

**Tmedia**

**TMG800 System Installation Guide**

9010-00206-1A, Issue 2.5

The information in this document is subject to change without notice. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of **TelcoBridges**. **TelcoBridges** may have patents or pending patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. The furnishing of this document does not give you license to these patents, trademarks, copyrights, or other intellectual property except as expressly provided in any written license agreement from TelcoBridges.

The information provided in this document is intended as a guide only. For the latest detailed engineering specifications, please contact **TelcoBridges** Customer Support. **TelcoBridges** is committed to continually improving product designs; as a result, product specifications may be subject to change without notification.

© 2003-2011 **TelcoBridges**. All rights reserved.

TelcoBridges, Tmedia, TMP6400, TMG3200, TMS1600 Switch, TMP800, TMG800, Toolpack API, On a Blade, System-Blade, TB-1+1 Solution, TB-16-E1/T1/J1, TB640-DS3, TB640-E1/T1/J1, TB640-OC3/STM-1, TB-8-E1/T1/J1, TB-IVR Mezzanine, TB-Multi-Blade, TB-Multi-Blade Mezzanine, TB-N+1-15 Solution, TB-N+1-3 Solution, TB-StreamServer, TB-Video, TB-VoIP Mezzanine, TM-1000 Network Probe are trademarks of **TelcoBridges** Inc. All rights reserved 2009. All other trademarks are property of their owners. This information is subject to change without notice.

Document Title: TMG800 Installation Guide  
Document Number:9010-00206-1A, Issue 2.5, 2011-06-08//09:00

## HEAD OFFICE

91 rue de la Barre, Suite 01  
Boucherville, Quebec  
J4B 2X6, Canada

T +1 450 655 8993

F +1 450 655 9511

[info@telcobridges.com](mailto:info@telcobridges.com)

[support@telcobridges.com](mailto:support@telcobridges.com)

# Preface

## About this Guide

This guide describes the installation and setup of the Tmedia TMG800 VoIP gateway and the connections to voice, and IP networks.

## Conventions

Terminology	Description
Tmedia Management Interface	This is the interface used to configure and manage the TMG800.
Tmedia Unit	A generic reference to the TMG800.

## Contact Us

If you have comments about this guide or any other TelcoBridges technical documentation, please send an E-mail to [support@telcobridges.com](mailto:support@telcobridges.com).



# Table of Contents

Chapter 1	Introduction .....	1
	1.1 Installation Overview .....	2
	1.2 Installation Prerequisites .....	3
	1.3 Preventing Electrostatic Discharge Damage.....	3
	1.4 Recommended Reading .....	4
Chapter 2	Equipment Connections .....	5
	2.1 TMG800 Package Contents.....	6
	2.2 Rack mounting the TMG800 .....	7
	2.2.1 Prerequisites .....	7
	2.2.2 Vertical Placement of Tmedia Equipment .....	7
	2.2.3 Mounting the TMG800 .....	8
	2.3 Connecting to the Tmedia Management Interface .....	9
	2.3.1 Prerequisites .....	9
	2.3.2 Interconnections.....	9
	2.4 Connecting to a VoIP Network.....	10
	2.4.1 Prerequisites .....	10
	2.4.2 Connections .....	10
	2.5 Connecting to the PSTN .....	11
	2.6 Powering Up.....	13
	2.6.1 Prerequisites .....	13
	2.6.2 Connecting to AC Power.....	13
	2.6.3 Connecting to DC Power.....	15
	2.6.4 Verifying the LED Status Indications.....	17
Chapter 3	Initial System Configuration .....	19
	3.1 Connecting to the TMG800 .....	20
	3.2 Retrieving TMG800 Information .....	20
	3.3 Changing the TMG800 Management Port IP Address.....	20
	3.4 Changing TMG800 Management Port Passwords.....	20
	3.5 Setting the Time Zone.....	21
	3.6 Configuring the TMG800 Using the Web Portal.....	21
	3.7 Changing VoIP Interface Addresses .....	21
Chapter 4	System Upgrades.....	23
	4.1 Installing a New License .....	23
Chapter 5	Troubleshooting Tools.....	25
	5.1 Connecting to the Serial Port of the TMG800 .....	26
	5.2 Configuring the Terminal Emulator Application.....	28
	5.3 Reporting a Problem .....	29
	5.4 Setup Information.....	29

5.5	Tbdebug Dump Files (Mandatory).....	29
5.6	Application Logs.....	30
5.7	Backdoor Tools .....	30
5.7.1	tbx_cli_tools_remote .....	30
5.7.2	Line/Trunk Status (Tbshows).....	31
5.7.3	VoIP Traffic Capture.....	31
5.7.4	Network Analysis Tools.....	32
5.7.4.1	Wireshark (formerly called Ethereal).....	32
5.7.4.2	tcpdump .....	32
5.7.5	Tbstreamlisten.....	32
5.7.6	Stream Server Audio Packets to Wave File .....	32
5.7.7	tbsigtrace Signaling Traces.....	32

# Chapter 1 Introduction

This chapter provides an introduction to the installation and setup of the TMG800.

