
Meridian 1 Options 51C, 61C, 81C

System Programming Guide

PO Number: P0912433

Document Release: Standard 6.00

Date: October 2000

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Printed in Canada

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Revision history

- October 2000** Standard release of documentation for software Release 25.3x
- June 1999** Standard release of documentation for software Release 24.2x
- December 1997** Standard release of documentation for software Release 23.0x. Updates have been made to include information for the Option 81C, IODU/C, Network configuration, and Setting up service loops.
- October 1996** Standard release of documentation for software Release 22.0x
- January 1996** Standard release of documentation for software Release 21.1x
- September 1995** Standard release of documentation for software Release 20.1x

Revision history

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About this guide

Who should use this guide

This guide is intended for the novice Meridian 1 administrator or programmer. Use this guide to perform initial programming on a newly installed Options 51C, 61C, or 81C Meridian 1 system.

How to use this guide

This guide provides information, tips, and programming (step-action) examples to help you program the newly installed Meridian 1 system.

Basic feature programming examples

The programming examples are of basic features needed to operate a typical Meridian 1 system.

Modify the basic feature examples probably to match the programming required for your system.

The examples are divided into a number of sections, each section addressing one particular aspect of a Meridian 1 system operation. Each section is called a task. A task number appears in the top corner of the page.

Advanced features

Advanced features require more explanation and instruction than this guide can provide. If your system requires advanced features you are referred to the Nortel Networks Technical Publication (NTP) that covers the advanced feature.

About this guide

How the sections of this guide work

About the Meridian 1

About the Meridian 1 introduces the basics of the Meridian 1.

Task sections

The main part of this guide is made up of sections which explain how to perform tasks. Each task section has an introduction, and a step-action procedure. Some tasks have diagrams and flow charts.

Introduction (narrative)

The introduction provides you with what you should know about an aspect of Meridian 1 functionality before you program it.

Step-action tables

Use the step-action example part of the task section to guide you through programming your Meridian 1 system.

Terms and abbreviations section

Terms and abbreviations provides a definition or explanation of a number of the terms and abbreviations used in this guide.

Index

The index at the back of this guide provides an easy way of finding information about specific subjects, features, prompts, responses, and system messages.

About this guide

Step-action tables

Table 1
A step-action table layout

STEP	ACTION		
1	Set up maintenance terminal.		
	>LD 17		
	REQ	CHG	See <i>X11 Administration (553-3001-311) LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
— continued —			
2	You have completed the programming required to configure terminals.		
			

Must use NTP

You must use the *X11 Administration (553-3001-311)* NTP with the System Programming Guide (SPG) to program your system.

Step column

The STEP column, lists each step and has a statement defining that step.

Action column

The ACTION column, divided into three untitled columns, matches the layout of the columns in the *X11 Administration (553-3001-311)* NTP.

The left hand column entry (REQ) relates to the Prompt column in the *X11 Administration (553-3001-311)*. Prompts are presented by the system on the terminal that you use to program the system.

The center column entry (CHG) relates to the Response column in the *X11 Administration (553-3001-311)*. You enter a Response to the system on the terminal to activate a feature for your system.

About this guide

The right hand column entry (See *X11 Administration* (553-3001-311) *LD 17 Alphabetical list of prompts*, for details of each prompt and response.) relates to the Comment column in the *X11 Administration* (553-3001-311). The Comment column explains the Response choices, and provides further details, tips, and helpful suggestions about the response choices. For advanced features the Comment column refers you to the advanced feature NTP for further details, and instructions.

- continued -

The - continued - step indicates that the Step-Action table continues on the next page.

END icon

The END icon indicates the end of the Step-Action table.

Administration tips



Administration tips appear throughout this guide to help you program your system.

To program your Meridian 1 system, you must understand and follow the information contained in the *X11 Administration* (553-3001-311) chapters *General* and *Communicating with the Meridian 1*.

While you are programming, your system can output messages on the terminal. You will need the *X11 System Messages Guide* (553-3001-411) to understand these messages. You can use the System Look up Messages function as described in *X11 Administration* (553-3001-311).

Availability of product

Please check with your supplier if you have questions about which Nortel Networks products (such as telephones, software features, or hardware) are available in your market area for a given release.

About this guide

Language standards and translations

This guide is written to North American English standards. Please see the *Terms and abbreviations* for equivalent terminology. We welcome suggestions for additions to these sections.

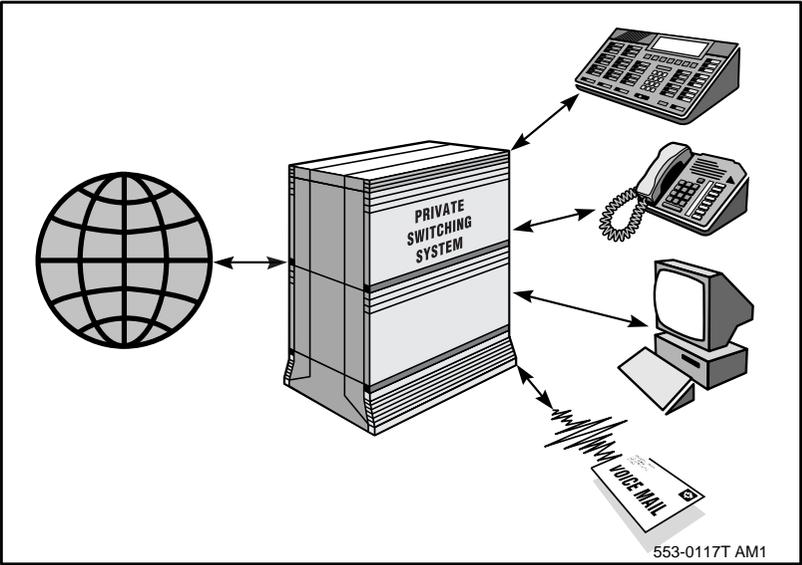
For versions of this guide in other than North American English, please check with your supplier or with Nortel Networks.

About this guide

About the Meridian 1

About the Meridian 1

The Meridian 1 is a digital telephone switch intended for use by customers that need advanced calling and networking features. The Meridian 1 provides flexible voice and data services, high reliability, compatibility with a number of telecommunications environments, and the ability to upgrade component by component as requirements change.



About the Meridian 1

Meridian 1 description

The Meridian 1 product line consists of three system types as follows:

- ◆ Meridian 1 Option 51C
- ◆ Meridian 1 Option 61C
- ◆ Meridian 1 Option 81C

A system Option is made up of Universal Equipment Modules (UEMs) stacked one on top of another to form a column. Each column contains a pedestal, a top cap, and up to four modules. A system can have one column or multiple columns.

Each UEM is a self-contained unit with the following elements:

- ◆ a cardcage and backplane
- ◆ power and ground cabling
- ◆ power units
- ◆ I/O panels
- ◆ circuit cards

When the cardcage is installed, the function of the UEM is established and the module is no longer “universal.” Meridian 1 modules are as follows:

- ◆ NT4N41 Core/Network Module for Meridian 1 Options 51C, 61C, and 81C
- ◆ NT8D35 Network Module
required for Meridian 1 Options 51C, 61C, and 81C
- ◆ NT8D37 Intelligent Peripheral Equipment (IPE) Module
required for Meridian 1 Options 51C, 61C, and 81C.

Note: In addition, modules that house equipment for specific applications, such as Meridian Mail and Meridian Link, can be included in a column.

About the Meridian 1

The pedestal generally houses a blower unit, air filter, Power Distribution Unit (PDU), and System Monitor.

The top cap provides airflow exits, input/output (I/O) cable entry and exit, and overhead cable-rack mounting. Thermal sensor assemblies for the column are attached to a perforated panel on top of the highest module in the column, under the top cap.

To comply with FCC and CSA standards for containing electromagnetic interference and radio frequency interference (EMI/RFI), spacer kits connect the columns in a multiple-column system

System types

Meridian 1 Option 51C

Meridian 1 Option 51C is a single-CPU system with one Core/Network Module, containing a half-network group. One Core/Network Module and one IPE Module are required. Additional IPE Modules and application modules can be used.

Meridian 1 Option 61C

Meridian 1 Option 61C is a dual-CPU system with two Core/Network Modules, fully redundant memory, and a full-network group. Two Core/Network Modules and one IPE Module are required.

Meridian 1 Option 81C

Meridian 1 Option 81C is a dual-CPU system with two Core/Network Modules, fully redundant memory, and up to eight full-network groups. Meridian 1 Option 81C is equipped with two redundant input/output processors and disk drive unit combination packs.

The following modules are required:

- ◆ two Core/Network Modules (provide one network group)
- ◆ a minimum of two Network Modules (provides one network group)
- ◆ a minimum of one IPE Module

About the Meridian 1

Additional Network and IPE Modules are required for additional network groups, and application modules can also be used.

Software

Meridian 1 software programs consist of instruction sequences that control call processing, peripheral equipment, administration, and maintenance functions. Several generic software programs with optional feature packages are available.

Office data

Office data describes the characteristics of the system in terms of configuration and call-dependent information, such as features and services. Office data is arranged in blocks defining peripheral equipment, system configuration, and transient data.

Resident programs

Resident programs stay in memory during system operation. Some resident programs are permanently programmed into the system read only memory (ROM). Other resident programs are automatically loaded into the system memory when the system is turned on.

Note 1: The Meridian 1 Option 51C runs on one CP PII: Call Processor Pentium II (A0810496) card. The Meridian 1 Options 61C, and 81C run on either of two CP PII: Call Processor Pentium II cards.

All software programs, including the non-resident programs listed in the following section are resident in, and accessible from, the memory on the cards listed above.

Non-resident programs

Non-resident programs (overlays) are loaded into an overlay area of the system memory to perform specific tasks. Overlays refer to non-resident administration and maintenance programs. Overlays are identified by the letters LD and numbers, for example LD 17. Administration overlays allow data entry to customize Meridian 1 system features, telephones, trunk groups, hardware, and data devices. Maintenance overlays diagnose Meridian 1 system operation and faults.

About the Meridian 1

Only one program can be loaded at a time. Non-resident programs can load automatically, under program control, or manually through software commands.

You can manually load non-resident programs into the system memory using the system terminal or maintenance telephone.

The non-resident programs provide the system interface for maintenance, service change, and traffic measurement. Each program is independent and has its own specific set of commands and formats. These programs do not interfere with system traffic or normal call processing.

There are five types of non-resident program:

- ◆ service change and print routines
- ◆ maintenance diagnostics
- ◆ traffic
- ◆ equipment data dump
- ◆ software audit

Service change and print routines

Use service administration programs to create or modify all aspects of the system, from individual feature key assignments to complete system configurations.

There are also programs and print routines for retrieving data from the system to check the status of office data assignments.

Maintenance diagnostics

Diagnostic programs are the primary tools for clearing system faults. Use diagnostic programs to automatically or manually test both common equipment and peripheral equipment. The programs can be loaded into the overlay area at the request of maintenance personnel, or as part of a daily maintenance routine automatically initiated by the system at a specified time.

About the Meridian 1

Traffic

All systems are equipped with traffic data accumulation programs. There is a traffic print program that examines the schedules, transfers data from accumulating to holding registers in accordance with schedules, and prints the traffic data. In addition, there is a traffic program used to query and modify schedules, options, and thresholds.

Equipment data dump

After making service changes, you transfer the changes to disk in order to save them. When you run the equipment data dump program, all the office data in the read/write memory is written to the system disk. You can run the program automatically during the midnight routine or on a conditional basis (for example, after making a service change). You can run the program manually through the system terminal.

You can also use the data dump program to install a new generic software version or issue and capture protected data store information (such as speed call lists) that a user might change.

Software audit

This program monitors system operation and gives an indication of the general state of the system. The program is concerned mainly with the system software. When a software problem is encountered, the program attempts to clear the problem automatically.

Firmware

Firmware provides fundamental programs consisting of hard-wired logic instructions stored in programmable read-only memory (PROM). Firmware programs manipulate data in the central processor and control input/output operations, error diagnostics, and recovery routines.

Advanced Meridian 1 system architecture

Meridian 1 Options 51C, 61C, and 81C Core processor cards support extensive networking, and provide intensive use of software features and applications, including call centers of up to 1000 agents.

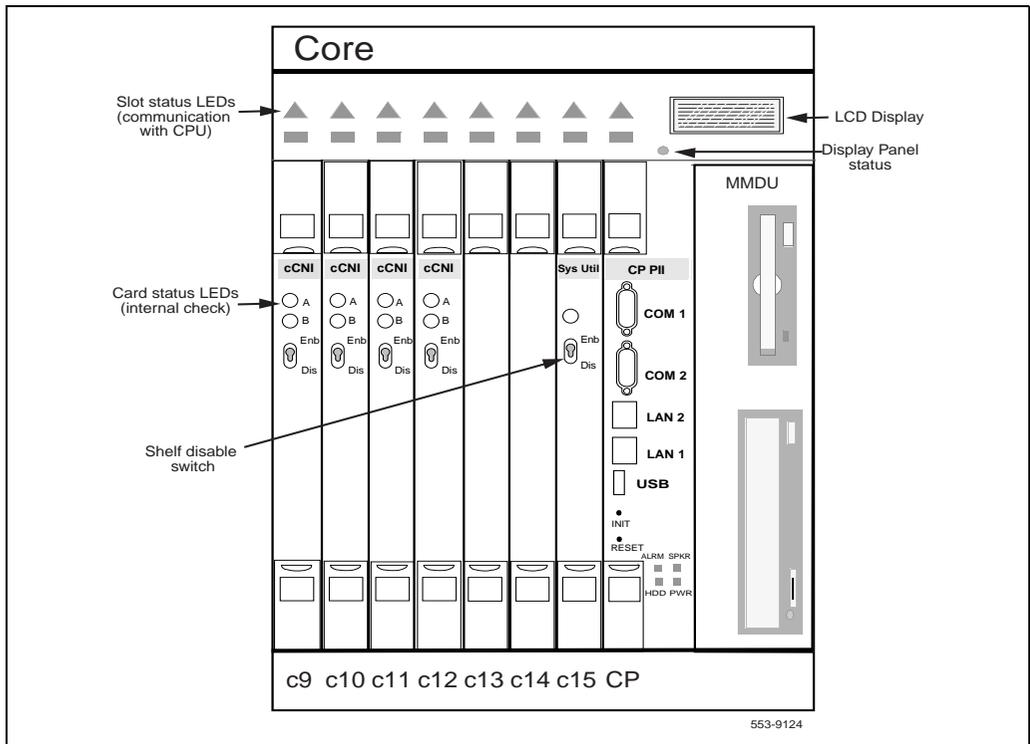
About the Meridian 1

All core overlays reside in dynamic random-access memory (DRAM) after they are loaded from the hard disk during an initial software load (software is shipped on redundant hard disks). The Resident Overlays featured in core based systems ensure sub-second speeds in accessing the overlays.

In the Meridian 1 Option 51C, the core control complex refers to one Core/Network Module. In the Meridian 1 Option 61C and Meridian 1 Option 81C, the core control complex refers to the two Core/Network Modules, Core/Network 0 and Core/Network 1. The Core and Core/Network Modules are fully redundant, with Core 1 duplicating the contents of Core 0.

In each Core or Core/Network Module, the core side contains the equipment shown in Figure 1.

Figure 1
Core



About the Meridian 1

Core circuit cards

cCNI: cPCI Core to Network Interface (NT4N65AA)

The cCNI cards connect the Core module cards to the 3PE cards in the Network modules.

Each Core module contains between one and four cCNI cards. Because each cCNI card can connect to two Network groups, each Core is connected to a minimum of two groups and a maximum of eight groups. The number of cCNI cards in a system depends on the number of Network groups in that system.

cCNI Transition card: cPCI Core to Network Interface Transition (NT4N66AA)

The cCNI Transition cards provide the cable connections to the 3PE Termination Panel in the back of the module.

Sys Util: System Utility (NT4N67AA)

The System Utility card provides additional functions for the CP II card. This card also includes a switch on the faceplate to enable or disable the Core cards.

System Utility Transition card (NT4N68AA)

The System Utility Transition card provides connections for the security device, the system monitor, and the status panel. This Transition card is mounted on the back of the backplane (back side) behind the System Utility card.

CP PII: Call Processor Pentium II (A0810496)

The CP PII card contains a Pentium II processor to process calls, manage memory, and monitor the system. This card also provides serial and Ethernet interfaces used to manage the system.

MMDU: Multi-Media Disk Unit (NT4N43AA)

This MMDU card contains the drives to store system software and databases. This card includes:

- ◆ a **hard disk** to store the system database and software
- ◆ a **floppy disk** to install software or back up databases
- ◆ a **CD-ROM** to install system software

About the Meridian 1

Customization

The information that describes specific system configuration and associated peripheral equipment is called office data. This data resides in the system memory and on disk.

Office data describes the characteristics of the system in terms of configuration and call-dependent information, such as features and services. Office data is arranged in blocks defining peripheral equipment, system configuration, and transient data.

Planning for your Meridian 1

Prepare for the configuration of your Meridian 1 before it arrives by planning the new telephone system. Your company needs to make decisions about:

- ◆ telephone extensions, including telephone numbers, types of telephones, and telephone options
- ◆ attendant consoles
- ◆ features
- ◆ value-added servers for applications such as Meridian Mail, Interactive Voice Response, or Automatic Call Distribution
- ◆ trunks linking the Meridian 1 to other telephone systems, including the public telephone network

Documents are available to help your company plan their telephone system. For information about hardware planning, refer to *Installation Planning* (553-3001-120). For more information about feature planning and provisioning, refer to *System Engineering* (553-3001-151).

When your company plans a new telephone system, use this guide to create implementation sheets or worksheets listing the responses to specific prompts in various Meridian 1 overlay programs.

About the Meridian 1

Configuring your new system

This guide provides you with programming examples to help you configure your new Meridian 1 with standard features and options. To use the procedures in this document, prior experience with Meridian 1 administration is necessary.

The tasks and step-by-step procedures in this guide follow the order shown in the flowcharts.

Data entry for new systems

Programming the Meridian 1 requires loading different overlay programs and using each one to enter a specific type of information. See *X11 Administration* (553-3001-311) General chapter, for information about overlays.

Flow charts

Use the flowchart “Data entry sequence for new systems” on page 24 to program a new system. The Data entry sequence flowchart does not show all possible administration overlays; only those applicable to this guide.

In some cases you have to move back and forth between overlays to complete the programming. For example, you must program the Customer Data Block (CDB) before you program the Attendant Console. However, there are console related prompts in the CDB that cannot be programmed until you have programmed an Attendant Console. Skip the console-related prompts, complete the CDB programming, then return to the CDB after the console is programmed. Finish the CDB console-related prompts. A similar situation exists with the Speed Call lists and the Telephones. You need to activate the Speed Call list(s) before you can assign the list(s) to a telephone.

The flowcharts on page 24, page 25, and page 26 show overlay titles and gate opener mnemonics for each feature group. A gate opener allows you to program a related group of features without having to

About the Meridian 1

step through all prompts of an overlay. NTP references are shown in the flowchart shaded boxes for those features and options beyond the scope of this guide.

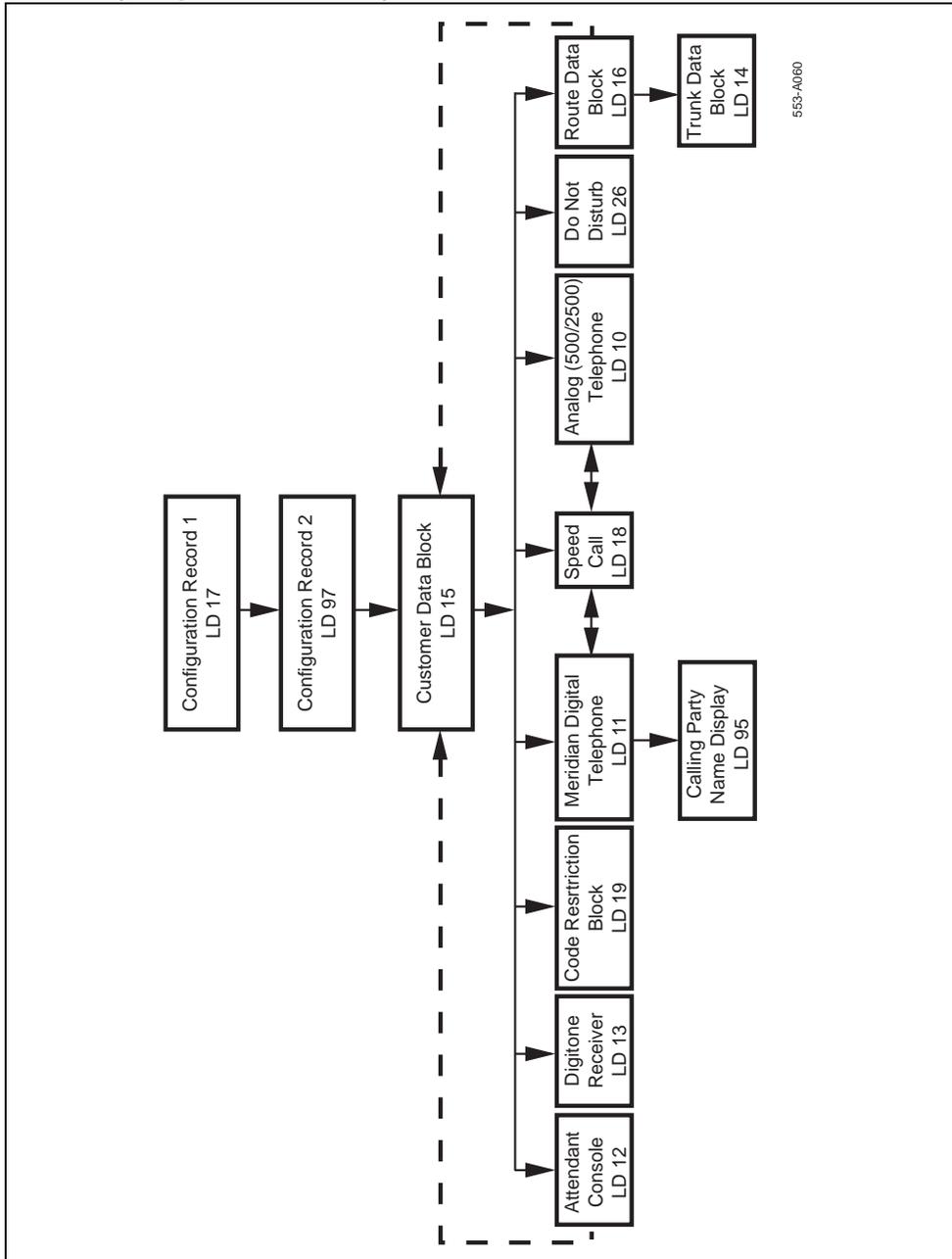
Worksheets

Several worksheets are available to help you plan for and perform configuration and feature implementation on the Meridian 1.

Worksheets are forms that serve as templates for your installation planning. Worksheets are available in *System Engineering* (553-3001-151).

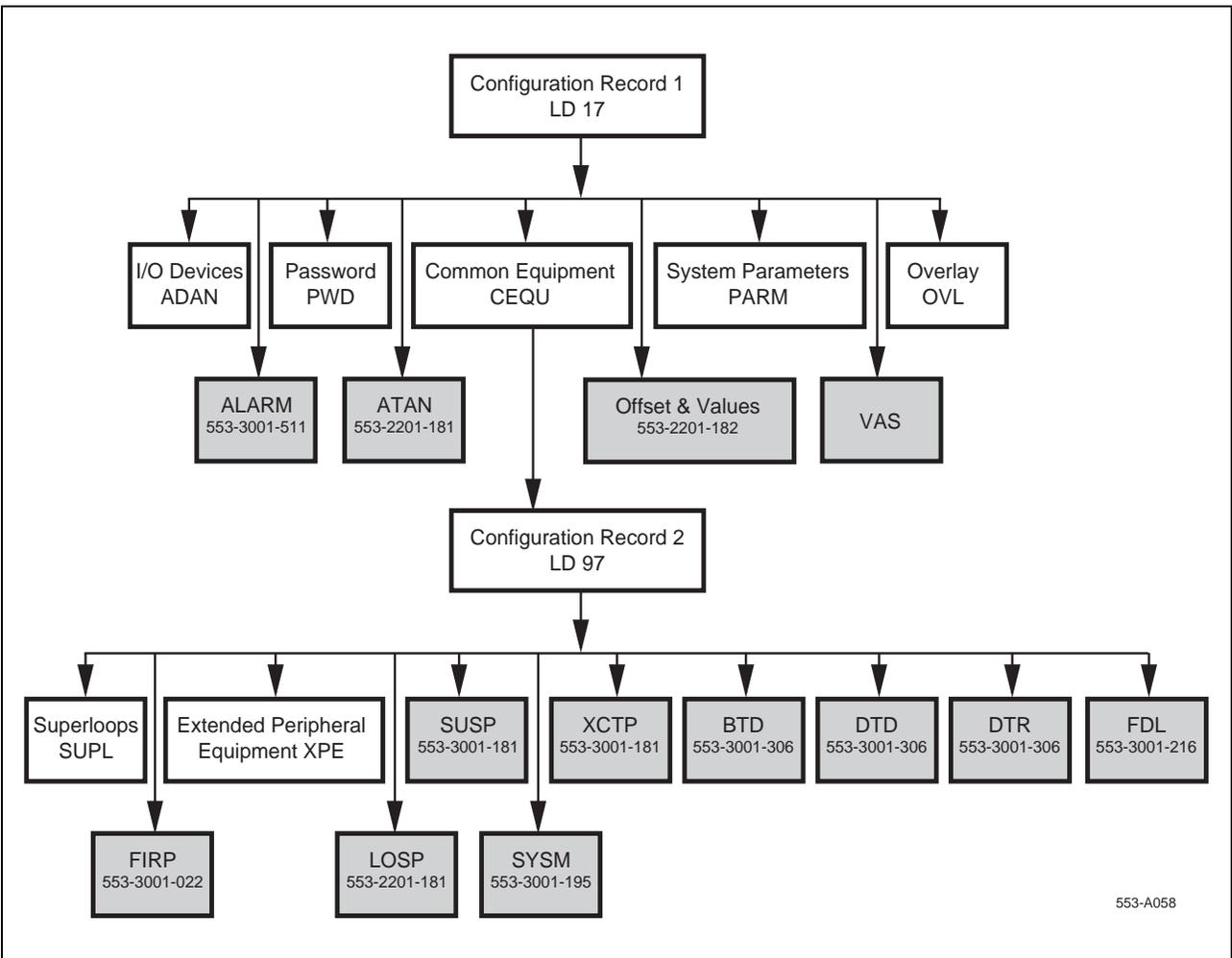
About the Meridian 1

Figure 2
Data entry sequence for new systems



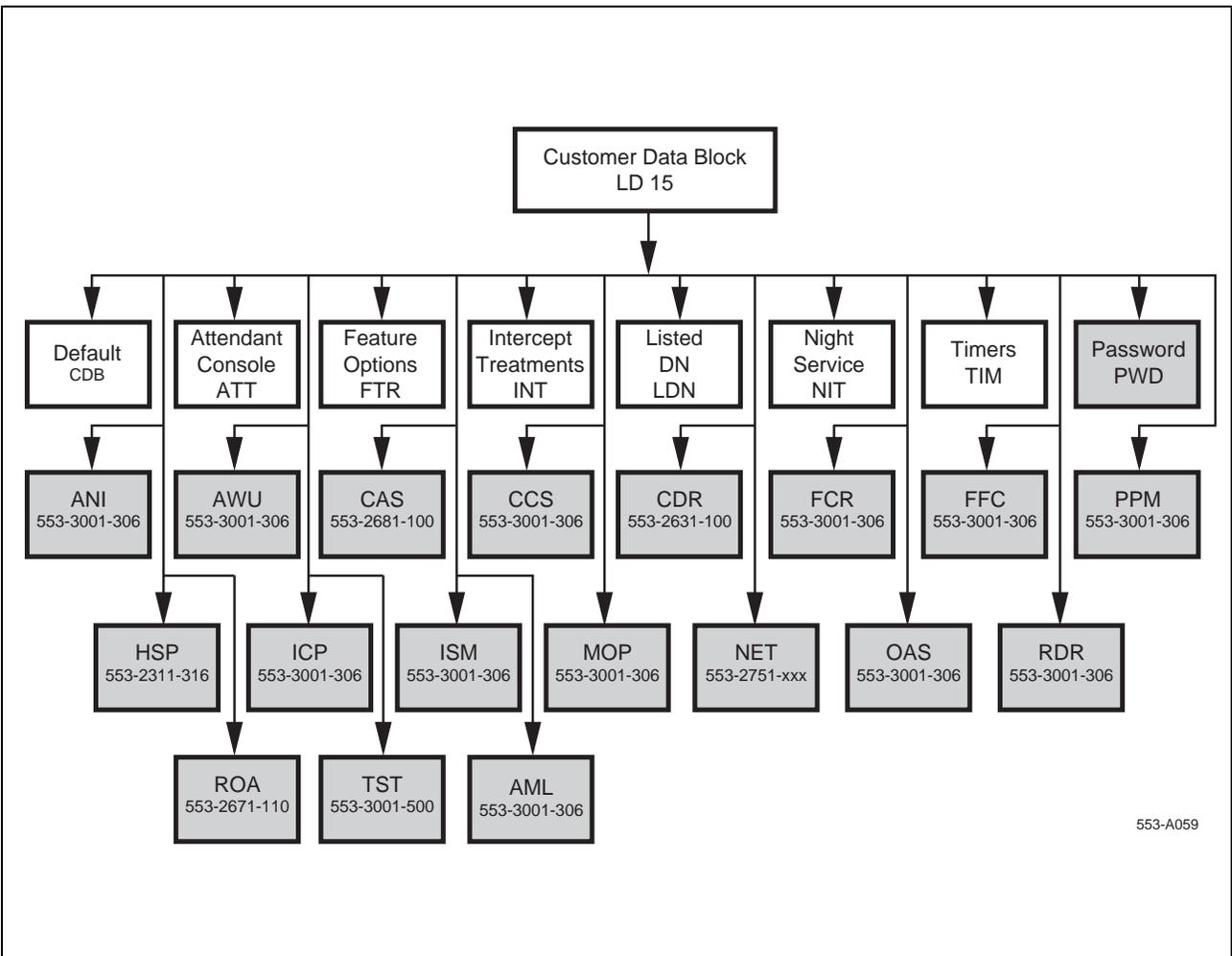
About the Meridian 1

Figure 3
Configuration record



About the Meridian 1

Figure 4
Customer data block



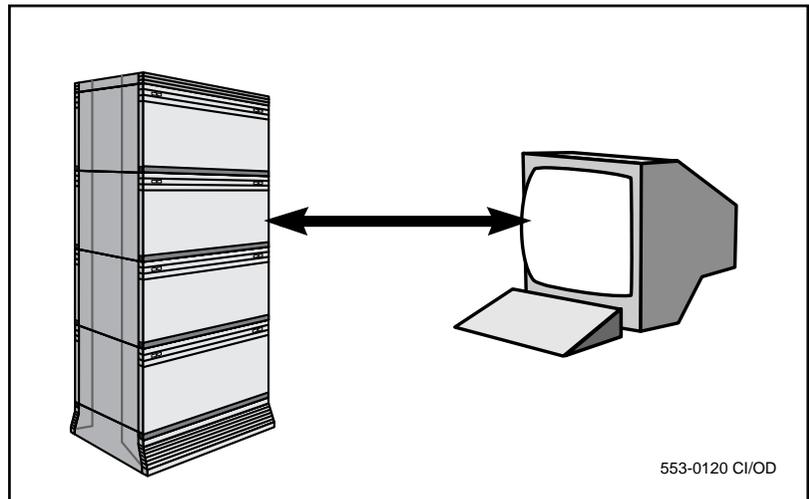
Configuring dumb terminals/TTYs

Purpose

System administrators communicate with the Meridian 1 through a text-based interface that lets them issue commands, enter data, or browse the Meridian 1 system database. You can use the text-based interface on any basic data terminal, including video data terminals, printer terminals, or computers running terminal emulation software.

