

MITEL NETWORKS

3300 | Integrated Communications Platform

3300 CITELink Gateway for 7000 Series Norstar Phones

Installation and Configuration Guide

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3300 CITELlink Gateway Installation and Configuration Guide

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Introduction

About this Guide

This guide provides instructions for installing, configuring, and troubleshooting the Mitel Networks™ 3300 CITELink Gateway. It is intended for qualified 3300 ICP technicians.

The guide contains the following sections:

- **Introduction**—provides an overview of the gateway and lists related documentation and safety notices.
- **Before You Begin**—sets out the steps for preparing the site for installation.
- **Installation**—describes how to install the gateway unit, register supported Nortel Networks™ Norstar IP sets, as well as test and troubleshoot the installation.
- **Configuration**—describes how to configure the gateway for DHCP or static IP addressing and how to upgrade software.
- **Appendixes**—provide additional information such as technical specifications, wiring charts, phone key layouts, and configuration tool commands.

About the 3300 CITELink Gateway

The 3300 CITELink Gateway is a network interface that provides supported Norstar sets with connectivity on the Mitel Networks 3300 Integrated Communications Platform (ICP).

The unit connects to the 3300 ICP controller through a Layer 2 switch and to a maximum of 24 Norstar sets through standard wiring, punchdown blocks, and connectors. (See FIGURE 1.) Norstar sets are line powered from the gateway.

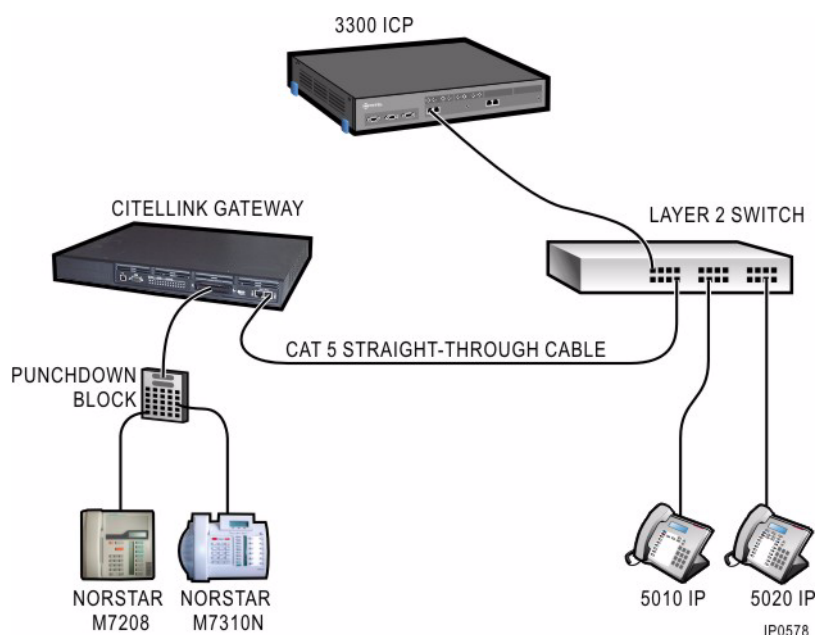


FIGURE 1. Standard CITELink Gateway Configuration

Once connected and programmed on the system, Norstar sets—including displays, softkeys, and supported hardkeys—operate like Mitel Networks phones.

By default, the gateway is configured to use DHCP IP addressing and to load software updates on startup. If required, these defaults can be changed using a command-line tool included with the gateway.

The 3300 ICP supports any combination of Mitel Networks and CITELink-supported phones up to the maximum capacity of the 3300 ICP controller. A 700 -user controller, for example, supports a maximum of 29 gateways (700 limit ÷ 24 phones per gateway).

The gateway is supported on 3300 ICP systems with Release 4.1 software or higher.

Supported Norstar Sets

The gateway supports the following Norstar models:

- | | | | |
|----------|---------|----------|--------------------|
| • M7100 | • T7100 | • M7310N | • T7316 |
| • M7208 | • T7208 | • M7324 | • T7406 (cordless) |
| • M7208N | • M7310 | | |



Note: The following Norstar devices are NOT supported: Key Lamp Module, Station Ancillary Power Supply (SAPS), Busy Lamp Field Unit, Analog Terminal Adapter, Internal Directory Name Unit

Supporting Documentation

The following documentation is available on Mitel Online at <http://www.ebiz.mitel.com>:

- *3300 CITELink Start Here Guide*—identifies the documentation that you need, provides important safety instructions, and details regulatory approvals.
- *3300 ICP System Administration Tool Online help*—provides instructions on how to configure phones on the 3300 ICP system.
- *3300 CITELink Phone User Guides*—identifies the functions of the Norstar phone keys and provides feature operation instructions.
- *3300 Integrated Communications Platform Technician's Handbook*—provides instructions on how to configure the 3300 ICP DHCP server and launch the System Administration tool.
- *LAN Design Guidelines for the Implementation of 3300 Platforms*—provides further details on setting up the LAN and Layer 2 switches.



Note: You require a Mitel Online username and password to access the site, and Adobe Acrobat Reader to view some online guides.

Important Safety Instructions

WARNING: Before attempting installation, read the Safety Instructions provided in the 3300 CITELink Gateway Start Here Guide. This guide is shipped with the gateway.

WARNING: Failure to follow all instructions may result in improper equipment operation and/or risk of electrical shock.

Before You Begin

This chapter lists the tools and information required for installation and describes how to

- Prepare the network, including testing existing sets and cabling, checking DHCP configuration (if required), and checking Layer 2 switch configuration.
- Program the 3300 ICP, including the DHCP server, licenses, feature access codes (FAC), Norstar sets, and phone keys.
- Prepare users by distributing user guides, FAC reference cards, and phone key labels.

When planning the installation, note that the gateway:

- Supports a maximum of 24 sets
- Supports ONLY the Norstar 7000-series IP sets listed on pg. 2
- Must be connected to a properly-configured Layer 2 switch
- Must be installed within 1.4 m (5 feet) of an AC power source



Note: For more information, see TABLE 5: *Technical Specifications* on page 19.

Tools and Equipment Checklist

The 3300 CITELink Gateway unit ships with mounting hardware and the 3300 CITELink Gateway Start Here Guide.

In addition, you will require:

- ☐ Power supply cord.
Order the correct power cord for the country of installation from Mitel Networks.
- ☐ CAT 5 straight-through cable with RJ-45 connectors
- ☐ A 25-pair extension line with Amphenol-type connectors for connecting the gateway to a punchdown block. A female connector is required to connect to the unit's front panel.
- ☐ A punchdown block and phone cables
- ☐ A PC with communications software (such as HyperTerminal) and an FTP utility
- ☐ An RS-232 straight-through cable for connecting the PC to the gateway or 3300 ICP controller
- ☐ 3300 ICP controller with Release 4.1 software or later
- ☐ 3300 ICP System Administration Tool username and password (for accessing the 3300 ICP System Administration Tool)
- ☐ 3300 ICP User and Device licenses for each Norstar set
- ☐ 3300 CITELink Phone User guides for the Norstar sets

Information Required

Before configuring the 3300 ICP and the gateway, record the following information:

- ☐ IP addresses for the 3300 ICP controller, external tftp server (if required), gateway unit, and network router. (Static IP addressing only)
- ☐ The directory number (DN), model number, and programming for each Norstar IP set. Check the part number on the bottom of each set to verify the model number.
- ☐ Feature Access Codes programmed on the Norstar phone system. (Optional)
It is recommended that you program the 3300 ICP with the same feature codes where possible.

Network Checklist

To avoid problems when installing the gateway, perform the following network check:

- ☐ Check existing network infrastructure before decommissioning the Norstar phone system:
 - Test installed Norstar IP sets including connections and handset cords
 - Tone and test existing cabling
 - Ensure the loop length does not exceed the maximum recommended (1600 feet/485 metres)
- ☐ Before installing new wall sockets, check existing phone plugs for non-standard wiring. For example, North American sets installed at a British site may require you to map pins 2 and 5 to 3 and 4 on the phone plug.
- ☐ If the network uses DHCP IP addressing, check DHCP server settings:
 - Ensure the DHCP server is programmed for the subnet where the gateway is located
 - Ensure the DHCP server has enough IP addresses
 - Ensure the tftp server referenced is storing the correct version of CITELink Gateway software
- ☐ Ensure the Layer 2 switch is programmed for 10-Base-T Ethernet 1/2 duplex

Program Norstar IP Sets on the 3300 ICP

Before programming Norstar sets

- Program the DHCP Server (if required)
- Enter IP device licenses
- Program Class of Service (COS), Interconnect Restriction, and Intercept Handling for each Norstar set
- Program Set Registration and Set Replacement Access Codes
- Program Feature Access Codes



Tip: To minimize user frustration, program the 3300 ICP with the same feature access codes as used on the old Norstar system.

