ringing at night.

Reference: *Night Service / Night Ring* on page 80.

Off-Hook Signaling

Indicates to an extension user busy on a call that another caller is trying to get through. Off-Hook Signaling can be muted Off-Hook Ringing or Camp-On tone, depending on system programming and the type of call.

Reference: *Off-Hook Signaling* on page 81.

Off Premise Call Forwarding

A keyset user can forward their calls to their home office or cell phone.

Reference: *Call Forwarding Off Premise* on page 36.

**Off-Premise Extensions
On-Premise Extensions**

Single line telephones can be installed as either On- or Off-Premise Extensions, depending on the type of system and additional equipment installed.

Reference: *Off-Premise Extensions / On-Premise SLT Extensions* on page 82.

One Touch Keys

See *Speed Dial* on page 99.

Optional Account Codes

A keyset user can optionally enter an Account Code while placing a call or while on a call. Also called Unforced Account Codes.

Reference: *Account Codes* on page 27.

Paging	<p>Enables extension users to broadcast announcements to speakers in keysets and/or to a customer-provided paging system. There are two types of Paging: Internal Paging and External Paging. With Internal Paging, an extension user can broadcast into 1 of 7 Internal Paging zones, or simultaneously into all zones (termed All Call Paging). With External Paging, announcements into internal zone 1 or internal All Call automatically broadcast from the system's External Paging audio port (which is typically connected to a customer-provided Paging system).</p> <p>Reference: <i>Paging</i> on page 83.</p>
Park	<p>Places an outside (trunk) call into a waiting state called a Park Orbit. An extension user can Park a call in one of 10 System Park Orbits, or use Personal Park to have the call wait at a specific extension.</p> <p>Reference: <i>Park</i> on page 85.</p>
Password Protection	<p>See <i>System Programming Password Protection</i> on page 151 in this glossary.</p>
PBX/Centrex Compatibility	<p>The system is compatible with PBX and Centrex services that require the user to dial an access code before the digits for their outside call.</p> <p>Reference: <i>PBX/Centrex Compatibility</i> on page 86.</p>
Personal Speed Dial	<p>See <i>Speed Dial</i> on page 150 in this glossary.</p>
Prime Line Preference	<p>Allows a keyset user to place or answer a call just by lifting the handset. The activation of Prime Line Preference is associated in system programming with a particular key on the telephone. If the association is with a line or loop key, the extension has Idle Prime Line. If the association is with the ICM key, the extension has Intercom Prime Line.</p> <p>Reference: <i>Prime Line Preference</i> on page 87.</p>
Privacy	<p>An extension option that, when enabled, blocks incoming Barge In attempts and Call Waiting signals.</p> <p>Reference: <i>Privacy</i> on page 88.</p>
Privacy Release Groups	<p>A group of extensions that can join in each other's outside (trunk) calls just by pressing a busy line key. The number of group members that can join the call is limited only by the system's Conference capacity.</p> <p>Reference: <i>Privacy Release Groups</i> on page 88.</p>

Private Line	<p>An outside line (trunk) reserved for a specific keyset for placing and answering calls.</p> <p>Reference: <i>Private Line</i> on page 89.</p>
Programmable Function Keys	<p>Keys on a keyset telephone that can be assigned to a variety of functions that simplify placing calls, answering calls, and using certain features. The 22-button sets have 12 Programmable Function Keys. The 34-button and Super Display sets have 24 Programmable Function Keys.</p> <p>Reference: <i>Programmable Function Keys</i> on page 89.</p>
Pulse to Tone Conversion	<p>The ability of an extension to automatically change the dialing mode of an outside (trunk) call from Dial Pulse to DTMF.</p> <p>Reference: <i>Pulse to Tone Conversion</i> on page 92.</p>
REJ Recording Jack Module	<p>A device that plugs into a Super Display or 34-Button Display Telephone that provides connection for an external tape recorder (for recording calls) or amplifier.</p> <p>Reference: <i>REJ Recording Jack Module (P/N 80175)</i> on page 8.</p>
Removing Trunks and Extensions from Service	<p>The capability of specific extensions to remove problem trunks and extensions from service. This is normally a repair facility most commonly reserved for system attendants and supervisors.</p> <p>Reference: <i>Removing Trunks and Extensions From Service</i> on page 93.</p>
Restore	<p>See <i>System Programming Backup and Restore</i> on page 151 in this glossary.</p>
Reverse Voice Over	<p>Allows a keyset user busy on a handset call to press their uniquely programmed Reverse Voice Over key to set up a private Intercom call with a co-worker. When the phone is idle, the Reverse Voice Over key functions the same as a Hotline key.</p> <p>Reference: <i>Reverse Voice Over</i> on page 93.</p>
Ring Groups	<p>See <i>Group Ring</i> on page 143 in this glossary.</p>