A data terminal connected to the Meridian 1 can be:

- ◆ a system monitor
- ◆ an administration and maintenance terminal
- ◆ a background terminal for use in a hotel/motel environment



Configuring dumb terminals/TTYs

A terminal is either connected directly to the Meridian 1, allowing programmers and administrators to work onsite, or it is connected by way of modems, allowing remote access.

The Meridian 1 has one pre-configured terminal, called a Single Terminal Access (STA). Use the STA terminal to communicate with the Meridian 1. Use the procedures and information provided here to configure any additional terminals.

Terminal types

The Meridian 1 uses data terminals in a number of ways, such as:

- ◆ a system monitor
- ◆ a background terminal
- ◆ a maintenance terminal
- ◆ a service change terminal
- ◆ a traffic terminal

If you do not know the functions each terminal you configure serve, refer to your installation workorder. Brief descriptions are provided below.

System monitor

A system monitor operates as an output device only, displaying power, cooling, and general system error and status reporting.

To configure a terminal as a system monitor, enter YES in response to the XMS prompt in LD 17.

Background terminal

A background terminal provides access to users in Hospitality environments, that allows them to monitor and control the Meridian 1.

To configure a terminal as a background terminal, enter BGD in response to the USER prompt in LD 17.

Configuring dumb terminals/TTYs

Maintenance terminal

A maintenance terminal outputs system and maintenance messages, including AUD, BUG and ERR messages.

To configure a terminal as a maintenance terminal, enter MTC in response to the USER prompt in LD 17.

Service change terminal

A service change terminal provides access to the Meridian 1 system, customer and set database, and allows programmers and administrators to review or change the database or issue commands.

To configure a terminal as a service change terminal, enter SCH in response to the USER prompt in LD 17.

Traffic terminal

A service traffic terminal reports on traffic levels and events to programmers and administrators.

To configure a terminal as a traffic terminal, enter TRF in response to the USER prompt in LD 17.

Serial data interface ports

The Meridian 1 communicates with terminals through Serial Data Interface (SDI) ports. These SDI ports exist on several of the Meridian 1 circuit cards. These circuit cards include:

- ◆ NT8D41 Dual Port Serial Data Interface Paddle Board
- ◆ QPC139 Serial Data Interface
- ◆ QPC841 4-Port Serial Data Interface Card
- ◆ NT6D80 Multi-Purpose Serial Data Link Card
- ◆ QPC513 Enhanced Serial Data Interface Pack
- ◆ NT5K35 D-channel Interface Card
- ◆ NT6D11 D-channel Interface Card

Configuring dumb terminals/TTYs

These cards reside in Network slots on the Meridian 1 switch. They require RS-232 cables with the exception of the Multi-purpose Serial Data Link (MSDL) card which requires a special cable (NTND27). The above circuit cards contain option switches, jumpers, or both and must be set for proper system operation.

Refer to *Circuit Card: Installation and Testing* (553-3001-211), Option settings chapter for circuit card option switches and jumper settings. Contact your maintenance personnel to set switches, and jumpers and to install cards.

What to have ready

The following checklist summarizes what is required before setting up the terminals.

Table 2
Checklist

Basic	Optiona 	Required material
✓		Your work order/instructions on how your Meridian 1 system is optioned for terminals.
✓		<i>X11 Administration</i> (553-3001-311) <i>LD 17, Gate Opener: ADAN (Action Device and Number)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example maintenance terminal configured on an MSDL card

STEP	ACTION
1	Log in For information on proper login procedures, see <i>Basic Programming Instructions in Basic Telecom Management</i> .
— continued —	

Configuring dumb terminals/TTYs

STEP	ACTION	
2	Set up maintenance terminal	
	>LD 17	
REQ	CHG	See <i>X11 Administration (553-3001-311) LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
TYPE	ADAN	The ADAN response is a gate opener.
ADAN	NEW TTY 7	ADAN = Action Device And Number. You must give three responses, as follows: 1. An Action you want to perform. The SPG example installs a NEW device. 2. A Device type. The SPG example installs a TTY device. 3. A Number to identify the device. The SPG example installs the 7th device.
CTYP	MSDL	The SPG example is an MSDL card.
GRP	4	For the SPG example the MSDL card is in group 4. The system repeats the device number and chooses the first available port on the MSDL for us. (Nice touch, don't you think?)
DES	Tech Term	A designator (name) provides identification or information on a print out. The SPG example, identifies device 7 as the technician's terminal.
BPS	9600	Sets the systems output BPS to match TTY 7. The SPG example device runs at 9600 bits per second.
BITL	cr	For the SPG example, a carriage return sets the systems output bit length to a default of 5, matching the TTY 7 bit length.
PARY	cr	For the SPG example, a carriage return sets the systems output parity to NONE, matching the TTY 7 parity.
PARM	cr	For the SPG example, a carriage return sets the system as an RS232 DCE, matching our TTY 7 as a RS232 DET.
FUNC	LME	The SPG example uses the Line Mode Editing which allows the use of the Backspace key on TTY 7.
— continued —		

Configuring dumb terminals/TTYs

STEP	ACTION		
	USER	MTC	For the SPG example, set the system to output maintenance messages on TTY 7.
	XSM	cr	For the SPG example, a carriage return indicates to the system that this port on the MSDL card is not used for a system monitor.
	TTYLOG	0	For the SPG example, there is no Log file.
	BANR	cr	For the SPG example, a carriage return displays the Security Banner at each LOGI on TTY 7.
	ADAN DATA SAVED		For the SPG example, the data for TTY 7 just programmed is now in volatile memory. (If step 6 is not done and the system reloads, TTY 7 will no longer exist.)
	ADAN	****	Terminate the overlay by entering ****.
3	Enable the MSDL card		
	>LD 48		
	. ENL MSDL 7 FDL		For the SPG example, enter ENL MSDL 7 to enable the MSDL card.
	Group	cr	
	. STAT MSDL 7		For the SPG example, enter STAT MSDL 7 to verify that the MSDL card is enabled.
	. ****		For the SPG example, terminate the overlay by entering ****.
4	Enable the terminal port		
	>LD 37		
	. ENL TTY 7		For the SPG example, enter ENL TTY 7 to enable the terminal port.
	. ****		For the SPG example, terminate the overlay by entering ****.
5	Check your programming		
	>LD 22		
	REQ	PRT	Enter PRT.
	TYPE	ADAN TTY 7	For the SPG example, enter ADAN TTY 7 to verify the terminal port settings. These setting must match those of the terminal connected to the switch.
— continued —			

Configuring dumb terminals/TTYs

STEP	ACTION
	<p>REQ ****</p> <p>Terminate the overlay by entering ****.</p> <p>If possible, try all terminals to ensure that they are operating properly. If you cannot check all terminals at this time, review your programming to ensure that no errors were made.</p>
6	<p>Perform a data dump to permanently store the programming you have just completed</p> <p>Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.</p> <p>> LD 43 . EDD <cr></p>
7	<p>Verify that the data dump was successful</p> <p>System response:</p> <p>Database backup Complete!</p> <p>For any other system response, contact your system supplier.</p>
8	<p>Terminate this overlay program</p> <p>.</p> <p>****</p>
9	<p>Terminate this programming session</p> <p>Log off.</p> <p>>LOGO</p>
10	<p>You have completed the programming required to configure terminals</p>
	

Configuring dumb terminals/TTYs

Configuring history and log files

Purpose

The Meridian 1 maintains a running log of system events and traffic. This information is stored in log and history files, or output to printers.

History file feature

If you have a printer connected to the system, each system message is printed as it is received. If you do not have a printer connected, you can use the History File to store a limited number of system messages in protected memory. The contents of the file can then be printed on demand. The messages stored are specified on a system basis and can be one or more of the following types:

- ◆ customer service changes (CSC)
- ◆ maintenance messages (MTC)
- ◆ service changes (SCH)
- ◆ software errors (BUG)
- ◆ initialization and sysload messages (INI and SYS)
- ◆ traffic messages (TRF)

The contents of the History File are erased during a sysload or if you change the History File's length. However, because the History File is located in protected data store, the contents survive an initialization.

You can change the length of the History File with the prompt HIST in the Configuration Record (LD 17). The maximum length of the file depends on the amount of protected data store available, which in turn depends on the number of system features that require protected data store.

Configuring history and log files

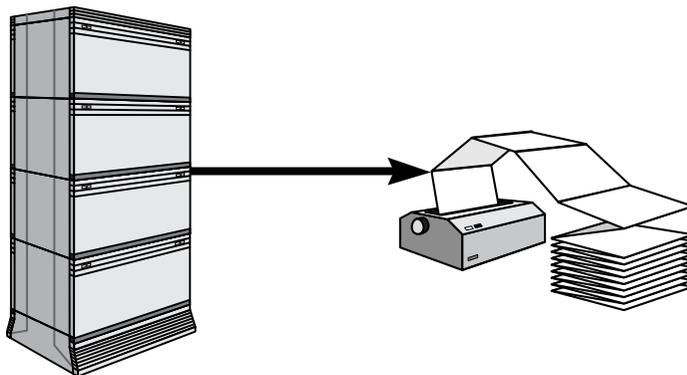
If the History File is full, the first messages stored are replaced by incoming messages. If this happens, the system gives a “file overflow” message at the start of a printout so you know some information has been replaced by newer messages.

TTY log files

With the Multi-User Login feature enabled, the log files associated with system TTY terminals record messages relating to such activities as service changes, traffic (if not redirected to a Traffic Log File), CDR activity, software bugs. Messages recorded in a TTY Log File are not written to the History File.

Traffic log files

During normal operation there can be large amounts of information generated. The Meridian 1 is capable of outputting information about its traffic. Traffic information is typically printed out on a high capacity high speed printer. If you choose not to use a printer, you can create a traffic log file instead.



553-0123T CI/OD

Configuring history and log files

You can create one traffic log file. All system-generated traffic reports are recorded in that file rather than in the History File, making these reports more accessible.

Log size

You can specify a size for the traffic log. The larger the log, the more memory it uses up and the greater its ability to buffer during overflow conditions.

Traffic parameters

When you have created the traffic log file, set traffic monitoring parameters in LD 2. For more information about LD 2 and the traffic parameters, refer to *X11 Administration* (553-3001-311).

Administration tips



After adding or changing an I/O device through the ADAN prompt sequence, the data is saved before ADAN is reprompted. This allows you to exit LD 17 with **** after I/O changes without having to carriage return through the remaining prompts.

What to have ready

The following checklist summarizes what is required before setting up your history and traffic log files.

Table 3
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for history files.
✓		<i>X11 Administration</i> (553-3001-311) <i>LD 17, Gate Opener: ADAN (Action Device and Number)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

Configuring history and log files

An example History File configuration

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions in Basic Telecom Management</i> .	
2	Set up a history file	
	>LD 17	
	REQ	CHG See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	ADAN The ADAN response is a gate opener.
	ADAN	NEW HST ADAN = Action Device And Number. You only have to give two responses, as History is not assigned to individual terminals/printers, but can be output on all terminals/printers
	SIZE	16384 For the SPG example the buffer size is 16384. Why not 16000? The memory component size is measured in units of two (binary).
	USER	MTC BUG SPG example, stores maintenance and BUG messages.
	Terminate the overlay by entering ****.	
3	Set up a traffic file	
	>LD 17	
	REQ	CHG
	TYPE	CFN See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
	ADAN	NEW TRF Enter NEW TRF to create a new traffic log.
	SIZE	(0) - 65534 Set the size of the traffic log.
	Terminate the overlay by entering ****.	
— continued —		

Configuring history and log files

STEP	ACTION	
4	Check your programming	
	>LD 22	
	REQ	PRT Enter PRT.
	TYPE	ADAN HST Enter ADAN HST to verify that a history file was created.
	REQ	PRT Enter PRT.
	TYPE	ADAN TRF Enter ADAN TRF to verify that a traffic file was created.
	REQ	**** Terminate the overlay by entering ****.
5	Perform a data dump to permanently store the programming you have just completed	
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.	
	> LD 43	
	. EDD <cr>	
6	Verify that the data dump was successful	
	System response:	
	Database backup Complete!	
	For any other system response, contact your system supplier.	
7	Terminate this programming session	
	Log off.	
	>LOGO	
8	You have completed the programming required to configure a history or traffic file	
		

Configuring history and log files

Common equipment

Purpose

Service loops provide specific functions to satisfy the requirements of a given application. They are system resources. Service circuits also consume system resources, such as physical space, real time, memory and so on.

Network and Service loop types

Network loops

Network loops digitally transmit voice and data signals, using space switching and time division multiplexing technology. The QPC414 Network Card provides two loops that support Meridian Mail.

Tone and digit switch loops

The Tone and Digit Switch (TDS) loop is a part of the dual loop NT8D17 Conf/TDS card. The TDS loop in Meridian 1 provides dial tone, busy tone, overflow tone, ringing tone, audible ringback tone, dial pulse or dual tone multifrequency (DTMF) outpulsing and miscellaneous tones. All these tones are provided through the maximum 30 time slots in the TDS loop.

Therefore, the maximum number of simultaneous users of tone circuits is 30, whether it is 30 of one tone or a combination of many different types of tones. One TDS loop is normally recommended for each Network Module or half network group of 14 traffic loops. Additional TDS loops can be added if needed, but this is rare.

Common equipment

Note: The NT8D17 Conf/TDS card installs in any network slot. One Conf/TDS card is usually installed in the first network type slot of the modules. In this case, the conference function of the card addresses the odd numbered loop and the TDS function addresses the even numbered loop.

Conference loops

The Conference loop is a part of the dual loop NT8D17 Conf/TDS card. It provides circuits for 3-way or 6-way conferences. It can also broadcast music from a source to a maximum of 30 users simultaneously. In addition, a Conference loop also provides temporary hold for a variety of features: and in particular, End to End Signaling. One Conference loop is normally recommended for each half network group or 14 traffic loops.

Music

MUSIC is provided by conferencing a caller to a MUS source. A Conference loop is required for the Music on Hold feature. Each set of 30 simultaneous music users require a Conference loop, and therefore, an NT8D17 Conf/TDS card, since these two service loops are not separable. For a small system, music users can share a conference loop with other applications.

Common equipment

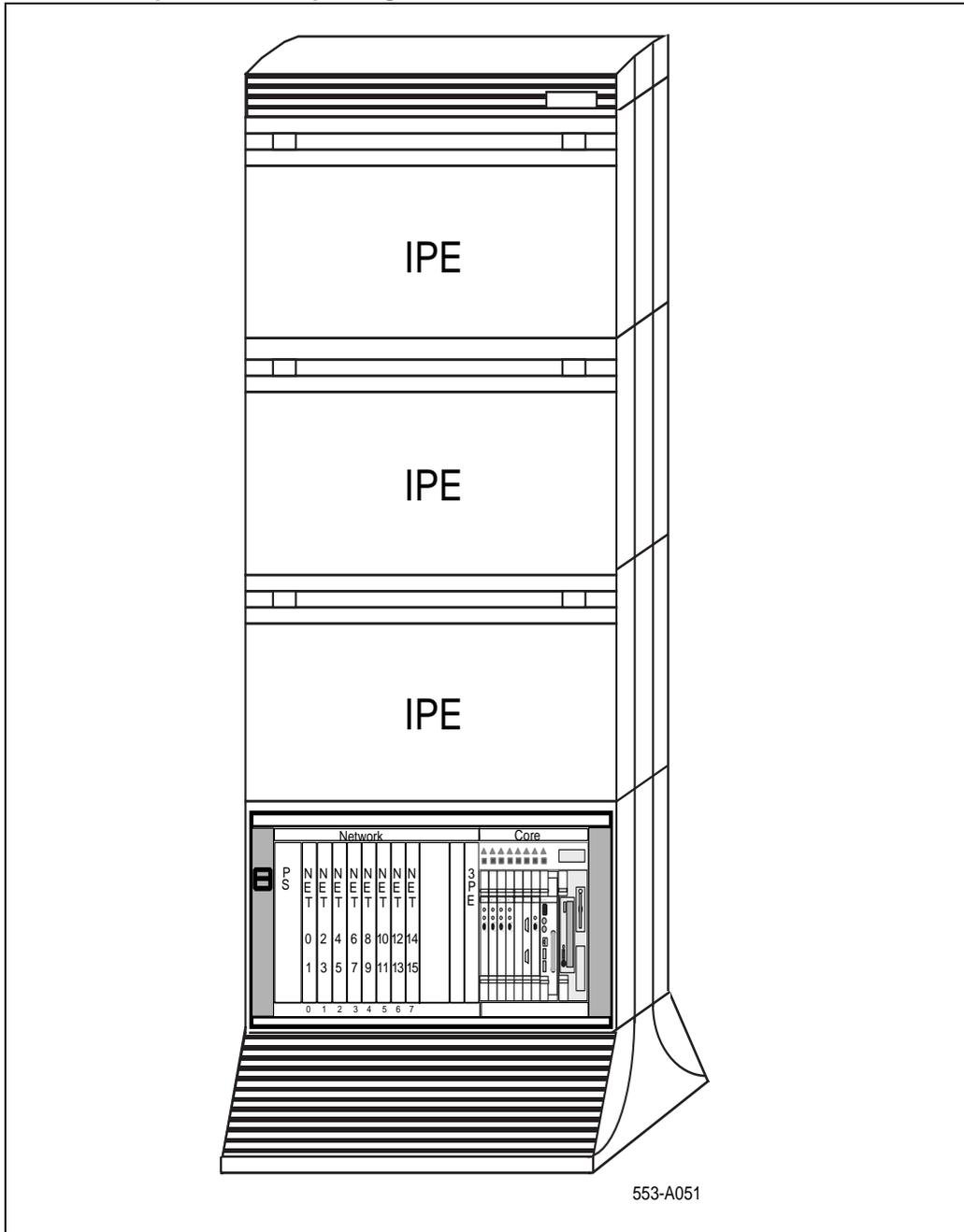
Service loop identification

The Conf/TDS cards install in the Core/Net Modules of the Meridian 1 Options 51C and 61C and in the Common Equipment Modules of the Meridian 1 Option 81C. One Conf/TDS card occupies one network card slot. The network card slots are identified by a label located at the bottom of the module. Placing a Conf/TDS card into a card slot automatically hardware addresses that card. When you program the Conf/TDS card in the database, your programed address must match the hardware address so the Core processor can find the Conf/TDS installed card . The hardware addresses are shown in Figure 5, Figure 6, and Figure 7.

For example, if the Conf/TDS card is located in slot 5 in Shelf 0 of Group 2, the Conf/TDS card is hardware addressed as loop 64 and 65. When you program the Conf/TDS card in the database, with the XCT prompt, your response is 64. This programs the TDS part of the card as loop 64 and the Conf part as loop 65.

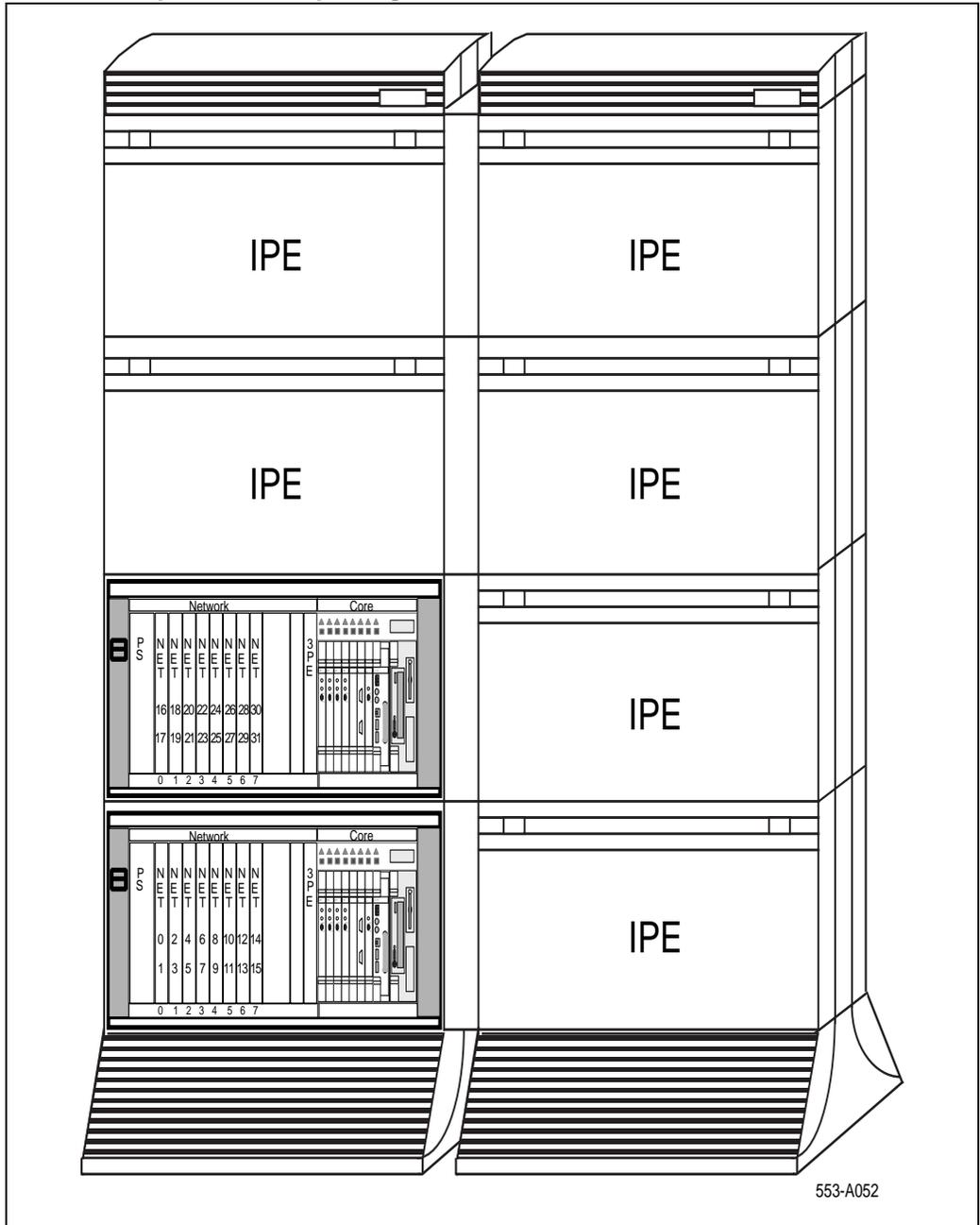
Common equipment

Figure 5
Meridian 1 Option 51C loop assignments



Common equipment

Figure 6
Meridian 1 Option 61C loop assignments



Common equipment

Remote peripheral equipment loops

In addition to supporting peripheral equipment cards collocated with the common equipment, Meridian 1 systems can support Remote Peripheral Equipment (RPE). Depending on the type of transmission media required between the host site (Meridian 1 system) and the remote site and the type of peripheral equipment cards selected, the following RPE products are supported:

- ◆ Remote Peripheral Equipment
- ◆ Carrier Remote IPE
- ◆ Fiber Remote IPE
- ◆ Fiber Remote Multi-IPE

Each of these remote products allow the peripheral cards to be located remotely from the host system. In the case of Remote Peripheral Equipment (RPE) and Carrier Remote IPE, these products allow the system network interface to be converted and transported across commonly used T1 or E1 digital facilities including digital microwave radio.

The Fiber Remote IPE and Fiber Remote Multi-IPE products provide the same network conversion requirements, but transport fiber facilities instead of T1 or E1.

All of these products offer the remote users the same level of feature functionality provided to the local users. Essentially, these remote products allow the remote peripherals to function as if they were collocated with the local peripheral equipment.

For more information, refer to *Remote Peripheral Equipment: Description, Installation, and Testing* (553-2601-200).

Common equipment

What to have ready

The following checklist summarizes the steps to take before configuring service loops.