For more information, see the System Administrator tool Online help.

For each Norstar IP set, you'll need to:

- Provide the directory number, device type (CITELink Type 1 or 2), and interconnect restriction.
- Assign a COS
- Program phone keys



Note: IP sets may be programmed using the System Administration tool or OPS Manager. For more information on programming Multiline IP sets, see the System Administration tool or the OPS Manager Online Help.

To program a Norstar set (System Administration tool):

1. Launch the 3300 ICP System Administration Tool. For instructions, refer to the Technician's Handbook.
2. Choose **System Configuration** from the **Selection** menu.
3. Open the **Multiline IP Set Configuration** form and click **Add**.
4. Program the set as required. Click **Help** for more information.
 - Set the Device Type as indicated:

For Norstar model:	Use device type:	For Norstar model:	Use device type:
M7100	CITELink Type1	M7310	CITELink Type2
M7208		M7310N	
M7208N		M7324	
T7100		T7316	
T7208		T7406 cordless	

- Enter the internal directory number (1 to 7 digits in length) for the phone.
 - Enter the Interconnect Number for the phone.
 - Click Save.
5. Open the **Station Service Assignment** form and assign a class of service.
 6. Open the **Multiline Set Key Assignment** form. Refer to "Appendix C: Phone Keys" on page 25 to identify the number and locations of the personal keys. Note that the T7100 and M7100 do not have personal keys.
 - Select the directory number of the phone from the Multiline Set Key Assignment list.
 - From the Softkeys list, select the button number of the key that you want to program. Click Change Member.
 - Program the function of the key in the form.
 - Click Save.

Preparing Norstar Users for Changes

Even if you are not installing new phones at the site, installation of the gateway will still have an impact on users. After installation, the Norstar phones will operate like Mitel Networks phones and users will have to reprogram personal keys such as personal speed dial buttons.

To minimize the impact on users, it is recommended that you:

- Inform Norstar users of changes in phone functionality as well as on the full range of Mitel features supported on Norstar sets
- Re-label the Norstar phone keys—Superkey, Trans/Conf, Redial, Message, Cancel, Prime Line, Up Arrow, Down Arrow and Personal keys—as required. See Appendix C: Phone Keys (pg. 25 through pg. 31) for the location of the keys.
- Replace the old feature access card on each Norstar phone with a new one. (Record the feature access codes on the sample cards in “Appendix G: Sample feature cards” on page 45 and then, photocopy, cut out, and distribute the cards.)
- Refer users to the CITELink phone user guides for operating instructions. You can print these guides from Mitel Online at <http://www.ebiz.mitel.com>.

Changes in Phone Functionality

To help Norstar phone users adjust to changes in functionality, ensure they are aware of the following differences:

- Sets without HOLD keys can still be placed on temporary hold
- Users program speed call numbers, personal keys as well as enable/disable features using the SuperKey.
- On some sets, users must navigate SuperKey menus using * and # on the keypad
- Some features require the user to dial a feature access code
- Sets display "Message" when the user has a message (including new voice mail messages)
- The user does not need to select a line before dialing a number
- Ring types and volume control settings are different

Supported Mitel Features

Most Mitel features are now available to Norstar phone users. For a list of supported features, refer to “Appendix D: Supported Features” on page 33.

Users should note that the following Mitel Networks features are NOT supported:

- | | |
|-----------------------------------------------------|---------------------------------------|
| • Resiliency | • Headset Operation |
| • Hot Desking | • Programmable Key Module support |
| • Compression | • Automatic Call Distribution support |
| • Desktop User Tool
(for programming phone keys) | • Mitel Networks 5700 support |

Installing the 3300 CITELink Gateway

WARNINGS:

- Before attempting installation, read the safety instructions provided in the 3300 CITELink Gateway Start Here Guide. This guide is shipped with the gateway.
 - Failure to follow all instructions may result in improper equipment operation and/or risk of electrical shock.
-

Caution! After you plug in the unit, Do NOT unplug or otherwise interrupt the 3300 CITELink Gateway unit until it has finished the boot up procedure. A power interruption may result in the gateway failing to boot properly.

Important! Read all sections of this chapter before installing. The steps must be followed in the order presented.

This chapter describes how to install the 3300 CITELink Gateway unit and register supported Norstar phones.

Before you install the gateway unit, ensure the proposed location

- Is within 1.4 meters (5 feet) of an AC power supply (preferably UPS-protected)
- Can access the punchdown block used by up to 24 supported Norstar phones. Refer to “Supported Norstar Sets” on page 2 for supported models.

The following steps are required to set up Norstar phones on the 3300 ICP:

1. Connect the gateway to the voice LAN and to the Norstar phones
2. Power up the gateway
3. Register the phones with the 3300 ICP
4. Verify phone operation and system programming

Connect the Gateway

1. Place the unit on a desk, or install it in a 19-inch rack using the supplied mounting brackets. The mounting brackets fasten to the sides of the rack.
2. Connect a CAT 5 straight-through cable from the MDI-II ethernet port on the gateway to an ethernet port on a layer 2 switch (see FIGURE 2).
Note: The port on the Layer 2 switch should be configured as an “access” port (for the voice LAN only) and not a “trunk” port. (Recommended)
3. Connect the 21-pair extension line from the male Amphenol-type connector on the gateway front panel to a punchdown block near the gateway.
Refer to “Appendix B: Phone Wiring Chart for Norstar Phones” on page 23 for wiring details.
4. Connect the Norstar phones (24 maximum) to the punchdown block using RJ-11 phone cables.

CAUTION: Do not connect Mitel Networks phones to the gateway.

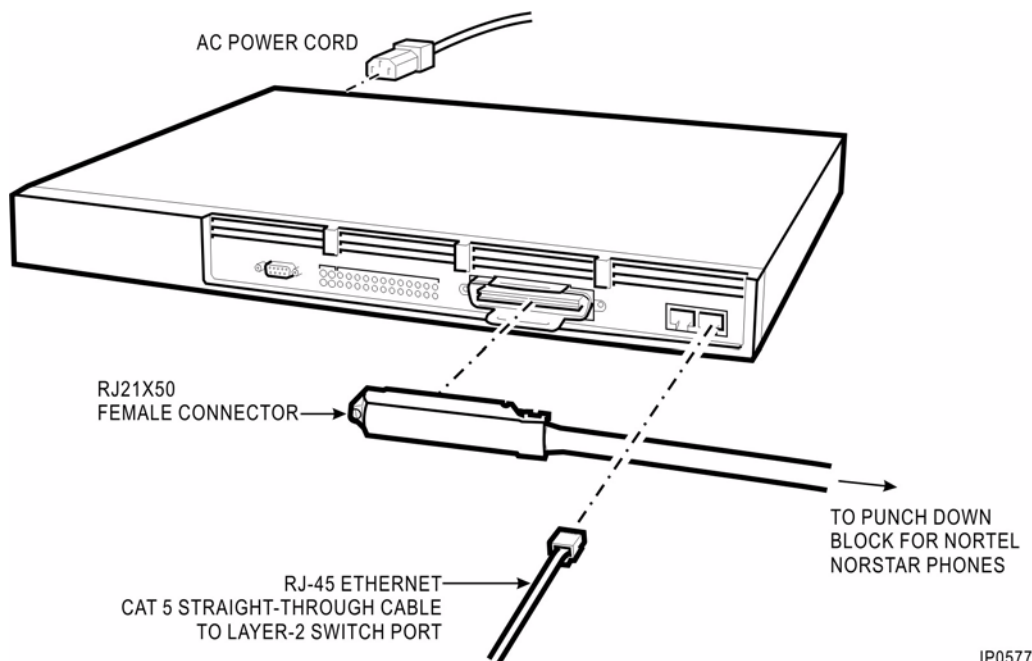


FIGURE 2. Connecting the cables

Power Up the Gateway

1. Connect the power cord to the power input connector on the rear panel of the gateway.
2. Plug the power cord into the AC power source. The gateway begins its Boot up procedure.

