

**555-7001-214**

# **Meridian Mail**

## Networking Installation Guide (SMDI)

8.0 Standard 01.01 April 1993

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# Meridian Mail

## Networking Installation Guide (SMDI)

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## About this document

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This document provides guidelines and step-by-step procedures for installing the AMIS and Meridian Mail Networking services on a Meridian SL-100 or Meridian Digital Centrex, hereafter referred to as the PBX/DMS. Networking is installed after the Meridian Mail Voice Messaging service is functioning (see *Meridian Mail Installation Procedures* (NTP 555-70x1-210) for details).

### Who should use this book

If you are the person responsible for installing AMIS and Meridian Mail networking at your site, you should read this book.



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## Chapter 1: Introduction

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Meridian Mail Networking is an incremental service, installed after the Meridian Mail Voice Messaging Service is functioning. Networking allows customers to send and receive voice messages, reply to voice messages and forward voice messages to users located at other Meridian Mail sites. Meridian Mail uses the Meridian Mail Networking voice service to transfer voice messages to remote sites. The Meridian Mail Networking service establishes the call and connects to the networking service on the remote system. Control information such as connection passwords, message headers and message delivery acknowledgements are transferred as data by conferencing modems onto the voice path at the local and remote sites.

The AMIS protocol is an industry standard which allows users of voice messaging products residing on systems of differing architectures to communicate voice messages to one another. Meridian users can send AMIS messages to users of other voice messaging systems (as long as they have AMIS installed on their site), receive messages from other AMIS sites and reply to these messages using standard Meridian Mail functionality. The AMIS open access design allows anyone who has access to AMIS to send messages without the need for pre-arranged passwords, site definitions or specialized hardware (e.g. modem).

### Installation Overview

Before installing the networking service the following hardware and software requirements must be met:

- 1 For Meridian Mail Networking to be installed, the Meridian Mail system must have at least one functional RSM card. See *Meridian Mail Installation Guide* (NTP 555-70x1-210) for RSM cabling details.

- 2 For AMIS Networking to be installed, 32k Voice Processor cards are required for each channel to provide the sending and receiving of military tones used in the AMIS transfer protocol. A 32k Voice Processor card provides four channels to the SL-1. For the configuration of the Voice Processor cards see *Meridian Mail Modular Option Installation Guide* (NTP 555-7041-210), or *Meridian Mail Options Installation Guide* (NTP 555-7011-210).

When installing the networking service, carry out the following steps:

- 1 Install the PBX/DMS Hardware. To support the Meridian Mail and AMIS Networking services, install the hardware trunks beforehand. For Meridian Mail Networking the data lines and conferencing circuits must also be installed.
- 2 Configure the PBX/DMS. Program trunks and data pathway to terminate incoming calls on the Meridian Mail and AMIS Networking service, and to route outgoing calls to remote sites.
- 3 Install Meridian Mail Hardware. Install and connect modems used by the Meridian Mail Networking service to the RSM port of the Meridian Mail node system and the PBX/DMS. These procedures assume that an RSM card and RSM cabling is in place.

**Note:** The RS-232 ports on ESBC cards cannot be used for networking.

- 4 Configure the Meridian Mail and AMIS Networking service. Configure the networking service Directory Number on the PBX/DMS, and define the characteristics of local sites, as well as user information for the local site. For Meridian Mail Networking, the characteristics for remote sites must also be defined.
- 5 Verify the installation. Perform simple loopback tests, and end-to-end checks to verify the operation of the networking service.

## Checklist

Prior to proceeding with the installation of the Meridian Mail Networking service, obtain a copy of the networking forms prepared using the *Site and Installation Planning Guide* (NTP 555-70x1-200). This form contains the networking Service Directory Number (DN), Modem DNs, and related information that must be entered in the course of configuring the PBX/DMS and Meridian Mail. This does not apply to AMIS Networking.

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## Chapter 2: Configuring the PBX/DMS hardware for AMIS Networking

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Inbound AMIS calls can be received on any voice menu, Time-of-Day controller (TOD), or thru-dialer that has direct access from the public network. AMIS does not require any dedicated outbound ports or trunks.

However, if you are expecting a large amount of AMIS Networking traffic, you may wish to modify your PBX/DMS as outlined in this chapter. These modifications include configuring an ACD DN and trunks to be used by the AMIS Networking service.

### Networking DN

Prior to configuring the trunks to be used with the Networking service, define a Directory Number for Networking. See “Overview” in “Networking Administration,” and “Voice System Configuration” in “Voice System Administration”, in the *System Administration Guide* for an introduction and procedures.

**Table 2-1xxx**  
**Defining a Directory DN**

Prompts	Responses	Description
SO:	NEW	
DN:	xxxxxxx	UCD Directory Number. This DN must be entered in the VSDN table on Meridian Mail.
LCC:	IBN	Define the line class code as IBN (Integrated Business Network).