Table 4
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for the number and types of service loops.
✓		<i>X11 Administration (553-3001-311) LD 17, Gate Opener: CEQU (Common Equipment)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example Common Equipment configuration

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .	
2	Define PE density, Conf/TDS loops, and extenders	
	>LD 17	
	REQ	CHG <i>X11 Administration (553-3001-311) LD 17, Gate Opener: CEQU (Common Equipment)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.
	TYPE	CEQU The CEQU response is a gate opener. (The SPG example, selects an Meridian 1 Option 81C.)
— continued —		

Common equipment

STEP	ACTION	
MPED	8D	Set to octal density (8D) to accommodate superloops. (Superloops are programmed in LD 97 after you finish programming CEQU.)
TERM	cr	A legacy prompt. (By the way, a GCE loop is a xxxxxx loop, and a TVT loop is a Swedish Televerkt loop.) The SPG example is carriage return to bypass this prompt and go to the next prompt.
REMO	cr	See <i>Remote Peripheral Equipment: Description, Installation, and Testing</i> (553-2601-200). The SPG example is carriage return to bypass this prompt and go to the next prompt.
TERD	cr	Some applications, such as Meridian Mail, use double density loops on QPC414 Network cards. The SPG example is carriage return to bypass this prompt and go to the next prompt.
REMD	cr	See REMO comment. The SPG example is carriage return to bypass this prompt and go to the next prompt.
TERQ	cr	A legacy prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
REMQ	cr	See REMO comment. The SPG example is carriage return to bypass this prompt and go to the next prompt.
DDCS	cr	See <i>DPNSS1: Product Overview Guide</i> (553-3921-100). A British Telecom feature. The SPG example is carriage return to bypass this prompt and go to the next prompt.
DTCS	cr	See <i>DPNSS1: Installation Guide</i> (553-3921-200). The SPG example is carriage return to bypass this prompt and go to the next prompt.
XCT	0	Enter an even loop number for the NT8D17 Conf/TDS card. The SPG example, selects loop 0.

— continued —

Common equipment

STEP	ACTION		
	TDS	cr	A legacy prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	CONF	cr	A legacy prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	MFSD	cr	A legacy prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	DTDT	cr	Go to the next prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	DLOP	cr	See <i>ISDN PRI: Installation</i> (553-2901-201). The SPG example is carriage return to bypass this prompt and go to the next prompt.
	PRI2	cr	See <i>ISDN PRI: Installation</i> (553-2901-201). The SPG example is carriage return to bypass this prompt and go to the next prompt.
	APVL	cr	See <i>DPNSS1: Features and Services Guide</i> (553-3921-300). A British Telecom feature.
	DTI2	cr	See <i>ISDN PRI: Installation</i> (553-2901-201). The SPG example is carriage return to bypass this prompt and go to the next prompt.
	JDMI	cr	Go to the next prompt. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	EXT0	3PE	3PE cards connect the network shelves to the Core/Net. (No choice here, when programming an Meridian 1 Option 81C.)
	CNI	9 0 0	The CNI cards are programmed for s p g one at a time. Check the slots the CNI cards occupy on Core/Net 0 of your switch and program those cards for s p g . See Table 5, "cCNI Network group designations," on page 52, and "cCNI card locations" on page 53. The SPG example, selects only cCNI slot 9.)
— continued —			

Common equipment

STEP	ACTION		
	EXT1	3PE	3PE cards connect the network shelves to the Core.
	CNI	9 0 0	The CNI cards are programmed for s p g one at a time. Check the slots the CNI cards occupy on Core/Net 1 of your switch and program those cards for s p g . See Table 5, “cCNI Network group designations,” on page 52.
	SYNM	cr	A British Telecom feature. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	MCFN	cr	The system automatically sizes memory SIMMs. The SPG example is carriage return to bypass this prompt and go to the next prompt.
	REQ	END	Exit the overlay.
3	Enable the XCT loops		
	>LD 34		
	.	ENLX 1	Enable Conf/TDS/MFS card on loop l and l+1. This command can be used in LD 34, LD 38 and LD 46. Enables the entire combined Conference, Tone and Digit Switch, and MF Sender (NT8D17) card. Both the even numbered TDS/MFS/loop and adjacent conference loop are enabled (loop = 0, 2, 4,... 254). The Conf/TDS card is not enabled automatically when it is inserted.
	REQ	****	Exit the overlay.
4	Check your programming		
	>LD 22		
	REQ	PRT	Enter PRT.
	TYPE	CEQU	Enter CEQU to verify common equipment.
	REQ	****	Terminate the overlay by entering ****.
5	Perform a data dump to permanently store the programming you have just completed		
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.		
	> LD 43		
	.	EDD <cf>	
— continued —			

Common equipment

STEP	ACTION
6	Verify that the data dump was successful System response: Database backup Complete! For any other system response, contact your system supplier.
7	Terminate this programming session Log off. >LOGO
8	You have completed the programming required to configure a history or traffic file

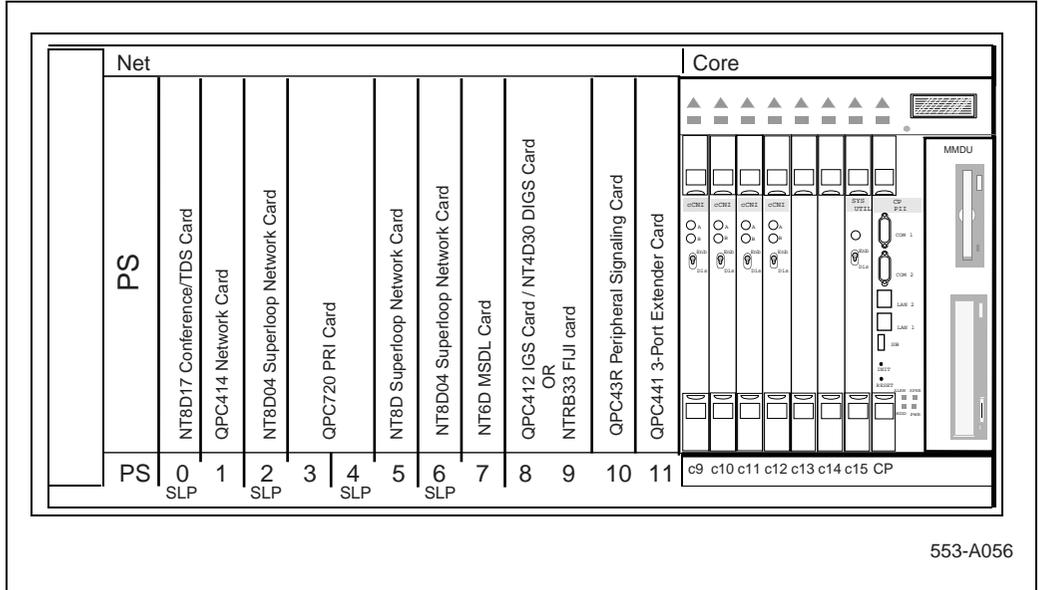


Table 5
cCNI Network group designations

cCNI card slot	cCNI card port	3PE Termination Panel label	Connected to Network group
c9	0	N/A (factory installed directly to the Core/Net backplane)	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

Common equipment

Figure 8
cCNI card locations



Common equipment

IPE and Superloop configuration

Network switching

Superloop network cards transmit digital voice and data signals, using space switching and time division multiplexing technology.

Two types of cards provide data/voice switching control:

- ◆ the NT8D04 Superloop Network (Net) card, provides four loops to support Intelligent Peripheral Equipment (IPE)
- ◆ the QPC414 Network (E Net) card, provides two loops that support Meridian Mail.

Network organization

The NT8D04 Superloop Network (Net) cards install in the Core/Net modules and Common Equipment modules. The superloop cards provide network loops that are organized into groups as follows:

- ◆ the Meridian 1 Option 51C has one Core/Net module with provisions for 16 loops making up a half-group system, see Figure 12
- ◆ the Meridian 1 Option 61C has two Core/Net modules with provisions for 32 loops making up a full-group system, see Figure 13
- ◆ the Meridian 1 Option 81C has two Core/Nets modules and up to seven Common Equipment modules with provisions for 255 loops making up a multi-group system, see Figure 14

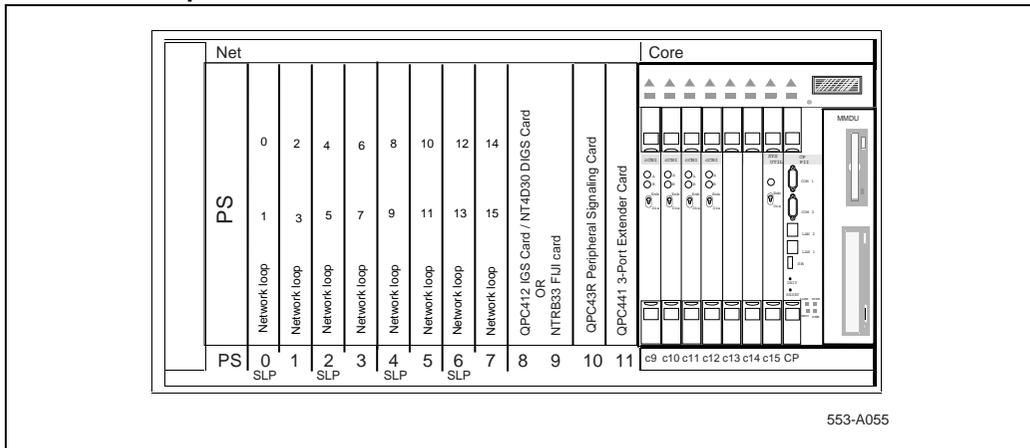
In multiple-group configurations, the groups are connected by a Fiber Network Fabric using FIJI cards.

IPE and Superloop configuration

One Superloop Network card occupies one network card slot. The network card slots are identified by a label located at the bottom of every module. The even number loop is always associated with the top of the card slot and the odd number loop is associated with the bottom of the card slot.

For example, Figure 9 shows the network card slots 0 to 7 in Core/Net 0. In Core/Net 0, card slot 0 is the location for loop 0 and loop 1 and card slot 2 is the location for loop 2 and loop 3, and so on.

Figure 9
Core/Net 0 loop identification



The network type cards, when inserted into the card slots, are loop addressed.

For example, in Figure 10, a superloop card placed into card slot 2 of the Core/Net module occupies loop 4, loop 5, loop 6, and loop 7. The card can be inserted into slot 2 (left hand side) or slot 3 (right hand side) and still occupy loop 4, loop 5, loop 6, and loop 7. This seemingly strange arrangement allows the “empty” card slot to be used by a non-loop addressed card, for example an MSDL card or PRI digital trunk card. In Figure 10, the superloop card for loops 4, 5, 6, 7 and the superloop card for loops 8, 9, 10, 11 are arranged either left or right to provide space between them for a dual width PRI card.

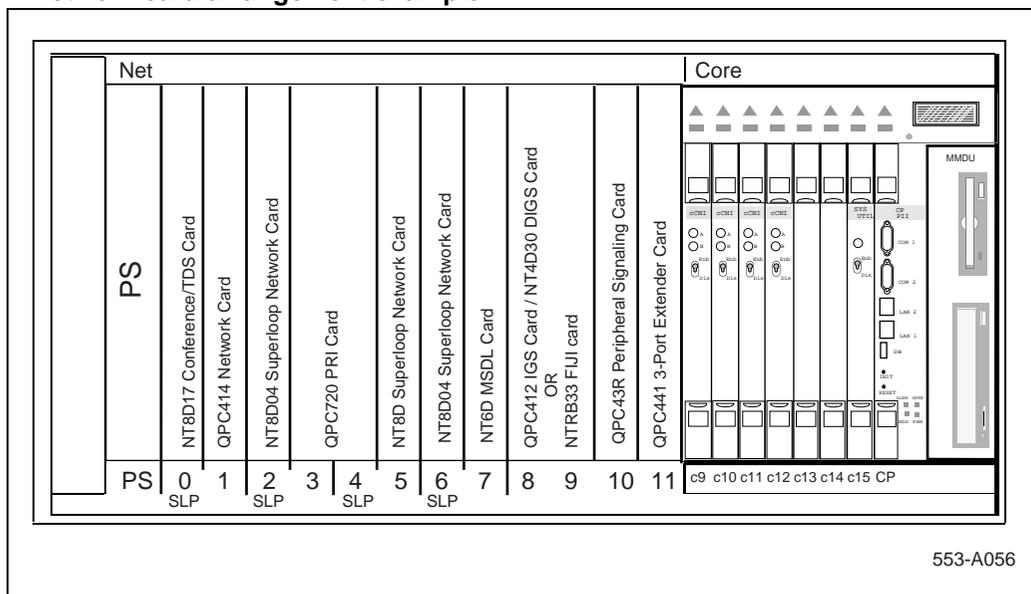
IPE and Superloop configuration

When you program the loop in the database, you in effect tell the Core processor where to find the installed Network card. The loop addresses are shown in the following figures:

- ◆ “Meridian 1 Option 51C loop assignments” on page 63
- ◆ “Meridian 1 Option 61C loop assignments” on page 64
- ◆ “Meridian 1 Option 81C loop assignment” on page 65

The superloops are programmed in groups of four starting at loop 0, loop 4, loop 8, loop 12, and so on. For example, in Figure 10, the Superloop Network card located in slot 2 is hardware addressed as loop 4, loop 5, loop 6, and loop 7. When you program the Superloop Network card in the database, responding to the SUPL prompt, your response is 4. Your response of 4 will address loop 4, loop 5, loop 6, and loop 7. You also have to program the superloop card as Left or Right. Left if the superloop card is in slot 2, and Right if the superloop card is in slot 3.

Figure 10
A network card arrangement example



IPE and Superloop configuration

A superloop connects to one segment or up to as many as eight segments. (Eight segments require two IPE modules.)

One superloop connected to one segment can handle a high volume of telephone traffic. For example, out of a possible number of 128 telephones, 120 telephones can be in use at any one time.

One superloop connected to eight segments can handle a low volume of telephone traffic. For example, out of a possible number of 1024 telephones, 120 telephones can be in use at any one time.

The flexibility of superloop and segment combinations allow cost effective provisioning for different telephone traffic situations.

For example, in Figure 11, segments 0, 1, and 2 are connected to superloop 8. This gives a low traffic capability to superloop 8. Segment 3 is connected to loop 24 giving high traffic capability.

For a detailed description of superloop-to-segment configurations, see *Meridian 1 system engineering* (553-3001-151).

What to have ready

The following checklist summarizes the steps to take before configuring Superloops and controllers.

Table 6
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for network card slot for the superloop cards.
✓		<i>X11 Administration</i> (553-3001-311) LD 97, <i>Gate Opener: XPE (Extended Peripheral Equipment shelf data block)</i> , <i>SUPL (Superloop parameters data block)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

IPE and Superloop configuration

An example of XPE and Superloop configuration

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .	
2	Define the XPE : Extended Peripheral Equipment shelf data block	
	>LD 97	
	REQ	CHG
	TYPE	XPE Enter XPE to configure peripheral equipment shelves.
	XPEC	5 Identifies the Controller card. Controller identity needed when you are doing remote maintenance. The SPG example is Controller number 5.
	LOC	C01M3 Controller location helpful when doing remote maintenance. The SPG example is column 1 and UEM module 3.
	RGTP	cr Consult your work order. The SPG example is carriage return to accept the default value.
3	Configure Superloops	
	>LD 97	
	REQ	CHG
	TYPE	SUPL Enter SUPL to configure Superloop parameters.
	SUPL	8 Check your system for NT8D04 Superloop cards, NT7R51 Carrier Remote Superloop cards, NT1P61 FSNET/FXNET Superloop cards. The SPG example is to install superloop 8. The superloop card can be in card slot 4 or card slot 5.
— continued —		

IPE and Superloop configuration

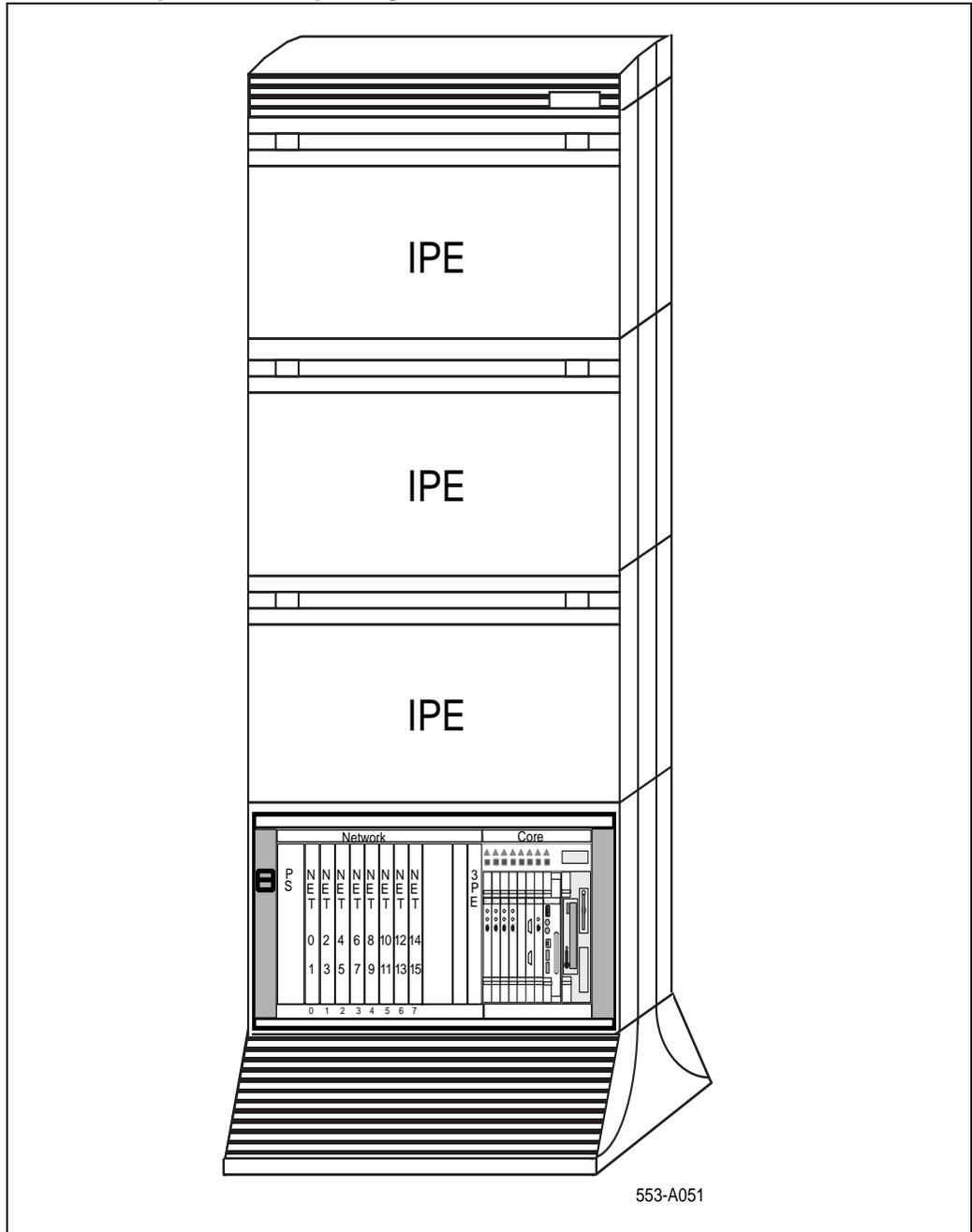
STEP	ACTION		
	SLOT	R	For the SPG example, the superloop card is in card slot 5, the Right hand side.
	SUPT	STD	Specify the Superloop type. Enter STD for normal copper cable connections between the XNET and XPEC, CARR for Carrier Link Superloop type connections between an LCI and RCI, or FIRE for fibre link connections between an FXNET and an FXPEC.
	XPE0	5 0-0 0-2	The SPG example is the controller on XPE 0, the first IPE shelf is 5, as programmed for XPE. As for the example in Figure 11, for XPE 0 the starting segment is 0 and the ending segment is 2. (If we had programmed eight segments to superloop 8 our response would look like this: 5 0-0 1-3. Controller 5, starting shelf 0, starting segment 0, ending shelf 1, ending segment 3.)
	XPE1	cr	The SPG example is carriage return to bypass this prompt and go to the next prompt, as shelf 1 is not connected to shelf 0.
	REQ	END	Exit the overlay.
4	Check your programming		
	Review your programming to ensure that no errors were made. Use LD 97 to examine the contents of the database (REQ = PRT).		
	>LD 97		
	REQ	PRT	Enter PRT.
	TYPE	SUPL or XPE	Enter SUPL to verify the superloop. Enter XPE to verify the peripheral equipment shelf.
	REQ	****	Terminate the overlay by entering ****.
5	Enable the superloop and XPE controller		
	> LD 32		
	.	ENLL xxx <cr>	Enable the superloop configured in step 3.
	.	ENXP xx <cr>	Enable the XPE configured in step 2
	.	**** <cr>	Exit the overlay.
— continued —			

IPE and Superloop configuration

STEP	ACTION
	<p>Note: The LED on the superloop card will go out if the card is enabled. If the LED does not go out, check to see that the card is in the correct network slot (right or left) and enable the card again.</p> <p>Note: The LEDs of the XPE when enabled should flash the controller number configured in step 3. If the LEDs do not flash the XPE number, suspect a cabling fault with the configured superloop card. Confirm that the superloop is enabled and is correctly cabled to the XPE card. Enable the XPE again.</p>
6	<p>Perform a data dump to permanently store the programming you have just completed</p> <p>Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.</p> <pre>> LD 43 . EDD <cr></pre>
7	<p>Verify that the data dump was successful</p> <p>System response:</p> <p>Database backup Complete!</p> <p>For any other system response, contact your system supplier.</p>
8	<p>Terminate this programming session</p> <p>Log off.</p> <pre>>LOGO</pre>
9	<p>You have completed the programming required to add Superloops</p>
	

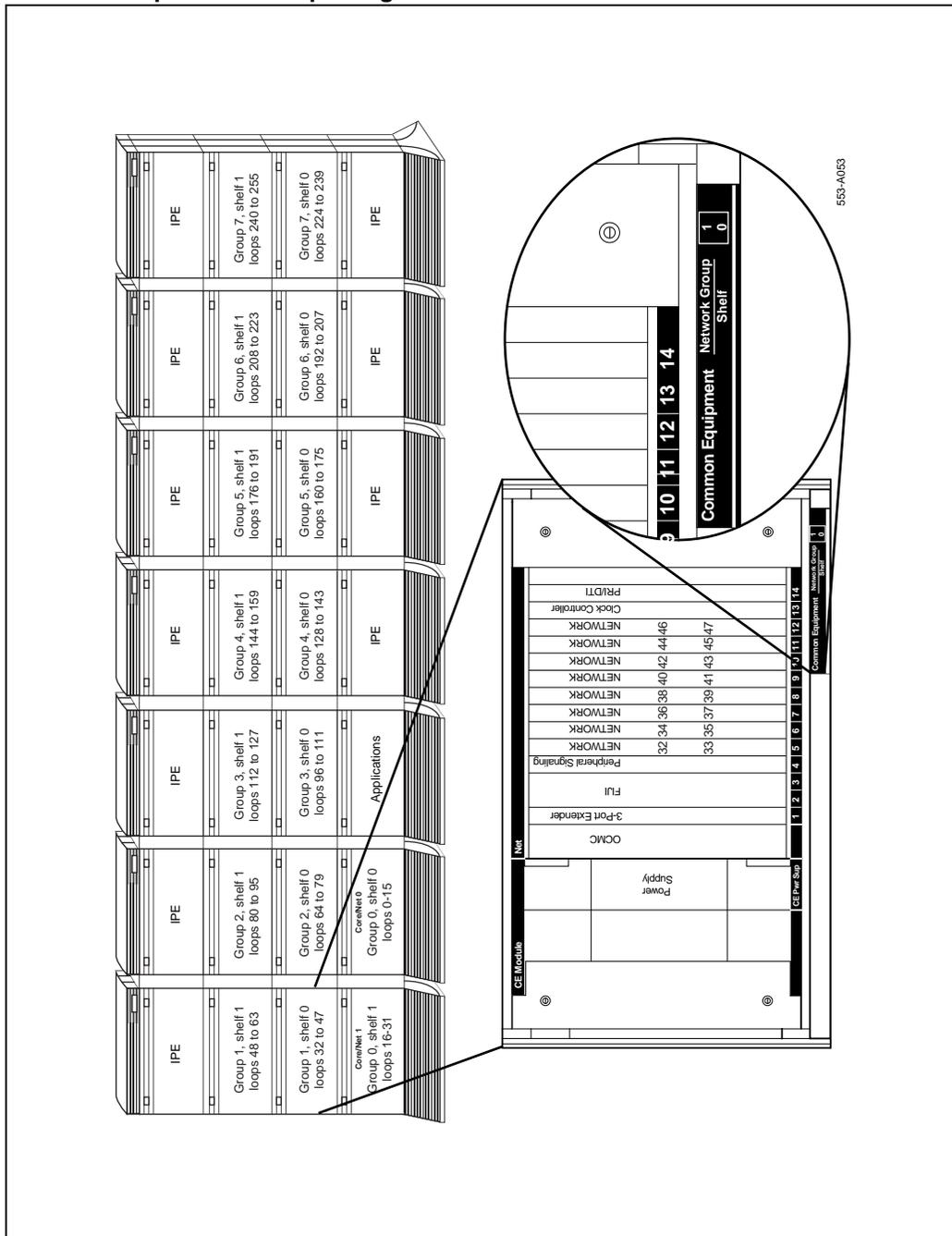
IPE and Superloop configuration

Figure 12
Meridian 1 Option 51C loop assignments



IPE and Superloop configuration

Figure 14
Meridian 1 Option 81C loop assignment



IPE and Superloop configuration

Setting up system parameters

Purpose

You can set system parameters that control how the Meridian 1 uses signal companding, how it handles timeslot faults, and how it uses signaling such as switch-hook flashes and pulse dialing.

The information you enter during this stage of basic configuration is described in detail below. Procedures for entering this information are provided later in this chapter.

Note: Attempts to readjust the system parameters without detailed system knowledge could cause severe disruption in service.

System parameters

To use the μ -Law international companding law, enter YES at the INTN prompt. To use the A-law international companding law, enter NO.

To set the maintenance threshold for timeslot continuity faults, respond to the CONT prompt. To set the maintenance threshold for cyclic redundancy check (CRC) continuity faults, respond to the CRCF prompt.

To set the switchhook flash time, respond to the FLSH prompt. To set the off-hook validation timer for an extended flexible analog line card, respond to the TOHY prompt.

To set the minimum time allowed for pulse dialing, respond to the TDP prompt. To set the maximum time for pulse dialing, respond to the TID prompt.

Setting up system parameters

Loss plans

The Meridian 1 compensates for line quality and line characteristics to provide uniform service over a variety of trunk and line types. In order to match itself to a particular type of trunk or line, the Meridian 1 needs information about the line.

To configure an IPE, enter loss and level information for each trunk. Loss planning can be complex, and is usually done before the Meridian 1 is installed. For details, see *International Loss and Level Plan* (553-2201-181).

Selecting tables

When creating a customized loss and level table, or disabling an active table, enter a second-level administration password.

To select the North American transmission plan for Central Office trunks (COT), enter YES at the NATP prompt. If you are not using the North American transmission plan, enter NO.

Enter the B34 table type at the TTYP prompt. Enter the number of a predefined table, if this table is to be used, at the TNUM prompt.

Trunk transmit and receive levels

Central office trunks

Enter receive and transmit levels for the central office trunk short-line class of service at the COTS prompt. Enter receive and transmit levels for the central office trunk long-line class of service at the COTL prompt.

Direct inward and outward dial trunks

Enter receive and transmit levels for the direct inward dial and direct outward dial short-line class of service at the DIDS prompt.

Setting up system parameters

TIE trunks

Enter receive and transmit levels for the TIE trunk two-wire compensated class of service at the T2WT prompt. Enter receive and transmit levels for the TIE trunk two-wire uncompensated class of service at the T2WN prompt. Enter receive and transmit levels for the TIE trunk two-wire via-network-loss (VNL) class of service at the T2WV prompt.