Caution! Do NOT unplug or otherwise interrupt the 3300 CITELink Gateway unit while it is starting up. A power interruption may result in the gateway failing to boot properly. If a power interruption occurs during an update, allow the unit 10 minutes to recover.

Check the indicators on the front panel of the gateway to ensure the unit is starting properly. For a description of the expected behavior, refer to TABLE 6: *Indicator Functions During 3300 CITELink Gateway Startup* on page 20.



Note: When the gateway has finished startup, the Norstar sets should display link status information followed by "PIN then Feature". If nothing is displayed, refer to "Troubleshooting the Installation" on page 15.

Register Norstar phones with the Gateway

1. Using the Norstar phone keypad, enter the "Set Registration Access code" (programmed in the **System Options Assignment** form) followed by the directory number of the phone.
2. Press the **Feature** (SuperKey) key. The time and date appears in the set display. The phone is now operational.

Verify Phone Operation and System Programming

1. Place calls from the Norstar phones to
 - other Norstar phones on the gateway
 - Mitel Networks phones on the 3300 ICP system
 - external numbers.
2. Place calls to the Norstar phones from
 - Mitel Networks phones on the 3300 ICP system
 - external numbers.
3. Test the feature keys and ensure that they are programmed and working correctly.

Connect a Phone after the 3300 CITELink Gateway is Powered Up

1. Program the phone on the 3300 ICP as required. See the section *"Program Norstar IP Sets on the 3300 ICP"* on page 4.
2. Connect the Norstar phone to the punchdown block. "PIN then Feature" will appear in the phone display.
3. Register the phone. See the section *"Register Norstar phones with the Gateway"* on page 8.

Configuring the 3300 CITELink Gateway

The 3300 CITELink Gateway can be installed and operated without any configuration required. By default, it uses DHCP IP addressing and will load updated firmware automatically on startup.

If required, you can configure the gateway by connecting a Maintenance PC (or “console”) and then issuing commands or entering settings at the prompt.

When changing some settings, you are prompted to enter your settings twice: once for each “side” of the gateway. The two sides are:

- NLPA (Network Layer Processor “A”)—supports 12 phones on channels 1 to 12
- NLPB (Network Layer Processor “B”)—supports 12 phones on channels 13 to 24

Important! Set “configAddress”(TFTP server IP address) on ONE SIDE ONLY. Do this to prevent problems caused by mismatched IP addresses in the two configAddress fields. Different IP addresses may result in the gateway trying to load software from two different locations.

The configuration tool has two modes: “Normal” and “Expert”. Most configuration commands require the Expert mode. “Toggle” between modes by entering “\$” at the prompt.

TABLE 1 lists the common gateway commands and settings with descriptions.

Table 1. Commands and Settings

Command	Description
i	Displays current gateway settings
I	Allows user to edit gateway settings
F	Displays firmware version
U	Loads firmware upgrade
^	Reboots the gateway
Setting	Description
IP Address settings: <ul style="list-style-type: none"> • myIpAddress • myIpNetMask • defaultRouter • configAddress • pbxIpAddress • sysLogAddress 	<p>Note: To use DHCP, set all IP addresses to “0.0.0.0”.</p> <p>IP address of the 3300 CITELink Gateway</p> <p>The net mask</p> <p>IP address of the default router</p> <p>IP address of the TFTP server</p> <p>IP address of the 3300 ICP</p> <p>Leave set to “0.0.0.0”</p>
dhcpEnabled	Enables or disables DHCP IP addressing. Set to “TRUE” (to enable) or “FALSE” (to disable). (Default is TRUE.)
autoUpdate	Enable or disable automatic upgrades. Set to “TRUE” (to enable) or “FALSE” (to disable). (Default is TRUE.)

For a description of gateway commands, refer to “Appendix E: Menu Commands” on page 37.

To configure the gateway, you require

- A PC with a communications program such as “HyperTerminal”
- An RS-232 straight-through cable

Connect a Maintenance PC to the 3300 CITELink Gateway

1. Connect an RS-232 straight-through cable from the gateway's serial port to the serial port on a PC.
2. From the PC, launch a communication program and configure the PC's serial port to use the following settings:

Table 2. PC-to-3300 CITELink Gateway Serial Settings

Baud Rate	115200	Stop Bits	1
Data bits	8	Flow Control	None
Parity	None		

Change Configuration Settings

1. From the communication program, press Enter to display the Normal prompt (**NORMAL>**)
2. Press **\$ <ENTER>** to switch to the Expert prompt (**EXPERT>**).
3. Press **I <ENTER>** to edit gateway settings. The gateway displays the settings for NLPA and NLPB one at a time.
4. Enter a new value or press **ENTER** to keep the current value.
5. To save changes, set “WriteToFlash” to “TRUE”.
6. Type **^ <ENTER>** to restart the gateway and have the new settings take effect.

Upgrading 3300 CITELink Gateway Software

Software upgrades for the 3300 CITELink Gateway are announced through a 3300 ICP product bulletin and made available on Mitel Online at <http://www.ebiz.mitel.com>. To download the software load, follow the instructions in the product bulletin.

If you upgrade the 3300 ICP controller, check the new software load for a newer version of 3300 CITELink Gateway software and upgrade if required.

To upgrade 3300 CITELink Gateway software:

1. Connect to the 3300 ICP controller and transfer the software load to the TFTP server.
2. From the gateway console, load the software (if required) and then reboot the gateway.

It is recommended that you store updates on the TFTP server included with the 3300 ICP.

To upgrade the gateway, you require

- A Maintenance PC with
 - A communications program such as "HyperTerminal"
 - An FTP utility
 - The software load downloaded from Mitel Online
- An RS-232 straight-through cable

Connect a Maintenance PC to the 3300 ICP Controller

1. Connect an RS-232 straight-through cable from the 3300 ICP Maintenance port to the serial port of the PC with the upgrade software.
2. Launch a communication program (such as HyperTerminal) and configure the PC's serial port to use the following settings:

Table 3. PC-to-3300 ICP Serial Settings

Baud Rate	9600	Stop Bits	1
Data bits	8	Flow Control	None
Parity	None		

Transfer the Software Load to the 3300 ICP Controller (Internal TFTP Server)

1. From the communications program, type **tfpdShutDown** <ENTER> to shut down the 3300 ICP TFTP server.
2. Using File Transfer Protocol software, connect to the 3300 ICP and log in using the administrator level username and password.
3. Change to the tftp directory (/sysro/tftp) and set the transfer type to binary.
4. Transfer the file (for example, "tig_minet_ns.bin") from your local directory to the TFTP server.

5. When the program indicates the transfer is complete, list the contents of the directory to verify that the software has been transferred.
6. From the communication program, type **ftpdStart <ENTER>** to restart the TFTP server.

Load the Software Upgrade

Before you continue, check the following settings from the gateway console:

- configAddress—IP address of the TFTP server
- appFileName—filename of the software load
- autoUpdate—automatic upgrade setting (either TRUE or FALSE)

For more information on configuring the gateway, see “*Configuring the 3300 CITELink Gateway*” on page 11.

Caution! Do NOT unplug or otherwise interrupt the 3300 CITELink Gateway unit while it is loading the software. A power interruption may result in the gateway failing to boot properly. If a power interruption occurs during an update, allow the unit 10 minutes to recover.

To load the software

1. If “autoUpdate” is set to “FALSE”, type **U <ENTER>** to load the software.
If “autoUpdate” is set to “TRUE”, proceed to step 2.

When the software has finished loading, the screen displays “INFO: dcpSwUpdateRx: Software update complete”.

2. Type **^ <ENTER>** to restart the gateway.

Troubleshooting the Installation

This chapter provides standard procedures to troubleshoot the most common problems.

Important! It is assumed that the network and the 3300 CITELink Gateway are configured to use DHCP.

Before You Contact Technical Support

If you cannot find the source of the problem in this chapter, please collect the required information listed in the applicable section(s) *before* calling Mitel Networks Technical Support.

