NORTEL

Media Gateway 3200

Fast Track Installation Guide
H.248 & SIP

Version SN09
Document #: LTRT-73805

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Table of Contents

List of Figures

List of Tables

> **Tip:** When viewing this manual on CD, Web site or other electronic copies, all cross-references are hyperlinked, so just click on the page or section numbers (shown in blue) to reach the individual cross-referenced item directly.

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Customer Support

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Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used. Only industry-standard terms are used throughout this manual. Hexadecimal notation is indicated by 0x preceding the number.

Related Documentation

Document #	Manual Name
LTRT-727xx (e.g., LTRT-72703)	MG 3200 H.248 User's Manual
LTRT-729xx	MG 3200 H.248 Configuration Guide

> **Note:** Where the word "network" appears in this manual, it means LAN, WAN, etc., accessed via the gateway's Ethernet interface.

1   Quick Start

This Fast Track Installation Guide helps you to set up the Media Gateway 3200 for the first time. Prior knowledge of IP networks is required. Refer to Figure 1-1 for the quick setup flow. For detailed information on how to *fully* configure the gateway, refer to the Media Gateway 3200 User's Manuals.

Figure 1-1: Required Steps to Install the Media Gateway 3200

①	**Unpack the MG 3200**	Refer to Section 2.1
②	**Mount the MG 3200**	Refer to Section 2.3
③	**Cable the MG 3200**	Refer to Section 2.4
④	**Assign the MG 3200 IP address**	Refer to Section 3.1
⑤	**Configure H.248 and SIP Parameters**	Refer to Section 3.4
⑥	**Configure the PSTN Parameters**	Refer to Section 3.5
⑦	**Change the MG 3200 Username and Password**	Refer to Section 4
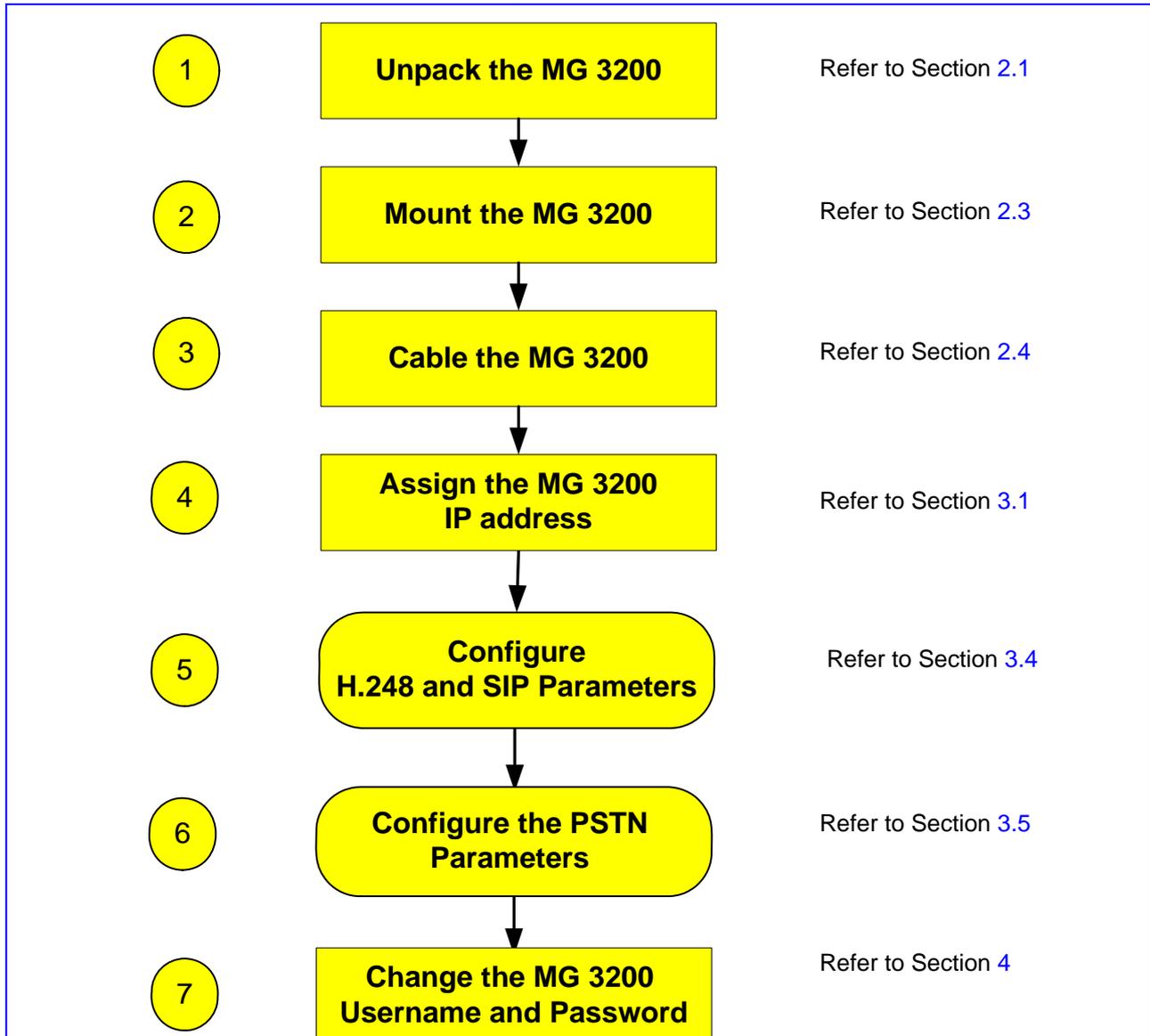
Reader's Notes

Reader's Notes

2 Installing the MG 3200

Figure 2-1 shows the front view of the MG 3200. For information on the MG 3200 LEDs refer to Section 6.1 on page 33.

Figure 2-1: MG 3200 Front View
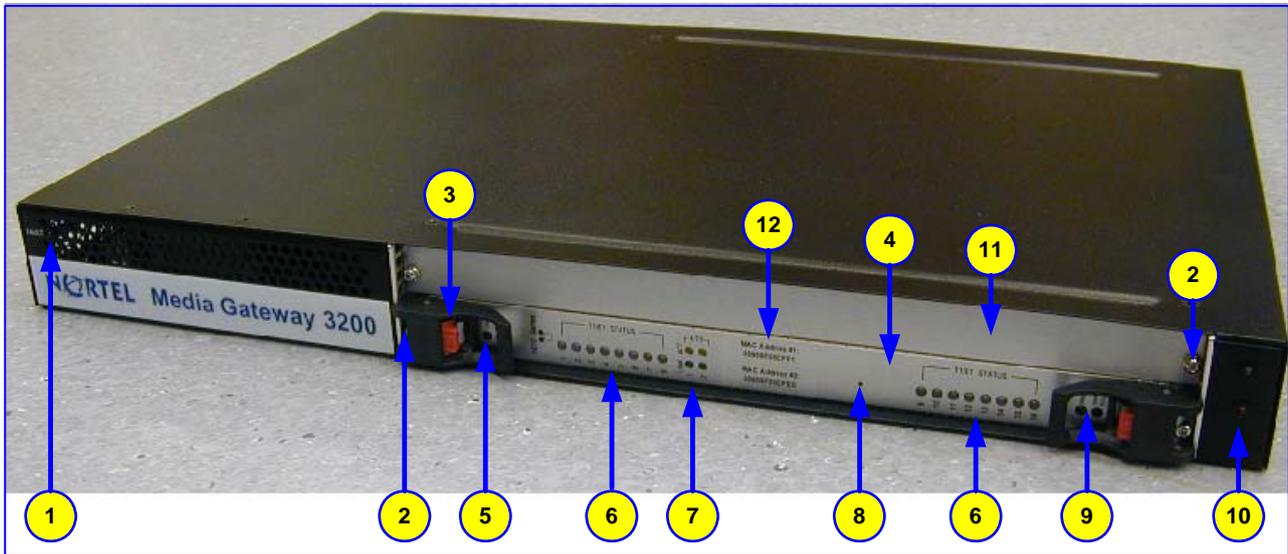
Table 2-1: MG 3200 Front View Component Descriptions

Item #	Label		LED Color	Component Description		
1	FAULT			Dual AC Power LED.		
2	-			cPCI board locking screws.		
3	-			cPCI latches.		
4	-			TP-1610 cPCI board, 16-trunk configuration.		
5	FAIL		**Red**	Normally Off. Indicates board failure when lit.		
	ACT		**Green**	Gateway Initialization OK		
6	T1/E1 STATUS (trunks 1 to 8 & 9 to 16)		**Green**	Trunk is synchronized (normal operation)		Bi-color LED
			Red	Loss due to any of the following 4 signals:		
				LOS	Loss of Signal	
				LFA	Loss of Frame Alignment	
				AIS	Alarm Indication Signal (the Blue Alarm)	
				RAI	Remote Alarm Indication (the Yellow Alarm)	
7	ETH	LINK	**Green**	Link all OK		
		ACT	**Yellow**	Transmit / receive activity		
8	-		-	Reset button.		
9	PWR		**Green**	Power is supplied to the board		
	SWAP READY		**Blue**	The cPCI board can now be removed.		
				The cPCI board was inserted successfully.		
10				Power and Fan LEDs (refer to Table 6-1 on page 33)		
11				An available cPCI slot for an optional third-party CPU board.		

12		MAC addresses

Caution Electrical Shock

The equipment must only be installed or serviced by qualified service personnel.

➢ **To install the MG 3200, take these 4 steps:**

1. Unpack the MG 3200 (refer to Section 2.1 below).

2. Check the package contents (refer to Section 2.2 below).

3. Mount the MG 3200 (refer to Section 2.3 on page 13).

4. Cable the MG 3200 (refer to Section 2.4 on page 15).

After powering-up the MG 3200, the Ready and LAN LEDs on the front panel turn to green (after a self-testing period of about 3 minutes). Any malfunction changes the Ready LED to red (refer to Section 6.1 on page 33 for details on the MG 3200 LEDs).

When you have completed the above relevant sections you are then ready to start configuring the gateway (Section 3 on page 20).

2.1   Unpacking

Electrical Component Sensitivity

Electronic components on printed circuit boards are extremely sensitive to static electricity. Normal amounts of static electricity generated by clothing can damage electronic equipment. To reduce the risk of damage due to electrostatic discharge when installing or servicing electronic equipment, it is recommended that anti-static earthing straps and mats be used.

➢ **To unpack the MG 3200, take these 6 steps:**

1. Open the carton and remove packing materials.

2. Remove the MG 3200 gateway from the carton.

3. Check that there is no equipment damage.

4. Check, retain and process any documents.

5. Notify Nortel or your local supplier of any damage or discrepancies.

6. Retain any diskettes or CDs.

2.2   Package Contents

Ensure that in addition to the MG 3200, the package contains:

- For the dual AC power supply version, two AC power cables are supplied.