Enter receive and transmit levels for the TIE trunk four-wire compensated class of service at the T4WT prompt. Enter receive and transmit levels for the TIE trunk four-wire uncompensated class of service at the T4WN prompt. Enter receive and transmit levels for the TIE trunk four-wire via-network-loss (VNL) class of service at the T4WV prompt.

Paging trunks

Enter a coded transmit relative input/output level for paging trunks at the PAGT prompt.

Recorded announcement trunks

Enter a coded receive relative input/output level for recorded announcement trunks at the RANR prompt.

Analog line cards

If your Meridian 1 has analog line cards installed, enter the analog line card unit short line class of service transmit and receive levels at the ALUS prompt. Enter the long line class of service transmit and receive levels at the ALUL prompt.

Setting up system parameters

What to have ready

The following checklist summarizes the steps to take before setting system parameters.

Table 7
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for parameter values.
✓		<i>X11 Administration (553-3001-311) LD 17, Gate Opener: PARM (System Parameters)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example of System Parameters configuration

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .	
2	Change Peripheral Equipment parameters	
	>LD 17	
	REQ	CHG
	<i>X11 Administration (553-3001-311) LD 17, Gate Opener: PARM (System Parameters)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.	
	TYPE	PARM
	The OVLY response is a gate opener. Prompts that do not fit into the other gate opener groups are placed into the PRAM group.	
	— continued —	

Setting up system parameters

STEP	ACTION	
	LIPB	1850 Input buffer is a temporary holding place in memory used by the processor to service telephone/trunk inputs, for example, going off-hook or on-hook messages, dialled digits. These inputs are used by the processor to set up call registers and subsequently establish call connections. Low priority interrupts are serviced after all the high priority interrupts are serviced. The SPG example is 1850, the recommended default in <i>Capacity Engineering</i> (553-3001-149) Design Parameters chapter, and <i>System Engineering</i> (553-3001-151).
	HIPB	1850 See input buffer above. The SPG example is 1850, the recommended default in <i>Capacity Engineering</i> (553-3001-149) Design Parameters chapter, and <i>System Engineering</i> (553-3001-151).
	500B	800 Output buffer is part of memory used by the processor to send telephone/trunk services, for example, ringing, busy tones. The 500b is for analog telephones and trunks. The SPG example is 800, the recommended default in <i>Capacity Engineering</i> (553-3001-149) Design Parameters chapter, and <i>System Engineering</i> (553-3001-151).
	SL1B	255 See output buffer above. The SL1B is for digital telephones. The SPG example is 255, the recommended default in <i>Capacity Engineering</i> (553-3001-149) Design Parameters chapter, and <i>System Engineering</i> (553-3001-151).
	DTIB	cr See <i>ISDN PRI: Installation</i> (553-2901-201)
	DTOB	cr See <i>ISDN PRI: Installation</i> (553-2901-201)

— continued —

Setting up system parameters

STEP	ACTION		
	NCR	3500	Call registers are memory locations assigned to hold information about telephone/trunk calls. Call register information is used by the processor to control, connect, route, and time calls within the Meridian 1. The information is gathered from the buffers you just programmed. Call register information is held for the duration of the call and then is erased from the registers. The number of call registers is proportional to the number of telephones/trunks and the frequency of calls. The SPG example is 3500. See <i>Capacity Engineering</i> (553-3001-149) and <i>System Engineering</i> (553-3001-151).
	MGCR	0	See <i>Capacity Engineering</i> (553-3001-149) and <i>System Engineering</i> (553-3001-151).
	NCPU	cr	SPG example, a return accepts default value 1 or 2. You could enter 1 for the Meridian 1 Option 51C and 2 for Meridian 1 Option 61C and Meridian 1 Option 81C.
	CFWS	YES	The CFWS information is held in the call registers and a SYSLOAD erases the call registers. The SPG example is YES.
	PCML	cr	SPG example, a return accepts default value of Mu law companding, North American standard.
	ALRM	cr	SPG example, is a return to accept the default value of NO.
	ERRM	ERR XBUG	See <i>X11 System Messages Guide</i> (553-3001-411) for details of these maintenance messages. The SPG example turns off the BUG messages and allows ERR messages.
	DTRB	cr	See <i>X11 Features and Services</i> (553-3001-306), <i>Flexible Tone and Digit Switch Control</i> . The SPG example is carriage return to accept the default value of 100.
	ABCD	cr	SPG example, a return to accept the default value for 12-button telephone DTMF.
	TMRK	cr	SPG example, a return to accept the default value of 128 ms. See <i>X11 Features and Services</i> (553-3001-306).
			— continued —

Setting up system parameters

STEP	ACTION		
	FCDR	cr	SPG example, a return to accept the default value for the old format. See <i>Call Detail Recording: Description and Formats</i> (553-2631-100)
	PCDR	cr	In some circumstances, for example, a small number of call registers programmed and a slow CDR printer, giving priority for CDR over telephone calls can fill the call registers and call processing will stop until the CDR information is read out of the call registers. In other circumstances, where the CDR information is more important than making and receiving calls, priority is yes. SPG example, is a return to accept the default value of NO.
	TPO	cr	SPG example, is a return to accept the default value NO. See <i>Traffic Measurement: Formats and Output</i> (553-2001-450)
	TSO	cr	SPG example, is a return to accept the default value NO. See <i>Traffic Measurement: Formats and Output</i> (553-2001-450)
	CLID	NO	SPG example, is a return to accept the default value NO. See <i>Call Detail Recording: Description and Formats</i> (553-2631-100)
	DUR5	cr	SPG example, is a return to accept the default value NO. See <i>Call Detail Recording: Description and Formats</i> (553-2631-100)
	MLDN	YES	The SPG example is YES. See <i>X11 Features and Services</i> (553-3001-306)
	MARP	YES	The SPG example is YES. <i>X11 Features and Services</i> (553-3001-306)
	FRPT	OLFR	The SPG example is OLFR. See <i>X11 Features and Services</i> (553-3001-306) Access Restrictions chapter.
	DCUS	0	The SPG example is 0. See <i>Automatic Call Distribution: Feature Description</i> (553-2671-110)

— continued —

Setting up system parameters

STEP	ACTION		
	MSCL	60	Your response sets aside memory for speed call lists. If memory space is a concern, check how many speed call lists your telephone users actually use. What they ask for and what they use is sometimes not the same. The SPG example is 60. See <i>X11 Features and Services</i> (553-3001-306) Speed Call chapter.
	PMSI	cr	The SPG example is carriage return to accept the default value NO. See <i>Property Management System Interface: Description</i> (553-2801-101)
	NDIS	cr	The SPG example is a return to accept the default value 20. See <i>Background Terminal Facility: Description</i> (553-2311-316)
	OCAC	cr	The SPG example is a return to accept the default value NO. See <i>X11 Features and Services</i> (553-3001-306), Equal Access Compliance chapter.
	MTRO	cr	The SPG example is a return to accept the default value MR. See <i>Message Registration: Description and Operation</i> (553-2701-101)
	SBA_ADM_INS	cr	The SPG example is a return to accept the default value 2. See <i>Set-Based Administration</i> (553-3001-303)
	SBA_USER	cr	The SPG example is a return to accept the default value 100. See <i>Set-Based Administration</i> (553-3001-303)
	BCAP	cr	The SPG example is a return to bypass this prompt and go to the next prompt.
	NORTEL_BRAND	cr	The SPG example is a return to accept the default value YES. (After all, we are Nortel Networks.) See <i>X11 Features and Services</i> (553-3001-306) Electronic Branding chapter.

— continued —

Setting up system parameters

STEP	ACTION
3	Check your programming
	>LD 22
	REQ PRT Enter PRT.
	TYPE PARM Enter PARM to verify the system parameters.
	REQ **** Terminate the overlay by entering ****.
4	Perform a data dump to permanently store the programming you have just completed
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.
	> LD 43
	. EDD <cr>
5	Verify that the data dump was successful
	System response:
	Database backup Complete!
	For any other system response, contact your system supplier.
6	Terminate this overlay program

7	Terminate this programming session
	Log off.
	>LOGO
8	You have completed the programming required to set system parameters
	

Setting up system parameters

Configuring overlay options

Purpose

A number of overlay program options are available, depending on your needs. Choose the options that best suit your maintenance requirements.

The information you enter is described in detail below. Procedures for entering this information are provided later in this section.

Date and time

The Meridian 1 system clock provides the time and date used for display on telephones, for the timestamping of logs and call detail recording, and for the scheduling of automatic maintenance routines. Set the time and date in LD 2 before configuring other overlay options.

System ID

Each Meridian 1 system has a unique system ID number (SID) from 0000 to 9999. The system ID is used in reports and networking.

The 4-digit ID number can be printed or set by the following commands in LD 2:

- ◆ To print the current SID: Enter TSID
- ◆ To change the SID: Enter SSID

For more information, see the step-action procedure later in this guide.

Configuring overlay options

Background overlay programs

The Meridian 1 can run overlay programs continuously in the background during normal operations. Background overlay programs can perform ongoing diagnostics and maintenance without affecting system operation. You can specify as many background overlay programs as you need. The Meridian 1 loads these overlays sequentially.

To specify the overlay programs that are to run in the background, respond to the BKGD prompt.

Traffic studies

Consider setting up traffic studies while configuring maintenance schedules and routines. Traffic studies monitor the performance of your system under typical working conditions, and provide the information needed to maintain a high level of service for users.

For more information about configuring traffic studies and using the information they provide, refer to the *Basic Telecom Management Guide*.

Automatic maintenance

The Meridian 1 can perform a number of automated maintenance routines at specified intervals or times. Automated maintenance helps to identify and correct faults before users become aware of them.

Message waiting lamp tests

The Meridian 1 can be set to test all message waiting lamps at a specified time (ideally when testing will not affect users). To set the time for lamp tests, respond to the PBXH prompt.

Configuring overlay options

Daily routines

The Meridian 1 can run sets of diagnostic overlay programs at a specified time. To set the time for the running of daily routines, respond to the TODR prompt. To select the overlay programs to be run during the daily routine, respond to the DROL prompt.

Remote peripheral equipment loopback tests

The Meridian 1 can, as part of the daily routines, perform automated 2.0 Mbit/s remote peripheral equipment (RPE) loopback testing. This testing includes local loopback. To specify a loop for testing, respond to the TRLL prompt.

Fault detection

When the Meridian 1 detects a fault during daily routines, it will automatically run a diagnostic program, LD 45, to identify the fault condition. To specify the number of times LD 45 will run after a fault is detected, respond to the CY45 prompt.

Configuring overlay options

What to have ready

The following checklist summarizes what is required before setting up your overlay options.

Table 8
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for overlay programs to run in background.
✓		<i>X11 Administration (553-3001-311) LD 17, Gate Opener: OVLY (Overlay)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example of Overlay configuration

STEP	ACTION
1	Log in For information on proper login procedures, see <i>Basic Programming Instructions in Basic Telecom Management</i> .
2	Check the date, time and system ID <pre>> LD 2 . TSID Print the system ID. . TTAD Print the current time and date. The format of the printed date and time is day-of-week day month year hour minute second. If the time and date are incorrect, update them using the following command: . STAD day month year hour min sec</pre> <p style="text-align: center;">— continued —</p>

Configuring overlay options

STEP	ACTION	
	<p>Note: Except for the year, the other entries in the time of day output are 2-digit numbers. The year can be any year from 1901 to 2099 inclusive. It can be entered as a full 4-digit field or as a 2-digit short form. The 2-digit short form is assumed to be in the range 1976 to 2075 and the appropriate addition is made when calculating the day-of-week and leap years.</p> <p>Leave LD 2 by typing ****:</p> <p>. **** Leave LD 2.</p>	
3	Set up overlay options	
	>LD 17	
	REQ	CHG See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	OVLV The OVLV response is a gate opener.
	SID	1234 For the SPG example, the system ID is the unique number 1234
	BKGD	45 See <i>X11 Maintenance</i> (553-3001-511) for overlay details. The SPG example runs the Background and Signaling Diagnostic.
	PBXH	cr For the SPG example, there are no message waiting lamps to test.
	TODR	0 For the SPG example, the daily routines run at midnight.
	DROL	32 36 43 See <i>X11 Maintenance</i> (553-3001-511) for overlay details. The SPG example runs the Network and Peripheral Diagnostic, Trunk Diagnostic, and Equipment Datadump.
	CY45	cr See <i>X11 Maintenance</i> (553-3001-511) for Background Switching and Signaling Diagnostic details. The SPG example runs the diagnostic without limiting the number of runs.
	MULTI_USER	ON See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Alphabetical, Communicating with the Meridian 1</i> for details of Multi User Log In. The SPG example uses the Multi User Log In feature.
	REQ	**** Terminate LD 17.
— continued —		

Configuring overlay options

STEP	ACTION
4	Check your programming
	>LD 22
	REQ PRT Enter PRT.
	TYPE OVLY Enter OVLY to verify the overlay programming.
	REQ **** Terminate the overlay by entering ****.
5	Perform a data dump to permanently store the programming you have just completed
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.
	> LD 43
	. EDD <Cr>
6	Verify that the data dump was successful
	System response:
	Database backup Complete!
	For any other system response, contact your system supplier.
7	Terminate this overlay program
	* * * *
8	Terminate this programming session
	Log off.
	>LOGO
9	You have completed the programming required to set your overlay options



Setting up passwords

Purpose

The Meridian 1 is protected from accidental and malicious tampering by passwords that control access to various overlays and customers, and to the system as a whole.

Configure passwords for all users using LD 17.

Password control is sophisticated, allowing precise control of the areas of the system available to each password user. The Meridian 1 provides a number of different types of passwords letting you limit access to varying degrees.

User names

You can force users to log in using a name as well as a password by turning on the login name option. To do this, enter YES at the LNAME_OPTION prompt in LD 17. When the option is turned on, ADMIN1 is applied to the current PWD1, ADMIN2 is applied to the current PWD2, USER0 is applied to the current Password 00, USER1 is applied to the current Password 01, through to USER 99.

Multi-user login

With Multi-User Login enabled, more than one user can be logged in with the same combination of name and password. (No two login names can have the same password associated with them.)

When a HOST user logs in, the options set up for the port are only output to that port. For example, if two ports are set up (for example, through the USER prompt) to output BUG and SCH messages, and a HOST user logs in to one of these ports, the other port does not output

Setting up passwords

BUG and SCH messages until the HOST user logs out. This feature removes the restriction that ports with the same options must operate at the speed of the slowest port.

Basic passwords

Basic user passwords provide access to all the overlay programs available on the Meridian 1. They are intended for use by administrators who need access to the entire Meridian 1 system.

To change passwords, log into the Meridian 1 using an existing administration password.

Administration passwords

The administration password is used to change passwords PW1, PWD2, and SPWD.

To change the first-level administration password, respond to the NPW1 prompt in LD 17. To change a second-level administration password, respond to the NPW2 prompt.

Logging in using the second-level administration password

If your system has the login name option enabled (LNAME_OPTION set to YES), log in by entering ADMIN2 at the LOGIN prompt. Enter the current second level administration password at the PASS prompt.

Limited Access to Overlays passwords

If your Meridian 1 has the Limited Access to Overlays (LAPW) package installed, you can allow specific users access to specific overlay programs. This helps maintain system security and can prevent accidental and damaging changes to system data.

Setting up passwords

You can also use this feature to allow customer administrators direct access to their data on the Meridian 1. The LAPW feature lets you limit an administrator's access to a specific customer's or tenant's data.

Enter the Limited Access to Overlays password number at the LAPW prompt in LD 17, the password itself at the PW nn prompt, and the overlays available to that password at the OVLA prompt. You can also specify customers available to the password at the CUST prompt, and tenants available at the TEN prompt.

To enable host mode access for the password, respond to the HOST prompt.

Changing Limited Access to Overlays passwords

To change a password, enter the old password at the NPWD prompt in LD 17, and the new password at the NLPW prompt.

Security thresholds

Attempts at password breaking, or hacking, result in lock-outs of affected ports. Lock outs are logged on maintenance terminals and supervisory stations, providing an indication of potential security problems.

To set the Failed Login Threshold (the number of failed logins needed to trigger a lockout of the port), respond to the FLTH prompt in LD 17. To set a lock-out time (the time, in minutes, a port is locked out after the Failed Login threshold is exceeded), respond to the LOCK prompt.

Setting up passwords

What to have ready

The following checklist summarizes the steps to take before defining passwords.

Table 9
Checklist

Basic	Optional	Preparation
	✓	<i>X11 Features and Services (553-3001-306) Limited Access to Overlays, Limited Access to Overlays Password Enhancement, and Teletype Terminal Access Control in Multi-customer Environment</i>
✓		Your work order/instructions on how your Meridian 1 system is optioned for password for each user name, and for failed login thresholds.
✓		<i>X11 Administration (553-3001-311) LD 17, Gate Opener: PWD (Password)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example of Password configuration

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .	
2	Define passwords	
	>LD 17	
	REQ	CHG See <i>X11 Administration (553-3001-311) LD 17 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	PWD The PWD response is a gate opener.
	— continued —	

Setting up passwords

STEP	ACTION	
PWD2	0000	For the SPG example, the factory default password.
LNAME_OPTION	YES	SPG example, is YES to accept system default names. (To login after accepting LNAME_OPTION you must use <i>logi admin1</i>)
DEFAULT LOGIN NAMES SAVED		
MEM AVAIL: (U/P): xxxxxx USED U P: xxxxxx TOT:xxxxxx		
DCH AVAIL: xx USED: x TOT: x		
AML AVAIL: xx USED: x TOT: x		
REQ	CHG	
TYPE	PWD	
PWD2	0000	This password remains as the default password.
LNAME_OPTION	YES	SPG example, is YES to change the default passwords.
NPW1	123abc	SPG example, is <i>123abc</i> used to login by system maintainers and administrators.
LOGIN_NAME	smith	SPG example, our technician's name.
NPW2	cba321	SPG example, is <i>cba321</i> used to change the level 1 password (NPW1) and other system passwords.
LOGIN_NAME	jones	SPG example, our administrators name. Our SPG administrator's name, who controls and changes all passwords.
LOUT	10	SPG example, automatic logout after 10 minutes.
LAPW	1	SPG example, 1 is a list number you assign to the PWnn. In this example the system presents the prompt PW01 when PWTP is OVLY.
PWTP	cr	SPG example, a return accepts default value for overlays.
PW01	9876	SPG example, is 9876 the password for PW01.
LOGIN_NAME	ralph	SPG example, is Ralph, the person allowed to set the time and date, and to change telephone features using the password for PW01.
— continued —		

Setting up passwords

STEP	ACTION		
	OVLA	02 10 11	SPG example, the person with password PW01 can access LD 02, LD 10, and LD 11. (OVLY prompts again, as all possible responses do not fit within the space provided by this prompt.)
	OVLA	cr	SPG example, a return steps to the next prompt.
	CUST	99	SPG example, the person with password PW01 can only access LD 02, LD 10, and LD 11 associated with Customer Data Block 99.
	TEN	cr	SPG example, a return steps to the next prompt as there are no tenants.
	CUST	cr	SPG example, a return steps to the next prompt as there are no more customers.
	HOST	cr	SPG example, a return steps to the next prompt as there are no hosts.
	MAT	cr	SPG example, a return steps to the next prompt as there is no MAT terminal.
	OPT	cr	SPG example, a return accepts default value for options.
	LAPW	cr	SPG example, a return steps to the next prompt. The system presents the LAPW prompt to OPT prompt, allowing you to add more personnel to use the Limited Access Passwords
	FLTH	5	SPG example, is five failed attempts before the person trying to log in is locked out of the system.
	LOCK	15	SPG example, 15 minutes is the lockout time for failed attempts.
	FLTH	cr	SPG example, a return accepts default value for no alarms. AUDT crSPG example, a return accepts default value.
	LLID	cr	SPG example, a return accepts default value.
	INIT	cr	SPG example, a return accepts default value.

— continued —

Setting up passwords

STEP	ACTION
3	Check your programming
	>LD 22
	REQ PRT Enter PRT.
	TYPE PWD Enter PWD.
	PWD2 xxxx Enter the Level 2 password.
	REQ **** Terminate the overlay by entering ****.
4	Perform a data dump to permanently store the programming you have just completed
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.
	> LD 43
	. EDD <cf>
5	Verify that the data dump was successful
	System response:
	Database backup Complete!
	For any other system response, contact your system supplier.
6	Terminate this overlay program

7	Terminate this programming session
	Log off.
	>LOGO
8	You have completed the programming required to configure passwords
	

Setting up passwords

Entering customer data

Purpose

Each customer connected to the Meridian 1 has a Customer Data Block (CDB). The CDB is a set of parameters that control specific features and options for the customer. Enter information for each customer who will be sharing the Meridian 1.

Departmental listed directory numbers

You can group customer telephones together using the Departmental Listed Directory Number (DLDN) feature. Telephones ring as a group.

Each customer can have up to four DLDN groups. Each group is identified by one of the customer's listed directory numbers (LDN).

Dial intercom groups

You can separate a customer's telephones into Dial Intercom Groups (DIG). Telephones within a group can call each other using one- or two-digit codes, providing intercom-like service. (Two-digit dialing is required for a DIG of more than ten stations.)

A total of 100 telephone extensions can belong to each DIG.

Night service

Telecommunications needs change during non-business hours. Incoming calls can be routed to a security desk instead of to the attendant. Night service automatically changes the routing of calls during non-business hours, permitting incoming calls normally directed to the attendant to be routed to another destination.

Entering customer data

Normal Night Service

With the feature active, the existing Night Service feature is enhanced by providing a night (NITE) prompt for applicable DID trunks. Night numbers for DID trunks can be defined in their respective trunk blocks against the prompt. Attendants will be able to change their night numbers by specifying their corresponding access codes and member numbers using the existing Flexible Night Service feature.

Group Night Service

The customer is allowed to assign individual Public Switched Telephone Network (PSTN) trunks to one of ten night group numbers (0 to 9). Each Night group has up to ten night directory numbers associated with it. During Night Service, incoming calls on a trunk is routed to one of the directory numbers associated with that trunk. The actual number called is determined by a Night Service Option number corresponding to the Night Group number programmed by the attendant during day service.

When an incoming call is routed to a busy directory number, an optional Night Call Waiting tone can be applied to that number to notify the user that a call is waiting. The call on the trunk will be queued until the night directory number becomes free.

The same feature requirements apply to Night Service, as well as the following requirements:

- ◆ Enhanced Night Service does not apply to Auto-terminate trunks.
- ◆ Enhanced Night Service is permanently activated if the system has no attendant and the ENS option is set to YES. In this case, the Night Service Option Number can only be programmed from the Customer Data block (LD 15).
- ◆ Enhanced Night Service makes use of only one Speed Call list as the Night Number Table.
- ◆ The operation of the optional Night Call Waiting Tone is the same as those of the Call Waiting Tone.

Night Service Option 0 and Night Service Group 0 are reserved for the customer Night number, and must not be programmed in LD 18.

Entering customer data

Feature interactions

Call Waiting

This feature terminates incoming Night calls to busy DNs by applying Call Waiting. This will be done even if the Night DN is an analog (500/2500 type) telephone with Call Waiting Denied (CWD) Class of Service, or if the Night DN is a Meridian 1 telephone without a Call Waiting (CWT) key assigned.

All telephones (analog 500/2500 type and Meridian 1) are given Night Call Waiting tone, if the NWT prompt in LD 15 was responded to with "YES", regardless of the Warning Tone (WTA, WTD) Class of Service setting of the set. Meridian 1 telephones are given Night Call Waiting tone in the handset instead of the speaker buzz for Call Waiting.

Direct Inward System Access (DISA)

It is not possible to assign a Night Service Group Number to any trunk that is a member of a route which is set to auto-terminate on a DISA DN.

Multi-Tenant Service

Any restrictions that exist in the system preventing individual tenant access to certain routes are not checked when the Night Number Table is programmed. The technician can ensure all such restrictions are taken into consideration.

The tenant to route restrictions are enforced when an attempt is made to terminate an incoming call on a Night DN through the Night Number Table. If the termination to the Night DN is not allowed, overflow tone (fast busy) is given to the incoming trunk.

Trunk Barring (Sets)

Any incoming call that is routed by Enhanced Night Service to a set from which it is barred will not be connected. Overflow tone (fast busy) is given to the incoming trunk instead.

Entering customer data

Trunk to Trunk Barring

Any incoming trunk call that is routed to an outgoing PSTN trunk will be barred if Enhanced Night Service is active. Overflow tone is given to the incoming trunk instead. This restriction is in addition to the configured trunk barring for the system.

Warning Tone

All telephones (analog 500/2500 type and Meridian 1) will be given Night Call Waiting tone, if the NWT prompt in LD 15 was responded to with "YES", regardless of the Warning Tone (WTA/WTD) Class of Service setting of the set.

Special prefix codes

Special prefix (SPRE) codes let telephone users access features that are not available as feature keys on their telephone sets. Users of analog 500/2500 telephones can use SPRE codes to take advantage of advanced call features.

Attendant directory number

The Attendant Directory Number lets internal telephone and TIE trunk users call the attendant by dialing a code (typically 0).

Customer options

You can specify a number of options for each customer. These options are described below.

Camp-on tone

Camp-on tone is a tone provided to a caller waiting for a called telephone to become idle.

Enhanced busy lamp field

The customer can have an enhanced busy lamp field on M2250 attendant consoles.

Entering customer data

Incoming call indicators

The customer can have either 10 or 20 incoming call indicators on M2250 attendant consoles. The default is 10.

Trunk group busy lamp field

This option indicates to users whether trunk groups to specific destinations are busy.

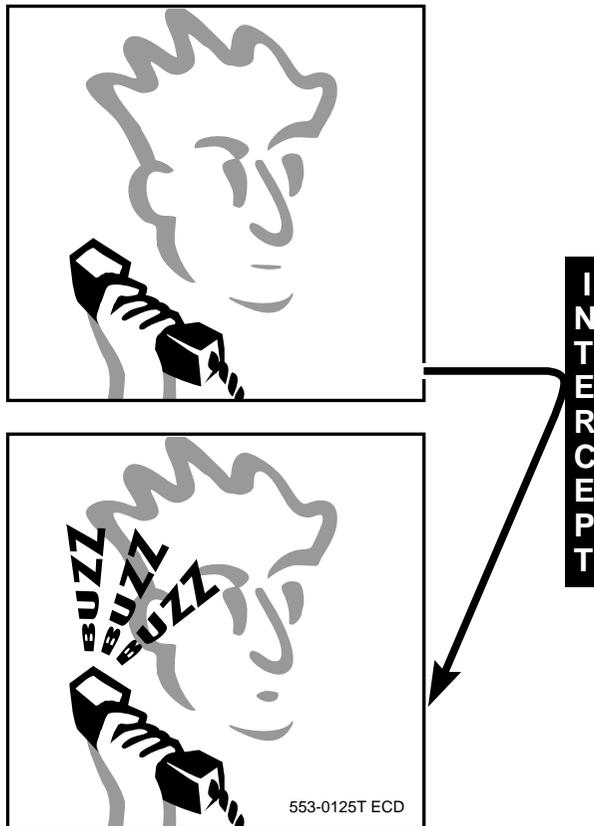
Originating side ringing cadence

The customer can have ringing cadence determined by the originating party.