You will also need the additional information:

- ☐ Serial number(s) of your equipment.
- ☐ Firmware version loaded on the gateway.
- ☐ Nature of the problem.
- ☐ What you were doing when the problem occurred.
- ☐ Troubleshooting steps taken.
- ☐ Troubleshooting results.
- ☐ Your network diagram.
- ☐ Equipment LED status.
- ☐ DHCP server configuration and settings.
- ☐ IP address scheme.
- ☐ Layer 2 switch configuration and settings (for connections to the 3300 ICP controller, 3300 CITELink Gateway, and the DHCP server).
- ☐ 3300 CITELink Gateway configuration and settings.

To help Technical Support investigate your problem, please capture the boot sequence if possible.



Note: To view or capture 3300 CITELink Gateway information—including firmware version, IP address settings, and bootup error messages—access the configuration tool available through the gateway console. For information on setting up a console and using the configuration tool, refer to “*Configuring the 3300 CITELink Gateway*” on page 11.

General Troubleshooting Steps

Follow the steps below if you can't find the problem when using the troubleshooting table in this chapter.

1. Verify the status of the LEDs (see *"Indicators"* on page 20 for more information).
2. For IP Phone and physical network connectivity problems:
 - Verify that the device has power.
 - Verify the status of the port link integrity LEDs at each end of the cable.
 - Verify that each device transmits a link integrity pulse (LINK LED on).
 - If the link is down, try with another port. Verify that proper cabling is installed between the end devices.
 - Verify that a crossover cable was not installed instead of a straight-through cable.
 - Verify that the straight-through cable is connected to ethernet port "MDI-II" (not "MD-X") on the gateway.
3. For network media problems:
 - If there is excessive noise, check for cabling problems.
4. For network connectivity problems:
 - PING devices on your network.
5. For feature-related problems:
 - Test the same feature (with identical COS) on Mitel Networks IP or DNI sets. This test can help identify (or rule out) 3300 ICP controller problems.
 - Verify that the feature is supported. Refer to *"Appendix D: Supported Features"* on page 33.
 - Verify feature key assignments. Refer to *"Appendix C: Phone Keys"* on page 25.
6. For audio-related issues:
 - Check if the problem only occurs between Norstar sets on the same gateway.
 - Check if there is a broadcast storm or multicast (Ghost) application running at the time of the audio problem. (Sniffer with Network diagram may be required.)

TABLE 4. Troubleshooting

Problem	Possible cause	Corrective action
Unit LEDs		
System and Phone Power LEDs are OFF	Faulty power supply or gateway unit	Replace power supply or unit.
Unit Function LED is not flashing	Unit has failed	Replace unit.
Service Required LED is ON	FLASH has been corrupted	<p>Reboot the gateway and check the console for the following error messages:</p> <p>ERROR: Header parse error ERROR: Application corrupt or not found.</p> <p>If found, follow the reflashing procedure provided on the 3300 ICP Release 4.1 software CD.</p> <p>If the problem persists, replace the unit.</p>
Startup		
On startup, the console displays: Info:nodeconfig : invalid	Static IP addresses are conflicting with DHCP options	Check the DHCP server and gateway configuration settings to ensure that your DHCP settings do not conflict with your Static IP settings.
Phone Displays		
Phone displays are blank after you power up the gateway	Faulty connections to telephone	Ensure Amphenol connector is firmly seated. Check connections to the punch-down block and sets.
	Line connector (RJ11) is loose.	Ensure connector is firmly seated.
	Wiring is incorrect.	Check wiring. Refer to "Appendix B: Phone Wiring Chart for Norstar Phones" on page 23
	Phone model is not supported by the gateway.	See "Supported Norstar Sets" on page 2 to determine which Norstar models are supported.
	The gateway is not running the correct version of firmware	<p>Check the firmware version</p> <ul style="list-style-type: none"> From the console, switch to Expert mode and press "F" to display the firmware version; or Reboot the gateway and check the console for the firmware version. <p>If the gateway is not running version 1.0.2.3, upgrade the firmware. See "Troubleshooting the Installation" on page 15.</p>
	Set is locked out (some sets)	Refer to "SET LOCKED OUT" action.

TABLE 4. Troubleshooting (continued)

Problem	Possible cause	Corrective action
Phone remains in DHCP discovery	No IP addresses are assigned to the CITELink Gateway.	<p>Check the DHCP server</p> <ul style="list-style-type: none"> • Option 128, 129 and 130 are programmed for the subnet where the gateway is located • Ensure that the DHCP server has enough IP addresses to give out • Ensure that DHCP server is active and functional • Ensure that Layer 2 switch port for the gateway has network connectivity.
	No Network connectivity	<p>Check to ensure you have a Cat 5 straight-through cable connected from the MDI-II port on the gateway to a Layer 2 switch port.</p> <p>Check the Layer 2 switch port</p> <ul style="list-style-type: none"> • Ensure the port is not shut down and that there are link activity • Ensure the port is properly configured to allow access to the DHCP server and the 3300 ICP controller. It is recommended that you connect the gateway to an access port rather than a trunk port. • Ensure the port auto negotiates to 10 M half duplex
"PIN then FEATURE" appears on the display	Set has not registered	<p>Register the phone</p> <p>If registration fails</p> <ul style="list-style-type: none"> • Check that Option 129 on the DHCP server is pointing to the 3300 ICP controller • Ensure the extension number has not been registered. If it has, register the phone using the Set Replacement code. <p>Refer to <i>"Register Norstar phones with the Gateway"</i> on page 8.</p>
"SET LOCKED OUT" appears on the display	The device type of the DN entered does not match the phone	<p>1 Clear the "Lockout" condition by repowering the phone and pressing * when prompted to erase the PIN.</p> <p>2 Do one of the following</p> <ul style="list-style-type: none"> • Correct the device type and then register the phone; or • Register the phone using a different DN with the right device type
Display shows PBX xxxxxxxx SET xxxxxxxxxxxx	Set has lost network connectivity to the 3300 ICP	<p>Check LAN cable</p> <p>Check Layer 2 switch port</p> <p>Check network</p>
Upgrading		
CITELink Gateway does not load latest version of firmware (tftpSendRequest fails)	TFTP server IP address is incorrect	<p>Ensure there is network connectivity.</p> <p>If using DHCP (with internal DHCP)</p> <ul style="list-style-type: none"> • Ensure that option 128 on the DHCP server is pointing to the 3300 ICP controller (internal TFTP) or an external TFTP server. • Ensure the gateway is properly configured <ul style="list-style-type: none"> - "autoUpdate" is set to True (default =true) - "dhcpEnabled" is set to True (default =true) - "configAddress" appears as "0.0.0.0". "0.0.0.0" indicates that the gateway uses DHCP addressing. Note that a static setting on the gateway will override DHCP options programmed on the 3300 ICP. <p>Note: If you are using an external DHCP server, refer to the product documentation.</p>

Appendix A: Hardware Description

Technical Specifications

TABLE 5. Technical Specifications

Physical	
Dimensions (height x width x depth)	4.45 x 48.3 x 39.4 cm (1.75 x 19 x 15.5 inches)
Weight	4.27 kg (9.3 lbs)
Environment	
Storage	Temperature: - 40 to + 60 °C Humidity: 15 to 95%, relative humidity, non-condensing
Operating	Temperature: 5 to 40 °C Humidity: 34 to 95%, relative humidity, non-condensing
Electrical	
Voltage input	Auto-ranging 100–240 Vac, 50–60 Hz
Telephone ports	24 ports in any combination
Supported phones	Refer to “Supported Norstar Sets” on page 2 for the supported phones.
Maximum loop-length station cabling to Nortel phones	1600 feet (485 meters)
Indicators	24 channel status indicators Gateway functioning indicator System power indicator Phone power indicator Service required indicator
Connectors	RJ21x50-way male for phone connection D-type 9-pin female RS-232 diagnostic port RJ-45 Ethernet connectors
LAN/WAN protocol support	3300 ICP Release 4.1 software or later 10-Base-T Ethernet (1/2 duplex with no auto-negotiation)

3300 CITELink Gateway Front Panel

FIGURE 3 shows the front panel connectors and indicators.