- For the DC power supply version, one connectorized DC power cable (crimp connection type) and one DC adaptor (screw connection type) connected to the rear panel of the MG 3200 are supplied; use only one type.

- CD (software and documentation).

- Small plastic bag containing (refer to Figure 2-2):

  ➢ Two brackets and four bracket-to-device screws for 19-inch rack installation option.

> ➢ Four anti-slide bumpers for desktop installation.

- This Fast Track Installation Guide.

Figure 2-2: 19-inch Rack & Desktop Accessories

2.3   Mounting the MG 3200

The MG 3200 can be mounted on a desktop, or installed in a standard 19-inch rack. Refer to Section 2.4 on page 15 for cabling the MG 3200.

2.3.1   Mounting the MG 3200 on a Desktop

No brackets are required. Optionally, attach the four (supplied) anti-slide bumpers to the base of the MG 3200 and place it on the desktop in the position you require.

2.3.2   Installing the MG 3200 in a 19-inch Rack

Users can install the device in a standard 19-inch rack either by placing the device on a shelf preinstalled in the rack (preferred method), or by attaching the device directly to the rack's frame via integral brackets.

Before rack mounting the chassis, attach the two (supplied) brackets to the front sides of the device (refer to Figure 2-3).

> ➢ **To attach the two front side brackets, take these 3 steps:**

1.   Remove the 2 screws nearest the front panel on either side of the device.

2.   Align a bracket over 2 holes on one side (so that the bracket's larger holes face front) and with the 2 supplied *replacement* screws, screw in the bracket.

3.   Perform the same procedure on the other side.

Figure 2-3: MG 3200 Front View with 19-inch Rack Mount Brackets

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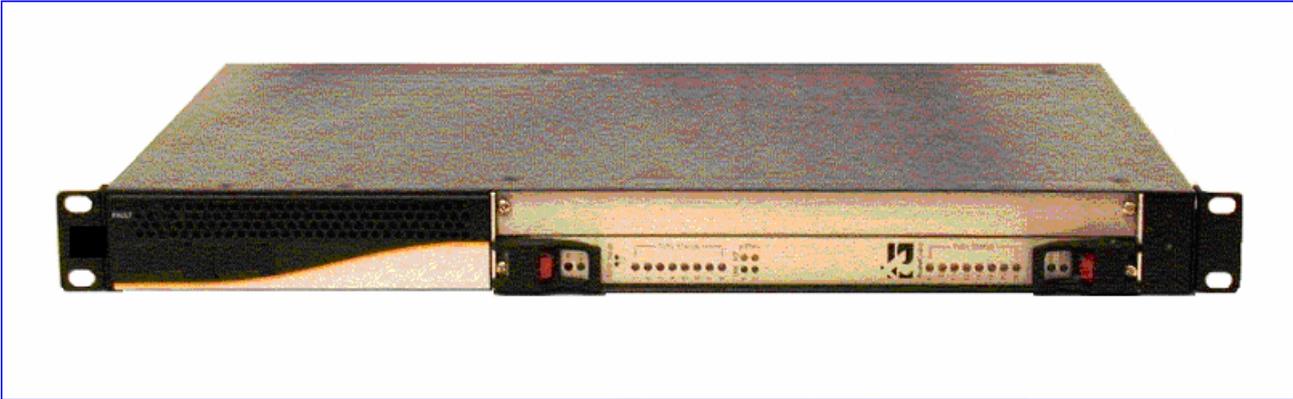
Rack Mount Safety Instructions (UL)

When installing the chassis in a rack, be sure to implement the following safety instructions recommended by Underwriters Laboratories:

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation on the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropri-ate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips.)

➢ **To attach the device to a 19-inch rack, take these 2 steps:**

1. Position the device in your 19-inch rack and align the left-hand and right-hand bracket holes to holes (of your choosing) in the vertical tracks of the 19-inch rack.

2. Use standard 19-inch rack bolts (not provided) to fasten the device to the frame of the rack.

Nortel recommends using two additional (not supplied) rear mounting brackets to provide added support.

Note: Users assembling the rear brackets by themselves should note the following:
- The distance between the screws on each bracket is 26.5 mm.
- To attach the brackets, use 4-40 screws with a maximal box penetration length of 3.5 mm.

➢ **To place the device on a 19-inch rack's shelf, take these 2 steps:**

1. Place the device on the preinstalled shelf.

2. You're now recommended to take the optional steps of fastening the device to the frame of the rack (as described above) while it is placed on the shelf, so preventing it from sliding when inserting cables into connectors on the rear panel.

2.4   Cabling the MG 3200

The MG 3200 is available in many *configurations*, i.e., AC or DC, in the 16-trunk, 8-trunk, 4-trunk, 2-trunk or 1-trunk device. The 16-trunk dual AC (Figure 2-4) and the 8-trunk DC (Figure 2-5) configurations are illustrated here *as representative* products.

Figure 2-4: MG 3200 Rear Panel Cabling (16 Trunks, Dual AC Power)
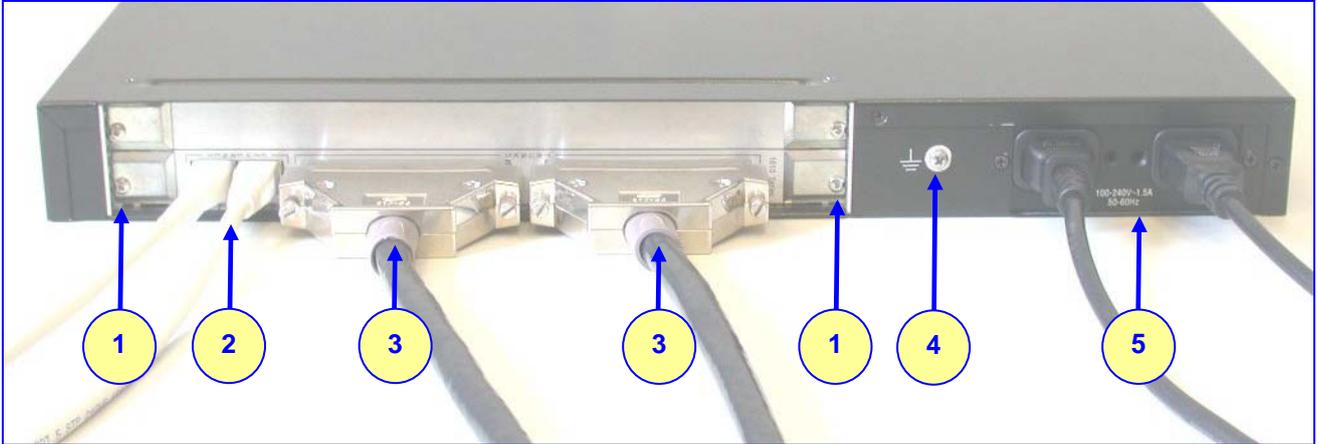
Table 2-2: MG 3200 Rear Panel Cabling (16 Trunks, Dual AC Power) Component Descriptions

Item #	Label	Component Description
1		RTM locking screws.
2	ETHERNET	Two Category 5 network cables, connected to the 2 Ethernet RJ-45 ports.
3	TRUNKS	Two 50-pin Telco connector cables, each supporting 8 trunks.
4	⏚	Protective earthing screw.
5	100-240~1.5A	Dual AC power cables.

Figure 2-5: MG 3200 Rear Panel Cabling (8 Trunks, DC Power))
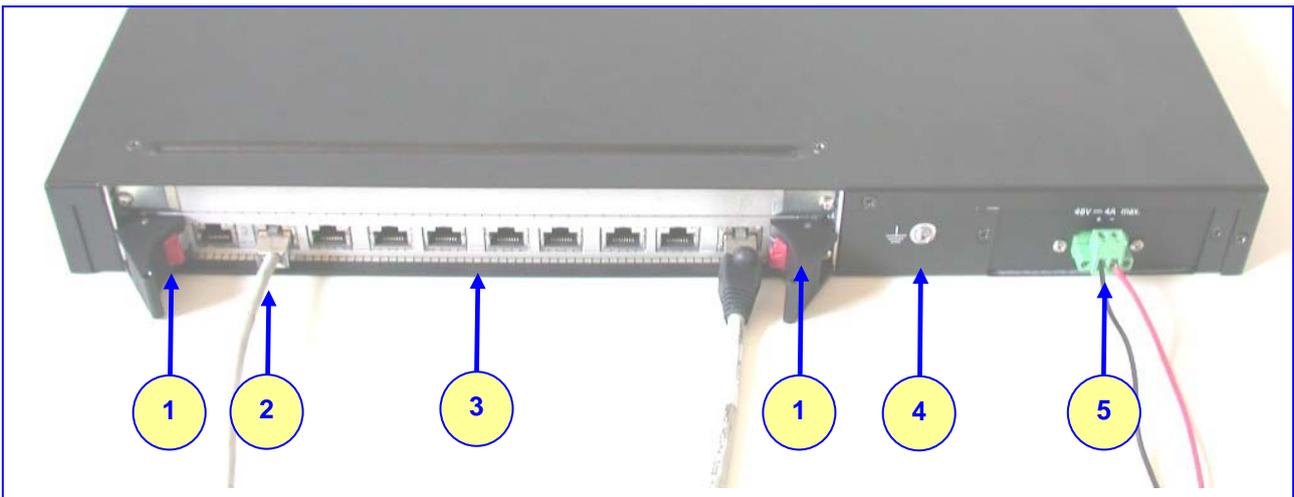
Table 2-3: MG 3200 Rear Panel Cabling (8 Trunks, DC Power) Component Descriptions

Item #	Label	Component Description
1		RTM latches.
2	ETH	A Category 5 network cable, connected to the Ethernet 1 RJ-45 port.

3	PSTN	8 RJ-48c ports, each supporting a trunk.
4	⏚	Protective earthing screw.
5	48V 4A max	2-pin connector for DC.

Electrical Earthing

The unit must be permanently connected to earth via the screw provided at the back on the unit. Use 14-16 AWG wire and a proper ring terminal for the earthing.

➢ **To cable the MG 3200, take these 4 steps:**

1. Permanently connect the device to a suitable earth with the protective earthing screw on the rear connector panel, using 14-16 AWG wire.