The following topics are covered:

- Installation overview
- Installation prerequisites
- Other recommended reading

## 1.1 Installation Overview

The installation and setup of the TMG800 consists of a series of procedures organized in the following order:

- Rack mounting the TMG800
- Connecting to the Tmedia management interface
- Connecting to the VoIP network
- Connecting to the PSTN
- Powering Up
- Initial System Configuration
- System Upgrades
- Troubleshooting

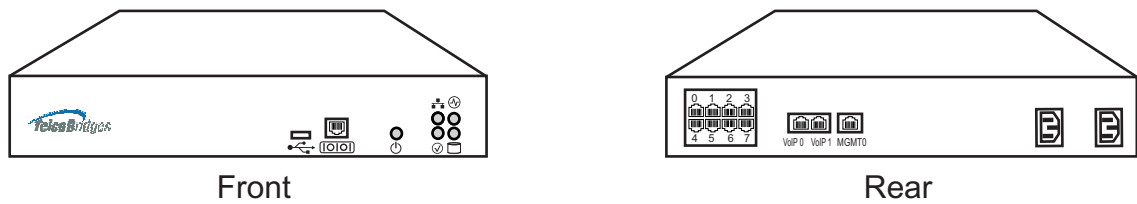


Figure 1.1 TMG800 front and rear views



---

## 1.2 Installation Prerequisites

In order for the TMG800 VoIP gateway installation to proceed without interruption, it is important that you verify that you have on hand all of the necessary materials. Prior to beginning the installation, you should have prepared for the following:

- Adequate space for the installation of your Tmedia VoIP gateway. Consider that you will need to mount the TMG800 on a 19" customer-provided equipment rack.
- Adequate power supply and power connections. To guarantee an uninterrupted supply, the TMG800 must be powered by a dedicated power source. Consider that the TMG800 will require one to two power connections.
- The TMG800 requires one IP address for the management port. To avoid delays, you should have the IP address, netmask and gateway addresses on hand. Take note that the management port supports DHCP, see Section 2.3 "Connecting to the Tmedia Management Interface" on page 9 for further information.

## 1.3 Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It may occur if electronic printed circuit cards are improperly handled and may cause complete or intermittent failure.

---

**Attention** Always follow ESD prevention procedures when removing and replacing modules:

- Ensure that the TelcoBridges Tmedia units are electrically connected to earth ground.
  - Wear an ESD-preventive wrist strap and ensure that it makes good contact with your skin. Connect the wrist strap clip to an unpainted surface of the Tmedia unit or the grounded equipment rack in order to channel away all ESD voltage safely to ground. To guard against ESD damage and shocks, the wrist strap and cord must be in proper working condition.
  - If no wrist strap is available, and you must work with the Tmedia units, ground yourself by touching a metal part of the chassis.
-

## 1.4 Recommended Reading

This document assumes that you are well versed in the installation of TelcoBridges Tmedia units and have been trained to work with the equipment. If you have any technical questions, please contact TelcoBridges technical support or send an E-mail to [support@telcobridges.com](mailto:support@telcobridges.com).

Other documents exploring various aspects of the Tmedia system are available on the TelcoBridges TB Wiki at: [http://docs.telcobridges.com/mediawiki/index.php/Main\\_Page](http://docs.telcobridges.com/mediawiki/index.php/Main_Page)

# Chapter 2      Equipment Connections

This chapter provides the procedures for the connection of a TMG800 to a Tmedia management interface, the PSTN and IP networks. Topics covered are:

- Verifying the List of Materials
- Rack mounting the TMG800
- Connecting to the Tmedia Management Interface
- Connecting to a VoIP network
- Connecting to a PSTN Network
- Connecting Power

## 2.1 TMG800 Package Contents

In the TMG800 box, you will find:

- One TMG800.
- One set of mounting brackets with screws. These are used for the mounting of a TMG800 on a 19" rack.
- One DB-9 to RJ-45 adapter. Allows you to interface the serial port of your computer with the RJ-45 console port of the TMG800. See pinout description in Section 5.1 "Connecting to the Serial Port of the TMG800" on page 26.
- Three RJ45 CAT5 Ethernet straight cables (male-male), three meters in length. One can be used to connect the console port to a terminal. The remaining two cables can be used to connect to VoIP networks.
- One warranty sheet.
- One packing slip.
- One TMG800 Quick Installation guide.