## 2-2 Configuring the hardware for AMIS Networking

---

Prompts	Responses	Description
GROUP:	groupname	Common Language Location Identifier (CLLI) of the IBN Customer Group.
SUBGRP:	x	Subgroup of a customer group to which a station or DN belongs (0-7).
NCOS	x	Define the Network Class of Service capabilities/restrictions (0-255).
LATANAME:	lataname	LATA name defined in table LATANAME.
LTG:	x	Line treatment group number (0-63).
LEN:	x x xx xx	Line equipment number of line.
OPTION:	COD	Cutoff on Disconnect.
OPTION:	DGT	Digitone service.
OPTION:	CFDVT 12	Call Forward -- Don't answer variable timer
OPTION:	CFU N \$ I	Call Forward -- Universal
OPTION:	CFD N XXXX A	Call Forward -- Don't answer the MM Voice DN
OPTION:	CFB N XXXX A	Call Forward -- Busy to MM Voice DN

## Trunks

Trunks used by the Networking service may be attached to a public (Central Office) or to a private (TIE) network. Use existing trunks if the anticipated networking traffic will not increase call blocking to an unacceptable level. Otherwise, install additional trunks.

Enable answer and disconnect supervision on all trunks. Central Office trunks automatically get supervision enabled. TIE trunks must have this option enabled when defining the trunk.

### Incoming access

Route incoming calls from remote sites to, and terminate on, the AMIS Networking DN without attendant intervention because calls are initiated under software control.

Trunks can be auto-terminated on the AMIS Networking DN, or terminated on a Direct Inward System Access (DISA) DN.

## **Outgoing access**

The number of outgoing trunks required by the Networking service is based on the anticipated outbound message traffic. If these trunks are also used for inbound calls, expected inbound traffic must also be considered.

These trunks must have Network Class of Service (NCOS) codes that support the NCOS codes of the UCD agents where outbound calls originate.

The AMIS outgoing calls are intended to go on the public network.

However, if the AMIS calls are used within an ESN network, then set the NCOS of the ACD agent so that the outgoing trunk call will not be routed off ESN to the public network.

If the PBX/DMS is a satellite ESN site (has access to ESN, but does not run ESN software), define the trunk as a new trunk route to the true ESN site. At the ESN site set NCOS so that calls will not be routed off the ESN network to the public network.

## 2-4 Configuring the hardware for AMIS Networking

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## Chapter 3: Configuring the PBX/DMS hardware for Meridian Mail Networking

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This section outlines the modifications needed on the PBX/DMS to accommodate the Meridian Mail Networking service. The Meridian Mail Networking service uses incoming and outgoing trunks on the PBX/DMS to establish connections with remote sites. The Meridian Mail Networking service also uses data lines and conferencing circuits to communicate the voice and addressing elements of voice messages between the PBX/DMS and the Meridian Mail system.

### Networking DN

Prior to configuring the trunks to be used with the Meridian Mail Networking service, define a Directory Number for networking. See “Overview” in “Networking Administration,” and “Voice System Configuration” in “Voice System Administration”, in the *System Administration Guide* for an introduction and procedures.

**Table 3-1xxx**  
**Defining a Directory DN**

Prompts	Responses	Description
SO:	NEW	
DN:	xxxxxxx	UCD Directory Number. This DN must be entered in the VSDN table on Meridian Mail.
LCC:	IBN	Define the line class code as IBN (Integrated Business Network).
GROUP:	groupname	Common Language Location Identifier (CLLI) of the IBN Customer Group.

### 3-2 Configuring the hardware for Meridian Mail Networking

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Prompts	Responses	Description
SUBGRP:	x	Subgroup of a customer group to which a station or DN belongs (0-7).
NCOS	x	Define the Network Class of Service capabilities/restrictions (0-255).
LATANAME:	lataname	LATA name defined in table LATANAME.
LTG:	x	Line treatment group number (0-63).
LEN:	x x xx xx	Line equipment number of line.
OPTION:	COD	Cutoff on Disconnect.
OPTION:	DGT	Digitone service.
OPTION:	CFDVT 12	Call Forward -- Don't answer variable timer
OPTION:	CFU N \$ I	Call Forward -- Universal
OPTION:	CFD N XXXX A	Call Forward -- Don't answer the MM Voice DN
OPTION:	CFB N XXXX A	Call Forward -- Busy to MM Voice DN

## Trunks

Trunks used by the Meridian Mail Networking service may be attached to a public (Central Office) or to a private (TIE) network. Use existing trunks if the anticipated networking traffic will not increase call blocking to an unacceptable level. Otherwise, install additional trunks.

Enable answer and disconnect supervision on all trunks. Central Office trunks automatically get supervision enabled. TIE trunks must have this option enabled when defining the trunk.

### Incoming access

Route incoming calls from remote sites to, and terminate on, the Meridian Mail Networking DN without attendant intervention because calls are initiated under software control.

Trunks can be auto-terminated on the Meridian Mail Networking DN, or terminated on a Direct Inward System Access (DISA) DN.

### Outgoing access

The number of outgoing trunks required by the Meridian Mail Networking service is based on the anticipated outbound message traffic. If these

trunks are also used for inbound calls, expected inbound traffic must also be considered.

These trunks must have Network Class of Service (NCOS) codes that support the NCOS codes of the UCD agents where outbound calls originate.