Ringdown Extension	Automatically places a call to an extension, Voice Mail, Ring Group or UCD Hunting group when the extension user lifts the handset. Ring-down extensions are typically single line sets used in hotel lobbies and airport terminals. Reference: <i>Ringdown Extension</i> on page 94.
Ringin Line Preference	Provides ringin call priority for keysets, which in turn enables a keyset to automatically answer a ringin call when the user lifts the handset. Reference: <i>Ringin Line Preference</i> on page 95.
Save Number Dialed	Permits an extension user to save the last outside number they dialed and easily redial it later on by pressing a uniquely programmed Save Number Dialed key. Reference: <i>Save Number Dialed</i> on page 96.
Selectable Display Messaging	Lets a user enable a text message for their extension which automatically shows on the display of any co-worker that calls their extension. Text messages can be appended by the user to provide more specific information, such as "BACK BY 5:00." Reference: <i>Selectable Display Messaging</i> on page 97.
Screened Transfer	See <i>Transfer</i> on page 153 in this glossary.
Silent Monitor	See <i>Monitor / Silent Monitor</i> on page 146 in this glossary.
Single Line Telephones	Single line telephones can be installed as either On- or Off-Premise Extensions, depending on the type of system and additional equipment installed. Reference: <i>Off-Premise Extensions / On-Premise SLT Extensions</i> on page 82.
Soft Keys	See <i>Interactive Soft Keys</i> on page 144 in this glossary.
Speed Dial	Provides an extension with quick access to frequently called numbers. There are 2 types of Speed Dial: Personal Speed Dial and System Speed Dial. Personal Speed Dial provides 20 numbers for each extension. System Speed Dial provides up to 1000 numbers that everyone in the system can use. Reference: <i>Speed Dial</i> on page 99.

Split (Alternate)	Lets an extension user easily switch between their current call and a waiting call, without joining the callers in Conference. Reference: <i>Split (Alternate)</i> on page 101.
Station Message Detail Recording	A system report, typically printed on a printer connected to the system's RS-232-C serial port, that provides a record of the system's outside (trunk) calls. Reference: <i>Station Message Detail Recording</i> on page 101.
Station Timers	See <i>System Timers</i> on page 151 in this glossary.
System Programming Backup and Restore	The capability of the DS2000 system to allow site-specific customer data to be saved to and restored from PC Card P/N 85880. Reference: <i>System Programming Backup and Restore</i> on page 102.
System Programming Password Protection	The protection the system provides against unauthorized programming by requiring the system programmer to enter a password prior to changing system options. Reference: <i>System Programming Password Protection</i> on page 103.
System Timers	The system provides numerous timers that control aspects of system, station, and outside line (trunk) behavior. Reference: <i>System Timers</i> on page 103, <i>System Timers, Stations</i> on page 105, and <i>System Timers, Trunks</i> on page 108.
Switched Loop Keys	See <i>Loop Keys</i> on page 146 in this glossary.
System Hold	A type of Hold for outside (trunk) calls that allows any extension user to retrieve the call from Hold. See also <i>Automatic Hold</i> on page 136, <i>Exclusive Hold</i> on page 142, and <i>Intercom Hold</i> on page 144 in this glossary. Reference: <i>Hold</i> on page 69.
System Speed Dial	See <i>Speed Dial</i> on page 150 in this glossary.