Entering customer data

Intercept treatments

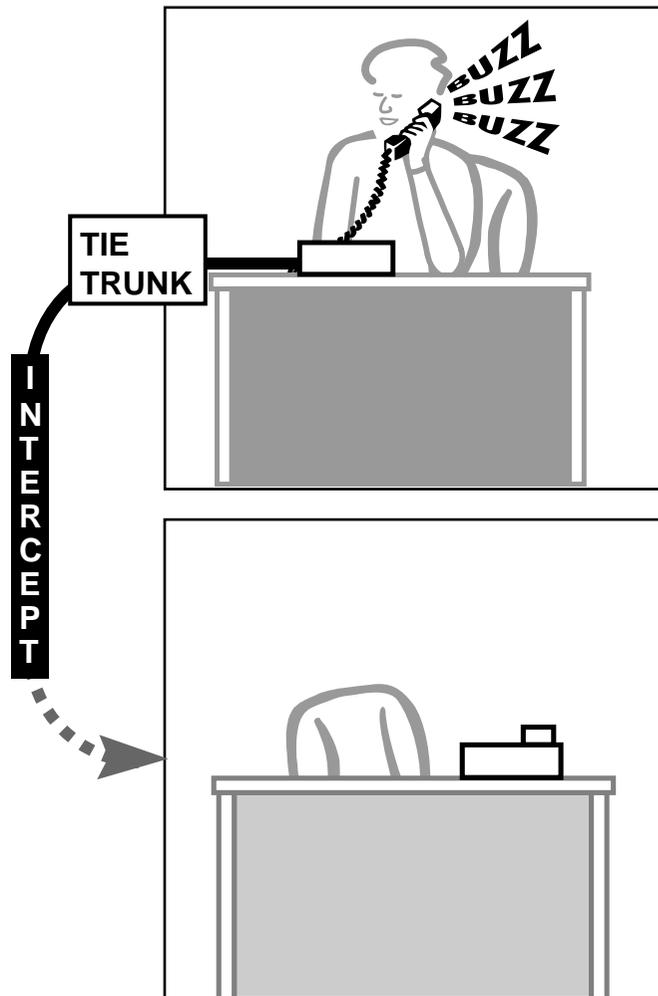
You must specify intercept treatments to be used for the customer under various situations. When a call cannot be completed, for whatever reason, it is intercepted by the system. The caller can hear a recorded announcement or some kind of tone.



Entering customer data

TIE trunk intercepts

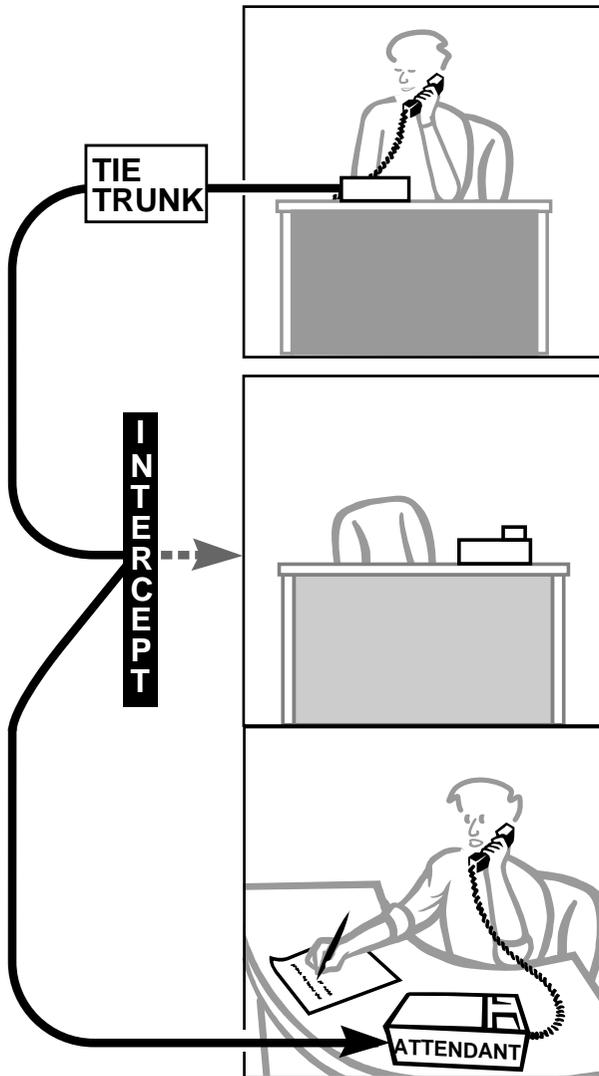
When a caller places a call over a TIE trunk to an extension on your Meridian 1, and the call is blocked by your Meridian 1, the caller receives intercept treatment. You can specify what kind of treatment the caller receives.



553-0126T ECD

Entering customer data

A call coming into your Meridian 1 over a TIE trunk, is likely to be s from one of the customer's other offices. The caller can receive a busy signal, an overflow tone, or be routed to the attendant.

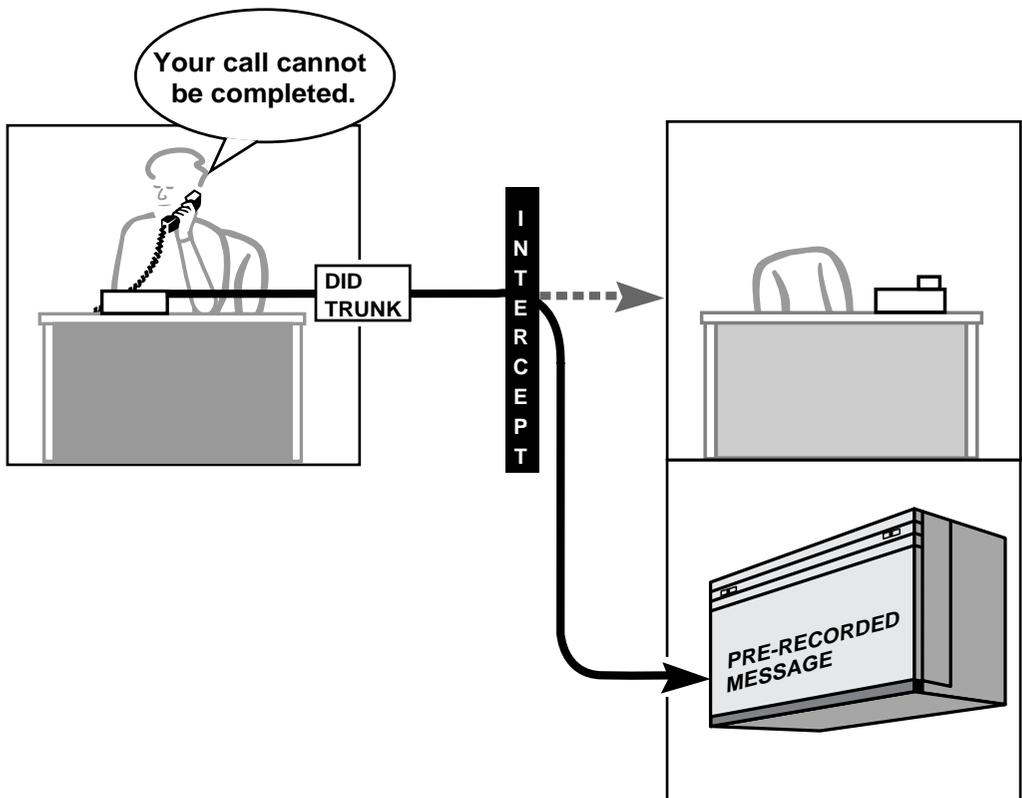


553-0127T ECD

Entering customer data

DID trunk intercepts

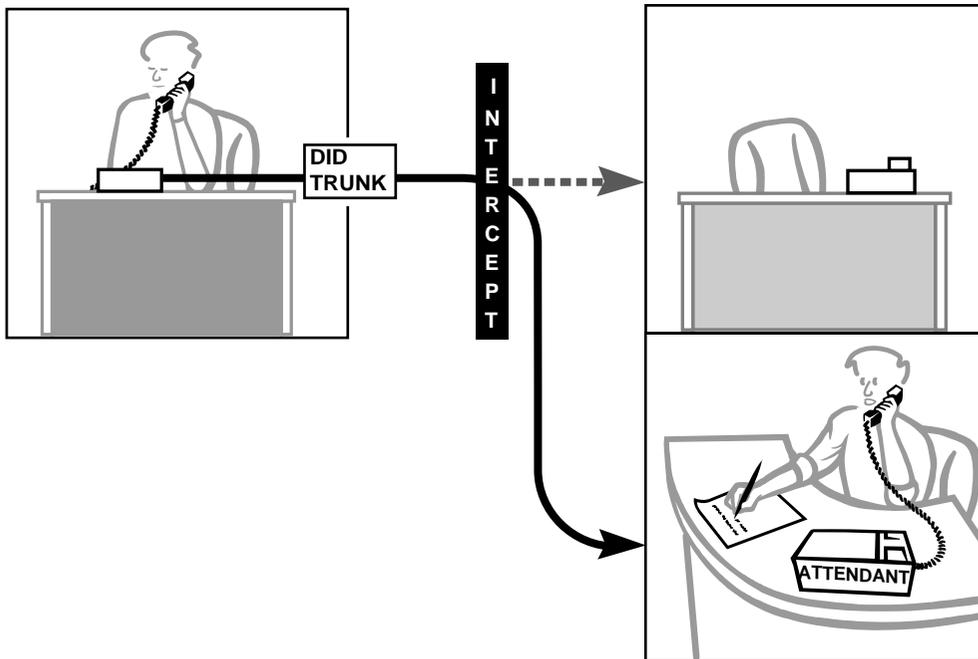
When a call is placed over a DID trunk to an extension on your Meridian 1, and the call is blocked by your Meridian 1, the caller receives intercept treatment. You can specify what kind of treatment the caller receives.



553-0128T ECD

Entering customer data

A call coming into your Meridian 1 over a DID trunk is likely to be a call from outside. The caller can receive a busy signal, a recorded announcement, or be routed to the attendant.

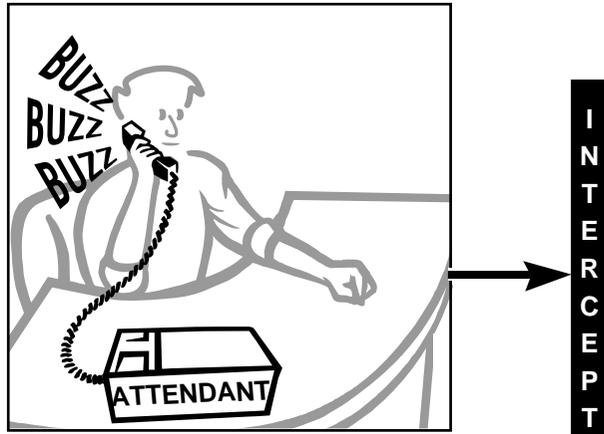


553-0129T ECD

Entering customer data

Attendant console intercept treatments

When an attendant places a call, and the call is blocked by your Meridian 1, the attendant receives intercept treatment. You can specify what kind of treatment the attendant receives.



553-0130T ECD

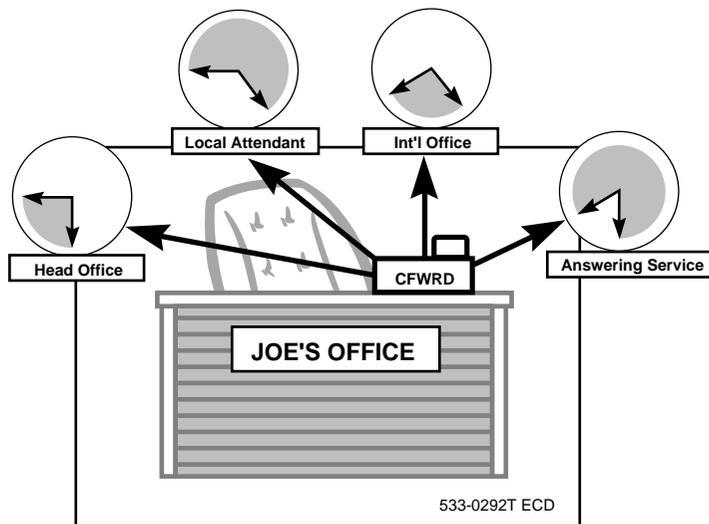
The attendant can receive a busy signal, overflow tone, or a recorded announcement.

Entering customer data

Call redirection

The Meridian 1 provides several forms of call redirection. Call Redirection by Time of Day applies to calls that are redirected by Call Forward No Answer or Hunt, that automatically forward to a second, alternate DN, typically after business hours. It allows up to four different alternate time periods to be defined in the Customer Data Block for unanswered (Call Forward No Answer) or busy (Hunt) calls.

Assign Call Redirection by Time of Day to individual telephones using Class of Service. You must also assign alternate time periods and redirection DNs for each telephone.



For example, in an office environment, you can have calls forwarded several ways:

- ◆ to the local attendant during the day
- ◆ to the International Office from 5 p.m. to 8 p.m.
- ◆ to the answering service from 8 p.m. to 6 a.m.
- ◆ then to the Head Office from 6 a.m. to 8 a.m.

Entering customer data

What to have ready

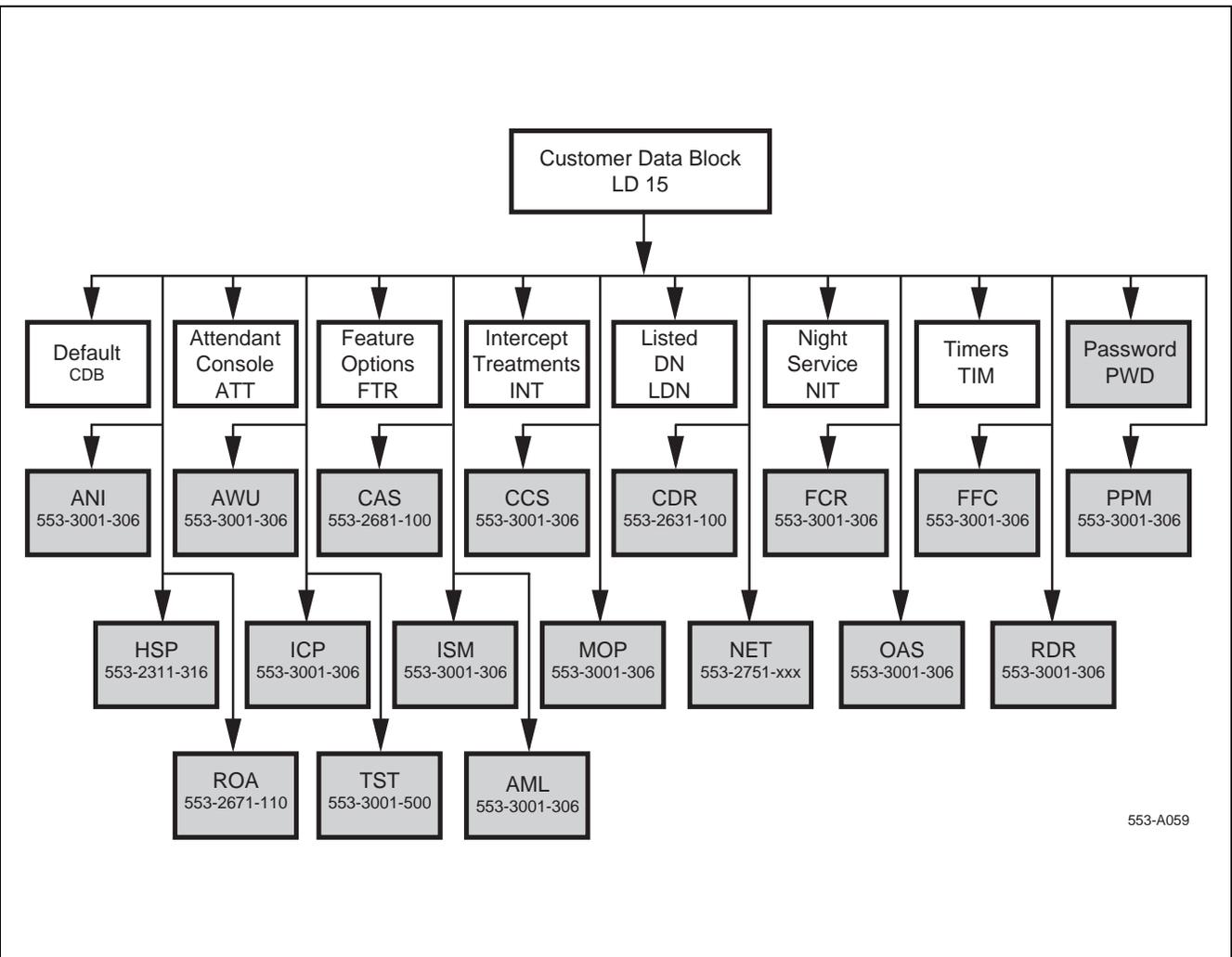
The following checklist summarizes the steps to take before entering customer data.

Table 10
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for attendant console features, feature options, intercept treatments, night service, timers, and other options.
✓		<i>X11 Administration</i> (553-3001-311) LD 15, for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

Customer Data Block flowchart

The flowchart on page 104 shows the gate openers for LD 15. The gate openers shown in the unshaded boxes have examples in this guide. The gate openers shown in the shaded boxes do not have examples in this guide. However, NTP references are listed.

Entering customer data**Figure 15**
Customer data block

Entering customer data

An example of Customer Data configuration

STEP	ACTION	
1	Log in	
		For information on proper login procedures, see <i>Basic Programming Instructions</i> in the <i>Basic Telecom Management Guide</i>
2	Create a customer number	
	>LD 15	
	REQ: NEW	See <i>X11 Administration (553-3001-311) LD 15 Alphabetical list of prompts</i> for details of each prompt and response. Read the LD 15 first page for the meaning of the colon.
	TYPE: DEF	Create a new customer number.
	CUST 99	SPG example, 99 is the customer number. However, in most cases you would start with customer 0.
	ANI_DATA	
	ANAT 0000	(ANI can be done with the DEFAULT gate opener or the ANI gate opener. See 553-3001-306.) This prompt will not accept a return to show the next prompt. SPG example, 0000 allows the next prompt to appear as the ANAT is not used. <i>X11 Features and Services (553-3001-306) Attendant Consoles</i> chapter.
	ANLD 000	This prompt does not accept a return to show the next prompt. SPG example, 000 allows the next prompt to appear as the ANLD value, associated with ANAT, is not used.
	CIS_ANI cr	CIS = Confederation of Independent States (formerly Russia). SPG example, a carriage return steps to the next prompt. <i>X11 Features and Services (553-3001-306) CIS ANI Digits Manipulation and Gateways Enhancements</i> chapter.
— continued —		

Entering customer data

STEP	ACTION		
	CACC	cr	SPG example, a return steps to the next prompt. <i>X11 Features and Services</i> (553-3001-306) CIS ANI Digits Manipulation and Gateways Enhancements chapter.
3	Attendant console CDB features		
	>LD 15		Refer to <i>X11 Features and Services</i> (553-3001-306) Attendant Consoles chapter.
	REQ:	CHG	<i>X11 Administration</i> (553-3001-311) <i>LD 15, Gate Opener: ATT (Attendant Consoles)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section. Refer to <i>X11 Features and Services</i> (553-3001-306) <i>Attendant Consoles</i> chapter.
	TYPE:	ATT_DATA	Enter ATT_DATA to set attendant console options.
	CUST	99	SPG example, 99 is the customer number.
	OPT	CPA IDP	SPG example, Call Park allowed and Digit Display included. For OPT details refer to OPT on page 109.
	ATDN	cr	SPG example, a return accepts default value 0 as DN. <i>X11 Features and Services</i> (553-3001-306) Flexible Attendant Directory Number chapter.
	NCOS	cr	SPG example, a return accepts default value. Refer to <i>Basic and Network Alternate Route Selection: Description</i> (553-2751-100).
	CWUP	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), <i>Meridian 1 Attendant Console Enhancements</i> chapter.
	CWCL	20 30	SPG example, 20 the lower limit and 30 the upper limit. Refer to <i>X11 Features and Services</i> (553-3001-306), <i>Attendant Calls Waiting Indication</i> chapter.
	CWTM	30 46	SPG example, 30 seconds is the lower limit and 46 seconds the upper limit. Refer to <i>X11 Features and Services</i> (553-3001-306), <i>Attendant Calls Waiting Indication</i> chapter.
— continued —			

Entering customer data

STEP	ACTION		
	CWBZ	YES NO	SPG example, buzz for call waiting limit and time, no second buzz. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Calls Waiting Indication chapter.
	EFLL	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306).
	MATT	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306).
	RTIM	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306).
	AQTT	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Overflow Position chapter.
	AODN	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), <i>Attendant Overflow Position</i> chapter.
	SPVC	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Supervisory Console chapter.
	RTSA	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Recall chapter.
	SACP	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Semi-automatic Camp-on chapter.
	ABDN	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Semi-automatic Camp-on chapter.
— continued —			

Entering customer data

STEP	ACTION	
IRFR	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Call Forward, Remote (Attendant and Network Wide chapter).
XRFR	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Call Forward, Remote (Attendant and Network Wide chapter).
ADHT	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Delay chapter.
AFNT	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Attendant Forward No Answer chapter.
IDBZ	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Meridian 1 Attendant Console Enhancements chapter.
PBUZ	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Meridian 1 Attendant Console Enhancements chapter.
ICI	cr	For the SPG example, a return steps by this prompt. Incoming Call Indicators can not be programmed until the Attendant console is programmed. When the console is programmed, return to this prompt and enter the ICIs. Refer to <i>Attendant Consoles: Description</i> (553-2201-117) for the location of the ICI keys
RICI	cr	SPG example, a return accepts default value. Refer to <i>X11 Features and Services</i> (553-3001-306), Recorded Overflow Announcement chapter.

— continued —

Entering customer data

STEP	ACTION	
4	Customer wide Feature and options	
	>LD 15	
REQ:	CHG	<i>X11 Administration (553-3001-311) LD 15, Gate Opener: FTR (Features and options) for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.</i>
TYPE:	FTR_DATA	Enter FTR_DATA to set feature options.
CUST	99	For the SPG example, 99 is the customer number.
OPT	cr	SPG example, a return accepts default value for the following OPT responses. The comment beside the OPT responses lists the reference chapters in <i>X11 Features and Services (553-3001-306) NTP</i> .
	(ABDD)	First-second Degree Busy Indication chapter.
	(AHD)	Recovery on Misoperation of Attendant Console chapter.
	(AMD)	China – Attendant Monitor chapter.
	(ATDA)	
	(BIND)	Attendant Break-In Busy Indication and Prevention chapter.
	(BIXA)	Attendant Break-In Busy Indication and Prevention chapter.
	(BLA)	Attendant Break-In to Lockout Set Denied chapter.
	(BOHD)	Position Busy with Call on Hold chapter.
	(CFO)	Call Forward All Calls chapter.
	(CFRD)	Call Forward All Calls chapter.
	(CHDD)	Charge Display at End of Call chapter.
	(COX)	Call Pickup chapter.
	(CPD)	Call Park chapter.
	(CTD)	Camp-On chapter.
	(CUI)	Console Operations chapter.
	— continued —	

Entering customer data

STEP	ACTION
	(CWRD) Call Waiting Redirection chapter.
	(CXOD) Tones, Flexible Incoming chapter.
	(DBA) Tones, Flexible Incoming chapter.
	(DNCA) <i>Attendant Forward No Answer</i> chapter.
	(DNX) Refer to <i>Automatic Call Distribution: Feature Description (553-2671-110)</i>
	(DRE) Console Operations chapter.
	(DSX)
	(DSTD) Lockout, DID Second Degree Busy, and MFE Signaling Treatments chapter.
	(FACD) Flexible Attendant Call Waiting Thresholds chapter.
	(FKA) Call Forward and Busy Status chapter.
	(HLPD) Call Hold, Individual Hold Enhancement chapter.
	(HRLD) Call Hold, Individual Hold Enhancement chapter.
	(HTU) Hot Line chapter.
	(HVD) Dial Intercom chapter.
	(IC1) Attendant Consoles chapter.
	(IHD) Call Hold, Deluxe chapter.
	(LLCD) Line Load Control <i>chapter</i> .
	(LOD) Attendant Consoles chapter.
	(LRD) Last Number Redial chapter.
	(MCTD) Malicious Call Trace on Direct Inward Dialing chapter.
	(MCX) Call Forward No Answer, Second Level chapter.
	(MWUD) Message Waiting Unconditional chapter.
	(NCD) Console Operations chapter.
	(PCMD) <i>Periodic Clearing on RAN, Meridian Mail, ACD and Music</i> chapter.
— continued —	

Entering customer data

STEP	ACTION
	(PSD) Console Operations chapter.
	(PVCA) Call Forward All Calls chapter.
	(RECA) Console Operations chapter.
	(REA) Recovery on Misoperation of Attendant Console chapter.
	(RND) Ring Again on No Answer chapter.
	(ROX) Recorded Overflow Announcement chapter.
	(RTD) Refer to <i>Coordinated Dialing Plan: Description (553-2751-102)</i> .
	(RTR) Camp-On to a Set in Ringback or Dialing chapter.
	(SBD) Tones, Flexible Incoming chapter.
	(SDDE) Single-digit Access to Hotel Services chapter.
	(SIAD) Source Included when Attendant Dials chapter.
	(SLD) Slow Answer Recall Enhancement chapter.
	(SYD) Attendant Consoles chapter.
	(THPD) Refer to <i>Automatic Call Distribution: Feature Description (553-2671-110)</i> .
	(TOA) China – Attendant Monitor chapter.
	(TTAD) <i>Call Detail Recording</i> chapter.
	(VOBD) Make Set Busy and Voice Call Override chapter.
	(XBL) Attendant Supervisory Console chapter.
	(XDP) Attendant Consoles chapter.
	(XLDN) Departmental Listed Directory Number chapter.
	(XLF) Attendant Consoles chapter.
	(XTG) Attendant Consoles chapter.
DGRP	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Dial Intercom</i> chapter.

— continued —

Entering customer data

STEP	ACTION	
IRNG	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Distinctive/New Distinctive Ringing chapter.
PKND	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Call Pickup, Directed chapter.
DNDL	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Do Not Disturb chapter.
SPRE	cr	SPG example, a return accepts default value.
PREO	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Pretranslation chapter.
BPSS	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Pretranslation and System Speed Call Enhancement chapter.
SRCD	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Automatic Set Relocation chapter.
EEST	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> End-to-End Signaling chapter.
EESD	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> End-to-End Signaling chapter.
TTBL	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> End-to-End Signaling chapter.
MUS	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Music, Enhanced chapter.
HCC	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Held Call Clearing chapter.
ALDN	cr	SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Malicious Call Trace</i> chapter.
— continued —		

Entering customer data

STEP	ACTION	
	RECD	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Malicious Call Trace</i> chapter.
	STCB	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Night Service Enhancements</i> chapter.
	NSCP	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Camp-On</i> chapter.
	TFRD	cr SPG example, a return accepts default value.
	RPA	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Radio Paging</i> chapter.
	MCDC	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Malicious Call Trace DN/TN Print</i> chapter.
	NAUT	cr SPG example, a return accepts default value. <i>Basic and Network Authorization Code:</i> <i>Description (553-2751-103)</i>
	IDEF	cr SPG example, a return accepts default value.
	LEND	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Speed Call Delimiter</i> chapter.
	MSCD	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Speed Call Delimiter</i> chapter.
	CPCI	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Called Party Control on Internal Calls</i> chapter.
	CONF_DSP	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Selectable Conferee Display and Disconnect</i> chapter.
	DAPC	cr SPG example, a return accepts default value.