The outgoing calls can go on the public network, if required. However, if the Networking calls are used within an ESN network and the PBX/DMS is a main ESN site, then you can set the NCOS of the ACD agent so that the outgoing trunk call will not be routed off ESN to the public network.

If the PBX/DMS is a satellite ESN site (has access to ESN, but does not run ESN software), define the trunks in one of two ways (if you wish to set up your Networking service so that the outgoing trunk call will not be routed off ESN to the public network):

- 1 As a new trunk route to the true ESN site. At the ESN site, set NCOS so that calls will not be routed off the ESN network to the public network.
- 2 As a CO trunk connected directly to the satellite ESN site, with Auto-terminate specified so that calls go directly to the Meridian Mail Networking DN.

## Data pathway

A data pathway is required to support each active incoming or outgoing Meridian Mail Networking connection. Control data used in the Meridian Mail message transfer protocol is transmitted over this pathway.

Each pathway requires a port on a 6X17 line card on the PBX/DMS, a port on the RSM card on Meridian Mail, and a modem.

- 1 At the Maintenance and Administration Position, enter **servord** followed by <Return>.  
*You are prompted to enter a command.*
- 2 Respond to the prompts as indicated in the Table 3-2.
- 3 When the system prompts you to save the changes, enter <Y> followed by <Return>.  
*The service order is saved and you are returned to command level.*
- 4 Repeat steps 1 to 3 for each modem DN.  
*The current date and time are displayed.*

**Table 3-2xxx**  
**Defining a Modem line**

Prompts	Responses	Description
SO:	NEW	
DN:	xxxxxxx	Modem Directory Number. This DN must also be entered in the View/Modify Data Port screen on Meridian Mail.
LCC:	IBN	Define the line class code as IBN (Integrated Business Network).
GROUP:	groupname	Common Language Location Identifier (CLI) of the IBN Customer Group.
SUBGRP:	x	Subgroup of a customer group to which a station or DN belongs (0-7).
NCOS	x	Define the Network Class of Service capabilities/restrictions (0-255).
LATANAME:	lataname	LATA name defined in table LATANAME.
LTG:	x	Line treatment group number (0-63).
LEN:	x x xx xx	Line equipment number of line.
OPTION:	DGT	Digitone service.
OPTION:	COD	Cutoff on Disconnect.
OPTION:	\$	
OPTION:	PADGRP	IOL

### Conference card

A three-party Conference card is required for conferencing the control data and voice components from Meridian Mail onto an outgoing trunk to the remote site. This card is usually installed as part of the PBX/DMS's base features. Card number is 3X67 configured as either 2-3 party or 1-6 party conference.

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## Chapter 4: Installing Meridian Mail hardware

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A 6X17 line card is required for each Meridian Mail Networking connection to provide transmission of control data used in the Meridian Mail message transfer protocol.

Each Meridian Mail Networking line (see Figure 4-1 on next page) has the following hardware components:

- port from a PBX/DMS 6X17 line card
- Ven-Tel 2400 bps V.22bis modem (model numbers EC2400-33, rev. 5.2/6.0 or EC2400 Plus II)

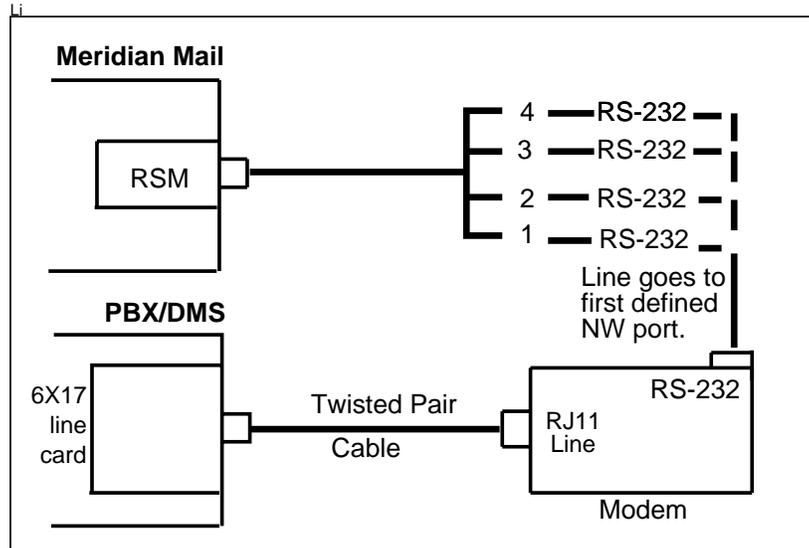
*Note:* To check the revision number of the modem, flip the cover and check the sticker inside the memory chip.

- RS-232 port from the RS-232 Service Module (RSM card)

*Note:* The RS-232 ports on ESBC cards cannot be used for networking.

- A 4-port cable (NT4R20AA)
- RS-232 cable with two male connectors (NT3M20AQ)

**Figure 4-1xxx**  
**Networking line hardware setup**



## Modem configuration

- 1 Set the modem's DIP switches as indicated in the Table below.