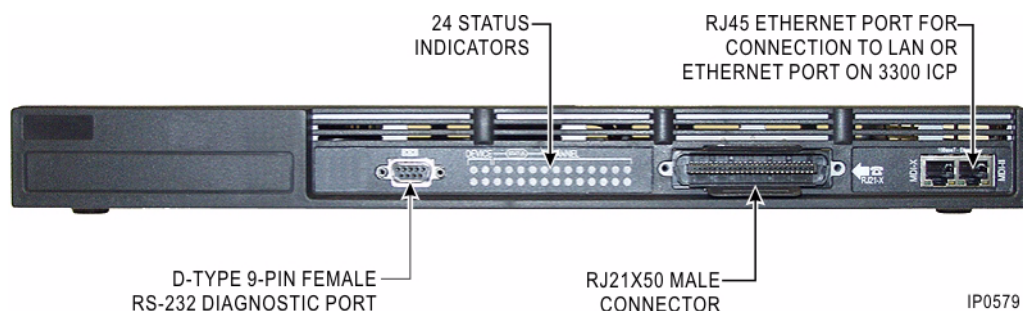


FIGURE 3. Front Panel

Indicators

The front panel displays four unit and 24 channel indicators as shown in FIGURE 4.

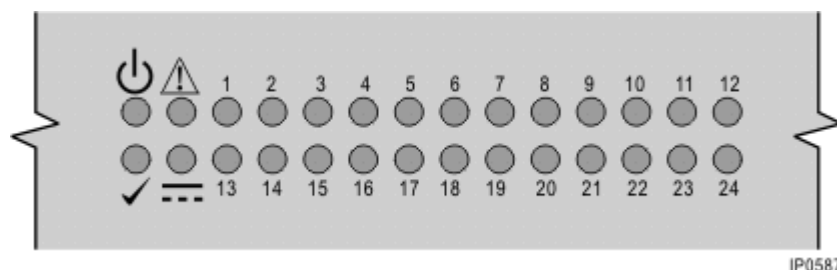


FIGURE 4. Unit and Channel Indicators

The following tables list the indicator functions during startup and normal operation.

TABLE 6. Indicator Functions During 3300 CITELink Gateway Startup

Indicator	Name	Status	Description
	System power	ON	Power input is normal.
		OFF	Power supply failure.
	Unit function	FLASHING	If channel indicators 1 to 8 are counting down from right to left, the software is loading.
		NOT FLASHING (May be on or off)	Unit has failed.
	Service required	ON	Unit requires service. Contact your dealer.
		OFF	Normal operation
	Phone power	ON	Inline power to phone is normal
		OFF	Inline power to phone has failed
1 to 8	Channel status	ON	Indicates the progress of the software boot process. (Lit LEDs indicate components yet to be loaded)
		OFF	
13 to 20	Channel status	ON	Indicates the progress of each stage in the software boot process. (Lit LEDs indicate software yet to be loaded for the component.)
		OFF	

TABLE 7. Indicator Functions During Normal Operation

Indicator	Name	State	Description
	System power	ON	Power input is normal.
		OFF	Power supply failure. If phone power indicator (see below) is ON, the power supply may have failed. Contact your dealer.
	Unit function	FLASHING	Unit is functioning correctly.
		NOT FLASHING (May be on or off)	Unit has failed.
	Service required	ON	Unit requires service. Contact your dealer.
		OFF	Normal operation
	Phone power	ON	Phone power normal
		OFF	Phone power has failed.
1 to 24	Channels	ON	Phone is connected and communicating with 3300 ICP.
		OFF	Phone is not connected. Check wiring.
		FLASHING	Phone is connected but link to 3300 ICP is not established.

Connectors

RS-232 Connector

The 9-pin D-type straight-through connector shown in FIGURE 5 allows Mitel Product Support to connect to the 9-pin RS-232 Diagnostic Port on the gateway and perform diagnostic tests.

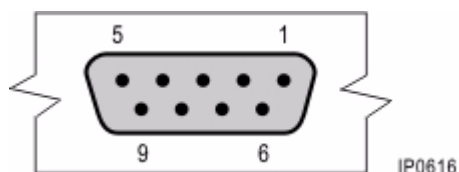


FIGURE 5. Diagnostic connector (RS-232)

TABLE 8 shows the function of each pin on the connector.

TABLE 8. Diagnostic port pin allocation

Pin	Function
2	TX OUT
3	Rx IN
5	GND
9	Not connected
1, 4, 6	Shorted together
7, 8	Shorted together

RJ21x Line Connector

RJ21x line connector (shown in FIGURE 6) plugs into the 50-way male connector on the gateway front panel and allows up to 24 Norstar phones access to the 3300 ICP through the 3300 CITELink Gateway.

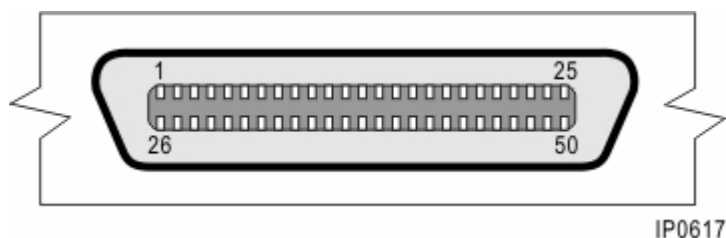


FIGURE 6. Line Connector (RJ21x)

DESIGNATION	WIRE COLOR			WIRE COLOR	DESIGNATION
Ring	Blue/White	1	26	White/Blue	Tip
Ring	Orange/White	2	27	White/Orange	Tip
Ring	Green/White	3	28	White/Green	Tip
Ring	Brown/White	4	29	White/Brown	Tip
Ring	Slate/White	5	30	White/Slate	Tip
Ring	Blue/Red	6	31	Red/Blue	Tip
Ring	Orange/Red	7	32	Red/Orange	Tip
Ring	Green/Red	8	33	Red/Green	Tip
Ring	Brown/Red	9	34	Red/Brown	Tip
Ring	Slate/Red	10	35	Red/Slate	Tip
Ring	Blue/Black	11	36	Black/Blue	Tip
Ring	Orange/Black	12	37	Black/Orange	Tip
Ring	Green/Black	13	38	Black/Green	Tip
Ring	Brown/Black	14	39	Black/Brown	Tip
Ring	Slate/Black	15	40	Black/Slate	Tip
Ring	Blue/Yellow	16	41	Yellow/Blue	Tip
Ring	Orange/Yellow	17	42	Yellow/Orange	Tip
Ring	Green/Yellow	18	43	Yellow/Green	Tip
Ring	Brown/Yellow	19	44	Yellow/Brown	Tip
Ring	Slate/Yellow	20	45	Yellow/Slate	Tip
Ring	Blue/Violet	21	46	Violet/Blue	Tip
Ring	Orange/Violet	22	47	Violet/Orange	Tip
Ring	Green/Violet	23	48	Violet/Green	Tip
Ring	Brown/Violet	24	49	Violet/Brown	Tip
Ring	Slate/Violet	25	50	Violet/Slate	Tip

FIGURE 7. Line Connector (RJ21x) Wiring


Appendix B: Phone Wiring Chart for Norstar Phones

TABLE 9. Phone wiring chart

RJ21x 50-way line connector pins	Wire color	Gateway Channel/Phone	RJ21x 50-way line connector pins	Wire color	Gateway Channel/Phone
26 1	White-Blue Blue-White	1	39 14	Black-Brown Brown-Black	14
27 2	White-Orange Orange-White	2	40 15	Black-Slate Slate-Black	15
28 3	White-Green Green-White	3	41 16	Yellow-Blue Blue-Yellow	16
29 4	White-Brown Brown-White	4	42 17	Yellow-Orange Orange-Yellow	17
30 5	White-Slate Slate-White	5	43 18	Yellow-Green Green-Yellow	18
31 6	Red-Blue Blue-Red	6	44 19	Yellow-Brown Brown-Yellow	19
32 7	Red-Orange Orange-Red	7	45 20	Yellow- Slate Slate-Yellow	20
33 8	Red-Green Green-Red	8	46 21	Violet-Blue Blue-Violet	21
34 9	Red-Brown Brown-Red	9	47 22	Violet-Orange Orange-Violet	22
35 10	Red-Slate Slate-Red	10	48 23	Violet-Green Green-Violet	23
36 11	Black-Blue Blue-Black	11	49 24	Violet-Brown Brown-Violet	24
37 12	Black-Orange Orange-Black	12	50 25	Violet-Slate Slate-Violet	unused
38 13	Black-Green Green-Black	13			

Appendix C: Phone Keys

This appendix shows the functions of keys on supported Norstar phones when programmed for use on the 3300 ICP. Personal Key numbers refer to the button numbers in the Multiline Set Key Assignment form of the 3300 System Administration Tool interface.