2. Connect the E1/T1 trunk interfaces (refer to Section 2.4.1 below).

3. Install the Ethernet connection (refer to Section 2.4.2 on page 17).

4. Connect the power supply (refer to Section 2.4.3 on page 17).

2.4.1   Connecting the E1/T1 Trunk Interfaces

Connect the MG 3200 E1/T1 Trunk Interfaces using **either** Telco or RJ-48 connectors:

➢ **With 50-pin Telco connectors (16-trunk device), take these 3 steps:**

1. Attach the Trunk cable with a 50-pin male Telco connector to the 50-pin female Telco connector labeled "Trunks 1→8" on the Rear Transition Module (RTM).

2. Connect the other end of the Trunk cable to the PBX/PSTN switch.

3. Repeat steps 1 and 2 for the other Trunk cable but this time connect it to the connector labeled "Trunks 9→16".

The 50-pin male Telco cable connector must be wired according to the pinout in Table 2-4 on page 16, and to mate with the female connector illustrated in Figure 2-6.

Figure 2-6: 50-pin Female Telco Board-Mounted Connector
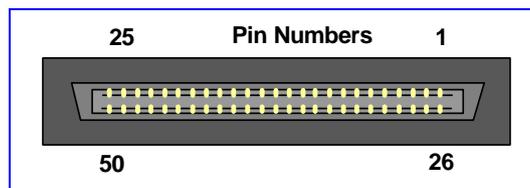
Table 2-4: E1/T1 Connections on each 50-pin Telco Connector

E1/T1 Number		Tx Pins (Tip/Ring)	Rx Pins (Tip/Ring)
1 to 8	**9 to 16**		
1	9	27/2	26/1
2	10	29/4	28/3
3	11	31/6	30/5
4	12	33/8	32/7
5	13	35/10	34/9
6	14	37/12	36/11

| 7 | 15 | 39/14 | 38/13 |
| 8 | 16 | 41/16 | 40/15 |

> ## ➢ With RJ-48c Connectors, take these 2 steps:

1. Connect the E1/T1 trunk cables to the ports labeled "Trunks 1 to 8" (in the case of the 8-trunk device) on the MG 3200 RTM.

2. Connect the other ends of the Trunk cables to the PBX/PSTN switch.

RJ-48c trunk connectors are wired according to Figure 2-7 below.

Figure 2-7: Pinout of RJ-48c Trunk Connectors

RJ-48c Connector and Pinout

1 2 3 4 5 6 7 8

1 = Rx Ring | 3, 6, 7, 8
2 = Rx Tip | not connected
4 = Tx Ring |
5 = Tx Tip | body = shield
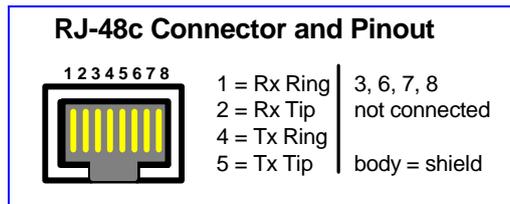
2.4.2 Installing the Ethernet Connection

When initializing (connecting the MG 3200 to the network for the first time) use a standard Ethernet cable to connect the network interface on your computer to a port on a network hub/switch. Use a second standard Ethernet cable to connect the MG 3200 to another port on the same network hub/switch.

For normal use, connect a standard Category 5 network cable to the Ethernet RJ-45 port (and the other as optional redundancy/backup). Connect the other end of the Category 5 network cables to your IP network. The Ethernet connectors (labeled Ethernet 1 and Ethernet 2) are wired according to Figure 2-8.

Note that for redundant operation it is recommended to connect each of the Ethernet connectors to a different Switch.

Figure 2-8: Pinout of RJ-45 Connectors

RJ-45 LAN Connector and Pinout

1 2 3 4 5 6 7 8

1 = Tx+ | 4, 5, 7, 8
2 = Tx- | not connected
3 = Rx+ |
6 = Rx- |
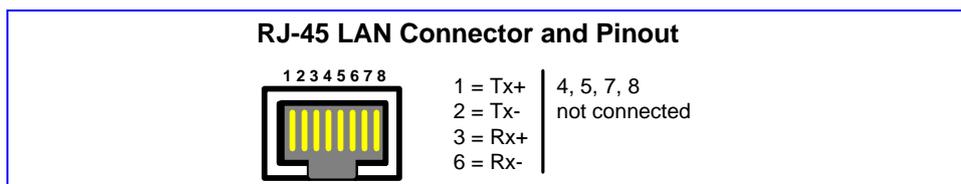
2.4.3 Connecting the Power Supply

Connect the MG 3200 to the power supply using one of the following methods:

2.4.3.1 Connecting the AC Power Supply

> ## ➢ When using a single AC power cable:

Attach one end of the supplied 100/240 VAC power cable to the rear AC socket and connect the other end to the correct earthed AC power supply.

Note: For the dual AC power supply note the following:
- The LED on the left side of the chassis is only connected when the dual AC is used. It is not relevant to the single AC power connection.
- If only a single socket is connected to the AC power, (while the other plug is left

unconnected) the chassis' LED (on the left side) is lit Red, indicating that one of the dual power inlets is disconnected.

- When both the AC power cables are connected, one of the plugs can be disconnected under power without affecting operation, in which case the chassis' left LED is lit Red.
- UPS can be connected to either (or both) of the AC connections.
- The dual AC connections operate in a 1 + 1 configuration and provide load-sharing redundancy.
- Each of the dual power cables can be connected to different power phases.

➢ **When using a dual AC power & cables take this step:**

Attach one end of each of the supplied 100/240 VAC power cables to the rear AC sockets and connect each of the other ends to separate earthed mains circuits (for power source redundancy).

2.4.3.2 Connecting the DC Power Supply

To connect the MG 3200 to a DC power supply use one of these two options:

- DC Terminal block with a screw connection type.
- DC Terminal block with a crimp connection type.

➢ **When using a DC terminal block screw connector, take these 3 steps:**

1. Create a DC cable by inserting two 14-16 AWG insulated wires into the supplied adaptor (refer to Figure 2-9) and fasten the two screws, each one located directly above each wire.
2. Connect the two insulated wires to the correct DC power supply. Ensure that the connections to the DC power supply maintain the correct polarity.
3. Insert the terminal block into the DC inlet located on the MG 3200.

Figure 2-9: DC Terminal Block Screw Connector

➢ **When using a DC terminal block crimp connector, take these 3 steps:**

1. Remove the DC adaptor (screw connection type) that is attached to the MG 3200 rear panel.
2. Connect the two insulated wires to the correct DC power supply. Ensure that the connections to the DC power supply maintain the correct polarity (refer to Figure 2-10).
3. Insert the terminal block to the DC inlet located on the MG 3200.

Figure 2-10: DC Terminal Block Crimp Connector

2 screws for connecting the crimp terminal block to the MG 3200 rear panel
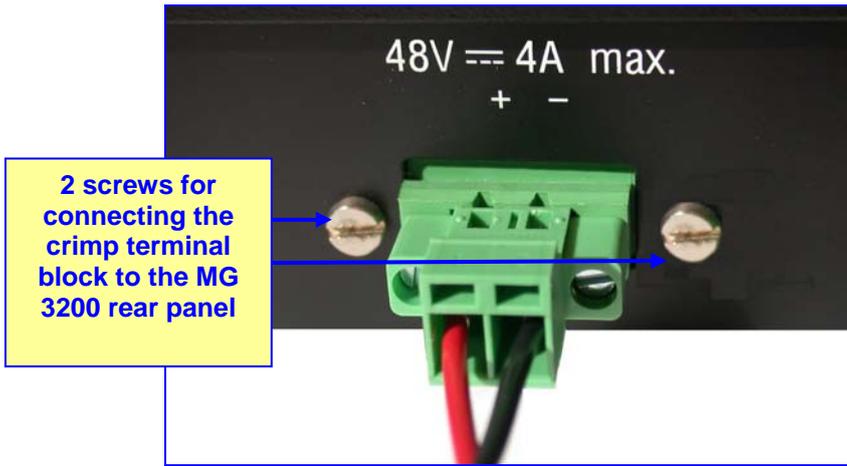
3   Configuring the MG 3200

The MG 3200 is supplied with application software already resident in its flash memory (with factory default parameters). The MG 3200 is also supplied with an Embedded (integrally stored) Web Server.

Section 3.1 below describes how to assign IP addresses to the MG 3200, while Section 3.4 on page 23 describes how to set up the MG 3200 with basic parameters using a standard Web browser (such as Microsoft ™ Internet Explorer).

> **Note:**   Section 3.1 applies equally to H.248 and SIP.

3.1   Assigning the MG 3200 IP Address

The MG 3200 is composed of one or two identical media gateway modules. These media gateways are fully independent, each gateway having its own MAC and IP addresses (Table 3-1 shows the default IP addresses of the MG 3200). To assign an IP address to each of the MG 3200 modules use one of the following methods:

- HTTP using a Web browser (refer to Section 3.1.1 below).

- BootP (refer to Section 3.1.2 on page 21).

- DHCP (refer to the MG 3200 User's Manual).

You can use the 'Reset' button to restore the MG 3200 networking parameters to their factory default values (refer to Section 3.2 on page 22).

Table 3-1: MG 3200 Default Networking Parameters

MG 3200 Version	Default Value
Single module (up to 8 Trunks)	10.1.10.10
Double module (up to 16 Trunks)	10.1.10.10 (Trunks 1-8) and 10.1.10.11 (Trunks 9-16)
Default subnet mask is 255.255.0.0, default gateway IP address is 0.0.0.0	

3.1.1   Assigning an IP Address Using HTTP

> ➢ **To assign an IP address using HTTP, take these 9 steps:**

1. Connect your computer to the MG 3200. Either connect the network interface on your computer to a port on a network hub/switch (refer to Section 2.4.2 on page 17), or use an Ethernet cross-over cable to directly connect the network interface on your computer to one of the RJ-45 jacks on the MG 3200.

2. Change your PC's IP address and subnet mask to correspond with the MG 3200 factory default IP address and subnet mask, shown in Table 3-1. For details on changing the IP address and subnet mask of your PC, refer to Windows™ Online Help (Start>Help).

3. Access the MG 3200 first module's Embedded Web Server (refer to Section 3.3 on page 23).

4. In the 'Quick Setup' screen, set the MG 3200 'IP Address', 'Subnet Mask' and 'Default Gateway IP Address' fields under 'IP Configuration' *to correspond with your network IP settings.* If your network doesn't feature a default gateway, enter a dummy value in the 'Default Gateway IP Address' field.

5. Click the **Reset** button and click **OK** in the prompt; The MG 3200 applies the changes and restarts. This takes approximately 3 minutes to complete. When the MG 3200 has finished restarting, the Ready and LAN LEDs on the front panel are lit green.