**Table 4-1xxx**  
**Ven-Tel Modem switch 2 (SW2) setting**

Switch	Setting	Function
SW2-1	Off	Follow DTR status.
SW2-2	Off	Enable word result codes for AT commands.
SW2-3	On	Enable generation of AT command result codes.
SW2-4	On	Disable AT command echo from modem.
SW2-5	On	Disable modem Auto answer. If not disabled, the modem will answer the phone call in Receiver mode.
SW2-6	Off	Carrier Detect responds to carrier.

Switch	Setting	Function
SW2-7	On	Speaker control may be On or Off. During installation it is recommended that the speaker be On in order to hear the operation of the modem. After verifying operation the speaker may be turned Off.
SW2-8	On	The modem will respond to AT commands.
SW2-9	Off	The Ven-Tel NVRAM mode command set is disabled.
SW2-10	Off	The Ven-Tel Dialer feature is disabled.
The Ven-Tel modem has one DIP switch pack, SW2. Older versions i.e., the EC2400-33, rev 5.2/6.0 may have two DIP switch packs, SW2 and SW3. SW3 remains at factory default settings (all switches are in the Off position). See the Ven-Tel 2400 User's manual for the location and access to the switches.		

- 2 Disconnect the RS-232 cable from the Meridian Mail administration terminal.
- 3 Connect the modem to the administration terminal using the RS-232 modem cable (NT3M20AQ) provided.
- 4 Plug the modem power cord into the nearest AC receptacle.
- 5 Power on both the modem and the terminal.
- 6 Enter **at&f** <Return> from the terminal to reset the modem to factory default values. The response *OK* should be returned.
- 7 To enable DTR-initiated reset, enter **at&d3** <Return> . The response *OK* should be returned.
- 8 Enter **at&w** <Return> to save the configuration. The response *OK* should be returned.
- 9 Turn the modem off, wait ten seconds, then turn it back on. Check the saved configuration by entering **atls** <Return>. Check the modem settings against those listed in Table 4-2. Repeat steps 6 to 9 if there is any discrepancy.

**Table 4-2xxx**  
**Ven-Tel settings for the networking modem**

**EC2400-33 Rev. 5.2**

```
\A0, %A0, B0, &C1, \C0 %C1, &D3, \D0, E0, F1, &G0, \G0 \J0, &L0, M1,
&M0, \N3, &P0, Q4, \Q0, &R0, \T0, &T4, V1, \V0, X4, &X0, \X0, Y0,
```

**EC2400-33 Rev. 6.0**

```
\A0, %A0, B0, &C1, \C0 %C1, &D3, \D0, E0, F1, &G0, \G0 \J0, &L0, M1,
&M0, \N3, &P0, Q0, \Q4, &R0, \T0, &T4, V1, \V0, X4, &X0, \X0, Y0, *N0,
```

**EC2400 Plus II**

```
\A0, %A0, B0, &C1, \C0 %C1, &D3, \D0, E0, F1, &G0, \G0 \J0, &L0, M1,
&M0, \N3, &P0, Q0, \Q4, &R0, \T0, &T4, V1, \V0, X4, &X0, \X0, Y0, *N0, #S0,
#R0, *B0,
```

- 10 Turn the modem off and disconnect the RS-232 cable at the terminal end.
- 11 Connect the modem cable to the required port on the RSM cable (see Figure 4-1).
- 12 Connect the modem's telephone port to the 6X17 port on the PBX using twisted pair cable.  
*- Label the modem with the Modem DN, and the Port Location information.*
- 13 Repeat the above steps for each networking modem.
- 14 Reconnect the cable (from the CRT port) to the administration terminal.
- 15 Check the terminal screen by typing < Ctrl > < w > .
  - a. If the information appears in a box with straight lines, close the window by typing < s > .
  - b. If the information appears in a box composed of letters, refresh the screen by typing < i > , then < f > .

## Meridian Mail configuration

To configure Meridian Mail:

- 1 At the Meridian Mail Administration console, display the Data Port Configuration screen (see the "Data Port Configuration" section in "Hardware Administration", in the *System Administration Guide*).

- 2 Note the Port Location values displayed for each Device Type set to "NWModem". These ports were assigned during installation for networking modems. Repeat for all networking modems.
- 3 At the Meridian Mail Administration console, enter the Modem DNs for each data port used by the Networking Service in the View/Modify Data Port screen (see "Data Port Configuration" and "Modify Data Port (Modem)" in the "Hardware Administration" chapter, in the *System Administration Guide*).

## Testing the Network DNs and Modem DNs

- 1 Call networking DN from local sites to all satellite sites. You should hear a modem tone.
- 2 Call modem DN. You should receive a ring but no answer.

If the tests are unsuccessful, check the "Modem Configuration" section in this chapter.

**4-6** Installing Meridian Mail hardware

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## Chapter 5: Configuring the AMIS Network

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This section outlines the tasks involved in configuring the AMIS Networking service. The operation of the menus and an overview of the configuration requirements of the networking service are described in the “Network Administration” chapter of the *System Administration Guide*.

### AMIS Networking service DN

If a dedicated AMIS service DN is to be set up, configure the AMIS Networking service using the Voice System Administration screens on the Meridian Mail system. See “Voice System Administration” in the *System Administration Guide*.