 **Note:** Feature Keys marked with an asterisk do not have a key indicator. Do not program features that need an indicator (such as Do Not Disturb) on these keys.

Norstar M7100



LL0109

Device Type: CITELink Type1

Button Label	Function
1	Trans/Conf
2	Superkey
3	Down Arrow
4	Cancel

Norstar M7208



LL0110

Device Type: CITELink Type1

Button Label	Function
1	Superkey
2	Cancel
3	Hold
4	Microphone/ Speaker
5	Prime Line
6	Trans/Conf
7	Redial
8	Personal Key 2
9	Personal Key 3
10	Down Arrow
11	Message

Norstar M7208N

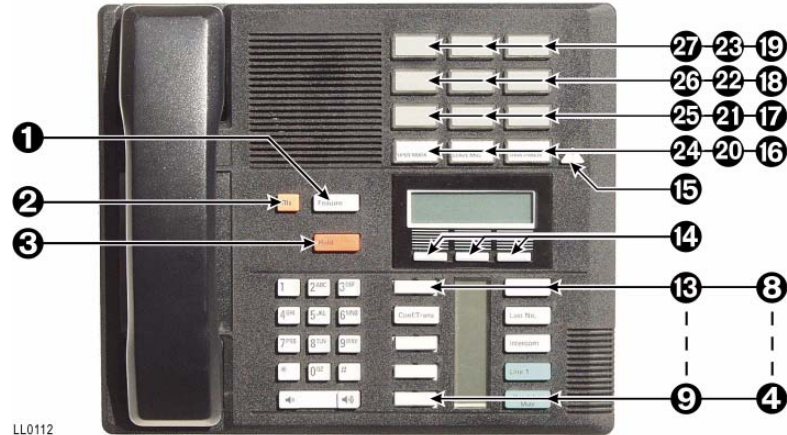


LL0111

Device Type: CITELink Type1

Button Label	Function
1	Cancel
2	Superkey
3	Hold
4	Microphone/ Speaker
5	Prime Line
6	Trans/Conf
7	Redial
8	Personal Key 2
9	Personal Key 3
10	Down Arrow
11	Message

Norstar M7310



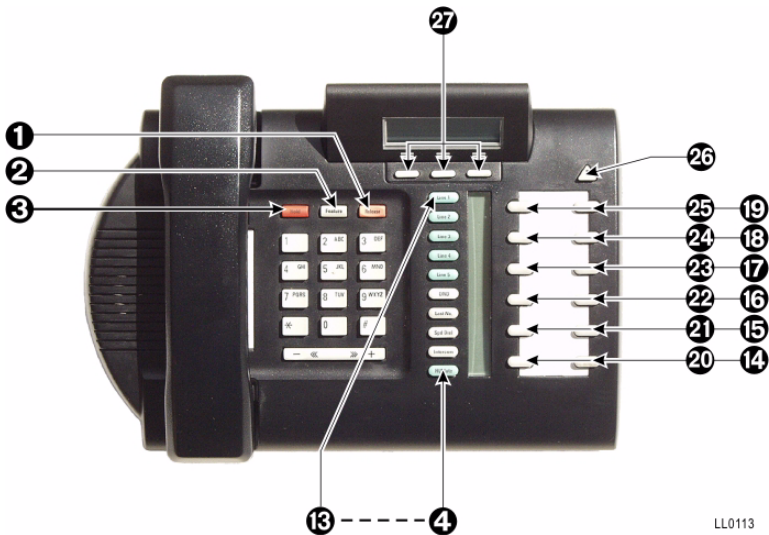
LL0112

Device Type: CITELink Type2

Button Label	Function	Button Label	Function	Button Label	Function
1	Superkey	10	Personal Key 6	19	Personal Key 11*
2	Cancel	11	Personal Key 7	20	Personal Key 12*
3	Hold	12	Trans/Conf	21	Personal Key 13*
4	Microphone/Speaker	13	Message	22	Personal Key 14*
5	Prime Line	14	LCD Soft Keys	23	Unused
6	Personal Key 2	15	Unused	24	Unused
7	Personal Key 3	16	Personal Key 8*	25	Down Arrow
8	Personal Key 4	17	Personal Key 9*	26	Up Arrow
9	Personal Key 5	18	Personal Key 10*	27	Redial

Norstar M7310N

Device Type: CITELink Type2



LL0113

Button Label	Function	Button Label	Function	Button Label	Function
1	Cancel	10	Personal Key 6	19	Personal Key 13*
2	Superkey	11	Personal Key 7	20	Personal Key 14*
3	Hold	12	Trans/Conf	21	Unused
4	Microphone/Speaker	13	Message	22	Unused
5	Prime Line	14	Personal Key 8*	23	Down Arrow
6	Personal Key 2	15	Personal Key 9*	24	Up Arrow
7	Personal Key 3	16	Personal Key 10*	25	Redial
8	Personal Key 4	17	Personal Key 11*	26	Unused
9	Personal Key 5	18	Personal Key 12*	27	LCD Soft Keys

Norstar M7324

Device Type: CITELink Type2



LL0114

Button Label	Function	Button Label	Function	Button Label	Function
1	Cancel	11	Personal Key 7	21	Unused
2	Superkey	12	Personal Key 8	22	Unused
3	Hold	13	Personal Key 9	23	Down Arrow
4	Microphone/Speaker	14	Personal Key 10	24	Up Arrow
5	Prime Line	15	Personal Key 11	25	Redial
6	Personal Key 2	16	Personal Key 12	26	Trans/Conf
7	Personal Key 3	17	Personal Key 13	27	Message
8	Personal Key 4	18	Personal Key 14	28	LCD Soft Keys
9	Personal Key 5	19	Unused		
10	Personal Key 6	20	Unused		

Norstar T7100



Device Type: CITELink Type1

Button Label	Function
1	Cancel
2	Down Arrow
3	Trans/Conf
4	Superkey

Norstar T7208



Device Type: CITELink Type1

Button Label	Function
1	Superkey
2	Hold
3	Cancel
4	Microphone/ Speaker
5	Prime Line
6	Trans/Conf
7	Redial
8	Personal Key 2
9	Personal Key 3
10	Down Arrow
11	Message
12	Unused
13	Microphone

Norstar T7316

Device Type: CITELink Type2



LL0117

Button Label	Function	Button Label	Function	Button Label	Function
1	Superkey	11	Up Arrow	21, 27	Personal Key 10*
2	Hold	12	Message	22	Personal Key 11*
3	Cancel	13	Personal Key 5	23	Personal Key 12*
4	Microphone/Speaker	14	Personal Key 6	24	Personal Key 13*
5	Prime Line	15	Personal Key 7	25	Personal Key 14*
6	Personal Key 2	16	Personal Key 8	28	LCD Soft Keys
7	Personal Key 3	17	Unused	29	Unused
8	Personal Key 4	18	Redial	30	Microphone
9	Unused	19	Trans/Conf		
10	Down Arrow	20, 26	Personal Key 9*		

Norstar T7406 (Cordless)



LL0118

Device Type: CITELink Type2

Button Label	Function
1	Cancel
2	Superkey
3	Hold
4	Prime Line
5	Personal Key 3
6	Personal Key 5
7	LCD Soft Keys
8	Options/Mute
9	Volume
10	Message
11	Trans/Conf
12	Personal Key 2

Appendix D: Supported Features

This section lists the 3300 ICP features supported on CITELink Type 1 and 2 phones. Refer to the 3300 ICP System Administration Tool online help for more information on these features.