> **Tip:** Record and retain the IP address and subnet mask you assign the MG 3200. Do the same when defining new username or password. If the Embedded Web Server is unavailable (for example, if you've lost your username and password), use the BootP/TFTP configuration utility to access the device, "reflash" the load and reset the password (refer to the MG 3200 User's Manuals for detailed information on using a BootP/TFTP configuration utility to access the device).

6. Repeat steps 3 to 5 for the MG 3200 second module (if used).

7. Disconnect your computer from the MG 3200 or from the hub / switch (depending on the connection method you used in step 1).

8. Reconnect the MG 3200 and your PC (if necessary) to the network.

9. Restore your PC's IP address and subnet mask to what they originally were. If necessary, restart your PC and re-access the MG 3200 via the Embedded Web Server with its new assigned IP address.

3.1.2   Assigning an IP Address Using BootP

> **Tip 1:** BootP procedure can also be performed using any standard compatible BootP server.
>
> **Tip 2:** You can also use BootP to load the auxiliary files to the MG 3200 (refer to the MG 3200 User's Manual).

➢ **To assign an IP address using BootP, take these 13 steps:**

1. Open the BootP application (supplied with the MG 3200 software package).

2. Click on the **Edit Clients** icon;
the 'Client Configuration' screen is displayed.

3. Click on the **Add New Client** icon;
a client with blank parameters is displayed (Figure 3-1 on page 22).

4. In the 'Client MAC' field, enter the MAC address of the gateway. The MAC address is printed on a label located on the base of the MG 3200.

5. Verify that the box to the right of the 'Client MAC' field is checked. This enables the particular client in the BootP tool (if the client is disabled, no replies are sent to BootP requests).

6. In the 'Client Name' field, enter a descriptive name for this client so that it is easier to remember which gateway the record refers to. For example, this name could refer to the location of the gateway.

7. In the 'IP' field, enter the IP address you want to assign the gateway. Use the normal dotted decimal format.

8. In the 'Subnet' field, enter the subnet mask you want to assign the gateway. Use the normal dotted decimal format. Ensure that the subnet mask is correct. If the address is incorrect, the gateway may not function until the entry is corrected and a BootP reset is applied.

9. In the 'Gateway' field, enter the IP address for the default gateway. If you do not know the IP address for the default gateway, contact your network administrator.

10. Click **Apply** to save this entry to the list of clients.

11. Click **OK**; the 'Client Configuration' screen is closed.

12. Reset the gateway *physically* causing it to use BootP; the MG 3200 changes its network parameters to the values provided by the BootP.

13. Repeat steps 2 to 11 for the MG 3200 second module (if used).

Figure 3-1: Client Configuration Screen with Blank Parameters
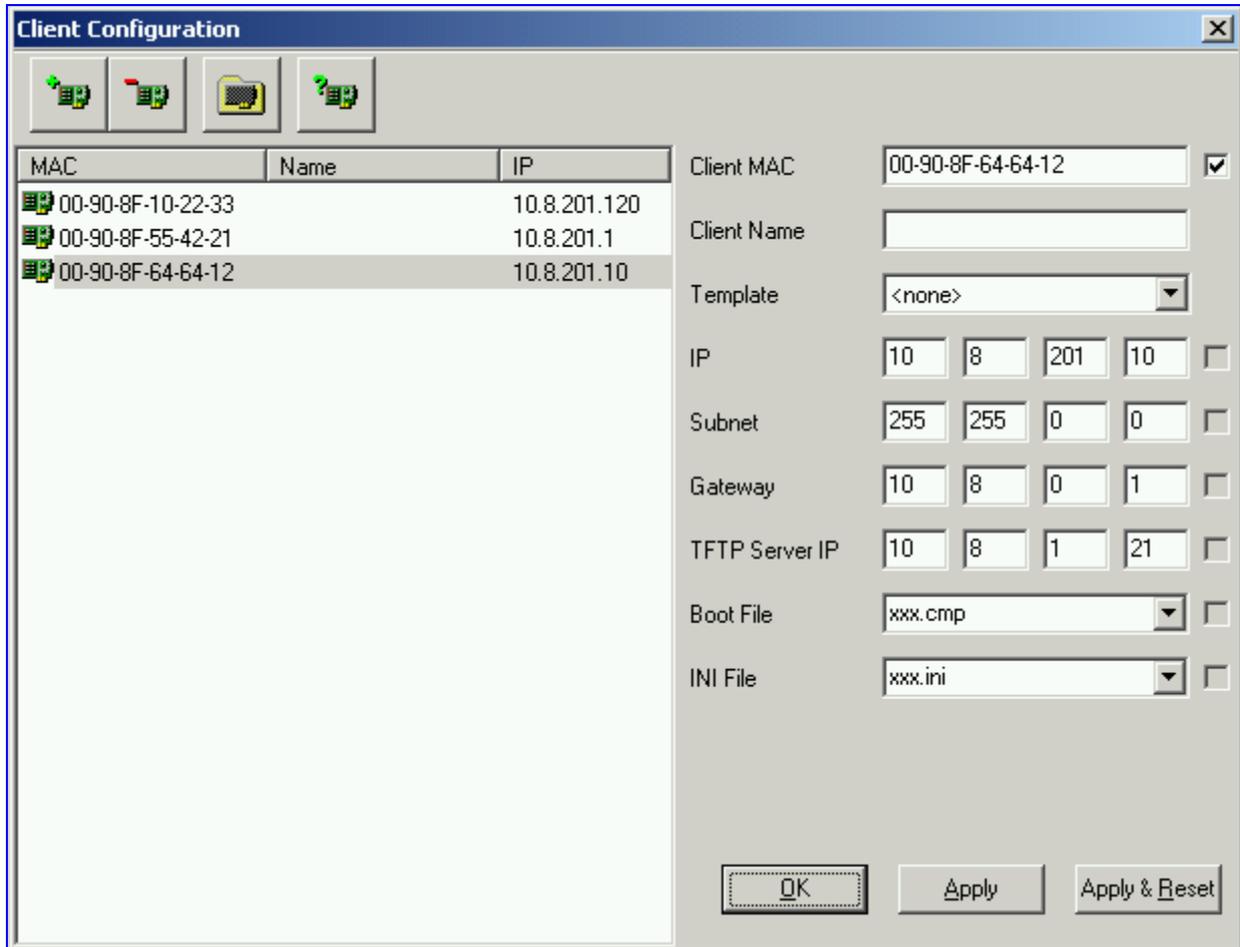
3.2 Restoring Networking Parameters to their Initial State

You can use the 'Reset' button to restore the MG 3200 networking parameters to their factory default values (described in Table 3-1) and to reset the username and password.

Note that this process also restores the MG 3200 parameters to their factory settings, therefore you must load your previously backed-up *ini* file, or the default *ini* file (received with the software kit) to set them to their correct values.

This option is currently supported on one media gateway module (trunks 1-8) only.

➢ **To restore networking parameters to their initial state, take these 5 steps:**

1. Disconnect the MG 3200 from the power and network cables.

2. Reconnect the power cable; the gateway is powered up. After approximately 45 seconds the ACT LED blinks for about 4 seconds.

3. While the ACT LED is blinking, press shortly on the reset button (located on the front panel); the gateway resets a second time and is restored with factory default parameters (username: "Admin", password: "Admin").

4. Reconnect the network cable.

5. Load your previously backed-up *ini* file, or the default *ini* file (received with the software kit). To load the *ini* file via the Embedded Web Server, refer to Section 5 on page 32.

3.3   Accessing the Embedded Web Server

➢ **To access the Embedded Web Server, take these 4 steps:**

1. Open a standard Web-browsing application such as Microsoft™ Internet Explorer™ (Version 6.0 and higher) or Netscape™ Navigator™ (Version 7.0 and higher).

2. In the URL field, specify the IP address of the gateway (i.e., http://10.1.10.10 for the first module of the MG 3200); the Embedded Web Server's 'Enter Network Password' screen appears, shown in Figure 3-2.

Figure 3-2: Embedded Web Server Login Screen

3. Enter the username (default: "Admin"), and password (default: "Admin"). Note that the 'User Name' and 'Password' fields are case-sensitive.

4. Click **OK**; the 'Quick Setup' screen is accessed, shown in Figure 3-3 (H.248) and Figure 3-4 (SIP).

3.4   Configuring the MG 3200 *Basic* Control Protocol Parameters

To configure the MG 3200 *basic* control protocol parameters use the Embedded Web Server's 'Quick Setup' screen.

- For H.248, refer to Section 3.4.1 on page 24.
- For SIP, refer to Section 3.4.2 on page 26.

When you have completed the above relevant section you are then ready to start using the MG 3200. For information on how to fully configure the VoIP gateway, refer to the MG 3200 User's Manuals.

⚠	**Tip:** Once the gateway is configured correctly back up your settings by making a copy of the VoIP gateway configuration (*ini* file) and store it in a directory on your computer. This saved file can be used to restore configuration settings at a future time. For information on backing up and restoring the gateway's configuration refer to Section 5 on page 32.

> **Note:** The following configuring Sections from here up to and including Section 3.4.2 on page 26 apply individually to H.248 **OR** SIP.
> **H.248** Configuring continues with Section 3.4.1 below.
> **SIP** Configuring continues with Section 3.4.2 on page 26.

3.4.1 Configuring *Basic* H.248 Parameters

After accessing the Embedded Web Server (refer to Section 3.3 on page 23) the H.248 'Quick Setup' screen is displayed, shown in Figure 3-3.

Figure 3-3: MG 3200 H.248 Quick Setup Screen

> **To configure basic H.248 parameters, take these 16 steps:**

1. If your network features a DNS server, in the fields 'DNS Primary Server IP' and 'DNS Secondary Server IP', enter the IP address of the primary and secondary DNS servers (clarify with your network administrator).

2. If your network features a DHCP server, in the 'Enable DHCP' field, select 'Enable'; the 'IP Address', 'Subnet Musk' and 'Default Gateway IP Address' fields are disabled. When the gateway is configured to use DHCP, it attempts to contact the DHCP server to obtain the networking parameters (e.g., IP address, subnet mask, default gateway and primary/secondary DNS server).

3. Under the section 'Trunk Configuration', select the 'Protocol Type' you use. Note that the Trunk Configuration parameters are *global,* and apply to all trunks. To configure different parameters *per trunk*, refer to Section 3.5 on page 28.

4. In the 'Framing Method' field, select the 'Framing Method' you use (for E1 trunks, always set the Framing Method to 'Extended Super Frame').

5. In the 'Clock Master' field, select the trunk clock source from the drop-down list. Choose either 'Recovered' (the clock is recovered from the trunk; default) or 'Generated' (the trunk's clock source is provided by the internal TDM bus clock source, according to the parameter 'TDM Bus Clock Source'). For detailed information on the parameter 'TDM Bus Clock Source', refer to the MG 3200 H.248 User's Manual.