### AMIS Networking parameters

To set the default AMIS parameters see “Networking Administrations” in the *System Administration Guide*.

## 5-2 Configuring the AMIS Network

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## Chapter 6: Configuring the Meridian Mail Network

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Once the various hardware components have been installed, you may configure the Meridian Mail Networking service. This section outlines the tasks to be carried out. The operation of the menus and an overview of the configuration requirements of the Meridian Mail Networking service are described in the *System Administration Guide*.

### Local and remote sites

Define the characteristics of the local and remote networking sites using Networking Administration screens on the Meridian Mail system. See “Networking Administration” in the *System Administration Guide*.

### Meridian Mail Networking service DN

Configure the Meridian Mail Networking service using the Voice System Administration screens on the Meridian Mail system. See “Voice System Administration” in the *System Administration Guide*.

### Meridian Mail Networking parameters

Set the default message delivery priority for messages delivered across the network in the Voice Messaging Options screen. See “Voice System Administration” in the *System Administration Guide*.

### Remote Voice Users

Define Remote Voice Users at the local system in the User Administration screens. Remote Voice Users are users who are frequently contacted by users at the local site. These remote users are registered at the local system and given a personal verification recording. See “User Administration” in the *System Administration Guide*.

## 6-2 Configuring the Meridian Mail Network

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## Chapter 7: Verifying the AMIS installation

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This section describes test procedures that should be performed following the installation of AMIS Networking, or at the end of each phase of the installation. These tests ensure proper operation of AMIS Networking before it is added to the Meridian Mail network. Do the test procedures in the order presented.

**Note:** If a test fails, do not continue until the problem has been corrected.

### Outcalling

This procedure determines whether or not outgoing trunks in a trunk access group are operational and can be used by Meridian Mail for outcalling.

#### Testing a Trunk Access Group

- 1 From the phone set, dial the outbound trunk access code.  
*Listen for the second dial tone.*
- 2 Dial an external number and ensure that the ringing tone is heard.
- 3 While ringing is heard on the trunk, repeat steps 1 and 2 for each outbound trunk in the trunk access group.  
*This ensures that all outbound trunks can be used in parallel.*
- 4 Disconnect all calls once all trunks have been accessed.
- 5 If this test fails:
  - a. Review the trunk hardware installation.
  - b. Verify that the trunk definition and trunk access group are correct.
  - c. Review the UCD agents, ensuring that 6-way Conferencing is defined.

## Loopback

The loopback test verifies network message delivery between systems. This is done by composing a message and sending it to a mailbox within the same system.

- 1 Compose an AMIS message addressed to a mailbox within the same system.  
*After sending the message either the composer receives a NDN message or the receiver receives the AMIS message.*
- 2 If the receiver receives the AMIS message, the message was successfully delivered.  
*To verify the delivery of the AMIS message, log onto the receiver's mailbox to read the message.*
- 3 If the composer receives the NDN message then the AMIS message could not be delivered.  
*Consult the SEER manual for descriptions of non-delivery reasons. The likeliest cause of error lies in the networking service's information for the local site. (See the "Network Administration" chapter of the System Administration Guide). For example:*
  - a. No AMIS server DN (Voice System Administration)
  - b. AMIS system option not enabled (Network Administration)
  - c. AMIS customer option not enabled (Network Administration)
  - d. AMIS user's option not enabled (User's Administration)
  - e. Threshold parameters not set up correctly (Network Administration)

## End-to-End

Having proved that the local site is operational, the final test is to compose a message and send it to a remote site.

- 1 Compose a message addressed to a mailbox at the remote site and tag it with the acknowledgement message option.  
*After sending the message the composer receives either an acknowledgement or a non-delivery notification.*
- 2 If you receive an acknowledgement, the message was successfully delivered to the remote site recipient.  
*To verify the delivery of the remote message, either log on to the remote mailbox or ask the administrator at the remote site to read the message.*

- 3** If you receive a non-delivery notification, the message could not be delivered within the time specified in the Networking Administration menus (see “Thresholds”, in “Network Administration”, in the *System Administration Guide*).

*Consult the SEER log for descriptions of non-delivery reasons. Since all the previous tests have succeeded, the likeliest cause of error lies in the Networking service's information for the remote site. For example:*

- a. Incorrect AMIS System Access Number
- b. Remote site does not have the AMIS capabilities
- c. Remote site disabled the AMIS capabilities

**7-4** Verifying the AMIS installation

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## Chapter 8: Verifying the Meridian Mail network installation

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This section describes test procedures that should be performed following the installation of Networking, or at the end of each phase of the installation. These tests ensure proper operation of Networking before it is added to the Meridian Mail network. Do the test procedures in the order presented.

*Note:* If a test fails, do not continue until the problem has been corrected.

### Outcalling

This procedure determines whether or not outgoing trunks in a trunk access group are operational and can be used by Meridian Mail for outcalling.