TABLE 10. Mitel Features Supported on CITELink Phones

Feature	CITELink Type1	CITELink Type2
E-911 Support	Yes	Yes
Account Codes–Default	Yes	Yes
Account Codes–Verified and Non-Verified	Yes	Yes
Account Code Reporting for Internal SMDR	Yes	Yes
Account Codes–System	Yes	Yes
ACD Dial out of Queue	Yes	Yes
ACD Hold Retrieve/Abandon Event	No	No
ACD Make Busy Reason Codes	No	No
ANI Display on Non-prime Lines	Yes	Yes
Add Held	Yes	Yes
Advice of Charge	Yes	Yes
Attendant Directory Number	Yes	Yes
Attendant Messaging	Yes	Yes
Attendant Recall	Yes	Yes
Attendant Serial Call	Yes	Yes
Attendant Setup and Cancellation of Station Features	Yes	Yes
Auto-Answer	No	Yes
Auto-Hold	Yes	Yes
Automatic Route Selection (ARS)	Yes	Yes
Automatic – Record a Call Outgoing Automatically	Yes	Yes
Autovon	Yes	Yes
Broadcast Groups	Yes	Yes
Broker's Call	Yes	Yes
Busy Dial Through	Yes	Yes
Calculator	No	No
Callback	Yes	Yes
Callback–System Programmable	Yes	Yes
Call By Name (see Phonebook)	Yes	Yes
Call Coverage	Yes	Yes
Call Duration Display	Yes	Yes
Call Forward	Yes	Yes
Call Forward–Cancel All	Yes	Yes
Call forward Delay	Yes	Yes
Call Forward–Follow Me–End Chaining	Yes	Yes
Call Forward–Follow Me–Reroute When Busy	Yes	Yes
Call Forward–Forced	Yes	Yes
Call Forward Group	Yes	Yes
Call Forward Out of Service	Yes	Yes
Call Forward Override	Yes	Yes

TABLE 10. Mitel Features Supported on CITELink Phones (continued)

Feature	CITELink Type1	CITELink Type2
Call Hold	Yes	Yes
Call Line Identification	Yes	Yes
Call Park	Yes	Yes
Call Pickup	Yes	Yes
Call Privacy	Yes	Yes
Call Release	Yes	Yes
Call Rerouting	Yes	Yes
Call Split (Conference Split)	Yes	Yes
Call Swap	Yes	Yes
Call Transfer	Yes	Yes
Call Waiting Swap	Yes (with flash hook)	Yes (with flash hook)
Camp-on (Call Waiting)	Yes	Yes
Camp-on Tone Security	Yes	Yes
Centrex (Flash and Double Flash over Trunk)	Yes (with flash hook)	Yes (with flash hook)
Class of Restriction	Yes	Yes
Class of Service	Yes	Yes
Clear All Features	Yes	Yes
CLI Substitution	Yes	Yes
Compression	No	No
Conference	Yes	Yes
Conference Split	Yes	Yes
Day/Night Service Control	Yes	Yes
Dial Tone	Yes	Yes
Dial Tone—Outgoing Calls	Yes	Yes
Dialed Number Editing	Yes	Yes
Dialing—Conflicting Numbers	Yes	Yes
Direct-In Lines (DIL)	Yes	Yes
Direct Inward Dialing (DID)	Yes	Yes
Direct Page	Yes	Yes
Direct Station Select/Busy Lamp Field (DSS/BLF)	Yes	Yes
Disable Send Message	Yes	Yes
Display Caller ID on all Lines	Yes	Yes
Display Contrast Control	Yes	Yes
Display Identity of Ringing Non-Prime Line Keys	Yes	Yes
Display of Name and Number	Yes	Yes
Do Not Disturb	Yes	Yes
PKM Support	No	No
Emergency Services (Customer Emergency Services ID)	Yes	Yes
Feature Keys	Yes	Yes
Flash—Switch hook	Yes	Yes
Flexible Answer Point	Yes	Yes
Group Page	Yes	Yes
Group Silent Monitor	No	No
Groups—Key System and Multicall	Yes	Yes
Handset Receiver Volume Control	Yes	Yes
Handsfree Operation	M7208, M7208N and T7208 only	Yes

TABLE 10. Mitel Features Supported on CITELink Phones (continued)

Feature	CITELink Type1	CITELink Type2
Headset Operation	No	No
Hold	Yes	Yes
Hold on Hold	Yes	Yes
Hot Desking	No	No
Hotline	Yes	Yes
Hunt Groups	Yes	Yes
Intercept Handling	Yes	Yes
Interconnect Restrictions	Yes	Yes
Interconnect Restriction Override	Yes	Yes
IP Networking	Yes	Yes
Keep TelDir Entry on Checkout	Yes	Yes
Key System Groups	Yes	Yes
Language Change	Yes	Yes
Line Types and Appearances	Yes	Yes
Line Appearance Ring Types	Yes	Yes
Meet Me Answer	Yes	Yes
Messaging Advisory	Yes	Yes
Messaging-Callback	Yes	Yes
Messaging-Dialed	Yes	Yes
Message Waiting Display (displays MSG on phone)	Yes	Yes
Multicall Groups	Yes	Yes
Multiple Message Waiting Indications	Yes	Yes
Music	Yes	Yes
Music On Hold	Yes	Yes
Networked ACD	No	No
Networked Group Page	Yes	Yes
Night Service	Yes	Yes
Non-Busy Station	Yes	Yes
Non-DID Extension	Yes	Yes
Off-Hook Detection to Display Phones	Yes	Yes
Off-Hook Voice Announce	No	No
Override	Yes	Yes
Override Security	Yes	Yes
Paging	Yes	Yes
Permanent Do Not Disturb	Yes	Yes
Phonebook	Yes	Yes
Privacy Release	Yes	Yes
Recall	Yes	Yes
Record a Call Option	Yes	Yes
Redial	Yes	Yes
Redial-Saved Number	Yes	Yes
Release	Yes	Yes
Reminder	Yes	Yes
Remote Wake-up Calls	Yes	Yes
Reroute after Call Forward Follow Me to Busy Destination	Yes	Yes
Resiliency	No	No
Ringer Control	Yes	Yes

TABLE 10. Mitel Features Supported on CITELink Phones (continued)

Feature	CITELink Type1	CITELink Type2
Ringinɡ–Discriminating	Yes	Yes
Ringinɡ Line Select	Yes	Yes
Speak@Ease Softkey Support	No	Yes
Speaker Volume Control	Yes	Yes
Speed Call Keys	Yes	Yes
Speed Call–Pause	Yes	Yes
Speed Call–System	Yes	Yes
Station-To-Station Dialinɡ	Yes	Yes
Swap	Yes	Yes
Switchhook Flash	Yes	Yes
Tag Call	Yes	Yes
Telephone Directory–Privacy Option	Yes	Yes
Telephone Usage Restriction (Curfew Control)	Yes	Yes
Timed Reminder	Yes	Yes
Tone Demonstration	Yes	Yes
Transfer	Yes	Yes
Trunk Answer from any Station (TAFAS)	Yes	Yes
Trunk Select–Direct	Yes	Yes
Voice Mail Softkeys	No	Yes

Appendix E: Menu Commands

Commands for the 'Normal >' prompt

Command	m
Description	Menu
Action	Displays menu options
User Mode	Normal
Screen Display	<p>Normal > m</p> <p>Menu:</p> <p>m Show menu of commands</p> <p>k Get CPLD glue type</p> <p>1* Boot NLPA</p> <p>2* Boot NLPB</p> <p>3* Boot EP20K160 FPGA (Large FPGA)</p> <p>6* Boot all DSPs with real code</p> <p>7* Reset FPGA</p> <p>8* Reset all DSPs</p> <p>9* Test TDM sub-system</p> <p>a System register dump</p> <p>b IOM-2 register dump</p> <p>c Processor register dump</p> <p>d Test SSC</p> <p>e* Toggle VPBX state (Currently active)</p> <p>f Temporarily route console to NLPA</p> <p>j Temporarily route console to NLPB</p> <p>g* Set boot mode to BSL (Currently FLASH)</p> <p>G* Set boot mode to FLASH (Currently FLASH)</p> <p>h* Program the RCP</p> <p>H* Wipe the RCP</p> <p>i Show address information</p> <p>I* Set address information</p> <p>(capital i)</p> <p>I* Toggle LED task</p> <p>(small L)</p> <p>n TDM channel dump</p> <p>p* Test RCP link</p>

Command	m
P	Control MITEL PIN numbers
>*	Gain test interface
q	Show board and build information
r*	Reset the NLPA
o*	Reset the NLPB
s	Show various system statistics
t*	tdmInsert()
T	Show current temperature
U*	Update node application using TFTP
B*	Update node booter
F*	dcpSwUpdateInfo()
w*	Toggle watchdog state (Currently active)
x*	Toggle SSC state (Currently active)
y	Get RCP info
#*	Set fixed-MAC test mode
@*	Run autoboot sequence
+*	Route console to NLPA
)*	Route console to NLPB
-*	Toggle routing of SSC to disable/enable DSPs
!*	Hardware Reset via RCP
^*	Reboot DCP
?	Show last restart reason
/*	Debug monitor
C	For complete information on copyrights
\$	Toggle menu mode [AUTHORIZED PERSONNEL ONLY] (Currently EXPERT)
* EXPERT mode only	