6. In the 'Line Code' field, select the Line Code. Use 'B8ZS' (bipolar 8-zero substitution) or 'AMI' (alternate mark inversion) for T1 spans, and 'HDB3' (high-density bipolar 3) or 'AMI' for E1 spans.

7. In the 'ISDN Termination Side' field (applicable only to ISDN protocols), select 'User Side' when the PSTN or PBX side is configured as 'Network side', and vice-versa. If you don't know the MG 3200 ISDN termination side, choose 'User Side' and refer to the 'Status & Diagnostics>Channel Status' screen. If the D-channel alarm is indicated, choose 'Network Side'.

8. Select the control protocol type you use: H.248, in the field 'Control Protocol Type'.

9. In the 'Call Agent IP' field, enter the Call Agent IP address if your enterprise's network doesn't feature a DNS server that automatically defines the Call Agent's IP address. If you have a DNS server, the field is optional.

10. In the 'Call Agent Port' field, enter the Call Agent port. The default port is 2944 (H.248).

11. In the 'Call Agent Domain Name' field, enter the Call Agent domain name. When using the DNS server option, enter the domain name of the Call Agent operating with the MG 3200. The DNS server automatically deduces the Call Agent's IP address from the domain name.

12. In the 'Gateway Name' field, enter a name to the device. (For example: 'gateway1.com'). Ensure that the name you choose is the one that the Call Manager/Agent is configured with to identify your MG 3200.

13. In the 'Endpoint Name' field, enter an intuitive endpoint name. Ensure that the endpoint name you choose is the one that the Call Manager works with.

14. In the 'Trunk Name' field, enter an intuitive trunk name. Ensure that the name you choose is the one that the Call Manager/Agent is configured with to identify your MG 3200.

15. Click the **Reset** button and click **OK** in the prompt; The MG 3200 applies the changes and restarts. This takes approximately 3 minutes to complete. When the MG 3200 has finished restarting, the Ready and LAN LEDs on the front panel are lit green.

16. After the gateway is reset, if different configuration is required *per trunk,* refer to Section 3.5 on page 28. Otherwise, set the 'PCM Law Select' field (**Advanced Configuration**>**TDM Bus Settings**), select 'A-law' for E1 trunks and 'μ-Law' for T1 trunks.

> **Note:** H.248 Users should continue with Section 3.5 Configuring the Trunk Settings on page 28.

3.4.2 Configuring *Basic* SIP Parameters

After accessing the Embedded Web Server (refer to Section 3.3 on page 23) the SIP 'Quick Setup' screen is displayed, shown in Figure 3-4.

Figure 3-4: MG 3200/SIP Quick Setup

> ### To configure basic SIP parameters, take these 10 steps:

1. If the MG 3200 is behind a router with NAT enabled, take the following procedures:

    ➤ Determine the "public" IP address assigned to the router (by using, for instance, router Web management). This "public IP address" is used to configure the MG 3200 Static NAT IP address.

    ➤ Enable the DMZ configuration on the residential router for the LAN port where the MG 3200 gateway is connected.

    ➤ Enter the public IP address for the MG 3200 in the 'NAT IP Address' field (in addition to the gateway's local IP address).

2. Under 'SIP Parameters', enter the MG 3200 domain name in the field 'Gateway Name'. If the field is not specified, the MG 3200 IP address is used instead (default).

3. When working with a Proxy server, set 'Working with Proxy' field to 'Yes' and enter the IP address of the primary Proxy server in the field 'Proxy IP address'. When no Proxy is used, the internal routing table is used to route the calls.

4. Enter the Proxy name in the field 'Proxy Name'. If Proxy name is used, it replaces the Proxy IP address in all SIP messages. This means that messages are still sent to the physical Proxy IP address but the SIP URI contains the Proxy name instead.

5. Configure 'Enable Registration' to 'Yes' or 'No':
'No' = the MG 3200 does not register to a Proxy server/Registrar (default).
'Yes' = the MG 3200 registers to a Proxy server/Registrar at power up and every 'Registration Time' seconds. For detailed information on the parameter 'Registration Time' refer to the MG 3200 SIP User's Manual.

6. Select the coder (i.e., vocoder) that best suits your VoIP system requirements. The default coder is: G.7231 30 msec. To program the entire list of coders you want the MG 3200 to use, click the button on the left side of the '1st Coder' field; the drop-down lists for the 2nd to 5th coders appear. Select coders according to your system requirements. Note that coders higher on the list are preferred and take precedence over coders lower on the list.

> **Note:** The preferred coder is the coder that the MG 3200 uses as a first choice for all connections. If the far end gateway does not use this coder, the MG 3200 negotiates with the far end gateway to select a coder that both sides can use.

7. Map outgoing calls to IP addresses (*when Proxy isn't used*) by completing these steps:

➤ Click the arrow button next to the 'Tel to IP Routing Table' label; the 'Tel to IP Routing' screen opens.
Any telephone number whose destination number matches the prefix defined in the 'Destination Phone Prefix' field *and* whose source number matches the prefix defined in the adjacent 'Source Phone Prefix' field, is sent to the IP address entered in the 'IP Address' field.

➤ Click the **Submit** button; the 'Tel to IP Routing' table is automatically updated.

➤ Click the **Close Window** button.

For more information on the 'Tel to IP Routing' table refer to the SIP MG 3200 User's Manual.

8. Enable E1/T1 B-channels by completing these steps:

➤ Click the arrow button next to the 'Trunk Group Table' label; the 'Trunk Group Table' screen opens.

➤ Select the number of the trunk you want to enable from the 'Trunk ID' drop-down list.

➤ Enter the number of B-channels you want to enable in the 'Channels' field.

➤ Enter the starting phone number in the adjacent 'Phone Number' field (these are virtual numbers, used only to define enabled B-channels).

➤ Click the **Submit** button; the 'Trunk Group Table' table is automatically updated.

➤ Click the **Close Window** button.

9. Click the **Reset** button and click **OK** in the prompt; The MG 3200 applies the changes and restarts. This takes approximately 3 minutes to complete. When the MG 3200 has finished restarting, the Ready and LAN LEDs on the front panel are lit green.

10. After the gateway is reset, configure the MG 3200 trunk parameters. For information on configuring the trunk parameters, refer to Section 3.5 on page 28.

> **Note:** SIP Users should continue with Section 3.5 Configuring the Trunk Settings on page 28.

> **Note:** The following Sections from here, up to the end of this Fast Track Guide, apply equally to H.248 and SIP.

3.5 Configuring the Trunk Settings

> ➢ **To configure the trunk settings, take these 13 steps:**

1. Access the Embedded Web Server (refer to Section 3.3 on page 23).

2. Open the 'Trunk Settings' screen (**Advanced Configuration** menu > **Trunk Settings**); the 'Trunk Settings' screen is displayed.
Initially, the screen appears with the parameters fields grayed (indicating read-only). The **Stop Trunk** button appears at the bottom of the screen.
The Trunk Status indicators appear colored. Table 3-2 shows the possible indicators and their descriptions.

Figure 3-5: Trunk Settings Screen

Trunk Number	9	10	11	12	13	14	15	16
Trunk Status								

Trunk Settings

Trunk Configuration

Trunk ID	15
Protocol Type	E1 TRANSPARENT 31
Clock Master	Recovered
Framing Method	Extended Super Frame
Line Code	B8ZS
Line Build Out Loss	0 dB
Trace Level	No Trace
Line Build Out Overwrite	OFF
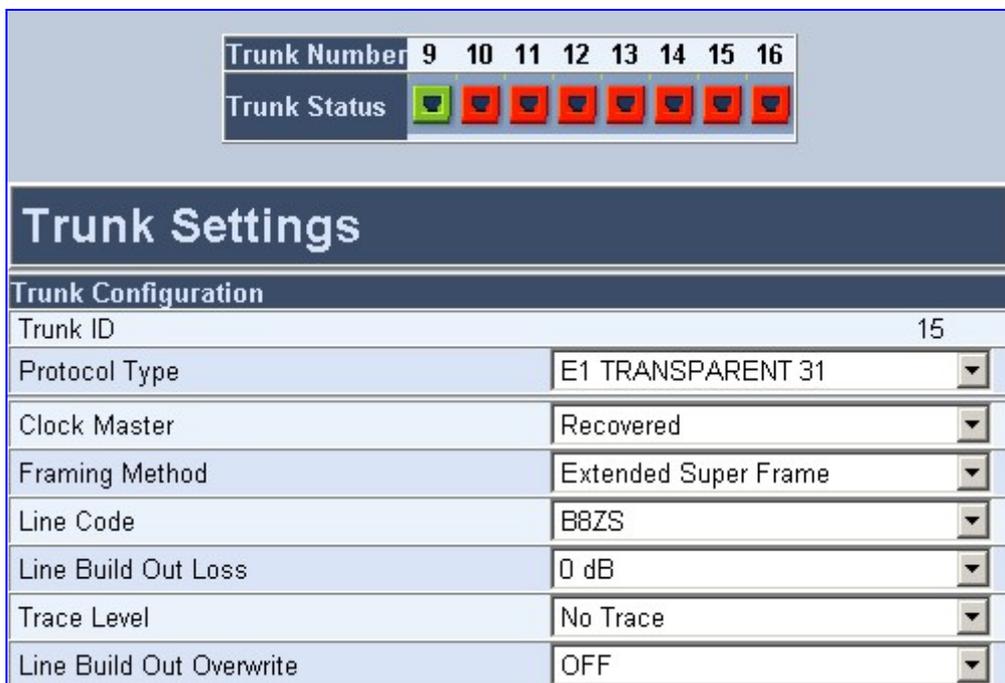
Table 3-2: Trunks Status Color Indicator Keys

Indicator	Color	Description
	Gray	Disabled
	Green	Active-OK
	Yellow	RAI Alarm
	Red	LOS Alarm
	Blue	AIS Alarm
	Orange	D-channel Alarm (ISDN only)

3. To configure the parameters of a specific trunk, from the trunks displayed on the top, select the trunk you want to configure by clicking the Trunk's Status indicator. The first parameter named 'Trunk ID' changes according to the trunk you click. The parameters displayed are for the selected trunk only.

4. To modify the selected trunk's parameters, click the **Stop Trunk** button; the trunk is stopped, the status of the parameter 'Trunk Configuration State' changes to 'Non Active', the parameters are no longer grayed and can be modified and the **Apply Trunk Settings** button appears at the bottom of the screen.
When all trunks are stopped, the **Apply to all Trunks** button also appears at the bottom of the screen.