#### Testing a Trunk Access Group

- 1 From the phone set, dial the outbound trunk access code.  
*Listen for the second dial tone.*
- 2 Dial an external number and ensure that the ringing tone is heard.
- 3 While ringing is heard on the trunk, repeat steps 1 and 2 for each outbound trunk in the trunk access group.  
*This ensures that all outbound trunks can be used in parallel.*
- 4 Disconnect all calls once all trunks have been accessed.
- 5 If this test fails:
  - a. Review the trunk hardware installation.
  - b. Verify that the trunk definition and trunk access group are correct.

### Testing the UCD Agents

- 1 At the Administration console, display the Add Remote Site information screen (see "Networking Administration" in the *System Administration Guide*).
- 2 Enter a non-existent site ID.
- 3 Press [Voice].  
*You are prompted to enter a DN.*
- 4 Enter a number that includes the access code of the outbound trunk group, an asterisk (\*) to pause for dial tone after trunk seizure, and a DN corresponding to a phone set that can be answered.  
*Make sure the phone rings and that when it is answered the softkeys change to allow recording and playback of a site spoken name.*
- 5 Press [Cancel].
- 6 If the test fails:
  - a. Ensure that the UCD agents have been configured correctly for outcalling.
  - b. Ensure that the UCD agents have NCOS values that do not restrict them from using the outbound trunks.
  - c. Review any SEERS that may have been produced.

### Incalling

This test verifies whether or not incoming calls to Networking are handled correctly.

- 1 Use a local phone set to place an off-network call to the Networking UCD DN.
- 2 After the call is answered, leave the phone set off the hook for at least 30 seconds.  
*The carrier tone of the data line's modem will be heard over the calling phone set.*
- 3 If you do not hear the carrier tone then:
  - a. Review the UCD agents, ensuring that 6-way Conferencing is defined.
  - b. Review the DNs associated with the data line.
  - c. Verify the modem DIP switch settings.
  - d. Verify that the VSDN table contains the Networking DN and the abbreviation "NW".
- 4 Repeat this test for each data line.

## Loopback

The loopback test verifies network message delivery between systems. Instead of delivering a voice message to a remote system, this test delivers the message to the same system that created the message. This allows the administrator to test message delivery in isolation from other remote sites. This test requires one outbound trunk, one inbound trunk, two networking data lines, and two modems—one data line and modem for outgoing Networking calls, and one for incoming Networking calls. Sites with only one modem cannot perform the loopback test. The loopback test is done using the Networking Administration screens. See “Site Verification Test”, in “Networking Administration”, in the *System Administration Guide*.

**Note:** If problems are encountered during this test, ensure that the site ID defined in “Networking Administration” is not zero.

## End-to-End

Having proved that the local site is operational, the final test is to compose a message and send it to a remote site.

- 1 Compose a message addressed to a mailbox at the remote site and tag it with the acknowledgement message option.

*After sending the message the composer receives either an acknowledgement or a non-delivery notification.*

- 2 If you receive an acknowledgement, the message was successfully delivered and read by the remote site recipient.

*To verify the delivery of the remote message, either log on to the remote mailbox or ask the administrator at the remote site to read the message.*

- 3 If you receive a non-delivery notification, the message could not be delivered within the time specified in the Networking Administration menus (see “Thresholds”, in “Network Administration”, in the *System Administration Guide*).

*Consult the SEER log for descriptions of non-delivery reasons. Since all the previous tests have succeeded, the likeliest cause of error lies in the Networking service’s information for the remote site. For example:*

- a. Incorrect password pairs were assigned between the sites.
- b. Connection DNs do not terminate on the Networking DN.
- c. A remote site that is not yet operational was specified.

#### 8-4 Verifying the MM network installation

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## Addendum: 555-7001-213

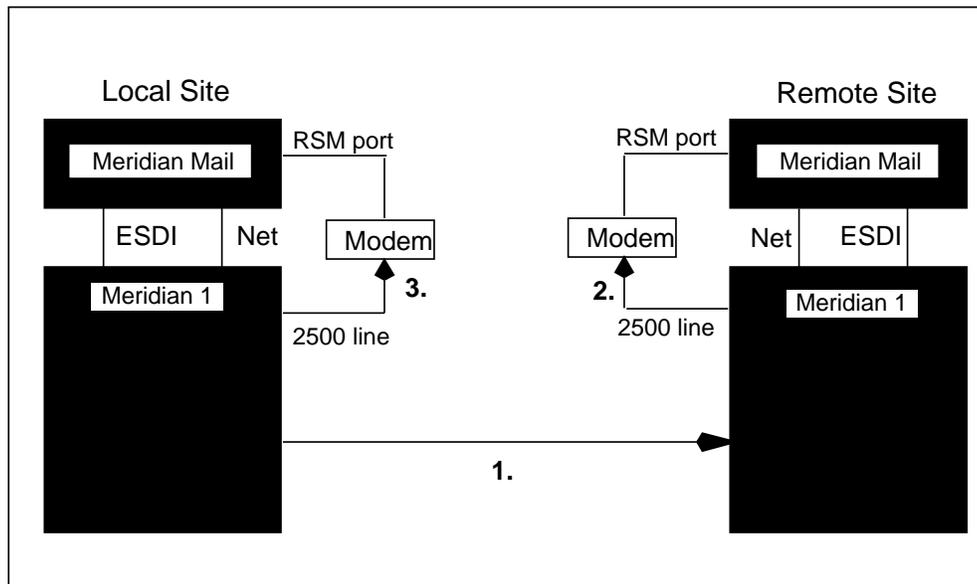
# Networking Racal modem configuration

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### Modem overview

A 2500 line is required for each Networking connection to provide transmission of control data used in the Meridian Mail message transfer protocol.