T1 Trunking	<p>Provides the DS2000 with advanced digital trunking and simplifies installation. T1 trunks can be loop start, ground start, DID, or Tie Lines. Also provides ANI/DNIS support.</p> <p>Reference: <i>T1 Trunking</i> on page 111.</p>
Tandem Trunking / Unsupervised Conference	<p>A type of Conference that lets an extension user join two outside callers in a trunk-to-trunk Conference, drop out of the call, and leave the 2 trunk callers connected.</p> <p>Reference: <i>Tandem Trunking / Unsupervised Conference</i> on page 112.</p>
Terminal Hunting	<p>A type of Extension Hunting in which a call unanswered at a member extension rings the next extension in the hunt group and, if unanswered, rings through the group until it reaches the last member. The call will not automatically cycle through all members of the group. It rings from the point at which it entered the group to the last member. See also <i>Circular Hunting</i> on page 139 and <i>Uniform Call Distribution (UCD) Hunting</i> on page 154 of this glossary.</p> <p>Reference: <i>Extension Hunting</i> on page 61.</p>
Text Messaging	<p>See <i>Selectable Display Messaging</i> on page 150 in this glossary.</p>
Tie Lines	<p>Using T1 trunks, tie lines allow you to link two DS2000 systems together for inter-system calling and other features.</p> <p>Reference: <i>Tie Lines</i> on page 113.</p>
Time and Date	<p>The Time and Date appears on display telephones and the Station Message Detail Recording report.</p> <p>Reference: <i>Time and Date</i> on page 113.</p>
Timers	<p>See <i>System Timers</i> on page 151 in this glossary.</p>
Toll Restriction	<p>Limits the outside numbers an extension user can dial, thereby controlling the cost of long distance calls.</p> <p>Reference: <i>Toll Restriction</i> on page 113.</p>

Transfer	<p>Extends an active call from one extension to another extension, Ring Group, UCD Hunting Group, or to the Voice Mail system. There are two types of Transfer: Screened and Unscreened. With Screened Transfer, the transferring user announces the call to the destination before hanging up. With Unscreened Transfer, the transferring user extends the call without an announcement.</p> <p>Reference: <i>Transfer</i> on page 114.</p>
Trunk Group Routing	<p>Allows an extension user to easily obtain dial tone on an outside line (trunk) for placing a call. Single line telephone users lift the handset and dial 9, while keyset extension users press ICM and dial 9. The system automatically selects the first available trunk in the programmed “dial 9” trunk group.</p> <p>Reference: <i>Trunk Group Routing</i> on page 115.</p>
Trunk (Line) Queuing / Trunk Callback	<p>Permits an extension user to queue (wait in line) off-hook for a busy trunk or trunk group to become free. If the user hangs up, the system automatically converts the Trunk Queue to a Trunk Callback. When the trunk becomes free, the system automatically recalls the extension that left the Callback. The user then just lifts the handset to answer the Trunk Callback and dials their call.</p> <p>Reference: <i>Trunk (Line) Queuing / Trunk Callback</i> on page 116.</p>
Trunk Groups	<p>Enables extension users to dial Trunk Group access codes 90-98 to place calls on Trunk Groups 90-98.</p> <p>Reference: <i>Trunk Groups</i> on page 117.</p>
Trunk Timers	<p>See <i>System Timers</i> on page 151 in this glossary.</p>
UltraMail	<p>UltraMail and UltraMail 2000 are PCB-based, digitally-linked, “in-skin” Voice Mail with Automated Attendant systems for DS2000.</p> <p>Reference: <i>UltraMail and UltraMail 2000</i> on page 16.</p>
Unforced Account Codes	<p>A keyset user can optionally enter an Account Code while placing a call or while on a call. Also called Optional Account Codes.</p> <p>Reference: <i>Account Codes</i> on page 27.</p>