> **Note:** If the trunk can't be stopped because it provides the gateway's clock (assuming the MG 3200 is synchronized with the E1/T1 clock), assign a different E1/T1 trunk to provide the gateway's clock or enable 'TDM Bus PSTN Auto Clock' on the TDM Bus Settings screen.
> To assign a different E1/T1 trunk that provides the gateway's clock, access the 'TDM Bus Setting' screen and change the 'TDM Bus Local Reference' number to any other trunk number (this operation can be performed on-the-fly).

5. Select the 'Protocol Type' you use. Note that different trunks can be defined with different protocols (CAS or ISDN variants) on the same gateway (subject to the constraints in the MG 3200 Release Notes).

> **Note:** When modifying the 'Protocol Type' field, the menu is automatically updated according to the selected protocol (ISDN, CAS or Transparent). Additional parameters are appropriate to the selected protocol type.

6. In the 'Framing Method' field, select the 'Framing Method' you use (for E1 trunks, always set the Framing Method to 'Extended Super Frame').

7. In the 'Clock Master' field, select the trunk clock source from the drop-down list. Choose either 'Recovered' (the clock is recovered from the trunk; default) or 'Generated' (the trunk's clock source is provided by the internal TDM bus clock source, according to the parameter 'TDM Bus Clock Source'). For detailed information on the parameter 'TDM Bus Clock Source', refer to the MG 3200 User's Manual.

8. In the 'Line Code' field, select the Line Code. Choose either 'B8ZS' (bipolar 8-zero substitution) for T1 trunks only; 'HDB3' (high-density bipolar 3) for E1 trunks only; or 'AMI' (for both T1 and E1).

9. In the 'ISDN Termination Side' field (applicable only to ISDN protocols), select 'User Side' when the PSTN or PBX side is configured as 'Network side', and vice-versa. If you don't know the MG 3200 ISDN termination side, choose 'User Side' and refer to the 'Status & Diagnostics>Channel Status' screen. If the D-channel alarm is indicated, choose 'Network Side'.

10. To configure the different behavior bits: either enter the exact hexadecimal value of the bits in the field to the right of the relevant behavior parameter, or directly configure each bit field by completing the following steps:

➢ Click the arrow button (-->) to the right of the relevant behavior parameter; a new window appears.

➢ Modify each bit field according to your requirements.

➢ Click the **Submit** button to save your changes.

➢ Click the **Close Window** button.

11. After modifying the parameters:

   ➢ To apply the changes to the selected trunk only, click the **Apply Trunk Settings** button.

   ➢ To apply the changes to all the trunks, click the **Apply to all Trunks** button.

   The screen is refreshed, parameters become read-only (indicated by being grayed). The **Stop Trunk** button appears at the bottom of the screen.

12. Access the 'TDM Bus Settings' screen (**Advanced Configuration**>**TDM Bus Settings**). In the 'PCM Law Select' field, select 'A-law' for E1 trunks and 'μ-Law' for T1 trunks.

13. To save the changes so they are available after a power fail, click the **Save Configuration** button on the main menu bar; the 'Save Configuration to the Flash Memory' screen is displayed. Click the **Save Configuration** button in the middle of the screen; a confirmation message appears when the save is complete.

For more detailed information on configuring the MG 3200 trunk settings, refer to the MG 3200 User's Manual, document # LTRT-727xx.

4   Changing the MG 3200 Username and Password

To prevent unauthorized access to the MG 3200, it is recommended that you change the username and password (both are case-sensitive) that is used to access the Embedded Web Server.

➢ **To change the username and password, take these 6 steps:**

1. Access the Embedded Web Server (refer to Section 3.3 on page 23).

2. Open the 'Change Password' screen (**Advanced Configuration** menu > **Change Password**); the 'Change Password' screen is displayed.

Figure 4-1: Change Password Screen

3. In the 'User Name' and 'New Password' fields, enter the new username and the new password respectively. Note that the username and password can be a maximum of 7 case-sensitive characters.

4. In the 'Confirm Password' field, reenter the new password.

5. Click the **Change Password** button; the new username and password are applied and the 'Enter Network Password' screen appears, shown in Figure 3-2 on page 23.

6. Enter the updated username and password in the 'Enter Network Password' screen.

5 Restoring and Backing Up the MG 3200 Configuration

The 'Configuration File' screen enables you to restore (load a new *ini* file to the gateway) or to back up (make a copy of the VoIP gateway *ini* file and store it in a directory on your computer) the current configuration the gateway is using. For information on the *ini* file refer to Table 7-1 on page 40.

Back up your configuration if you want to protect your VoIP gateway programming. The backup *ini* file includes only those parameters that were modified and contain other than default values.

Restore your configuration if the VoIP gateway has been replaced or has lost its programming information, you can restore the VoIP gateway configuration from a previous backup or from a newly created *ini* file. To restore the VoIP gateway configuration from a previous backup you must have a backup of the VoIP gateway information stored on your computer.

➢ **To restore or back up the *ini* file:**

• Open the 'Configuration File' screen (**Advanced Configuration** menu > **Configuration File**); the 'Configuration File' screen is displayed.

Figure 5-1: Configuration File Screen

➢ **To back up the *ini* file, take these 4 steps:**

1. Click the **Get INI FILE** button; the 'File Download' window opens.

2. Click the **Save** button; the 'Save As' window opens.

3. Navigate to the folder where you want to save the *ini* file.

4. Click the **Save** button; the VoIP gateway copies the *ini* file into the folder you selected.

➢ **To restore the *ini* file, take these 4 steps:**

1. Click the **Browse** button.

2. Navigate to the folder that contains the *ini* file you want to load.

3. Click the file and click the **Open** button; the name and path of the file appear in the field beside the **Browse** button.

4. Click the **Send *ini* File** button, and click **OK** in the prompt; the gateway is automatically reset (from the *cmp* version stored on the flash memory).

6   Monitoring the MG 3200

The MG 3200 provides several ways of monitoring the status of the gateway:

- Monitoring the MG 3200 LEDs (refer to Section 6.1 below).

- Monitoring the MG 3200 trunks and B-channels via the Embedded Web Server (refer to Section 6.2 on page 34).

6.1   Monitoring the MG 3200 LEDs

6.1.1   MG 3200 Chassis LED indicators

Table 6-1 provides a detailed description of the MG 3200 chassis' LED indicators.

Table 6-1: Chassis LED Indicators

LED Location	LED Color	LED Function
Right side of front panel	**Green**	The power is on.
Right side of front panel	**Red**	Fan failure - indicates that any of the internal fans has significantly reduced its speed or has frozen.
Left side of front panel	**Red**	Power supply failure - indicates that one of the two AC redundant power supplies is faulty or disconnected from the AC/mains outlet. (This LED is only relevant for the dual AC power supply).

6.1.2   TP-1610 Front Panel LED Indicators

The functionality of the front panel LEDs for the TP-1610 is described in the following four tables. Note that there is a choice of front panels according to the number of channels.

Table 6-2: Status LED Indicators

Label	LED Color	LED Function	
FAIL	**Red**	Normally OFF; Red indicates gateway failure (fatal error)	
ACT	**Green**	Gateway initialization sequence terminated OK	Bi-color LED
	Yellow	N/A	

Table 6-3: E1/T1 Trunk Status LED Indicators

Label	LED Color	Signal Description		
T1/E1 Status 1 to 8 and T1/E1 Status 9 to 16	**Green**	Trunk is synchronized (normal operation)		Bi-color LED
	Red	Loss due to any of the following 4 signals:		
		LOS	Loss of Signal	
		LFA	Loss of Frame Alignment	
		AIS	Alarm Indication Signal (the Blue Alarm)	
		RAI	Remote Alarm Indication (the Yellow Alarm)	

> **Note:** On the front panel 16 LEDs are provided for 16-span units and 8 LEDs are provided for 1-span, 2-span, 4-span, and 8-span units. In the case of 1-span, 2-span and 4-span units, the extra LEDs are unused.

Table 6-4: Ethernet LED Indicators

Label	LED Color	LED Function
LINK	**Green**	Link all OK
ACT	**Yellow**	Transmit / receive activity

Table 6-5: cPCI LED Indicators

Label	LED Color	LED Function
PWR	**Green**	Power is supplied to the board
SWAP READY	**Blue**	The cPCI board can now be removed.
		The cPCI board was inserted successfully.

During correct MG 3200 operation, the ACT LED is lit green, the FAIL LED is off. Changing of the FAIL LED to red indicates a failure.

6.2 Monitoring the MG 3200 Trunks and B-channels

➢ **To monitor the status of the trunks and B-channels:**

- Open the 'Trunk & Channel Status' screen (**Status & Diagnostics** menu > **Channel Status**); the 'Trunk & Channel Status' screen is displayed.

Figure 6-1: Trunk & Channel Status Screen
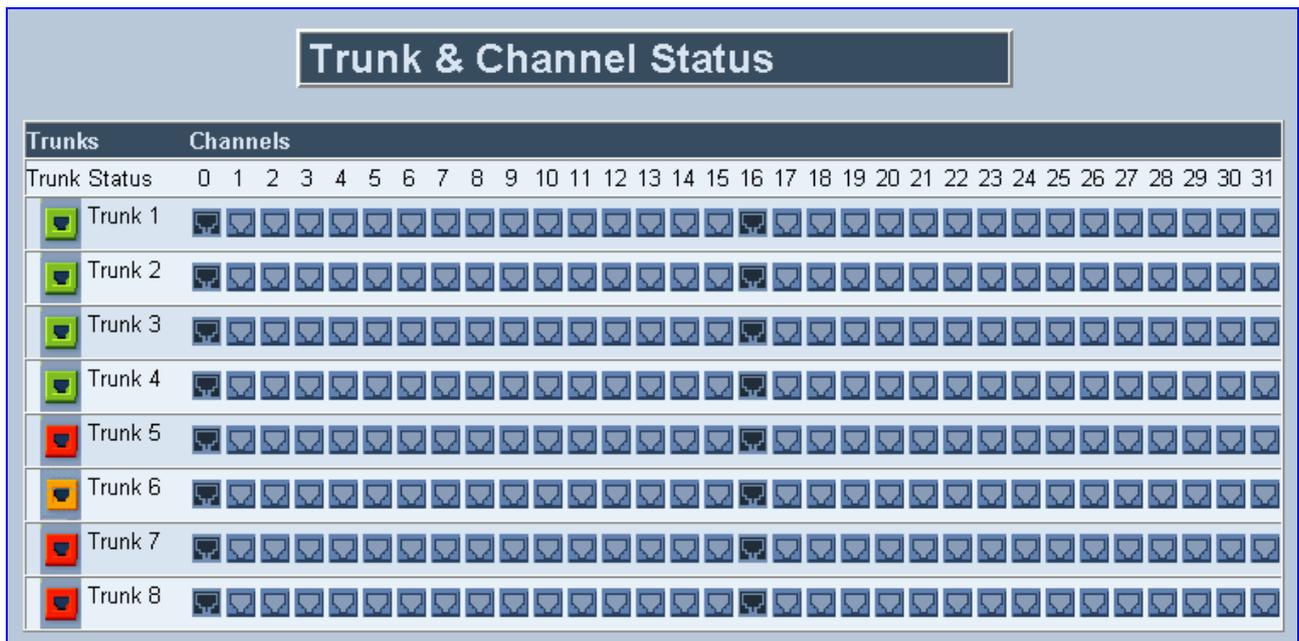
➢ **To monitor the details of a B-channel, take these 2 steps:**

1. In the 'Trunk & Channel Status' screen, click the numbered icon of the specific B-channel whose detailed status you need to check/monitor; the B-channel-specific 'Channel Status' screen appears.
2. Click the submenu links to check/view a specific B-channel's parameter settings.