— continued —

Entering customer data

STEP	ACTION	
	BSFE	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Boss/Secretary Filtering Enhancement chapter.
	ASPCT	cr SPG example, a return accepts default value.
5	Customer wide Intercept Treatments	
	>LD 15	
	REQ:	CHG <i>X11 Administration (553-3001-311) LD 15, Gate Opener: INT (Intercept Treatments)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.
	TYPE:	INT_DATA Enter INT_DATA to set Intercept treatments.
	CUST	99 For the SPG example, 99 is the customer number.
	ACCD	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>AC15 Recall: Transfer from Norstar, Intercept Treatment</i> chapters.
	CTVN	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	MBNR	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	CTRC	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	CLDN	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	NINV	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	NITR	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	NRES	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
— continued —		

Entering customer data

STEP	ACTION	
	NBLK	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment chapter.
	MFVO	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment Enhancements chapter.
	MFVN	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment Enhancements chapter.
	MFCG	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Intercept Treatment Enhancements chapter.
	LCKT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Lockout, DID Second Degree Busy, and MFE Signaling Treatments</i> chapter.
	RCLE	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Total Redirection Count</i> chapter.
	CONG	cr SPG example, a return accepts default value.
	DLT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> <i>Line Lockout</i> chapter.
	LLT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> AC15 Recall: Transfer from Norstar, and Off-Hook Alarm Security chapters.
	DNDT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Do Not Disturb chapter.
6	Listed Directory Numbers on attendant consoles	
	>LD 15	
	REQ:	CHG <i>X11 Administration (553-3001-311)</i> LD 15, Gate Opener: LDN (Listed Directory Numbers) for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.
	TYPE:	LDN_DATA Enter LDN_DATA to set Listed DN.
— continued —		

Entering customer data

STEP	ACTION	
	CUST	99 For the SPG example, 99 is the customer number.
	OPT	cr SPG example, a return accepts default value. For Opt details refer to OPT on page 109.
	DLDN	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Departmental Listed Directory Number</i> chapter.
	LDN0	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Departmental Listed Directory Number</i> chapter.
	ICI	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Departmental Listed Directory Number</i> chapter.
7	Night Service on attendant consoles	
	>LD 15	
	REQ:	CHG <i>X11 Administration (553-3001-311) LD 15, Gate Opener: NIT (Night Service)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.
	TYPE:	NIT_DATA Enter NIT_DATA to set Night service.
	CUST	99 For the SPG example, 99 is the customer number.
	NIT1	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Attendant Consoles</i> chapter.
	NIT2	cr SPG example, a return steps to the next prompt.
	NIT3	cr SPG example, a return steps to the next prompt.
	NIT4	cr SPG example, a return steps to the next prompt.
	RPNS	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306) Recall with Priority during Night Service</i> chapter.
— continued —		

Entering customer data

STEP	ACTION	
	ENS	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Enhanced Night Service chapter.
8	Timers	
	>LD 15	
	REQ:	CHG <i>X11 Administration</i> (553-3001-311) <i>LD 15, Gate Opener: TIM (Timers)</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.
	TYPE:	TIM_DATA Enter TIM_DATA to set timers.
	CUST	99 For the SPG example, 99 is the customer number.
	FLSH	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Intercept Computer Dial from Directory chapter.
	PHDT	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Call Hold, Permanent chapter.
	DIND	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Line Lockout chapter.
	DIDT	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Line Lockout chapter.
	LDTT	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) 500/2500 Line Disconnect chapter.
	DLAT	cr SPG example, a return accepts default value.
	BOTO	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Digital Trunk Interface – Commonwealth of Independent States, and Line Lockout chapters.
	DBRC	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Audible Reminder of Held Calls chapter.
	RTIM	cr SPG example, a return accepts default value. <i>X11 Features and Services</i> (553-3001-306) Automatic Timed Reminders chapter.
— continued —		

Entering customer data

STEP	ACTION	
	AQTT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Attendant Consoles chapter.
	ADLD	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Autodial chapter.
	AFNT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Attendant Forward No Answer chapter.
	NFNA	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Attendant Forward No Answer chapter.
	ADHT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Attendant Delay chapter.
	HWTT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Automatic Wake Up chapter.
	NIT	cr SPG example, a return accepts default value. <i>Basic and Network Alternate Route Selection: Description (553-2751-100)</i> .
	FOPT	cr SPG example, a return accepts default value. <i>X11 Features and Services (553-3001-306)</i> Flexible Orbiting Prevention Timer chapter.
9	Check your programming	
	>LD 21	
	REQ	PRT Enter PRT.
	TYPE	CDB Enter CDB to verify the customer data block.
	REQ	**** Terminate the overlay by entering ****.
10	Perform a data dump to permanently store the programming you have just completed	
	Refer to <i>X11 Maintenance (553-3001-511)</i> for more information on LD 43.	
	> LD 43	
	. EDD <cr>	
— continued —		

Entering customer data

STEP	ACTION
11	Verify that the data dump was successful System response: Database backup Complete! For any other system response, contact your system supplier.
12	Terminate this overlay program ****
13	Terminate this programming session Log off. >LOGO
14	You have completed the programming required to enter customer data
	

Entering customer data

Setting up attendant consoles

Purpose

Attendant Consoles assist in placing and extending calls into and out of the Meridian 1 system. The operator of an Attendant Console is known as the attendant. The consoles provide the attendant with many unique features that increase the speed and ease of call processing.

Refer to *Attendant Consoles: Description* (553-2201-117).

Attendant console features

The attendant console, in its standard configuration, allows you to perform basic operator tasks. Options are available to enhance or customize the attendant console, tailoring it to meet customer specific needs.

Administration tips

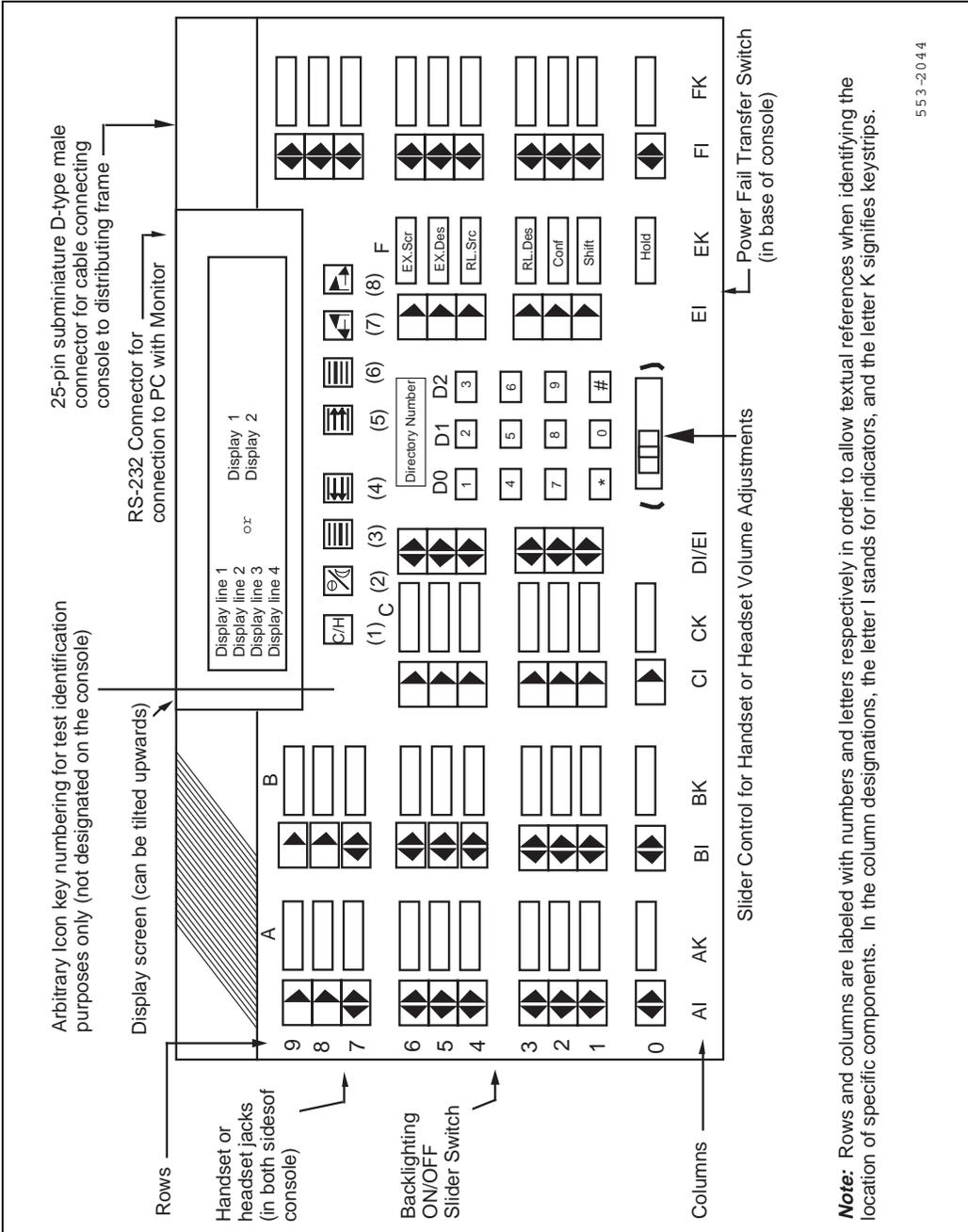


Do not assign attendant consoles to high priority card slots. The high number of priority messages generated by attendant consoles can result in delays, both in messages output to the attendant consoles themselves, and to messages output to telephones and trunks.

Always assign attendant consoles to card slots 2 - 10. Avoid assigning a large number of attendant consoles to the same network loop.

Setting up attendant consoles

Figure 16
M2250 Attendant Console



553-2044

Setting up attendant consoles

What to have ready

The following checklist summarizes the steps to take before setting up an attendant console.

Table 11
Checklist

Basic	Optional	Preparation
	✓	<i>Attendant Consoles: Description</i> (553-2201-117) and <i>Telephone and Attendant Console: Installation</i> (553-3001-215)
✓		Your work order/instructions on how your Meridian 1 system is optioned for Consoles.
✓		<i>X11 Administration</i> (553-3001-311) <i>LD 12</i> , for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example of Attendant Console configuration

STEP	ACTION		
1	Log in		
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .		
2	Enable basic options you plan to install on the attendant console		
	>LD 12		
	REQ	NEW	
	TYPE	2250	SPG example, a type M2250 Attendant Console.
	TN	8 0 3 5	SPG example, the console connects to Unit 5 of the Digital line card in slot 3 on IPE shelf 0 controlled by Superloop 8.
— continued —			

Setting up attendant consoles

STEP	ACTION		
	SEIN	8 0 3 6	SPG example, the console is as big as two telephones therefore it requires two TNs.
	CUST	99	SPG example, 99 is the customer number.
	ANUM	2	SPG example, this will be the second console on the system.
	IADN	23	As the SPG system has two consoles, SPG telephone users can dial 23 to call attendant console number 2.
	SSU	cr	SPG example, a return shows the next prompt.
	ICDR	cr	SPG example, a return denies CDR.
	CPND	CNDA	SPG example, Call Party Name Display shown on the console.
	DNDI	DNDA	SPG example, Dialed Name Display shown on the console.
	LANG	cr	SPG example, a return defaults to English.
	SGRP	cr	SPG example, a return accepts default value.
	QTHM	cr	SPG example, a return accepts default value.
	DNAN	cr	SPG example, a return accepts default value.
	DAPC	cr	SPG example, a return allows Dial Access Prefix on console.
	KEY	0 ADL	SPG example, key 0 is an auto dial key. Refer to <i>Attendant Consoles: Description</i> (553-2201-117) for key layouts.
	KEY	1 CPK	SPG example, key 1 is a Call Park key.
	KEY	cr	SPG example, a return ends the programming.
	REQ	****	Terminate the overlay by entering ****.
3	Check your programming		
	>LD 20		
	REQ	PRT	Enter PRT.
	TYPE	2250	Enter 2250 to verify the attendant programming.
	TN	8 0 3 5	SPG example, enter 8 0 3 5 to verify the attendant programming.
— continued —			

Setting up attendant consoles

STEP	ACTION
	<p>CDEN <code>cr</code> Enter return to step to next prompt.</p> <p>DATE <code>cr</code> Enter return to step to next prompt.</p> <p>PAGE <code>cr</code> Enter return to step to next prompt.</p> <p>REQ <code>****</code> Terminate the overlay by entering <code>****</code>.</p> <p>Verify that the display is functioning on the attendant console.</p>
4	<p>Perform a data dump to permanently store the programming you have just completed</p> <p>Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.</p> <p>> LD 43</p> <p>. EDD <cr></p>
5	<p>Verify that the data dump was successful</p> <p>System response:</p> <p>Database backup Complete!</p> <p>For any other system response, contact your system supplier.</p>
6	<p>Terminate this overlay program</p> <p>. ****</p>
7	<p>Terminate this programming session</p> <p>Log off.</p> <p>>LOGO</p>
8	<p>You have completed the programming required to add an attendant console</p>
	

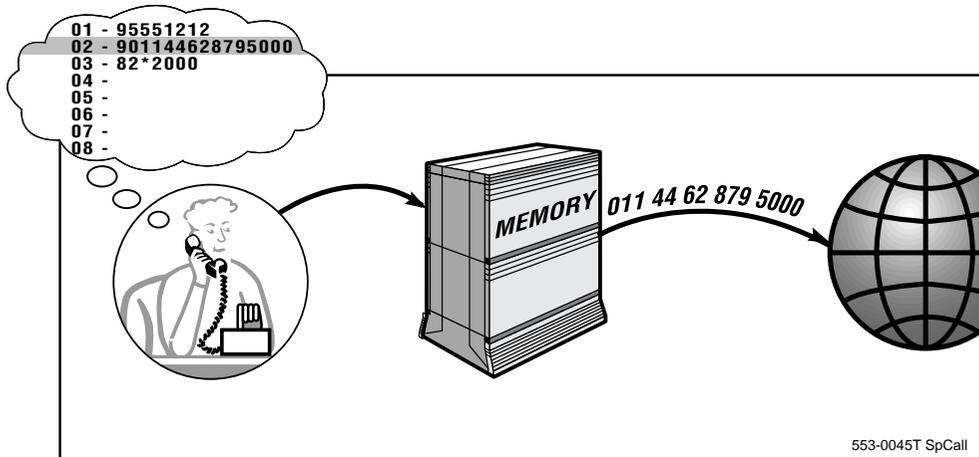
Setting up attendant consoles

Setting up speed call

Purpose

Speed Call lets telephone users place calls to preprogrammed numbers by dialing a one-, two-, or three-digit code.

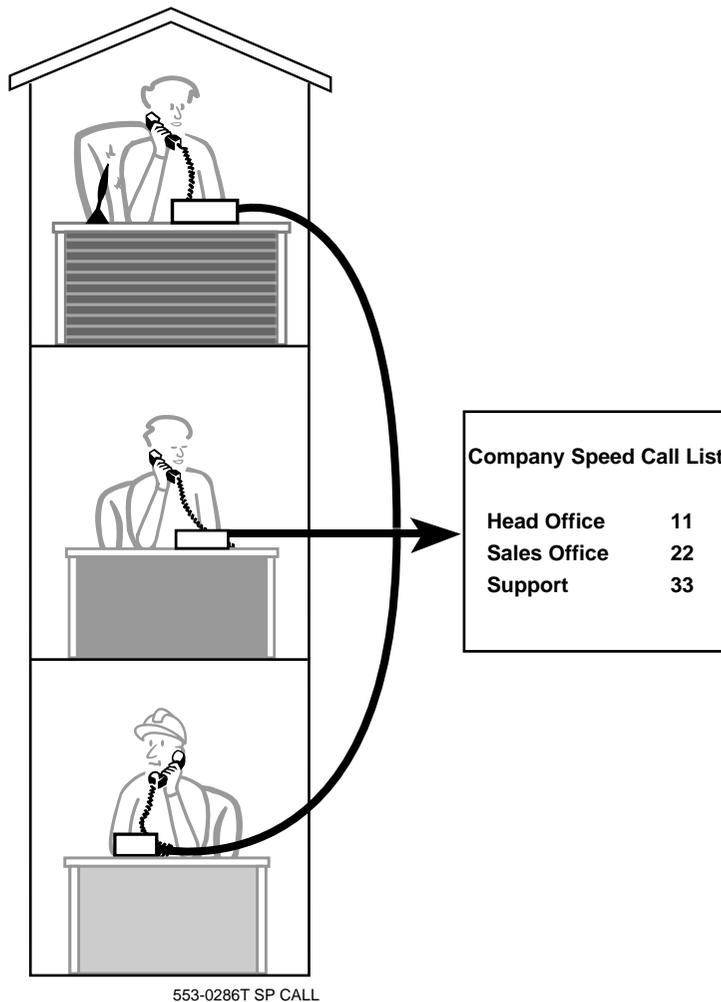
The telephone numbers are stored in Speed Call lists.



Setting up speed call

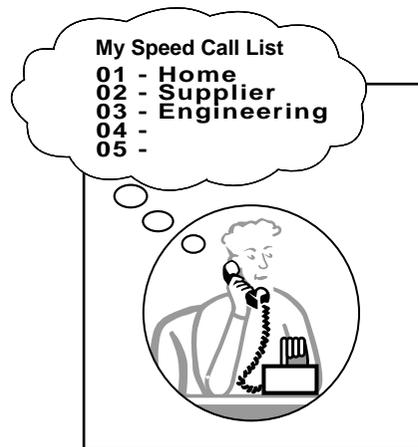
Speed Call lists

There are two kinds of Speed Call list. One type of list, the system-wide Speed Call list, can be accessed from any telephone. The company can program commonly used numbers into the system-wide Speed Call list, and give all employees access to commonly used telephone numbers.



Setting up speed call

The other type of Speed Call list is specific to each Directory Number. Telephone users can program these private Speed Call lists with the numbers they most frequently call.



553-0287T Sp Call

List limits

Each stored number is assigned a Speed Call code from the Speed Call list. Each list can contain up to 1000 telephone numbers (entries). The maximum number of digits of the telephone number that can be stored in each entry is specified by the customer. Speed Call entries can be 4, 8, 12, 16, 20, 24, 28, or 31 digits long.

You can define up to 8191 (0-8190) Speed Call lists per system, as long as enough memory is available. The limit includes all combined Speed Call, System Speed Call (SSC), and Hot Line lists.

You can have as many Speed Call lists as you have available key/lamp pairs on any Meridian 1 proprietary telephone, or attendant console. Any number of users can be assigned to a list. Analog (500/2500 type) telephones can access only one Speed Call list.

Setting up speed call

A maximum of 31 digits for the telephone number is allowed per Speed Call list entry. An asterisk (*), which indicates a pause, and an octothorpe (#), which indicates end-of-dialing, can be programmed as part of the entry.

Speed Call list entries can be defined in LD 18 or by Speed Call Controllers (SCC). SCCs must know the digit length (one, two, or three) required for the Speed Call codes in each list.

Speed call operation

You can use Speed Call for both internal and external calls.

Programming and using lists

SCCs can program numbers into the Speed Call list. Speed Call Users (SCU) can use the Speed Call list. SCCs and SCUs can be analog (500/2500 type) telephones, Meridian 1 proprietary telephones, and attendant consoles.

Telephones designated as a SCUs cannot program numbers into lists.

You can assign more than one SCC to each list, but it is not recommended.

Speed Call dialing

To store an external number on a Speed Call list, enter the appropriate trunk group access code in front of the digits in the call.

For example, an external number in North America, such as 555-1212 is stored as 95551212.

Meridian 1 systems do not require a pause after a COT (Central Office Trunk) access code such as 9.

If a pause for dial tone is required between digits, use the asterisk (*). The * provides a 3 second pause between digits.

If the call is to be routed over to another type of system first, and outpulsed from there, that system might require a pause after the trunk access code, before the other digits in the number are outpulsed. For

Setting up speed call

example, if you want to send calls over a TIE trunk and then outpulse digits from the system at the other end, store the same number. For example, if 82 is the TIE trunk access code for the TIE trunks to another system and it is not an Meridian 1 system, store a number as 82*9*5551212. You can remove the pauses if the other system does not require them. Experiment with the number of pauses you need until you find a sequence of digits and pauses that works every time.

Store an octothorpe (#) at the end of the digits to indicate end of dialing. This speeds up outpulsing of the call.

The Speed Call key cannot be used after a Centrex Switchhook Flash or during an established call to send digits out to the far site. The Speed Call key can be used only during the dialing stage.

Privacy

A telephone user can store a Calling Party Privacy (CPP) code as part of a telephone number in the in the Speed Call list. An outgoing trunk call, using the Speed Call code carries the Privacy Indicator. The user cannot dial *67 (or anything else) before accessing a Speed Call list entry.

Authorization codes

If a Speed Call entry is programmed with a valid Authcode for Authcode Last followed by an octothorpe "#", the existing Authcode Last operation will reject the Authcode as an invalid Authcode. If Authcode Last Retry is defined, the caller is reprompted for the Authcode.

Last Number Redial

A number dialed using Speed Call will become the Last Number Redial number on all telephones except the M2317 and M3000.

Pretranslation

A Speed Call List number should be programmed to allow for Pretranslation. For example, if 9 pretranslates to 99 and you want to reach 99 nxx xxxx, you need to program the number in the Speed Call List as 9 nxx xxxx. When the Speed Call List is used, 9 nxx xxxx is pretranslated at call processing time to become 99 nxx xxxx.

Setting up speed call

Three Wire Analog Trunk - Commonwealth of Independent States (CIS)

Speed Call on an E3W trunk will fail for toll calls. E3W trunks do not wait for the ANI request from the Public Exchange, that is expected to appear after the toll access code is dialed. The Public Exchange will not accept the call due to the failure to receive ANI information.

What to have ready

The following checklist summarizes the steps to take before configuring Speed Call.

Table 12
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for terminals.
✓		<i>X11 Administration (553-3001-311) LD 18, Speed/Group call, Pretranslation, Special Service, 16-Button DTMF and Hotline</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

An example of Speed Call configuration

STEP	ACTION
1	Log in For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .
— continued —	

Setting up speed call

STEP	ACTION	
2	Calculate the available memory and disk space	
	>LD 18	
REQ	COMP	<i>X11 Administration (553-3001-311) LD 18, Speed/Group call, Pretranslation, Special Service, 16-Button DTMF and Hotline</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section. Enter COMP to compute disk and memory requirements for new lists.
TYPE	SCL	Enter SCL to calculate space for Speed Call.
NOLS	150	SPG example, 150 lists to be added.
DNSZ	cr	SPG example, return accepts the default value of 16 digit DNs.
SIZE	35	SPG example, 35 DNs per list.
	ADDS: MEM: 22050 DISK: 43.1 Where 22050 is the amount of protected memory and 43.1 is the number of disk records required for the new speed call list.	
	MEM AVAIL: (U/P): 637887 USED U P: 804741 15547 TOT: 1458175 (U/P) = Unprotected data / Protected data in bytes. 637887 = amount of memory for U/P data. 804741 = amount of memory used for U data of the total of 1458175 bytes. 15547 = amount of memory used for P data of the total of 1458175 bytes. Refer to <i>Capacity Engineering (553-3001-149)</i> .	
	Compare the MEM AVAIL: values the system returns with the ADDS: MEM:xxx and DISK:xxx values to ensure that your system has sufficient memory and disk space.	
3	Configure Speed Call list	
REQ	NEW	Add a new list.
TYPE	SSC	SPG example, create a new System Speed Call list. <i>X11 Features and Services (553-3001-306) Speed Call</i> chapter.
— continued —		

Setting up speed call

STEP	ACTION		
	LSNO	4	SPG example, 4 is the number for one of the 150 lists. Now we only have to make 149 more lists.
	NCOS	cr	SPG example, a return accepts default value.
	DNSZ	cr	SPG example, a return accepts default value.
	SIZE	25	SPG example, 25 DNs allowed in the list.
	WRT	cr	SPG example, a return accepts default value.
	ADDS: MEM:x DISK: y		
	STOR	09 16	SPG example.
	WRT	cr	SPG example, a return accepts default value.
	STOR	cr	SPG example, a return finishes the programming.
	REQ	END	Exit the overlay.
4	Check your programming		
	>LD 20		
	REQ	PRT	Enter PRT.
	TYPE	SCL	Enter SCL to verify the speed call list.
	LSNO	4	SPG example, 4 is the list number.
	RNGE	cr	SPG example, returne to print all entries. (Entries will not print until you program the DNs for the telephones)
	REQ	****	Terminate the overlay by entering ****.
5	Perform a data dump to permanently store the programming you have just completed		
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.		
	> LD 43		
	. EDD <cr>		
6	Verify that the data dump was successful		
	System response:		
	Database backup Complete!		
	For any other system response, contact your system supplier.		
7	Terminate this overlay program		

			— continued —

Setting up speed call

STEP	ACTION
8	Terminate this programming session Log off. >LOGO
9	You have completed the programming required to configure Speed Call
	

Setting up speed call

Configuring tones

Purpose

Tones are used by the Meridian 1 and other telephone equipment for signalling. This equipment includes all 2500-type telephones and trunks that send Digitone Multifrequency (DTMF) tones to the system, and by Multifrequency (MF) trunks that send MF tones to the system. All 2500 sets and some trunks must have Class of Service (CLS) defined as Digitone (DTN).

Configuring tones is your final task, and is only completed after 2500-type telephones and trunk requirements have been determined for the complete system. Refer to *Capacity Engineering* (553-3001-149) for details on calculating tone configuring requirements

Digitone receivers

Digitone receivers (DTR) are cards that are equipped on your Meridian 1 if you are using Digitone-type telephones or if your system connects to trunks that use Digitone signaling. The DTR interprets the Digitone tone signals, converting tones into a digital signal that the Meridian 1 CPU can use.

DTRs are shared among all the Digitone-type telephones and trunks. The number of DTRs needed on your system depends on the number of Digitone-type telephones to be used, the number of Digitone signaling trunks, and the expected level of traffic.

Configuring tones

Tone detectors

Tone detectors (TDET) are used by the Meridian 1 to identify tones sent to the system across trunks. TDETs are shared among all the trunks equipped on the Meridian 1.

Dial tone detectors

Dial tone detectors (DTD) are used by the Meridian 1 to detect dial tone on outgoing trunks. The number of DTDs needed on your system is determined by the number of trunks that have been equipped, and the level of outgoing traffic.

What to have ready

The following checklist summarizes the steps to take before configuring Digitone Receivers.

Table 13
Checklist

Basic	Optional	Preparation
✓		Your work order/instructions on how your Meridian 1 system is optioned for terminals.
✓		<i>X11 Administration (553-3001-311) LD 13, Digitone Receivers, Tone Detectors, Multifrequency Senders and Receivers</i> for details of Prompt, Response, Comment, and the Alphabetical list of prompts section.

Configuring tones

An example Digitone Receiver configuration

STEP	ACTION		
1	Log in		
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .		
2	Define a new Digitone receiver		
	>LD 13		
	REQ	NEW	See <i>X11 Administration</i> (553-3001-311) <i>LD 13 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	DTR	Add a new Digitone receiver (DTR).
	TN	8 0 10 0	SPG example, is the DTR unit 0, on DTR card 10, located on XPE shelf (module) 0, controlled by superloop 8.
	REQ	END	Exit the overlay.
3	Check your programming		
	>LD 20		
	REQ	PRT	Enter PRT.
	TYPE	DTR	Enter DTR to verify the Digitone receiver data block.
	TN	8 0 10 0	SPG example, the TN is 8 0 10 0
	CDEN	cr	Enter return to step to next prompt.
	DATE	cr	Enter return to step to next prompt.
	REQ	****	Terminate the overlay by entering ****.
4	Perform a data dump to permanently store the programming you have just completed		
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.		
	> LD 43		
	. EDD <cr>		
— continued —			

Configuring tones

STEP	ACTION
5	Verify that the data dump was successful System response: Database backup Complete! For any other system response, contact your system supplier.
6	Terminate this overlay program * * * *
7	Terminate this programming session Log off. >LOGO
8	You have completed the programming required to configure tones



Setting up digital and ISDN trunks

Purpose

Digital trunks carry signaling and calls in a digital format between telephone switches. Digital trunks provide greater quality than analog trunks and allow the use of advanced signaling and network features.

The proper configuration of digital trunks is essential to your telephone network access and features. If trunks are not properly provisioned, users can have difficulty placing calls to destinations served by other telephone switches, or are unable to use the network features available to them. Refer to *X11 Networking Features and Services* (553-2901-301), *ISDN PRI: Installation* (553-2901-201), and *ISDN PRI: Maintenance* (553-2901-501).

Digital trunks

Digital trunks can take many physical forms, including twisted pair cable, channels on multiplexed cable, and fibre optic links. The provisioning in software of these different types of physical trunks are the same. Configuration depends on the way a trunk will be used and billed.

Traffic

When planning to configure new trunks, consider the impact of the extra traffic load on the loop, or superloop, to which the trunk is connected. Loops and superloops perform best when they share equally in the total traffic load offered to the system.