**Figure A-1**  
Networking modem configuration overview



The steps performed to setup the network call are:

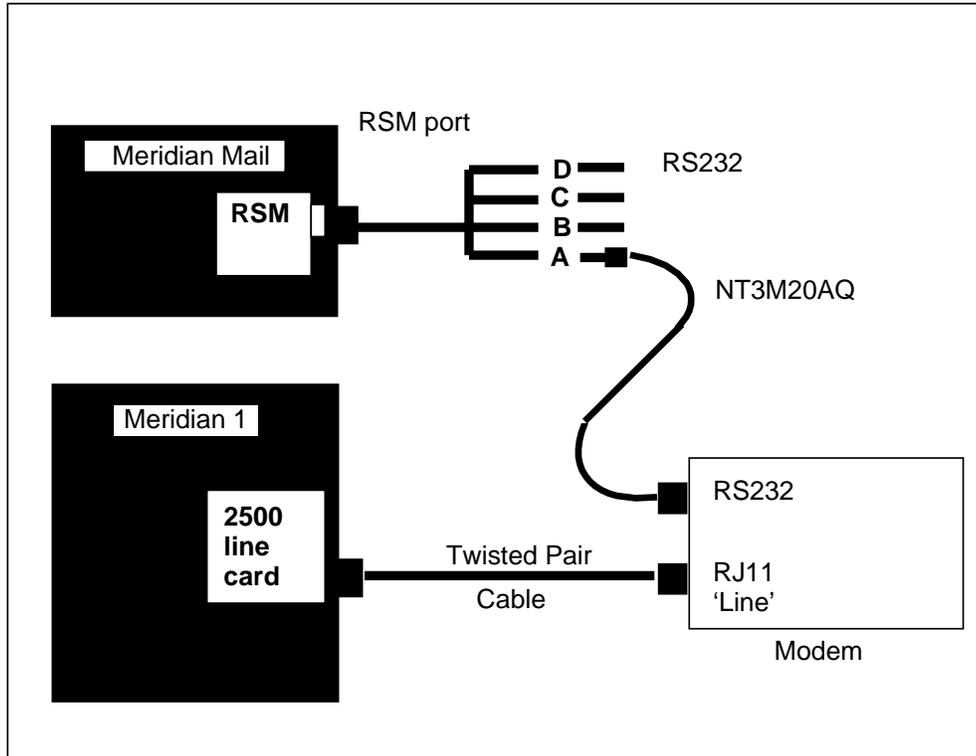
- 1** Local Site calls Remote Site over Central Office or Network Line. Remote Site answers the call.
- 2** Remote Site adds call to the modem:
  - a. Local Site sends "ATS0=0" to wake up the modem.
  - b. If ringing is detected on the modem, it answers the modem and delays 20 seconds before sending "ATA" to the modem to make the modem go offhook. The modem should answer in 2 seconds.
  - c. Local Site completes the conference call and expects to detect carrier within 30 seconds.
- 3** Local Site adds call to the modem:
  - a. Local Site sends "ATS0=0" to wake up the modem.
  - b. If ringing is detected on the modem, it answers the modem and sends "ATD" to the modem to make the modem go offhook. The modem should answer in 2 seconds.
  - c. Local Site completes the conference call and expects the modem to detect carrier within 30 seconds.

Modems are in CONNECT mode and Voice Mail Networking will proceed.

Each networking line has the following hardware components:

- port from an SL-1 2500 line card (QPC452, QPC60 or QPC594) or a Meridian 1 2500 line card
- Racal V12422PA Modem
- RS232-port from the RS-232 Service Module (RSM)
- RS-232 cable with two male connectors (NT3M20AQ)

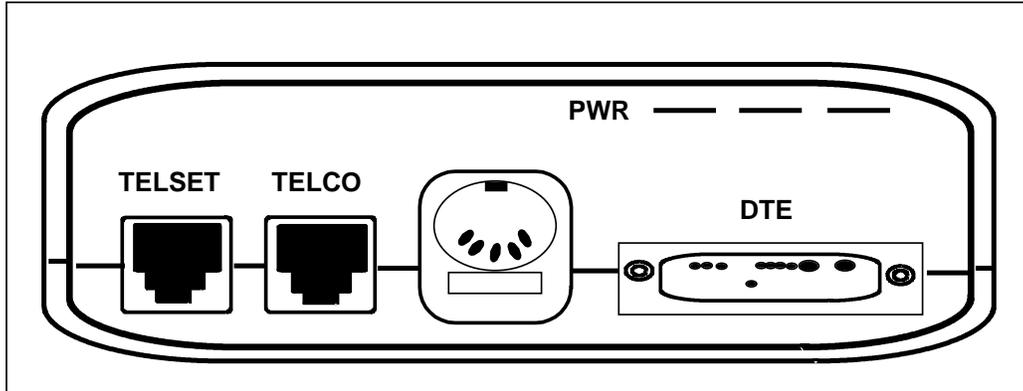
**Figure A-2**  
**Networking line hardware setup**



More details on the Racal modem is available in the Guide "V12322PA Modem User's Guide" from Racal Data Communications, which is provided with Racal modem.