Uniform Call Distribution (UCD) Hunting	<p>A type of Extension Hunting in which calls route to hunt group members according to the frequency of use of the member extensions. The first extension rung is the member that has been idle the longest. The last extension rung is the member that has been idle the shortest. See also <i>Circular Hunting</i> on page 139 and <i>Terminal Hunting</i> on page 152 of this glossary.</p> <p>Reference: <i>Extension Hunting</i> on page 61.</p>
Universal Night Answer	<p>See <i>Night Service / Night Ring</i> on page 147 in this glossary.</p>
Unscreened Transfer	<p>See <i>Transfer</i> on page 153 in this glossary.</p>
Unsupervised Conference	<p>See <i>Tandem Trunking / Unsupervised Conference</i> on page 152 in this glossary.</p>
User Programmable Features	<p>The capability keyset users have to customize the way their telephones work, without having to rely on system programmers.</p> <p>Reference: <i>User Programmable Features</i> on page 117.</p>
Verified Account Codes	<p>A type of Forced Account Code where the system compares the Account Code the user dials with a list of codes in the Verified Account Codes Table.</p> <p>Reference: <i>Account Codes</i> on page 27.</p>
Voice Mail	<p>IntraMail, UltraMail, and NVM-Series provide integrated Voice Mail and Automated Attendant services to every user in the telephone system.</p> <p>Reference: <i>Voice Mail</i> on page 118.</p>
Voice Over	<p>Allows an extension user to dial the Voice Over code to get through to a keyset user busy on a handset call.</p> <p>Reference: <i>Voice Over</i> on page 121.</p>
Volume Controls	<p>The capability of a keyset user to press VOL ▲ and VOL ▼ to adjust the volume of the active feature, such as ringing, Paging, the Handsfree speaker, and Background Music.</p> <p>Reference: <i>Volume Controls</i> on page 122.</p>

Walking Class of Service

An extension user can temporarily use their Toll Restriction and Class of Service options at a co-worker's phone.

Reference: *Walking Class of Service* on page 123.

Symbols

“In-Skin” Voice Mail. . .15

Numerics

110-Button (P/N 80555) and 24-Button (P/N 80556)
DSS Consoles. . .7

16DSTU Digital Station PCB (P/Ns 80021 and
80021A). . .11

22-Button Display Telephone (P/N 80573). . .6

22-Button Telephone (P/N 80570). . .6

2-OPX Module (P/N 92177A). . .7

34-Button Display Telephone (P/N 80663). . .6

34-Button Super Display Telephone (P/N 80673). . .5

4ASTU 4 Port Analog Station PCB (P/Ns 80040 and
80040A). . .12

4ATRU 4 Port Analog Trunk PCB (P/Ns 80010 and
80010A). . .12

4-Slot Cabinet (P/N 80000). . .9

8ASTU 8 Port Analog Station PCB (P/Ns 80041 and
80041A). . .11

8ATRU 8 Port Analog Trunk PCB (P/Ns 80011 and
80011A). . .12

8-Conductor Cable (P/N 80891). . .18

8-Pin DIN to Mod-8 Cable (P/N 80893). . .19

8-Slot Cabinet (P/N 80001). . .9

A

Account Codes

- And Emergency Calls. . .28
- Last Number Redial and Save. . .28

Adaptor (P/N 85980). . .20

Adaptor (P/N 85981). . .21

Adaptor Box (P/N 80890). . .18

Alphanumeric Display. . .27, 29

Alternate. . .101

Analog Door Box (P/N92245). . .8

Analog Trunk PCB. . .12

Announced Transfer. . .115

Answer Machine Emulation. . .119

Answering Central Office Calls. . .41

Answering Machine Emulation. . .119

Answering Priority. . .41

Attendant Call Queuing. . .29

Attendant Position. . .30

Automatic Handsfree. . .30–31

Automatic Handsfree Answerback. . .67

Automatic Hold. . .70

B

Background Music. . .32

Background Music Over External Page. . .84

Backup and Restore. . .102

Barge In (Intrusion). . .33

Battery Backup. . .33

BGM/MOH Music Source Input. . .128

Blank PC Card (P/N 85880). . .10

C

Cabinet

- DS1000. . .13

Cable (P/N 80891). . .18

Cable (P/N 80892). . .21

Cable (P/N 80893). . .19

Cabling Requirement. . .130

Call Coverage. . .34

Call Coverage, Door Box. . .60

Call Forwarding. . .35

Call Forwarding Off Premise. . .36

Call Forwarding to Voice Mail. . .118

Call Key. . .29

Call Park. . .85

Call Pickup, Directed. . .55

Call Pickup, Group. . .65

Call Queuing, Attendant. . .29

Call Restriction. . .113

Call Timer. . .37

Call Waiting / Camp-On. . .38

Callback. . .38

Callback, Trunk. . .116

Caller ID. . .39

- Caller ID Integration with Voice Mail. . .40
- Caller ID on the SMDR Report. . .39
- Display Separator. . .40
- Hardware Requirements. . .40
- Second Call Caller ID (Extension Level Call Wait-
ing Caller ID). . .40
- Single and Multiple Message Format
Compatibility. . .39
- Third Party Caller ID Check. . .40