Blockage within the system will be negligible when the traffic load per loop or superloop is kept within the recommended guidelines. If all your existing loops and superloops are at their recommended

Setting up digital and ISDN trunks

capacity, consider adding more to your system (especially if you will be adding more digitone receivers, telephones, or data terminals in the future).

Trunk types

Japan Digital Multiplex Interfaces

Japan Digital Multiplex Interface (JDMI) trunks provide connectivity between the Meridian 1 and other telephone switches. JDMI trunks carry both incoming and outgoing calls.

1.5 Mbit/s DTI trunks

1.5 Mbit/s Digital Trunk Interface (DTI) trunks provide digital connectivity between the Meridian 1 and other telephone switches in the North American market. DTI trunks carry both incoming and outgoing calls.

2.0 Mbit/s DTI trunks

2.0 Mbit/s Digital Trunk Interface (DTI) trunks provide digital connectivity between the Meridian 1 and other telephone switches. DTI trunks carry both incoming and outgoing calls.

DTI trunk options

Many trunk options exist. For detailed discussions of DTI trunk options and trunk provisioning, refer to the *ISDN PRI: Installation* (553-2901-201), and *ISDN PRI: Maintenance* (553-2901-501).

Signaling Category

Select a Signaling Category table number by responding to the SICA prompt in LD 14.

Channel order

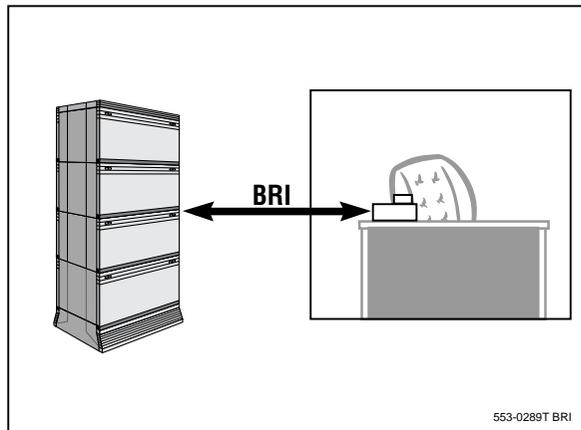
You can specify the order in which channels are allocated. To specify the channel order, respond to the INC prompt.

Setting up digital and ISDN trunks

ISDN trunks

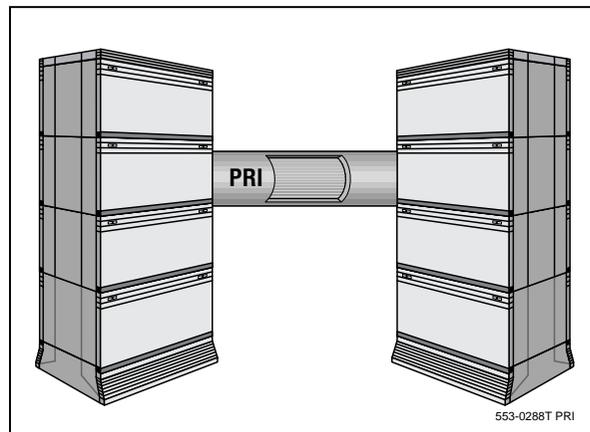
Basic rate interface

Basic rate interface (BRI) ISDN trunks provide 2 B + D ISDN access to end users. For more information about ISDN BRI configuration, refer to *X11 Networking Features and Services* (553-2901-301)



Primary rate interface

Primary rate interface (PRI) ISDN trunks provide either 23 B + D or 30 B + D ISDN access to end users. For more information about ISDN PRI configuration, refer to *X11 Networking Features and Services* (553-2901-301)



Setting up digital and ISDN trunks

ISDN 23B + D

Primary rate interface (PRI) ISDN 23 B + D trunks provide ISDN digital connectivity between the Meridian 1 and other telephone switches in the North American market. ISDN trunks carry both incoming and outgoing calls.

ISDN 30B + D

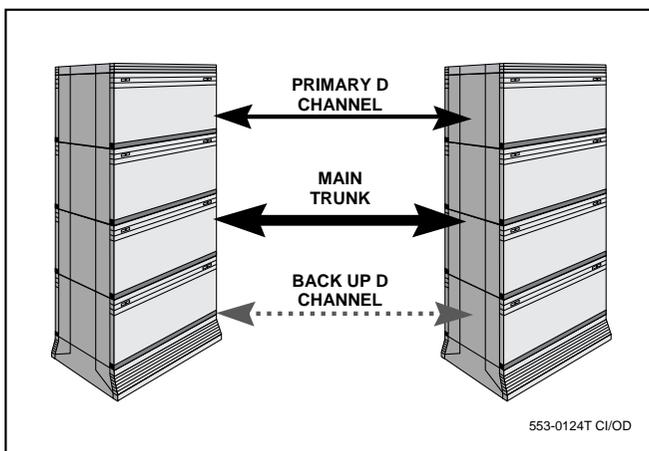
Primary rate interface (PRI) ISDN 30 B + D trunks provide ISDN digital connectivity between the Meridian 1 and other telephone switches. ISDN trunks carry both incoming and outgoing calls.

D-channels

An ISDN trunk carries call traffic only. The signaling used to control the trunk is carried over a separate set of links, called D-channels. The D-channels allow two telephone switches to negotiate channels on a trunk and handle call setup and control.

The D-channels between switches is carried over cable, modem connections, or other data connections. There are two D-channels for each ISDN trunk. The primary D-channel carries all the signaling traffic. The backup D-channel remains idle unless the primary D-channel fails.

The Meridian 1 treats the D-channels as input/output devices. To configure a D-channel for an ISDN trunk, respond to the ADAN and USER prompts in LD 17.



Setting up digital and ISDN trunks

Trunk routes

Digital trunk routes operate in the same way as analog trunk routes. A trunk route carries all calls of a specific type between two switches.

Some digital trunk options are described here. In addition, a number of trunk options described in the previous section apply.

Integrated Service Access Route

To set a route up for Integrated Service Access (ISA), enter YES at the ISAR prompt in LD 16. You need to specify a route number, facility indicator, and Service Identification at the RTN, FACY and SID prompts.

Set the minimum and maximum numbers of channels at the MIN and MAX prompts.

Specify the Network Class of Service group number and the Class of Service at the PRIM, NCOS and COS prompts.

Select Trunk Group Access Restrictions at the TGAR prompt.

Network Attendant Service

Network Attendant Service is a feature that allows attendants to be shared by Meridian 1 switches across a network. Calls that would normally be routed to an attendant at a particular Meridian 1 can be routed to an attendant at a different Meridian 1, even to a different location, if the local attendant is unavailable.

To allow Network Attendant Service to operate over a trunk route, respond to the NASA prompt.

Digital trunk route options

Protocol set group

To select a protocol set, respond to the PGPN prompt. Protocol set groups must already be defined in LD 27 before you can select them.

Setting up digital and ISDN trunks

Integrated Services Digital Network (ISDN)

Enter YES at the ISDN prompt to make a trunk route an ISDN route. Specify the mode of operation at the MODE prompt. Specify the DCHI port number at the DCHI prompt. Set the interface at the IFC prompt.

Respond to the TRO prompt to enable or disable trunk optimization.

Priority designation

You can specify a priority designation for DPNSS ISDN trunks. To set the priority, respond to the PRIO prompt in LD 14.

Malicious Call Trace

Enable or disable the Malicious Call Trace (MCT) signal at the MCTS prompt in LD 16. Define the call trace request string at the MCCD prompt. Specify the digit string delay time at the MCDT prompt.

Set the MCT request timer at the MCTM prompt. This is the delay in disconnection that occurs when the far-end goes on-hook for AXE-10 D-channels.

Specify the MCT tandem disconnect delay at the MTND prompt. This is the delay in disconnect operation at the node closest to the CO for AXE-10 interfaces.

Turn the MCT alarm on or off for external calls at the ALRM prompt.

Line identity options

Set the Line Identities option by responding to the LID prompt in LD 16. Enter 0 to suppress the sending of ISDN Line Identities, 1 to send identities, or 2 to convert and then send identities. Specify the Line Identities conversion tree number at the LCNO prompt. (The tree number is a DCNO tree defined in LD 49.)

Setting up digital and ISDN trunks

Programming order for Meridian 1 to Central Office (DMS) PRI

Order	Task	Overlay
1	Defining error detection thresholds	LD 73 Digital Data Block
2	Add a PRI loop	LD 17 Configuration Record
3	Add a DCHI card	LD 17 Configuration Record
4	Define a PRI customer	LD 15 Customer Data Block
5	Define the PRI route	LD 16 Route Data Block
6	Define the PRI B-channels (trunks)	LD 14 Trunk Data Block
7	Define clock synchronization	LD 73 Digital Data Block

An example of Meridian 1 to Central Office (DMS) PRI

STEP	ACTION	
1	Log in	
	For information on proper login procedures, see <i>Basic Programming Instructions</i> in <i>Basic Telecom Management</i> .	
2	Define error detection thresholds	
	>LD 73	
	REQ	NEW See <i>X11 Administration</i> (553-3001-311) <i>LD 73 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	DDB Enter DDB to configure the digital data block.
	— continued —	

Setting up digital and ISDN trunks

STEP	ACTION	
	PREF	cr SPG example, a return accepts default value.
	TRSH	0 SPG example, 0 defines the threshold table created using the following prompts.
	RALM	cr SPG example, a return accepts default value.
	BIPC	cr SPG example, a return accepts default value.
	LFAC	cr SPG example, a return accepts default value.
	BIPV	cr SPG example, a return accepts default value.
	SRTK	cr SPG example, a return accepts default value.
	SRNT	cr SPG example, a return accepts default value.
	LFAL	cr SPG example, a return accepts default value.
	SRIM	cr SPG example, a return accepts default value.
	SRMM	cr SPG example, a return accepts default value.
	TRSH	cr SPG example, a return accepts default value.
	ICS	cr SPG example, a return accepts default value.
	REQ	**** Enter **** to terminate overlay.
3	Check the Digital data block programming	
	>LD 73	
	REQ	PRT Request.
	TYPE	DDB Print the Digital data block.
	REQ	**** Enter **** to terminate overlay.
4	Add a PRI loop	
	>LD 17	
	REQ	CHG See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Gate Opener: CEQU (Common Equipment)</i> and <i>Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	CEQU Enter CEQU to add a PRI loop.
	MPED	cr SPG example, a series of returns to step past the prompts to arrive at the DLOP prompt.
	.	
	.	
— continued —		

Setting up digital and ISDN trunks

STEP	ACTION		
	DLOP	12 23 ESF	SPG example, the PRI digital loop number is 12 and 23 is the number of data calls allowed on this PRI with the ESF frame format used.
	MODE	PRI	SPG example, Primary Rate Interface mode.
	LCMT	B8S	SPG example, B8ZS gives a 64k clear channel as the T1 carrier supports a 64k clear channel. YALMFDL SPG example, FDL supported by the far end (Central Office).
	TRSH	0	SPG example, 0 matches the maintenance threshold table to be used for this PRI loop, as configured in LD 73.
	DTIC	cr	SPG example, a return does not reserve a card slot. Used to reserve a network card slot for a PRI card. You can not program card requiring network loop number in this slot.
	DLOP	cr	SPG example, a series of returns to step past DLOP and all other prompts and arrive at the end of LD 17. This prompt allows you to add more digital loops.
	.		
	.		
	.		
	REQ		(Go to step 4.)
5	Check the PRI loop programming		
	>LD 22		
	REQ	PRT	Enter PRT.
	TYPE	CEQU	Enter CEQU to print the common equipment data.
	REQ	****	Enter **** to terminate overlay.
6	Add a DCHI card		
	REQ	CHG	See <i>X11 Administration</i> (553-3001-311) <i>LD 17 Gate Opener: ADAN (Action Device and Number)</i> and <i>Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	ADAN	SPG example, enter ADAN to add a D-channel Handler Interface card.
	— continued —		

Setting up digital and ISDN trunks

STEP	ACTION	
	ADAN	NEW DCH 4 SPG example, add a NEW MSDL card with the I/O address of 4 matching the switch settings on the MSDL card.
	CTYP	MSDL SPG example, a D-channel interface card.
	GRP	3 SPG example, 3 group number for a 81C.
	DNUM	4 SPG example, 4 to match the MSDL card address switch settings.
	PORT	0 SPG example, MSDL card port.
	DES	DMS-100 SPG example, used to identify this card as a Central Office DCHI, on a print-out
	DPNS	cr SPG example, a return accepts default value.
	USR	PRA SPG example, the D-channel is for ISDN PRA only.
	IFC	cr SPG example, a return accepts default value for a Central Office type DMS-100.
	DCHL	12 SPG example, PRI loop number 12, which will carry the D-channel as its 24th channel.
	PRI	cr SPG example, a return steps to the next prompt.
	OTBF	cr SPG example, a return steps to the next prompt.
	DRAT	64KC SPG example, 64KC to match the CO B8S.
	SIDE	cr SPG example, a return accepts the default value.
	RLS	36 SPG example, 36 to match the CO (far-end).
	RCAP	ND2 SPG example, refer to <i>X11 Networking Features and Services</i> (553-2901-301).
	OVLR	cr SPG example, a return accepts default value.
	OVLS	cr SPG example, a return accepts default value.
	MBGA	cr SPG example, a return accepts default value.
	NASA	cr SPG example, a return accepts default value.
	TIMR	cr SPG example, a return accepts default value.

— continued —

Setting up digital and ISDN trunks

STEP	ACTION		
	LAPD	cr	SPG example, a return accepts default value.
	REQ	****	Enter **** to terminate overlay.
7	Check The D-channel programming		
	>LD 22		
	REQ	PRT	Enter PRT.
	TYPE	ADAN DCH	For the SPG example, enter ADAN TTY 7 to verify the terminal port settings. These setting must match those of the terminal connected to the switch.
8	Define a PRI customer		
	>LD 15		
	REQ:	CHG	See <i>X11 Administration (553-3001-311) LD 15 Gate Opener: CEQU (Common Equipment) and Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE:	NET	Enter NET to define a PRI customer.
	CUST	99	SPG example, 99 the customer number.
	.		
	.		
	.		
	ISDN	YES	SPG example, Enter YES to equip the customer with ISDN.
	PNI	1	SPG example, customer private network identifier.
	.		
	.		
	.		
	REQ	****	Enter **** to terminate overlay.
9	Check the PRI customer data programming		
	>LD 22		
	REQ	PRT	Request.
	TYPE	CDB	Print the customer data block.
	CUST	99	SPG example, 99 the customer number.
	REQ	****	Enter **** to terminate overlay.
	— continued —		

Setting up digital and ISDN trunks

STEP	ACTION	
10	Define an PRI route	
	>LD 16	
	REQ	NEW See <i>X11 Administration</i> (553-3001-311) <i>LD 16 RDB (Route Data Block)</i> and <i>Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE	RDB Enter RDB to create a route data block.
	CUST	99 SPG example, 99 the customer number.
	ROUT	100 SPG example, route number is 100.
	TKTP	COT SPG example, trunk type is a COT.
	DTRK	YES SPG example, YES for a digital trunk route.
	DGTP	PRI SPG example, digital trunk type for this route is Primary Rate Interface.
	ISDN	YES SPG example, enable ISDN option.
	MODE	PRA SPG example, route is used for PRA only.
	IFC	D100 SPG example, interface to a DMS-100.
	.	.
	.	.
	.	.
	CHTY	cr SPG example, a return accepts default value.
	ICOG	IAO SPG example, Incoming and outgoing trunk route.
	REQ	**** SPG example, Enter **** to terminate overlay.
11	Check the PRI route programming	
	>LD 21	
	REQ	PRT Request.
	TYPE	RDB Print the route data block.
	CUST	99 SPG example, 99 the customer number.
	ROUT	100 SPG example, 100 the PRI route.
	ACOD	cr SPG example, 99 the customer number.
	REQ	**** Enter **** to terminate overlay.
	— continued —	

Setting up digital and ISDN trunks

STEP	ACTION	
12	Define the PRI B-channels (trunks)	
	>LD 14	See <i>X11 Administration (553-3001-311) LD 14 TDB (Trunk Data Block) and Alphabetical list of prompts</i> for details of each prompt and response.
	REQ NEW 23	SPG example, create 23 new trunk members.
	TYPE COT	SPG example, Central Office trunk.
	TN 12 1	SPG example, the PRI digital loop number is 12 and the starting channel number is 1.
	.	
	.	
	.	
	CUST 99	SPG example, 99 the customer number.
	RTMB 100 23	SPG example, rout 100 member 23.
	PRDN cr	SPG example, return to step to next prompt.
	CLS cr	SPG example, return to accept default values.
	REQ ****	Enter **** to terminate overlay.
13	Check the PRI B-channel programming	
	>LD 20	
	REQ PRT	Request.
	TYPE COT	Print the central office B-channel data.
	TN cr	Return to print all B-channels.
	CUST 99	SPG example, 99 the customer number.
	DATE cr	Return to step to the next prompt.
	PAGE cr	Return to step to the next prompt.
	REQ ****	Enter **** to terminate overlay.
14	Define Clock synchronization	
	>LD 73	
	REQ CHG	See <i>X11 Administration (553-3001-311) LD 73 Alphabetical list of prompts</i> for details of each prompt and response.
	TYPE DDB	Change the digital data block.
	— continued —	

Setting up digital and ISDN trunks

STEP	ACTION	
	PREF	12 SPG example, loop 12 is the primary clock reference.
	SREF	cr SPG example, a return a there is no secondary PRI loop.
	REQ	**** Enter **** to terminate overlay.
15	Check clock synchronization programming	
	>LD 73	
	REQ	PRT Request.
	TYPE	DDB Print clock synchronization data.
	REQ	**** Enter **** to terminate overlay.
16	Enable digital trunk interface	
	>LD 60	
	.ENLL	12 Enable PRI loop 12.
	.STAT	12 Verify that the loop and all channels are enabled.
	REQ	**** Enter **** to terminate overlay.
17	Enable the D-channel	
	>LD 96	
	.ENL	DCH 4 Enable D-channel 4.
	.STAT	DCH 4 Verify that the D-channel created in step 4 is enabled.
	REQ	**** Enter **** to terminate overlay.
18	Perform a data dump to permanently store the programming you have just completed.	
	Refer to <i>X11 Maintenance</i> (553-3001-511) for more information on LD 43.	
	> LD 43	
	. EDD <cr>	
19	Verify that the data dump was successful	
	System response:	
	Database backup Complete!	
	For any other system response, contact your system supplier.	
	— continued —	

Setting up digital and ISDN trunks

STEP	ACTION
	Log off. >LOGO
20	You have completed the programming required to configure a digital trunk
	

Setting up digital and ISDN trunks

Setting up telephones

Refer to the *Basic Telecom Management Guide* to program telephones.

Setting up telephones

Terms and abbreviations

2500 set

A push button analog Digitone™ telephone. When a button or key is pressed, the telephone transmits a combination of two tones which represents the digit corresponding to the key pressed. Calls are made by pressing these buttons for the digits in the phone number to be called.

500 set

Dial telephone, sometimes called a rotary telephone. It has a rotary device on the front, used for the purpose of dialing digits to make calls. Each time a person turns the dial with a finger in one of the holes, the dial returns to its rest position. In doing so, the circuit connecting the telephone to the system is broken and reconnected the number of times marked beside the hole in the dial.

A-law companding

Except for North America, companding is accomplished using a logarithmic law called, A-law. See companding.

Access Restriction

Sometimes called the Class of Service of a telephone. It is only one component of the Class of Service. Access-restriction controls the types of calls that can be made from a telephone. For example, if the access-restriction type is programmed as Toll Denied, the telephone cannot be used to make any calls where the digit 1 or 0 is the first or second digit following the access code digits.

There are many different access restriction types that have different levels of control of the types of calls that can be made from the telephone.

Terms and abbreviations

ACD (Automatic Call Distribution)

Application software that puts incoming calls in a queue to one or more telephones referred to as agent telephones. The longest-waiting call is sent to the agent telephone that has been idle for the longest time. Incoming calls can be given a priority and answered at a prioritized telephone as an option. There are enhancements which can be added to basic ACD functionality to help with management and reporting tasks and also to customize and enhance the treatment incoming calls are given. ACD software packages A, B, C, D, and Custom Controlled Routing offer enhancements to management tools and reports, in order to add to the functionality of basic ACD.

Analog (500/2500 type) telephone

A name that replaces PBX set. The name describes a standard telephone set that works on many telephone systems. Examples of these systems are the Meridian 1, DMS or other vendors systems. Analog (500/2500 type) telephone describes the North American 500 set, United Kingdom analogue rotary dial, North American 2500 set, United Kingdom MF 4 and Unity telephones.

application processor

A special purpose computer that attaches to the Meridian 1 system to decrease the load on the system processor. The application processor provides value-added and special services. Application processors are used with voice mail, interactive voice response, and automatic call distribution.

Aries telephones

Digital telephones called the M2006, M2008, M2216ACD, M2616 telephones. They are also known as Meridian Modular Digital telephones.

Attendant

The main answering position on a system. From the attendant position, incoming calls are transferred to internal telephones. The terminal used at the attendant position is called a console. There can be one or more attendants on a system, although some systems do not

Terms and abbreviations

have any attendants. Attendants can answer incoming calls for the main listed number, recall those which have not been answered, calls from users who are dialing incorrectly, and calls from users who are attempting to place restricted calls.

Automatic Call Distribution (ACD)

Application software that puts incoming calls in a queue to one or more telephones referred to as agent telephones. The longest-waiting call is sent to the agent telephone that has been idle for the longest time. Incoming calls can be given a priority and answered at a prioritized telephone as an option. There are enhancements that can be added to basic ACD functionality to help with management and reporting tasks and also to customize and enhance the treatment incoming calls are given. ACD software packages A, B, C, D, and Custom Controlled Routing offer enhancements to management tools and reports, in order to add to the functionality of basic ACD.

Backup answering

Otherwise known as Call Redirection, backup answering refers to call answering at a telephone or voice messaging port, when the originally dialed caller is busy, not answering, or does not wish to be disturbed, and features such as Call Forward are active.

Basic Rate Interface (BRI)

An international standard for connecting terminals to a system. One BRI connection is composed of 2 B-channels at 64 kbit/s each, and 1 D-channel at 16 kbit/s.

BCS set (Business Communication Set)

A term for analog/digital hybrid telephones used on a Meridian 1 switch. The analog/digital hybrid telephones are no longer available.

BRI (Basic Rate Interface)

An international standard for connecting terminals to a system. One BRI connection is composed of two B-channels at 64 kbit/s each, and one D-channel at 16 kbit/s.

Terms and abbreviations

Business Communication Set (BCS)

Refer to BSC set.

Call Center

Another term for a queue of incoming calls being answered by one or more telephones.

Call Detail Recording (CDR)

CDR records are printed when calls are dialed. CDR records show information about the number dialed, the telephones involved, and the duration of the call. Additional information can be printed when CDR enhancements are installed on a system.

Call Pickup

Also called pickup or ringing number pickup. The feature that allows one user to answer an incoming call ringing at another telephone.

call processing

The action of the processor executing the work schedule routine to complete tasks controlled by telephone users. Call processing involves connecting telephone users to other telephones or facilities.

Call Redirection

Also known as backup answering, call redirection refers to calls answered at a telephone or voice messaging port when the originally dialed caller is busy, not answering, or does not wish to be disturbed, and features like Call Forward are active.

call register

Call registers are located in a part of transient data memory. Call registers store temporary information about trunks and telephone sets in the process of establishing calls. Each telephone or trunk in use has a separate call register containing approximately 40 words of information. An example of the 40 words are Class of Service, features, and time slots in use. This information is known as transient data as it is held in a call register only for the duration of the call. Part of the call register information is transferred to the network or

Terms and abbreviations

superloop cards. When the information is transferred, the network or superloop cards set up and control the call. When the call is finished, the transient data is erased from the call register.

Camp-On

This feature allows an attendant to extend a call to a busy telephone. The user of the telephone hears a tone indicating a call is Camped-On. When the user hangs up, the Camped-On call rings the telephone. If the user does not hang up within a programmed amount of time after hearing the tone, the Camped-On call recalls to the attendant.

carriage return

An instruction directing you to press the key on the keyboard marked ENTER, or RETURN. When you press the you tell the system you have finished that line of input. In this book the symbol <cr> is used for carriage return.

CCSA (Common Control Switching Arrangement)

A service offered by AT&T for private networks that allows any telephone in the network to call another using a seven-digit number.

CDR (Call Detail Recording)

CDR records are printed when calls are dialed. CDR records show information about the number dialed, the telephones involved, and the duration of the call. Additional information can be printed when CDR enhancements are installed on a system.

CE (Common Equipment)

A term for the part of the system that controls the operation of other system components. Common equipment is composed of CPU, memory, input/output ports, and disk storage.

Central Office (CO)

A large telephone switching system that provides service to subscribers located over a large geographic area, usually as part of a public or military switched telephone network. In North America a

Terms and abbreviations

central office is the facility containing the switching equipment that provides telephone service to subscribers in the immediate geographical area.

Central Office trunk (COT)

Physical carrier of voice and data traffic to and from a local Central Office. Can be copper wire, cable, or optical fibre.

Central processing unit (CPU)

The card that controls the functions of the other system components, following instructions it gets from the system memory. Some systems have one CPU and others have two.

Centrex

A type of telephone system that usually resides in the central office and can serve telephones distributed over a wide area. The Nortel Networks system that provides this functionality is called the DMS. It provides services and features that are similar to those of a PBX and some that are different.

channel

A transmission path capable of carrying voice or data.

Class of Service

There are many different capabilities and features that can be activated or deactivated for each telephone or trunk. A programming term is used to refer to these capabilities and features collectively. It is Class of Service. For example, the Last Number Redial feature is activated in the Class of Service.

Some people use the term Class of Service when they are referring to one particular feature called Access Restriction. When you program Trunks, Meridian Mail channels, Authorization Codes, and Direct Inward System Access ports, you assign a class of service which is in fact the access-restriction type.

Terms and abbreviations

CO (Central Office)

See Central Office.

CODEC (coder-decoder)

A device that codes analog signals into digital signals. It also decodes digital signals into analog signals.

Common Equipment (CE)

A term for the part of the system that controls the operation of other system components. Common equipment is composed of CPU, memory, input/output ports, and disk storage.

companding

Companding is derived from the words “compressing” and “expanding”. Companding is the process of compressing the amplitude range of a signal for transmission and then expanding the signal back to its original form at the receiving end.

The transmitted signal (speech) is normally a digital signal. An analog to digital conversion of speech is done in three steps. Sampling the analog signal, Quantizing the sample, and Encoding the quantized sample.

The process of sampling, quantizing, and encoding is known as Pulse Code Modulation (PCM). Eight bit PCM is an industry standard.

COMPANION™

Meridian COMPANION™ systems offer digital wireless telephone capabilities to Meridian 1 systems. Wireless telephone users can travel around their coverage area while answering, initiating, continuing, or transferring telephone calls using low-powered, pocket-size telephones.

CONF (Conference Card)

The interface card in the system that is responsible for adding additional timeslots to an existing call so that more than two people can be bridged together for one call.

Terms and abbreviations

configuration record

A programmable data block that describes the location and function of the CE hardware in the system. The configuration record is programmed in LD 17.

confirmation tone

A form of special dial tone that indicates to a telephone user that a feature has been activated.

Core

The processing and data storage portion of the Meridian 1 Options 51C, 61C, and, 81C systems. The Core equates to the Common Equipment in Meridian 1 systems.

Core number

The Meridian 1 Options 61C, 81 and 81C systems has two redundant Core systems. The two Core systems are identified by the Core numbers 0 and 1.

COT (Central Office trunk)

A central office trunk is a circuit between a public exchange network switch and a Meridian 1 system.

CPU (central processing unit)

The card that controls the functions of the other system components, following instructions it receives from the system memory. Some older legacy systems had one CPU and others had two.

cross-connect panel

Sometimes called the jumper panel or main distribution frame (MDF). The panel where wires from telephones and trunks are interconnected with corresponding wires from the system's line and trunk cards.