Not included with the TMG800:

- A 19" equipment rack. You will use a standard 19" wide equipment rack to install the TMG800.

## 2.2 Rack mounting the TMG800

The TMG800 is mounted on a customer provided equipment rack using the mounting hardware packaged in the box.

### 2.2.1 Prerequisites

To rackmount the TMG800, you will need:

- One 19" customer provided equipment rack. Racks must be solidly anchored to the floor with appropriate support at the top of the racks.
- Climate controlled room: 0 to +50 Celsius, 0 to 95% non-condensing humidity.

### 2.2.2 Vertical Placement of Tmedia Equipment

The TMG800 is housed in a 1U chassis, as tabulated in table 2.1 on page 7. It is important that you provide for enough room on the equipment rack to allow for the installation of the TMG800 and other related equipment. Consider the available space on your equipment rack and the height of each unit. Due to the rear-exhaust heat vents and the efficient heat dissipation design, there is no need to leave any physical vertical space between the placement of the TMG800 on the equipment rack.

Table 2.1 Tmedia Physical Height

Tmedia Model Number	Vertical Height
TMG800	1U (1.75 inches or 44.45 mm)

## 2.2.3 Mounting the TMG800

The TMG800 is mounted on the 19" equipment rack using the angle brackets and screws provided in the box. To mount the hardware, proceed as follows:

**To mount the TMG800, proceed as follows:**

1. Using two metal screws, attach one angle bracket to the front, left-hand side of the TMG800 when viewed from the front, as shown in figure 2.1 on page 8. Repeat the same for the angle bracket on the right-hand side.
2. Mount the TMG800 on the rack, keeping in mind the space required on the equipment rack for other equipment as described in Section 2.2.2 "Vertical Placement of Tmedia Equipment" on page 7.

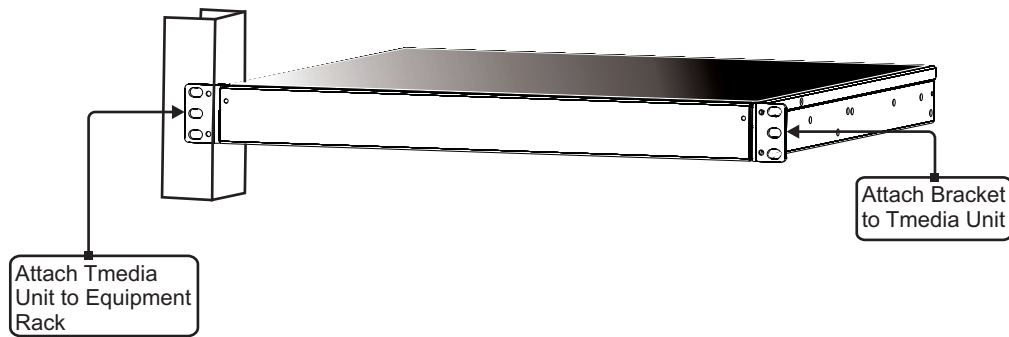


Figure 2.1 Mounting the TMG800

## 2.3 Connecting to the Tmedia Management Interface

The Tmedia Management Interface enables administrators to perform management tasks on the TMG800.

### 2.3.1 Prerequisites

To communicate with the Tmedia Management Interface, the following is needed:

- One CAT5 Ethernet cable with RJ45 male-male terminations.

### 2.3.2 Interconnections

The TMG800 provides a Tmedia Management Interface, using one Gigabit Ethernet network link, as shown in figure 2.2 on page 9.