Camp-On. . .38

Capacities. . .125

Central Office Calls, Answering. . .41

Central Office Calls, Placing. . .42

Centrex Compatibility. . .86, 99

Check Key. . .43

Circular Hunting. . .61

Class of Service. . .43

Common Equipment. . .132–133

- DS1000. . .13

DS2000. . .9
Conference. . .48
Conference, Meet-Me. . .76
Contrast Control. . .29
Conversation Record. . .119
Conversation Record with Voice Mail. . .119
CPRU Relay Contacts. . .128
CPU Central Processing Unit (P/Ns 80025 and 80025A). . .10

D

Database Transfer Utility, DS1000. . .102
Date and Time. . .113
DB25 Male to Mod-8 Adaptor (P/N 85981). . .21
DB9 Female to Mod-8 Adaptor (P/N 85980). . .20
Default Feature Configuration. . .25
Default Hardware Configuration
 DS1000. . .24
Delayed Ringing. . .48
Dial Number Preview. . .49
Digital Station PCB. . .11
DIL. . .51
Direct Inward Line. . .51
Direct Inward Lines Overflow. . .51
Direct Station Selection (DSS). . .52
Direct Station Selection (DSS) Console. . .52
 Account Code Key (02.10.09)
Direct Trunk Access. . .55
Directed Call Pickup. . .55
Directory Dialing. . .56
Disabling Trunks and Extensions. . .93
Display Contrast Control. . .29
Display Messaging. . .97
Displays. . .29
Distinctive Flash Rate on Park Recall. . .85
Distinctive Flash Rate on Recall. . .70
Distinctive Flash Rate on Transfer Recall. . .115
DND. . .57
Do Not Disturb. . .57
Door Box. . .59
 Analog. . .8
 Digital. . .8
Door Box Call Coverage. . .60
Door Chime Over External Page. . .84
DS1000 Cabinet (P/N 80200). . .13
DS1000 Common Equipment. . .13
DS1000 Database Transfer Utility. . .102
DS1000 Default Hardware Configuration. . .24
DS1000 Expansion Board (P/N 80221). . .14
DS1000/2000 System Administrator (P/N 80053). . .17
DS2000 Common Equipment. . .9
DS2000 Configuration Guidelines. . .22

DS2000 Feature Overview. . .2
 Calling a Co-Worker. . .2
 Customizing Your Telephone's Operation. . .3
 Handling and Rerouting Your Calls. . .2
 Have a Telephone Meeting. . .3
 Managing The System. . .3
 Other Powerful System Options. . .3
 Outside Calls. . .2
 Placing Calls Quickly. . .3
 When You Work in Groups. . .3
 When Your Call Can't Go Through. . .3
DS2000 Load Factor Calculations. . .22
DSS. . .52
DSS Console. . .52

E

Electrical Specifications. . .127
Enhanced Personal Park Orbit Recall Display. . .85
Enhanced System Park Orbit Recall Display. . .86
Enhanced Transfer Recall Display. . .115
Environmental Requirements. . .126
Environmental Specifications. . .126
Exclusive Hold. . .70
Expansion Board
 DS1000. . .14
Extended Ringing. . .60
Extension Hunting. . .61
Extension Ringdown. . .94
External Paging. . .83, 128

F

FCC Registration Informatio. . .129
FCC Registration Information. . .129
Feature Configuration, Default. . .25
Fixed Loop Keys. . .75
Flash. . .63
Flexible Numbering Plan. . .64
Forced Account Codes. . .27
Forced Intercom Ringing. . .67
Forced Trunk Disconnect. . .64
Function Keys. . .89