CSA trunk

Common Control Switching Arrangement trunk. See CCSA.

Terms and abbreviations

Customer group

A group of users with their own trunk groups, attendants, features and Numbering Plan. A system can be used by one or more unique customer groups.

Data dump

Storing information from memory onto disks.

DCE (Data Circuit Terminating Equipment)

Devices that solve issues of interface between Data Terminating Equipment (DTE) and the network. Examples include modems, routers, channel service units, data service units, and interface cards.

DDI (Direct Dialing In)

External callers dialing internal telephones directly, without the intervention of an attendant or interactive voice response system.

Default

The response which is preprogrammed in the system software for a prompt which must have a response. If the programmer does not enter any value for this particular element or prompt, then the default value is retained in the database. These default responses, along with the changed data, are shown when a printout is made. They are also explained in the programming sections of this book and the other programming guides available from Nortel Networks.

delay dial

A trunk signal used to control the transfer of dialed digits. Upon seizure, the originating switch will not outpulse digits until the terminating switch does the following steps:

1. sends an off-hook to the originating switch
2. finds and attaches its digit collection equipment
3. sends an on-hook to the originating switch

Terms and abbreviations

The on-hook indicates the terminating switch can now accept digits. The time between on-hook and off-hook varies with equipment types.

Density

A term that refers to the number of terminals that can be connected to a card. Early vintages of cards such as line cards and trunk cards had capacities for fewer terminals than the cards that are made today. Early cards are referred to as single density. Later cards are called double density to indicate that the capacity had doubled. Still later, cards were introduced that are called quadruple (quad) density and octal density.

Designator (DES)

An alphanumeric code that a programmer associates with a telephone, if the system is equipped with Office Data Administration Software package 20 (ODAS). The code can be up to six characters in length. It can be used to identify the telephone in some way that helps the programmer, usually for record keeping purposes. The programmer decides what the codes will be, and what they will mean.

Printouts can be made of telephones with specified DES codes to sort the telephone database according to DES code parameters. For example, the DES system can be set up to identify what department the telephone is in and the floor and building where it is installed. A telephone that is in the accounting department, and on floor 2 of building 1 can have a DES code which is ACF2B1. The programmer could request a printout of all telephones with DES codes that begin with the letters AC to find out what telephones belong to the accounting department.

Dial tone

The tone produced by the system after a user lifts the telephone handset to initiate a call. This tone is heard through the handset or on the handsfree speaker, if the user is doing on-hook dialing. The user can dial a call when this tone is heard.

Terms and abbreviations

DID (Direct Inward Dialing)

External callers dialing internal telephones directly, without the intervention of an attendant or interactive voice response system.

DID trunk

A trunking feature that allows telephone callers connected to the public exchange network to dial directly to a telephone connected to the Meridian 1 system. DID happens without the intervention of an attendant or interactive voice system.

digital subscriber loop

Any one of eight physical Basic Rate Interface (BRI) ports on a BRI line card. Each port has two B-channels and one D-channel.

digital telephones

A telephone that uses digital signaling. An analog voice is converted into a digital signal within the telephone. A Macintosh, IBM-PC or other data terminal can be connected to some telephones. The data to and from that terminal is multiplexed on the same set of wires used by the telephone for voice calls.

Digitone

Tones used for signaling the digits 0 through 9, # and *. The tones are a combination of two voice frequencies, a high tone and a low tone.

Digitone-type telephone

An analog telephone that has buttons, on a key-pad, on the front. When each button is pressed, the telephone transmits a unique tone which represents the digit corresponding to the button pressed. Calls are made by pressing these buttons for the digits in the phone number to be called.

Direct Inward Dialing (DID)

External callers dialing internal telephones directly, without the intervention of an attendant or interactive voice response system.

Terms and abbreviations

Direct Inward System Access (DISA)

A port configured to allow external callers to use the system as if they were internal users.

Directory Number (DN)

A telephone number. This is the number internal callers dial to ring a telephone.

Disks

Magnetic data storage media.

Distinctive Ringing

There are three features that you can program that cause a telephone to ring differently from default ringing.

You can use the feature called Distinctive Ringing to allow a user to recognize when a call from a particular trunk group is ringing a telephone. If this feature is activated on all trunk groups, then the telephone rings distinctively whenever an external call comes in.

You can program digital telephones to ring in one of four different ringing styles called Distinctive Ringing Groups. This allows a user to differentiate the various telephones when they ring.

You can program a telephone to ring distinctively when a call from a Dial Intercom Group member comes into the telephone. The user can then differentiate a call to a DN as opposed to an incoming call from the intercom group.

DLC (Digital Line Card)

An intelligent digital line card used on systems with Superloops. It can accommodate up to 16 digital telephones and 16 associated data terminals.

DN (Directory Number)

A telephone number. This is the number callers dial to ring a telephone.

Terms and abbreviations

download

To receive data from another device.

DTE (Data Terminal Equipment)

Equipment consisting of digital end devices that convert user information into data signals for transmission, and reconvert the received data signals into user information.

DTMF

Dual Tone Multi Frequency. See Digitone.

DTN (Digitone)

A signaling system that uses audio tones to transmit information. Digitone signaling allows the transmission of digits 0-9, and on specially configured telephones, A-D.

DTR (Digitone receiver)

A card with Digitone receiver units on it. The DTR units translate analog Digitone signals into a digital format.

Enhanced network

A card accommodating two loops. Each loop has 32 timeslots.

exchange network

The global network made up of telephone switches operated for the public by telephone utility companies and governments.

extender or extender pair

A term used to describe a 3 Port Extender (3PE) card, Segmented Bus Extender (SBE) card, and the cable that connects them. These components extend the processor's control to the network shelves. The SBE is located on the common equipment shelf, with the processor. The 3PE is located on the network shelf.

Terms and abbreviations

far end

The remote PBX at the distant end where your Tie trunk or Private circuit terminates.

Fast busy tone

A tone that sounds like busy tone, but turns on and off at a faster rate. Typically, fast busy tone is used to indicate that a call is not progressing or cannot be completed. It can also be called overflow or reorder tone.

Features

Capabilities assigned to the terminals that allow the users to do more than make and receive basic calls. Features range from basic Call Transfer to something as complex as Network-wide Message Waiting. Features are provided by system software which is sometimes basic to every system or packaged as separate options which are either chargeable or non-chargeable. In programming a regular telephone there is an element of programming referred to as the “feature prompt”. This element of programming controls certain capabilities which can be activated for that telephone. Some capabilities are activated in the Class of Service.

FEX (Foreign exchange trunk)

A trunk that provides telephone service to and from a public exchange switch that is outside the subscriber’s exchange area. A user in one city can dial the access code for his FEX trunk and receive dial tone from the foreign public exchange switch. The user can also receive calls dialed from the foreign exchange switch.

firmware

Software, data, and programming instructions stored permanently in Read Only Memory hardware. (It is neither soft nor hard, therefore it must be firm.) Firmware provides the basic functions needed by the Meridian 1 system during start-up, software loading, and other periods when software is not be available in memory. Firmware does not require regular update.

Terms and abbreviations

Flexible Features Codes

User-defined numbers of up to four digits that can be used in place of the preprogrammed Special Prefix (SPRE) feature access codes. Flexible Feature Codes allow users to define different feature access codes for different features.

Floppy disks

Magnetic data storage media.

Foreign exchange trunk (FEX)

The physical carrier of voice and data communications to and from a remote or foreign central office (exchange office).

Generic

A family of software releases that are designed to apply to a certain market or application. For example, the Generic called X11 was designed to be used in the North American business market. There are other generics that have existed through the years that were designed for the European market and for the hospitality market. Now there is one generic of software for all markets.

group

A pair of interconnected network modules or shelves. A single network module or shelf is known as a half-group.

Group Call

The name of a feature that allows one user to press a key on a proprietary telephone and automatically call several telephones. When users answer these telephones they are automatically bridged into a conference connection with other users on the same Group Call.

Handset

The part of a telephone held in the hand to speak and listen. The handset contains the transmitter and receiver.

Terms and abbreviations

Handsfree

Using a telephone without requiring a handset or headset. During handsfree operation, a properly equipped telephone picks up the user's voice through a microphone built into the telephone, and broadcasts the far end user's voice through a built-in speaker.

high-speed link

A communications channel that uses EIA RS422 or RS423 to connect the Meridian 1 to an applications processor. For example a high speed link connects the Meridian 1 to the Meridian MAX.

immediate start

A signal used on trunks to control the transfer of dialed digits. After a trunk seizure, the originating switch can start outpulsing digits to the terminating switch after a minimum delay of 70 ms.

Initialization

During initialization, transient (unprotected) data is cleared from memory until the initialization is complete. During this time, established calls can remain connected. Calls cannot be originated or disconnected during this time. It generally lasts for a few seconds.

Input/output (I/O) ports

The connection points through which the system outputs data and through which the system receives data.

intercept treatments

Invalid or denied actions coming from a telephone, TIE trunk, attendant, or CCSA/DID trunk are given a treatment called an intercept treatment. These treatments are defined customer wide. For example, if a user who is Toll Denied tries to dial a toll call, then the intercept treatment for that situation determines what will happen to that user. The user can hear overflow tone, or be routed to the attendant or can hear a recorded announcement.

Terms and abbreviations

IPE (Intelligent Peripheral Equipment)

The part of the system composed of interface cards that connect to terminals such as telephones and trunks, and the shelves on which these cards reside. The interface cards are equipped with microprocessors.

ISDL (Integrated Services Digital Line Card)

Peripheral Equipment line cards that are used to support digital telephones. They can accommodate up to eight digital telephones and eight associated data terminals.

ISDN (Integrated Services Digital Network)

A digital telephony network that allows the transmission of voice and data using internationally approved protocols.

Issue

During development of a new release of software several versions, called issues, of the release are developed in sequence. Each issue fixes problems that have been identified from the previous issue.

Jumper panel

Sometimes called the cross-connect panel or main distribution frame (MDF). The panel where wires from telephones and trunks are interconnected with corresponding wires from the system's line and trunks cards.

junctor

A passive device providing the interconnection for calls between network groups on multi-group Meridian 1 systems.

Key system

A type of telephone system where the exchange lines can be directly accessed using keys or buttons on the telephones.

Terms and abbreviations

Key

A button on a proprietary telephone that you can assign as a feature or DN function. Assign these keys using LD 11. The programming for these keys is stored in the system memory.

legacy

Hardware and software, supported on traditional Meridian 1 systems, not available on new systems.

LD

Part of a title of an overlay program. For example, LD 10, a command issued to the Meridian 1 to load program 10 into a reserved portion of memory, called the overlay area. Program 10 overlays a previous program in the overlay area. This is why LD 10 is called an overlay program. See Overlay.

link

1. Another name for a communications channel or circuit.
2. A button on certain types of telephones that users can press when they want to perform a switch-hook flash, instead of pressing the switch-hook under the handset.
3. A connection to another system, as in the Meridian Link application.

Loop

A transmission path within the system. Line cards and trunk cards share the transmission path using 32 timeslots.

low-speed link

A communications channel, using EIA RS232 to connect the Meridian 1 to a terminal.

Terms and abbreviations

Main Distribution Frame (MDF)

Sometimes called the cross-connect panel or jumper panel. The panel where wires from telephones and trunks are interconnected with corresponding wires from the system's line and trunk cards.

MARP (Multiple Appearance Directory Number Redirection Prime)

The telephone designated as the controlling one on a shared DN for features like Hunting, Call Forward No Answer, and Call Forward All Calls.

MCA (Meridian Communications Adapter)

A device that provides an interface between an IBM-PC, Macintosh, or data terminal, and an Aries telephone.

MCU (Meridian Communications Unit)

A device that provides an interface between an IBM-PC, Macintosh, or data terminal, and the Meridian 1 system.

MDF (main distribution frame)

Sometimes called the cross-connect panel or jumper panel. The panel where wires from telephones and trunks are interconnected with corresponding wires from the system's line and trunks cards.

MEM (memory)

The hardware in the system that is used to store the information the system needs in order to operate.

memory (MEM)

The hardware in the system that is used to store the information the system needs in order to operate.

Meridian 1 telephone

A term used to describe a telephone set designed to operate exclusively with the Meridian 1 PBX. Refer to the *Meridian 1 Telephones: Description and Specifications* (553-3001-108) NTP.

Terms and abbreviations

Meridian Mail

The voice mail system manufactured by Nortel Networks to be compatible with the Meridian 1. Meridian Mail is provided using an external application processor.

Meridian Proprietary Telephone

A term used to describe telephones designed to operate exclusively on Meridian 1 switches.

Message Center

A configuration where telephones are programmed to redirect calls to either a specific telephone, the attendant, or voice mail when calls are not answered or the telephone was busy.

mnemonic

A code used as a memory aid. Mnemonic codes are also used in programming.

module

1. Another name for a memory card.
2. An aluminum box that holds a card cage. It is also called a Universal Equipment Module or UEM.

MPU (Multi Processing Unit)

A processor that performs some of the tasks that would otherwise be performed by the CPU. For example, the IPE analog line card contains an MPU that interprets a series of on-hook, off-hook rotary dial pulses as a DN. The MPU then passes the DN on to the CPU, saves CPU resources. Without the MPU, the CPU would have to set and control timers to ensure the incoming pulses are not hook-switch flashes, hits on the line, or that the caller has abandoned the call. See time stamp 2.

Mu-law companding

Companding is the process of compressing the amplitude range of a signal for transmission. At the receiving end the compressed signal is expanded back to its original form. Companding is a contraction of

Terms and abbreviations

compressing and expanding. In North America, companding is accomplished using a logarithmic law called, “255 Law Companded Pulse Code Modulation Digital Coding Standard” or μ -law. See companding.

Multiple Appearance Directory Number Redirection Prime (MARP)

The telephone designated as the controlling one on a shared DN for features like Hunting, Call Forward No Answer, and Call Forward All Calls.

Multiple Appearance DN

A DN that is programmed to appear on more than one telephone or more than one key on one telephone.

Multiple Call DN

A DN that appears on more than one telephone or more than one key on one telephone. It is capable of handling as many calls as there are appearances.

NANP (North American Numbering Plan)

The North American Public Exchange Network has been divided into geographical areas with three digit codes which precede the seven digit local telephone number of the subscriber. Previous to 1995, the three digit area codes assigned to each geographical area were in the format where the first digit was any digit between 2-9 and the last digit was any digit between 0-9. The middle digit was either 0 or 1. As of January 1, 1995, the middle digit can be any digit between 0-9. This increases the capacity of three digit codes available.

NE (Network Equipment)

The part of the Meridian 1 that serves to interconnect terminal equipment. Network Equipment also provides services such as conferencing and tones.

Terms and abbreviations

near end

The local Meridian 1 system where your Tie trunk or Private circuit terminates.

NET (Network Controller - Superloop)

The circuit pack on which the Superloop resides.

Network Class of Service

A class of service that determines network access.

Network Equipment (NE)

The part of the Meridian 1 that serves to interconnect terminal equipment. Network Equipment also provides services such as conferencing and tones.

NPA (Numbering Plan Area Code)

The North American Public Exchange Network has been divided into geographical areas with three digit codes which precede the seven digit local telephone number of the subscriber. It is used when dialing a long distance call. For example, when someone in a city in the 205 area code wants to direct dial someone located in the 613 area code, they dial 1613 followed by the person's seven digit telephone number.

NTP (Nortel Networks Technical Publication)

The manuals published by Nortel Networks that describe how to install, program and maintain all the features, services and components of a Meridian 1 system. Many of these manuals are shipped with every system. Some of the manuals are optional.

Numbering Plan

The leading digits which are assigned to directory numbers, trunk route access codes, and the Special Prefix (SPRE) code for feature activation within one customer group database. The same digits cannot be assigned to two different numbers or codes. This is called the "leftwise unique rule".

Terms and abbreviations

For example, it is permissible to have access code 11 for SPRE and access code 130 for paging trunks but it is not permissible to assign access code 55 to a TIE trunk route and access code 552 to a dictation trunk route.

A typical Numbering Plan:

- 0 Attendant
- 11 Special Prefix Code (SPRE)
- 2xxx Directory numbers (DNs)
- 3xxx DID Directory numbers
- 4 Unassigned (for future use)
- 5 Unassigned (for future use)
- 6 Unassigned (for future use)
- 7x Access codes for TIE trunks, paging trunks, dictation trunks
- 8 Access code to Automatic Route Selection calls
- 9 Access code to COT trunks or local calls

NXX (Public Network Exchange code)

The first three digits of a seven digit telephone number assigned to each subscriber in North America. These digits identify the Central Office to which the subscriber is connected.

Off-hook

The status of a telephone when the handset is lifted from the switch-hook. The telephone is described as being in an off-hook condition.

Terms and abbreviations

office data

A term used to describe the data programmed on a Meridian 1 using the Administration overlay loads. The administration loads are as follows:

- ◆ LD 10 to LD 29
- ◆ LD 49 to LD 52
- ◆ LD 56 to LD 58
- ◆ LD 73 to LD74
- ◆ LD79
- ◆ LD 81 to LD 88
- ◆ LD 90
- ◆ LD 93 to LD 95
- ◆ LD 97

On-hook

The status of a telephone when the handset is resting on the switch-hook. The telephone is described as being in an on-hook condition.

Outputpulse

To transmit digits on external trunks to other systems. Also, telephones can outputpulse digits to the system to which they are connected. The user causes either one of these types of outputpulsing to occur by dialing digits on a telephone.

output buffer

A storage area in transient data memory used to keep output information to be sent to a telephone or trunk from the processor. The information, called a messout, will control relays on trunk cards, LEDs or LCDs on telephones, and so on. There are two types of output buffers, SL-1 and 500.

Terms and abbreviations

Overflow Tone

A tone that sounds like busy tone, but turns on and off at a faster rate. Typically, fast busy tone is used to indicate that a call is not progressing or cannot be completed. It can also be called fast busy or reorder tone.

Overlay

Overlay refers to administration and maintenance programs. Overlays are identified by the letters LD and numbers. Administration overlays, for example LD 11, LD 17, and LD 83, allow data entry to customize Meridian 1 system features, telephones, trunk groups, hardware, and data devices. Maintenance overlays, for example LD 32, LD 45, and LD 143, diagnose Meridian 1 system operation and faults.

parameters

A range or limits set for entries in the software.

PBX (Private Branch Exchange)

A private telephone switch that serves trunks and telephones.

PBX set

A term replaced by Analog (500/2500 type) telephone. A PBX set is a standard telephone set that works on many telephone systems. Examples of these systems are the Meridian 1, DMS or other vendors systems.

PCM

Pulse Code Modulation. See companding.

PE (Peripheral Equipment)

The part of the system composed of interface cards that connect to terminals such as telephones and trunks, and the shelves on which these cards reside.

Terms and abbreviations

PFTU

Power Fail Transfer Unit. A term used for QUA4, QUA5, QUA6 and NT8D39 (DEES) transfer units. The term implies that an emergency transfer will only result from a loss of power. All transfer units can be connected to perform the emergency transfer function when the CPU cannot process calls, due to a system reload or CPU failure.

Phantom DN

A DN which appears on a secondary key of a telephone. It is not published.

Phantom TN

A TN defined in software that does not exist in hardware.

Pickup

Also called call pickup, ringing number pickup. The feature that allows one user to answer an incoming call ringing at another telephone.

Pickup groups

A group of telephones provided to users who have to be able to answer incoming calls for each other.

port

A port is:

1. the connection point for a terminal
2. another term for a Terminal Number
3. the connection point for an input/output (IO) device

Primary Rate Interface (PRI)

An international standard for connecting telephone switches. A PRI connection is composed of 23 B-channels at 64 kbit/s each, and one D-channel at 16 kbit/s. A PRI2 connection is composed of 31 B-channels at 64 kbit/s each, and one D-channel at 16 kbit/s.

Terms and abbreviations

Prime DN

The DN programmed on key 0 of a telephone.

Private line service

Also known as leased-line service or point-to-point service.

Private network

Trunk connections between PBXs and Centrex systems that carry calls between users who reside on different systems that belong to one organization or company. The private network trunks can be used for calls that end up on the public network, if that is allowed in the area where the systems are installed.

prompt

A mnemonic presented by the system when you are programming or issuing commands to the system.

Proprietary telephone

See Meridian 1 telephone.

PSTN (Public Switched Telephone Network)

Otherwise known as the public network. The global network made up of telephone switches operated for the public by telephone utility companies and governments.

Public (Exchange) network

Refer to Exchange network.

Queuing

The organizing of calls so that the longest waiting or highest priority call is the first to be processed.

RAN

Mnemonic for Recorded Announcement.

Terms and abbreviations

Redirection

Otherwise known as backup answering, redirection refers to answering calls at a telephone or voice messaging port when the originally dialed caller is busy, not answering, or does not wish to be disturbed, and features like Call Forward are active.

redundant

A Meridian 1 with two processors is a redundant system. One processor controls the system while the other is in a standby mode. A redundant system is necessary to allow a software upgrade without interrupting service.

Regular telephone

An analog telephone which can operate on any system. These telephones work when connected to a central office, key system or Private Branch Exchange (PBX). They have rotary dial or digitone keypads.

Release

A version of software that contains certain features and capabilities (for example, Release 21). Not all releases can be used on all machine types. Each new release has greater functionality than its predecessor. Nortel Networks introduces at least one new release of software each year.

Reorder Tone

A tone that sounds like busy tone, but turns on and off at a faster rate. Typically, fast busy tone is used to indicate that a call is not progressing or cannot be completed. It can also be called overflow or fast busy tone.

response

A mnemonic you type in answer to a prompt when you are programming.

Terms and abbreviations

response time-out

A memory or I/O device does not respond to a read or write signal from the processor within 8 ms. A response time-out causes an initialize or a system reload.

Restriction

Preventing telephone users from making certain types of calls or accessing certain features.

Return key

The key on the keyboard marked ENTER, or RETURN. Pressing the key tells the system you have finished that line of input. In this book the symbol <cr> is used for carriage return.

Ring Again

A feature that allows a telephone user to queue for a busy telephone or trunk group.

Ringback tone

The tone the caller hears when the called telephone is ringing.

Ringing number pickup

Also called pickup, ringing number pickup. The feature that allows one user to answer an incoming call ringing at another telephone.

SDI (Serial Data Interface)

Input/output port.

Secondary DN

A DN programmed on a key other than key 0 of a telephone.

service change

A term used when you program in administration overlay programs.

Terms and abbreviations

service loop

Another name for Tone & Digit Switch and Conference loops. Service loops provide services such as dial tone and multi-party calls.

set

Another term for telephone. Telephone is the preferred term.

Single Appearance DN

A DN that is programmed to appear on only one telephone and one key of one telephone.

Single Call DN

A DN that appears on one telephone or more than one telephone. It is capable of handling one call at a time.

slot number

A numbered designator indicating where cards are located within the card cage of the modules.

software package

A component of software that, if equipped, provides certain features and capabilities. Software packages are listed by a mnemonic or a number or both.

special dial tone

A dial tone that sounds different from normal dial tone and indicates to a telephone user the operation of a feature, that a message is waiting, or that a response is required.

Special prefix code (SPRE)

A code defined customer-wide that users of analog (500/2500) telephones dial to access features. The code can also be used on Meridian Digital telephones to access certain features that have not been assigned to keys.

Terms and abbreviations

Standard Network

A card that accommodates one loop. Each loop has 32 timeslots. Timeslots are used in matching pairs.

starting arrangement

The protocol used between Meridian 1 PBX and a Central Office to control digit collection. See immediate start, delay dial and wink start.

Station

Another term for telephone. Telephone is the preferred term.

Station Control Password

A password that is assigned to a telephone in LD 10 or LD 11 that the user of the telephone must dial in order to activate features such as Electronic Lock and Remote Call Forward.

Superloop

A transmission path within the system. Intelligent line and trunk cards share the transmission path using 128 timeslots.

Switch-hook flash

The term used for pressing the button under the handset of a telephone for a specific amount of time. This is done to access certain features. A link button performs a similar function.

Switch-hook

The term used to describe the button that sits under the handset of a telephone. The switch-hook is used to disconnect calls, initiate calls and perform features. The user depresses the switch-hook, lifting the receiver off the switch-hook, and flashing the switch-hook respectively. (Refer to switch-hook flash).

Terms and abbreviations

SYSLOAD

The reset and startup of a telephone switch. During SYSLOAD, data is loaded into the system from storage media, and no call processing can take place.

system monitor

A component found in the lower rear of Meridian 1 equipment columns. The system monitor reports the status of power related hardware for its column to the processor. The processor subsequently sends the system monitor's message to the SDI data terminals.

TDS (Tone and Digit Switch)

A card that the system uses to provide many different tones to users.

Terminal Number (TN)

A physical or hardware location address, consisting of a network loop number, PE shelf number, PE card number, and unit number.

TN (Terminal Number)

A physical or hardware location address, consisting of a network loop number, PE shelf number, PE card number, and unit number.

TIE trunk

A dedicated circuit that connects two Meridian 1 systems or a Meridian 1 system and any other kind of PBX.

time slot

An interval of time during which a PCM bit occupies a shared transmission path during an active call.

Terms and abbreviations

time stamp

There are two types of time stamp as follows:

1. A time stamp that is output within five minutes of the processor detecting an problem to warn service personnel. For example, TIM061 09:00 9/3/1994 CPU0. The type of time stamp is normally accompanied by a message.
2. A time stamp that is used to start, stop and control timers. When a call register is established for a telephone or trunk, the processor marks the start time and each interval action time with a time stamp in milliseconds. The time stamps are used to start, stop and control timers. For example, a rotary dial telephone sends dialed digits as a series of exactly timed on/off-hooks. If the on-hook to off-hook time interval is short, the processor decodes this as a switch hook flash and not a dialed digit. If an off-hook to on-hook transition lasts too long, the processor decodes this as a call which is finished or abandoned and tears down the connection.

Traffic

A measurement of the level of activity of a specific resource.

transient data

The same as U data. See unprotected data store.

Trunk group

A defined set of trunks that can be used interchangeably by the system to reach a specific destination.

Trunk

One or more pairs of wires that connect one system to another. There are many types of trunks, distinguished by the types of calls they are designed to carry and the types of systems they inter-connect. Trunks are grouped together by type into trunk groups. Some examples of trunk types are TIE trunks, Central Office trunks, and Foreign Exchange trunks.

Terms and abbreviations

TTY

A data terminal used to transmit and receive commands and responses when you are programming. A TTY refers to any dumb terminal or DTE (Data Terminal Equipment) used to pass ASCII data. A DTE used for communicating alphanumeric information with the Meridian 1 system.

UEM (Universal Equipment Module)

An aluminum box holding a card cage.

Unity telephone

A family of telephones manufactured by Nortel Networks . They belong in the analog (500/2500) telephone family.

WATS (Wide Area Telephone Service) trunk

In North America, a circuit between a public exchange network switch and a Meridian 1 system. WATS telephone calls are billed at a reduced rate.

wink start

A signal used on trunks to control the transfer of dialed digits. The terminating switch finds and attaches its digit collection equipment, then sends a 140 ms off-hook, on-hook pulse to the originating switch that requests the digits to be sent.

X08

An early edition of the software package for International Business applications. X08 was replaced by X11 with Supplementary Features. With the release 20 software, X11 denotes global applications software.

X11

A software package for North American Business applications. With the release 20 software, X11 denotes global applications software.

Terms and abbreviations

XNET

A mnemonic for a superloop network card.

XPE0

The first module (PE shelf) cabled to a superloop.

XPE1

The second module (PE shelf) cabled to a superloop.

XPEC

A mnemonic for System Monitor.

XSM

A mnemonic for System Monitor. A component found in the lower back of Meridian 1 equipment columns. The system monitor reports the status of power related hardware for its column to the processor. The processor subsequently sends the system monitor's message to a data terminal connected to an SDI port.

μ-law companding

In North America, companding is accomplished using a logarithmic law called, "255 Law Companded Pulse Code Modulation Digital Coding Standard" or μ-law. See companding.

Terms and abbreviations

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PO Number: P0912433

Document release: Standard 6.00

Date: October 2000

Printed in Canada

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