## Modem configuration

Figure A-3  
Racal data modem rear panel



The following steps apply to both the local and the remote modem.

- 1 Disconnect the RS-232 cable from the Meridian Mail administration terminal.
- 2 Connect the modem to the administration terminal using the RS-232 modem cable (NT3M20AQ) provided.
- 3 Plug in the modem power cord into the nearest AC receptacle.
- 4 Power on both the modem and the terminal.
- 5 Enter **at&f** <Return> to use factory default values. The response OK should be returned.
- 6 Enter **at&d3** <Return> to enable STR-initiated reset. The response OK should be returned.
- 7 Enter **atx1** <Return> to select desired result code.
- 8 Enter **ats10=14** <Return> to set carrier off delay to 1.4 seconds.
- 9 Enter **ate0** <Return> to turn off echo.
- 10 Save the configuration by entering **at&w** <Return>.
- 11 Enter **at\*t0** <Return> to see the current register settings, which should correspond to those in Table 9-1 for the modem.
- 12 Turn the modem off, wait 10 seconds, then turn it back on. Enter **at\*t0** <Return> to see if the register settings still correspond to those in Table 9-1 for the modem.

- 13 Turn the modem off and disconnect the RS-232 cable at the terminal end.
- 14 Connect the modem cable to the required port on the RSM cable (see Figure 9-2).
- 15 Connect the modem's telephone port to the 2500 port on the CSE using twisted pair cable.  
Label the modem with the Modem DN and the Port Location information.
- 16 Repeat the above steps for each networking modem.
- 17 Reconnect the cable (from the CRT port) to the administration terminal.
- 18 Check the terminal screen by typing <Ctrl> <w>.
  - a. If the information appears in a box with straight lines, close the window by typing <s>.
  - b. If the information appears in a box composed of letters, refresh the screen by typing <i>, then <f>.

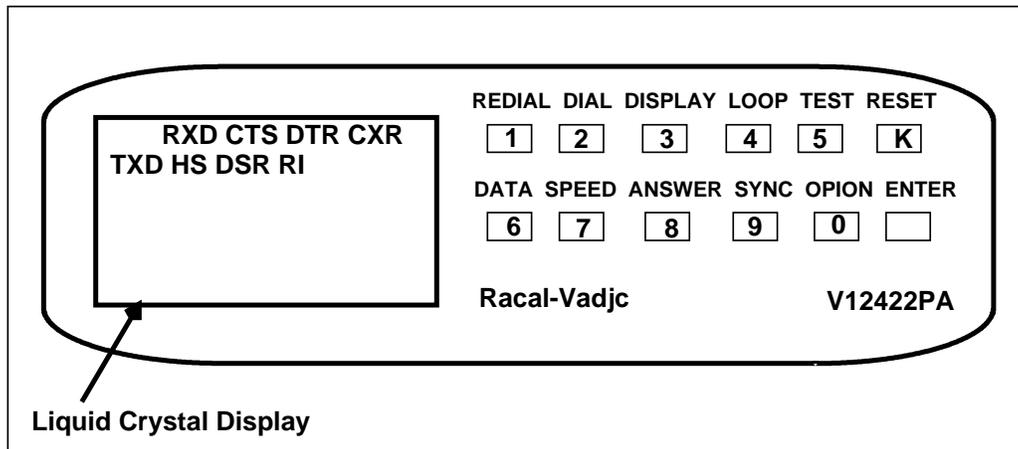
**Table A-1**  
**Racal - \*T-S register settings**

Register	Function	Setting
S0	Answer on Ring	000
S1	Ring Count	000
S2	Escape Code	043
S3	Carriage Return	013
S4	Line Feed	010
S5	Back Space	008
S6	Dial Tone Delay	005
S7	Abort Timer	050
S8	Comma Pause	004
S9	Carrier Timer	006
S10	Carrier Off Delay	014
S11	Not Used	070
S12	Escape Code Guard	050
S13	Reserved	160
S14	Bit Mapped	170

Register	Function	Factory Setting
S15	Reserved	059
S16	Bit Mapped Test	000
S17	Not Used	228
S18	Diagnostic Timer	000
S19	Reserved	000
S20	Reserved	000
S21	Bit Mapped	000
S22	Bit Mapped	064
S23	Bit Mapped	027
S24	Reserved	000
S25	STR OFF Delay	005
S26	RTS/CTS	001
S27	Bit Mapped	000

## Modem startup

Figure A-4  
Racal data modem front panel



- 1 The front panel of both modems will display **IDLE** in the LCD to indicate that the modem is ready to call another modem.



# **Meridian Mail**

## **Networking Installation Guide (SMDI)**

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