G

Glossary. . .135
Group Call Pickup. . .65
Group Listen. . .65
Group Ring. . .66
 Overflow. . .66
Groups, Trunk. . .117

H

- Handfree Transfer. . .115
- Handsfree. . .115
- Handsfree and Handsfree Answerback. . .67
- Handsfree, Automatic. . .31
- Hardware Configuration
 - DS1000. . .24
- Headset Compatibility. . .68
- Hold. . .69
 - Automatic Hold. . .70
 - Distinctive flash rate on recall. . .70
 - Exclusive Hold. . .70
 - Intercom Hold. . .70
 - System Hold. . .70
- Hotline. . .71
- Hunting. . .61
 - Circular. . .61
 - Terminal. . .61
 - UCD. . .62

I

- Idle Prime Line. . .87
- Idle Prime Lines. . .87
- Installation Cable (P/N 80892). . .21
- Interactive Soft Keys. . .71
- Intercom. . .72
- Intercom Hold. . .70
- Intercom Prime Line. . .87
- Intercom Ring Over External Page. . .84
- Intercom Ringing, Forced. . .67
- Internal Paging. . .83
- IntraMail. . .15, 132
- Intrusion. . .33

K

- Key Ring. . .72

L

- Labelmaker. . .8
- Last Number Redial. . .73
- Leaving a Message. . .118
- Leaving a Message in Voice Mail. . .118
- Line Keys. . .74
- Line Preference. . .87, 95
- Line Queuing. . .116
- Loop Keys. . .75

M

- Mechanical Specifications. . .128

- Meet-Me Conference. . .76
- Message Center Mailbox. . .119
- Message Waiting. . .77
- Microphone Mute. . .78
- Miscellaneous and Optional Equipment. . .17, 133
- Mod-8 Adaptor (P/N 85980). . .20
- Mod-8 Adaptor (P/N 85981). . .21
- Mod-8 Cable (P/N 80893). . .19
- Modem Cut-Through. . .78
- Multiple Directory Numbers. . .79
- Music Source Input. . .128

N

- Number Preview. . .49
- Number Redial. . .73
- Numbering Plan, Flexible. . .64

O

- Off Premise Call Forwarding. . .36
- Off-Hook Signaling for Intercom Calls. . .82
- Operator Call Key. . .29
- Operators. . .30
- Optional (Unforced) Account Codes. . .27
- Optional Equipment. . .17, 133
- Other Station Equipment. . .7, 131
- Overflow
 - Voice Mail. . .119
- Overflow for Direct Inward Lines. . .51
- Overflow for Group Ring Calls. . .66
- Overflow for Key Ring Calls. . .73
- Overflow, Voice Mail. . .119

P

- Page Relay Support. . .84
- PAME. . .119
- Park. . .85
 - Distinctive flash rate on recall. . .85
 - Enhanced Personal Park Orbit Recall
 - Display. . .85
 - Enhanced System Park Orbit recall display. . .86
- Parts List. . .131
- Password Protection. . .103
- PBX/Centrex Compatibility. . .86
- PC Card (P/N 85880). . .10
- PC Card with Software (P/N 80050-V***.**). . .10
- PC Program. . .17
- PCBs. . .132
 - DS2000. . .10
- Personal Answering Machine Emulation. . .119
- Personal Answering Machine Emulation with Voice

Mail. . .119
 Personal Speed Dial. . .99
 Placing Central Office Calls. . .42
 Power Requirements. . .126
 Power Supply (P/Ns 80005 and 80005A). . .10
 Prime Line Preference. . .87
 Priority vs. Ringing Line Preference. . .87
 Priority
 Prime Line vs. Ringing Line Preference. . .87, 96
 Privacy. . .88
 Privacy Release Groups. . .88
 Private Line. . .89
 Programmable Function Keys. . .89
 Programming Backup and Restore. . .102
 Programming Password Protection. . .103
 Pulse to Tone Conversion. . .92