Command	i
Description	IP configuration settings
Action	Displays current IP configuration settings
User Mode	Normal
Screen Display	NORMAL>i INFO: nodeConfig : VALID INFO: NLP config for NLPA INFO: dhcpEnabled : TRUE INFO: myIpAddress : 0.0.0.0 INFO: myIpNetMask : 0.0.0.0 INFO: defaultRouter : 0.0.0.0 INFO: configAddress : 0.0.0.0 INFO: pbxIpAddress : 0.0.0.0 INFO: syslogAddress : 0.0.0.0

Command	q
Description	Board and Build Information
Action	Displays revision levels of the board and build
User Mode	Normal
Screen Display	NORMAL>q INFO: Software Type: CITELink Mitel-Norstar Handset Gateway INFO: Code Created: Aug 19 2003 14:22:12 INFO: Board Type: 0xAC INFO: CPLD version: 0x8

Command	?
Description	Reason for last reboot
Action	Displays the reason the product was last rebooted
User Mode	Normal
Screen Display	NORMAL>? INFO: WATCHDOG: Last restart reason: None logged INFO: WATCHDOG: Pending restart reason: None logged

Command	C
Description	Copyright information
Action	Displays the copyright notice
User Mode	Normal/Expert
Screen Display	<p>The TCP/IP implementation in this product is: Copyright (c) 2001-2003 Swedish Institute of Computer Science. All rights reserved Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:</p> <p>1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. etc</p>

Command	\$
Description	Normal/Expert Toggle Mode
Action	Toggles between the Normal and Expert user menus
User Mode	N/A
Screen Display	<p>NORMAL>\$ New user mode: EXPERT EXPERT>\$ New user mode: NORMAL NORMAL></p>

Commands for the 'Expert >' prompt

Command	I (capital i)
Description	Set IP address
Action	Configure ICP information
User Mode	Expert
Screen Display	<p>EXPERT>I INFO : NLP config for NLP INFO : dhcpEnabled : TRUE ENTER: TRUE/FALSE or <RETURN> to keep current</p> <p>NFO : myIpAddress : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : myIpNetMask : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : defaultRouter: 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : configAddress: 192.168.1.82 ENTER: New address or <RETURN> to keep current 192.168.1.82</p> <p>INFO : pbxIpAddress : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p>

Command	I (capital i)
	<p>NFO : syslogAddress: 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>INFO : NLP config for NLPB INFO : dhcpEnabled : TRUE ENTER: TRUE/FALSE or <RETURN> to keep current</p> <p>NFO : myIpAddress : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : myIpNetMask : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : defaultRouter: 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : configAddress: 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : pbxIpAddress : 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>NFO : syslogAddress: 0.0.0.0 ENTER: New address or <RETURN> to keep current</p> <p>INFO : DCP config INFO : appFileName : tig_minet_ns.bin ENTER: New string or <RETURN> to keep current</p> <p>NFO : autoUpdate : TRUE ENTER: TRUE/FALSE or <RETURN> to keep current</p> <p>INFO : nodeConfig : VALID INFO : NLP config for NLPB INFO : dhcpEnabled : TRUE INFO : myIpAddress : 0.0.0.0 INFO : myIpNetMask : 0.0.0.0 INFO : defaultRouter: 0.0.0.0 INFO : configAddress: 192.168.1.82 INFO : pbxIpAddress : 0.0.0.0 INFO : syslogAddress: 0.0.0.0</p> <p>INFO : NLP config for NLPB INFO : dhcpEnabled : TRUE INFO : myIpAddress : 0.0.0.0 INFO : myIpNetMask : 0.0.0.0 INFO : defaultRouter: 0.0.0.0 INFO : configAddress: 0.0.0.0 INFO : pbxIpAddress : 0.0.0.0 INFO : syslogAddress: 0.0.0.0</p> <p>INFO : appFileName : tig_minet_ns.bin INFO : autoUpdate : TRUE INFO : WriteToFlash?: FALSE ENTER: TRUE/FALSE or <RETURN> to keep current true INFO : Erasing FLASH sector... INFO : Writing address information to FLASH... INFO : Flash write finished INFO : If NLP(s) are running, please restart the node</p>

Command	U
Description	Update node application using TFTP
Action	Updates the installed software with available software selected
User Mode	Expert
Screen Display	Loading progress

Command	F
Description	dcpSwUpdateInfo()
Action	Displays loaded code build information with CRCs
User Mode	Expert
Screen Display	n/a

Command	!
Description	Hardware Reset via RCP
Action	Restarts the product
User Mode	Expert
Screen Display	n/a
WARNING: This command shuts down the system and stop all calls in progress	

Command	^
Description	Reboot system
Action	Restarts the product
User Mode required	Expert
Screen Display	n/a
WARNING: This command shuts down the system and stop all calls in progress	

This appendix includes forms you can use to capture site configuration details before decommissioning the Norstar system.

Feature Access Codes

[illegible]

Norstar Phone Information

[illegible]

Internal directory #	Interconnect number	Norstar Model	Device type

Norstar model	Device type:	Norstar model	Device type:
M7100	CITELink Type1	M7310	CITELink Type2
M7208		M7310N	
M7208N		M7324	
T7100		T7316	
T7208		T7406 cordless	

Appendix G: Sample feature cards

English

CITELink Features	Code
Speedcall—Store	
Speedcall—Invoke	
Speedcall—Clear	
Call Forwarding No Answer (Int & Ext)	
Cancel All Forwarding	
Do Not Disturb	
Do Not Disturb Cancel	
Save Last Number	
Redial Last Number	
Paging	
Campon Setup	
Campon Retrieve	
Cancel All Features	

Spanish (Latin America)

Funciones de CITELink	Código
Marcado rápido—Almacenar	
Marcado rápido—Llamar	
Marcado rápido—Borrar	
Reenvío de llamada No responde (Int. y Ext.)	
Cancelar todo reenvío	
No molestar	
Cancelar No molestar	
Guardar último número	
Remarcar el último número	
Localización	
Campon Setup (Configuración de acampado)	
Campon Retrieve (Recuperación de acampado)	
Cancelar Todas las funciones	

Canadian French

Fonctions du CITELink	Code
Composition abrégée—Stocker	
Composition abrégée—Exécuter	
Composition abrégée—Effacer	
Renvoi automatique sur Pas de réponse (interne et externe)	
Annuler tous les renvois	
Ne pas déranger	
Ne pas déranger—Annuler	
Enregistrer le dernier numéro	
Recomposer le dernier numéro	
Recherche de personne	
Mise en attente—Définir	
Mise en attente—Reprendre	
Annuler toutes les fonctions	

Appendix H: Glossary

CAT 5 cable—The highest grade of unshielded twisted-pair as defined by EIA/TIA 568. Category 5 UTP cable is required to run Fast Ethernet.

LEDs—Light emitting diodes (status indicators)

MAC address—Media Access Control address. Each IP phone has a MAC address. The system registers the phone's MAC address in the Multiline IP Set Configuration form after you enter the Set Registration Access code followed by the extension number.

Multiline IP Set Configuration form—a form in the 3300 ICP System Administration Tool that allows you to assign directory numbers to IP phones.

Multiline Set Key Assignment form—a form in the 3300 ICP System Administration Tool that allows you to assign functions to the programmable keys on a phone.

System Administration Tool—Internet Explorer-based programming interface for the 3300 ICP system.

CITELink Gateway Phone User Guides—Identify the functions of the keys on the Norstar phones when they are connected to the Gateway and provide instructions on how to use the phones. These guides are available from the Mitel Customer Documentation site at <http://edocs.mitel.com>.

PSU—power supply unit

Punchdown block—allows you to connect the wires from the 25-pair/50-way cable to the telephone cables.

TFTP (Trivial File Transfer Protocol)—a simple file transfer protocol that enables devices such as Mitel Networks IP phones to download software without user intervention.

UPS—Uninterruptible power supply.

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