7   Software Update

The 'Software Update' menu enables users to upgrade the MG 3200 software by loading a new *cmp* file along with the *ini* and a suite of auxiliary files, or to update the existing auxiliary files.

The 'Software Update' menu comprises two submenus:

- Software Update Wizard (refer to Section 7.1 below).

- Auxiliary Files (refer to Section 7.2 on page 40).

> **Note:**   When upgrading the MG 3200 software you *must* load the new *cmp* file with all other related configuration files.

7.1   Software Upgrade Wizard

The Software Upgrade Wizard guides users through the process of software upgrade: selecting files and loading them to the gateway. The wizard also enables users to upgrade software while maintaining the existing configuration. Using the wizard obligates users to load a *cmp* file. Users can choose to also use the Wizard to load the *ini* and auxiliary files (e.g., Call Progress Tones*)* but this option cannot be pursued without loading the *cmp* file. For the *ini* and each auxiliary file type, users can choose to reload an existing file, load a new file or not load a file at all.

> **Note:**   The Software Upgrade Wizard requires the MG 3200 to be reset at the end of the process, disrupting any of its traffic. To avoid disruption, disable all traffic on the MG 3200 before initiating the Wizard.

➢ To use the Software Upgrade Wizard, take these 9 steps:

1.   Stop all traffic on the MG 3200 (refer to the note above).

2.   Open the 'Software Upgrade Wizard' (**Software Update** menu > **Software Upgrade Wizard**); the 'Start Software Upgrade' screen appears.

Figure 7-1: Start Software Upgrade Screen
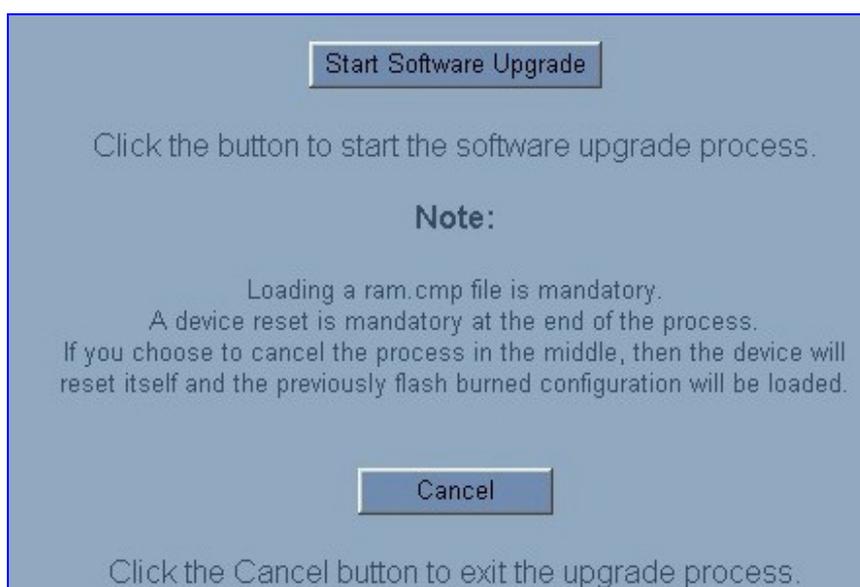
> **Note:** At this point, the process can be canceled with no consequence to the MG 3200 (click the **Cancel** button). If you continue the process (by clicking the **Start Software Upgrade** button, the process must be followed through and completed with a MG 3200 reset at the end. If you click the **Cancel** button in any of the subsequent screens, the MG 3200 is automatically reset with the configuration that was previously burned in flash memory.

3. Click the **Start Software Upgrade** button; the 'Load a *cmp* file' screen appears (Figure 7-2).

> **Note:** When in the Wizard process, the rest of the Web application is unavailable and the background Web screen is disabled. After the process is completed, access to the full Web application is restored.

Figure 7-2: Load a *cmp* File Screen
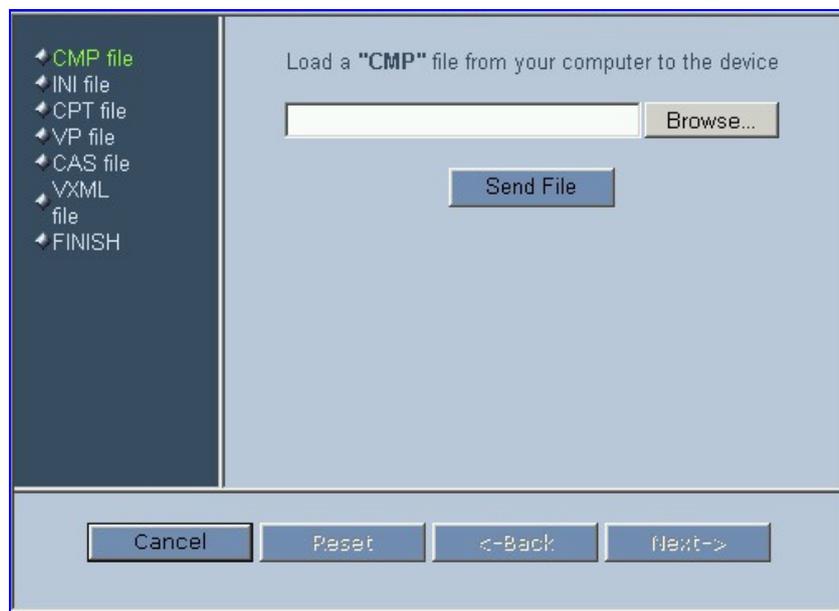
4. Click the **Browse** button, navigate to the *cmp* file and click the button **Send File**; the *cmp* file is loaded to the MG 3200 and you're notified as to a successful loading (refer to Figure 7-3).

Figure 7-3: *cmp* File Successfully Loaded into the MG 3200 Notification
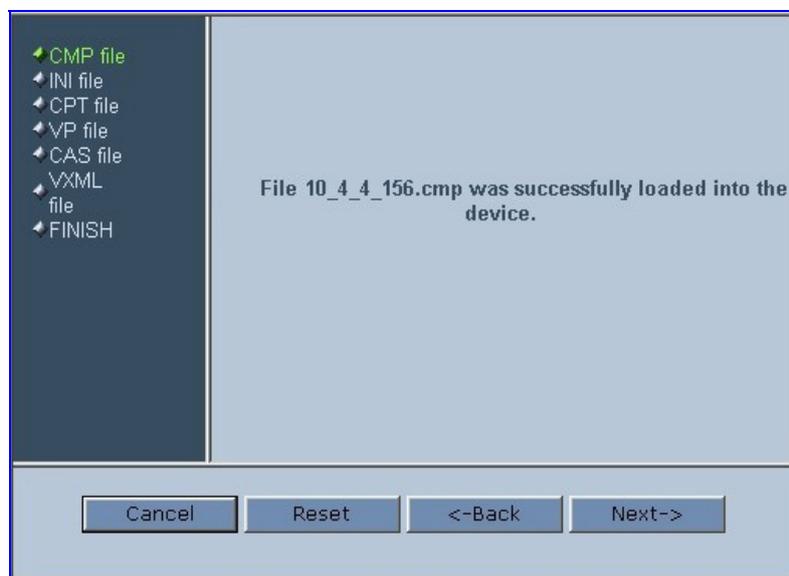
5. Note that the four action buttons (**Cancel**, **Reset**, **Back**, and **Next**) are now activated (following *cmp* file loading).

You can now choose to either:

➢ Click **Reset**; the MG 3200 resets, utilizing the new *cmp* you loaded and utilizing the current configuration files.

➢ Click **Cancel**; the MG 3200 resets utilizing the *cmp, ini* and all other configuration files that were previously stored in flash memory. Note that these are NOT the files you loaded in the previous Wizard steps.

➢ Click **Back**; the 'Load a *cmp* File' screen is reverted to; refer to Figure 7-2.

➢ Click **Next**; the 'Load an *ini* File' screen opens; refer to Figure 7-4. Loading a new *ini* file or any other auxiliary file listed in the Wizard is optional.

Note that as you progress, the file type list on the left indicates which file type loading is in process by illuminating green (until 'FINISH').

**Figure 7-4: Load an *ini* File Screen**
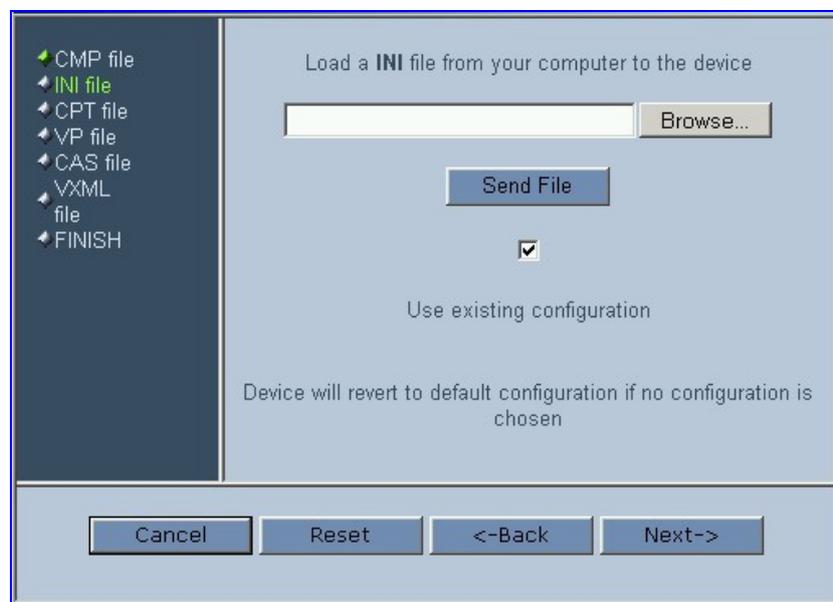
6. In the 'Load an *ini* File' screen, you can now choose to either:

➢ Click **Browse** and navigate to the *ini* file; the check box 'Use existing configuration', by default checked, becomes unchecked. Click **Send File**; the *ini* file is loaded to the MG 3200 and you're notified as to a successful loading.