Q

Queuing, Trunk. . .116

R

Registration Information. . .129
 REJ Recording Jack Module (P/N 80175). . .8
 Removing Trunks and Extensions From Service. . .93
 Replacement Parts. . .134
 Reverse Voice Over. . .93
 Ring Groups. . .94
 Ringdown Extension. . .94
 Ringing
 Intercom. . .67
 Ringing Line Preference. . .95
 Priority vs. Prime Line. . .96
 Ringing, Delayed. . .48
 Ringing, Extended. . .60
 RJ61X 8-Conductor Cable (P/N 80891). . .18
 Routing, Trunk Group. . .115

S

Save Number Dialed. . .96
 Screened Transfer. . .115
 Section. . .1, 5, 27, 125
 Selectable Display Messaging. . .97
 Silent Monitor. . .79
 Single Line Telephones. . .98
 SMDR. . .101
 Soft Key Shows New Messages. . .120
 Soft Keys. . .71
 Specifications. . .125
 Speed Dial. . .99
 Split (Alternate). . .101

ST4 Analog Telephone (P/N 85403W). . .7
 Station Message Detail Recording. . .101
 Station Timers. . .105
 Storing Trunk Routing in a Speed Dial Bin. . .99
 Switched Loop Keys. . .75
 System (Regular) Hold. . .70
 System Capacities. . .125
 System Hold. . .70
 System Load Factor Calculations. . .24
 System Programming Backup and Restore. . .102
 System Programming Password Protection. . .103
 System Speed Dial. . .99
 System Timers. . .103
 System Timers, Stations. . .105
 System Timers, Trunks. . .108

T

T1 Trunk PCB. . .13
 Tandem Trunking / Unsupervised Conference. . .112
 Telephones. . .131
 Terminal Hunting. . .61
 The Telephones. . .5
 Time and Date. . .113
 Timers. . .103, 105, 108
 Toll Restriction. . .113
 Transfer. . .114
 Distinctive Flash Rate on Transfer Recall. . .115
 Enhanced Recall Display. . .115
 Handfree Transfer. . .115
 Transfer Utility, DS1000. . .102
 Transferring to Voice Mail. . .119
 Trunk (Line) Queuing / Trunk Callback. . .116
 Trunk Callback. . .116
 Trunk Calls
 Off Hook Signaling. . .81
 Trunk Disconnect, Forced. . .64
 Trunk Group Routing. . .115
 Trunk Groups. . .117
 Trunk Queuing Priority. . .116
 Trunk Ringing Over Page. . .84
 Trunk Timers. . .108

U

UCD Hunting. . .62
 UltraMail. . .133
 UltraMail and UltraMail 2000. . .16
 Unannounced Transfer. . .115
 Uniform Call Distribution (UCD) Hunting. . .62
 Unique Speed Dial Entries. . .99
 Unscreened Transfer. . .115
 Unsupervised Conference. . .112

Update Utility. . .17
User Programmable Features. . .117
User-Programmable Features. . .125

V

Verified Account Codes. . .28
Voice Mail. . .118
 Conversation Record. . .119
 Improved Handling of Extensions in Do Not
 Disturb. . .120
 In-Skin. . .15
 Leaving a Message. . .118
 Message Center Mailbox. . .119
 Overflow. . .119
 Personal Answering Machine Emulation. . .119
 Transferring to Voice Mail. . .119
Voice Mail Overflow. . .119
Voice Over. . .121
Voice Over, Reverse. . .93
Volume Controls. . .122

W

Wall Mount Kit (P/N 80579). . .8

Y

Year 2000 Compliance. . .123

NEC

NEC America, Inc., Corporate Networks Group

4 Forest Parkway, Shelton, CT 06484

Tel: 800-365-1928 Fax: 203-926-5458

cng.nec.com

Other Important Telephone Numbers

Sales:203-926-5450
Customer Service:203-926-5444
Customer Service FAX:203-926-5454
Technical Service:203-925-8801
Discontinued Product Service:900-990-2541
Technical Training:203-926-5430
Emergency Technical Service (After Hours)203-929-7920

(Excludes discontinued products)

NEC

NEC America, Inc., Corporate Networks Group
4 Forest Parkway, Shelton, CT 06484
TEL: 203-926-5400 FAX: 203-929-0535
cng.nec.com



August 12, 2003
Printed in U.S.A.