➢ Ignore the **Browse** button (its field remains undefined and the check box 'Use existing configuration' remains checked by default).

➢ Ignore the **Browse** button and uncheck the 'Use existing configuration' check box; no *ini* file is loaded, the MG 3200 uses its factory-preconfigured values.

You can now choose to either:

➢ Click **Cancel**; the MG 3200 resets utilizing the *cmp, ini* and all other configuration files that were previously stored in flash memory. Note that these are NOT the files you loaded in the previous Wizard steps.

➢ Click **Reset**; the MG 3200 resets, utilizing the new *cmp* and *ini* file you loaded up to now as well as utilizing the other configuration files.

➢ Click **Back**; the 'Load a *cmp* file' screen is reverted to; refer to Figure 7-2.

➢ Click **Next**; the 'Load a CPT File' screen opens, refer to Figure 7-5; Loading a new CPT file or any other auxiliary file listed in the Wizard is optional.

Figure 7-5: Load a CPT File Screen
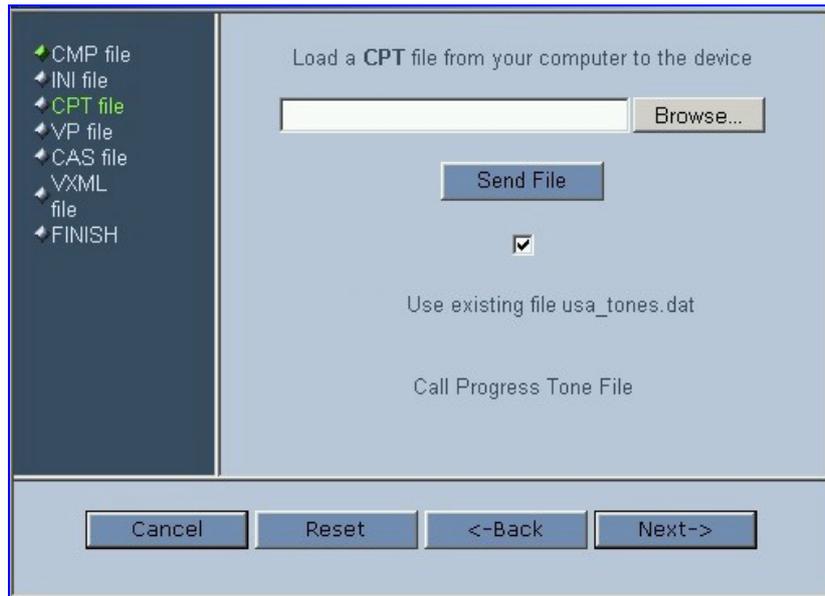
7. Follow the same procedure you followed when loading the *ini* file (refer to Step 6). The same procedure applies to the 'Load a VP file' (not applicable to the MG 3200 gateway) screen and 'Load a coefficient file' screen.

8. In the 'FINISH' screen (refer to Figure 7-6), the **Next** button is disabled. Complete the upgrade process by clicking **Reset** or **Cancel**.

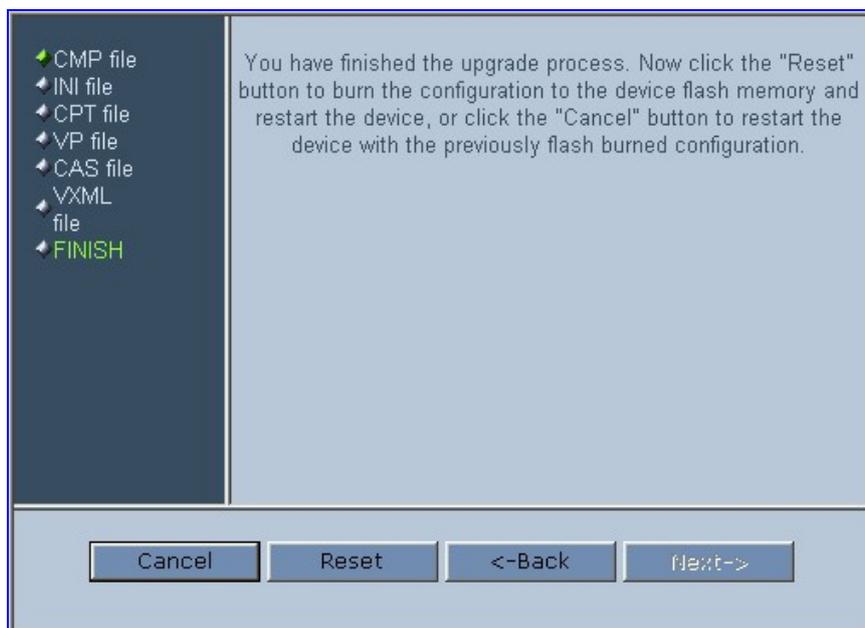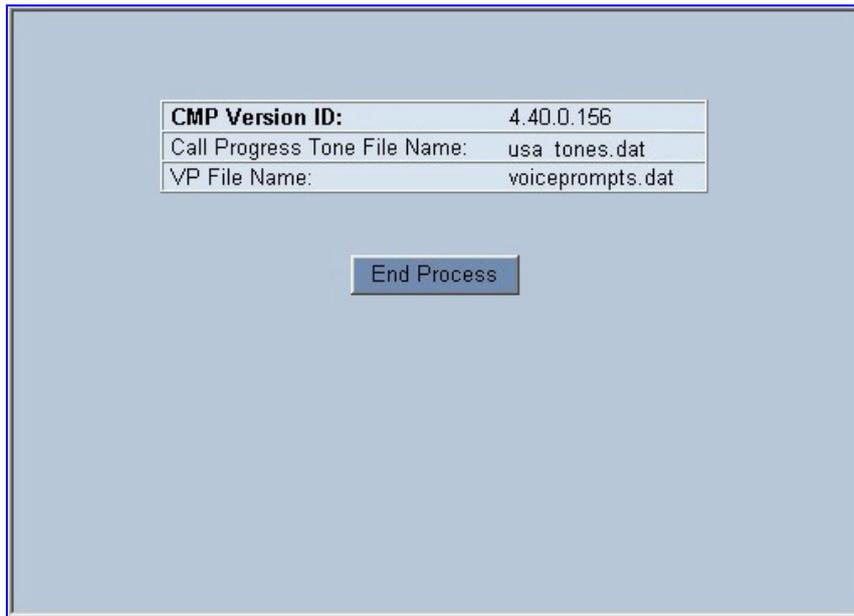| Button	Result
Reset	The MG 3200 'burns' the newly loaded files to flash memory. The 'Burning files to flash memory' screen appears. Wait for the 'burn' to finish. When it finishes, the 'End Process' screen appears displaying the burned configuration files (refer to Figure 7-7).
Cancel	The MG 3200 resets, utilizing the files previously stored in flash memory. (Note that these are NOT the files you loaded in the previous Wizard steps).

Figure 7-6: FINISH Screen

Figure 7-7: 'End Process' Screen

CMP Version ID:	4.40.0.156
Call Progress Tone File Name:	usa tones.dat
VP File Name:	voiceprompts.dat

End Process

9. Click the **End Process** button; the 'Quick Setup' screen appears and the full Web application is reactivated.

7.2   Updating the Auxiliary Files

The auxiliary files are configuration *dat* files that are loaded to the gateway (in addition to the *ini* file) to enable enhanced gateway provisioning. The following auxiliary files are available: CAS, Voice Prompts, Call Progress Tones (CPT) and Prerecorded Tones (PRT). Table 7-1 presents a brief description of the *ini* file and of each auxiliary file.

Table 7-1: *ini* and Auxiliary Files Descriptions

File Type	Description
Ini	Load the file to provision the MG 3200 parameters. The Embedded Web Server enables practically full device provisioning but customers may occasionally require new feature configuration parameters in which case this file is loaded. Note that loading the *ini* file only provisions parameters that are contained in the *ini* file. If a parameter is not specified in the *ini* file, values associated with that parameter are reset to a default value. These values may not be the same as the values that were configured for the VoIP gateway at the time of manufacture. **Note:** After the file has completed loading, the VoIP gateway automatically restarts (software is loaded from the flash).
CAS	Up to 8 different CAS files containing specific CAS protocol definitions. These files are provided by Nortel to support various types of CAS signaling.
Voice Prompts	The voice announcement file contains a set of Voice Prompts to be played by the MG 3200 during operation on Call Agent request.
Call Progress Tones	This is a region-specific, telephone exchange-dependent file that contains the Call Progress Tones levels and frequencies that the VoIP gateway uses. The default CPT file is: U.S.A.
Prerecorded Tones	The *dat* PRT file enhances the gateway's capabilities of playing a wide range of telephone exchange tones that cannot be defined in the Call Progress Tones file.

> ➢ **To load an auxiliary file via the Embedded Web Server, take these 6 steps:**

1. Open the 'Auxiliary Files' screen (**Software Update** menu > **Load Auxiliary Files**); the 'Auxiliary Files' screen is displayed (shown in Figure 7-8).

2. Click the **Browse** button that is in the field for the type of file you want to load.

3. Navigate to the folder that contains the file you want to load.

4. Click the file and click the **Open** button; the name and path of the file appear in the field next to the **Browse** button.

5. Click the **Send File** button adjacent to the field that contains the name of the file you want to load. An asterisk in the screen section indicates that the file's loading takes effect on-the-fly (e.g., Voice Prompts file).

6. Repeat steps 2 to 5 for each file you want to load.

Figure 7-8: Auxiliary Files Screen

> ➢ **To save the loaded auxiliary files to flash memory, take these 2 steps:**

1. Click the **Save Configuration** button on the main menu bar; the 'Save Configuration to the Flash Memory' screen is displayed.

> **Note:** Saving an auxiliary file to flash memory may disrupt traffic on the MG 3200. To avoid this, disable all traffic on the device before saving to flash memory.

2. Click the **Save Configuration** button in the middle of the screen; a confirmation message appears when the save is complete.

> **Note:** A device reset is required to activate a loaded CPT file, and may be required for the activation of certain *ini* file parameters.

> ➢ **To reset the MG 3200, take these 2 steps:**

1. Click the **Reset** button on the main menu bar; the 'Reset' screen is displayed.

2. Click the **Reset** button in the middle of the screen; the auxiliary files are saved into flash and the MG 3200 restarts. This takes approximately 3 minutes to complete. When the MG 3200 has finished restarting, the Ready and LAN LEDs on the front panel are lit green.