#### To communicate with the Tmedia Management Interface:

1. Connect the supplied CAT5 Ethernet cable to MGMT0 at the rear of the TMG800.

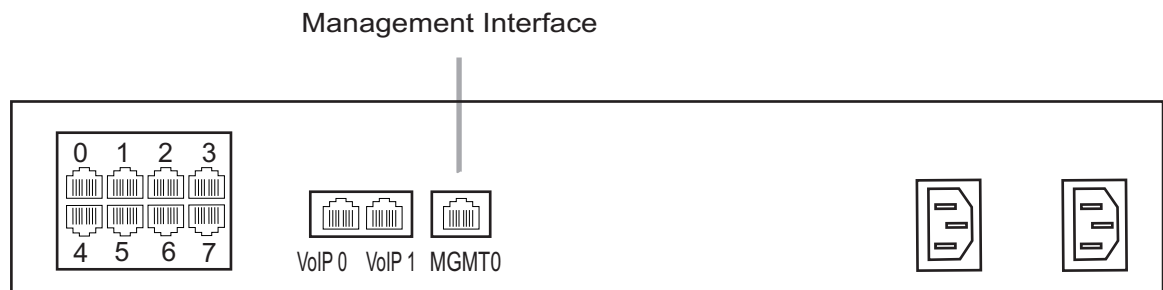


Figure 2.2 Tmedia Management Interface

**Note** The management port is configured using DHCP by default. Refer to Section 5.1 “Connecting to the Serial Port of the TMG800” on page 26, to change the IP address.

## 2.4 Connecting to a VoIP Network

The TMG800 features dual GigE ports for connection to different VoIP networks. This provides an access point to manage VoIP traffic. Should one of the IP networks fail, the TMG800 will continue to manage VoIP traffic using the alternate network.

The IP address of the VoIP ports can be modified using the Web Portal.

---

**Note:**        **Certain configurations of the TMG800 will exceed 100 Mbps, therefore 1000 Mbps is recommended.**

---

### 2.4.1 Prerequisites

To connect the TMG800 to the VoIP network, you will need:

- Gigabit Ethernet switch. A second one is required to support redundancy of the VoIP interface.
- One CAT5 Ethernet cable with RJ45 male-male terminations for each TMG800.
- If your system has access to a second VoIP network, you can connect it to a second VoIP interface of the TMG800 with an RJ45 (male-male) CAT5 Ethernet cable.

### 2.4.2 Connections

The TMG800 is connected to the VoIP network by one or optionally two Ethernet GigE network links, as shown in figure 2.3 on page 10.

**To connect the TMG800 to the VoIP network:**

1. Connect a CAT5 Ethernet cable to VoIP 0 at the rear of the TMG800. Connect the other end of the same CAT5 cable to the Gigabit Ethernet switch.
2. If your system employs a second Gigabit Ethernet switch for redundancy, connect a second CAT5 Ethernet cable to VoIP 1 at the rear of the TMG800. Connect the other end of the same CAT5 cable to the second Gigabit Ethernet switch.

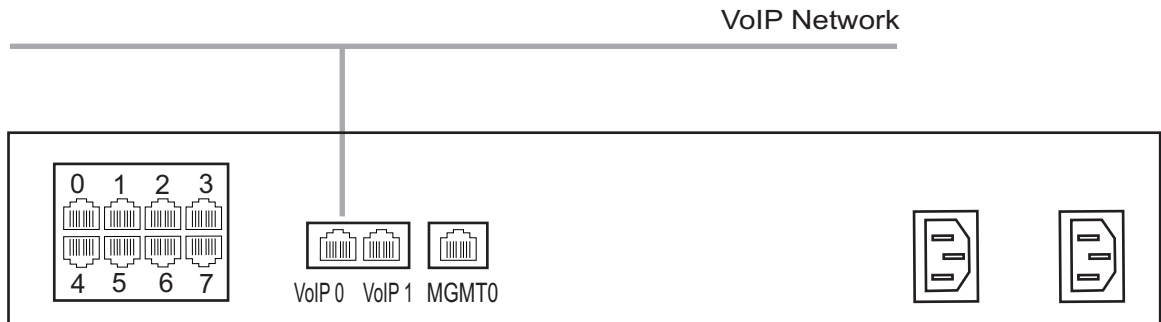


Figure 2.3 Connecting to the VoIP Network



## 2.5 Connecting to the PSTN

The TMG800 features 8 modular 8-conductor RJ48C type jacks for connection to T1/E1/J1 lines. You will need one cable for each (T1/E1/J1) interface on the TMG800. If you are making your own cables, refer to figure 2.5 on page 12 for crossover or straight cable wiring connections.

The termination impedance is set at 100 ohms for T1 lines and 120 ohms for E1 lines. It is possible to connect an external balun in order to convert line impedances to 75 ohms.

---

**Note** All ports may not be active. T1/E1/J1 ports are activated by software license; the number of active ports depends on the licenses purchased.

---

### To connect the TMG800 (RJ48C type) to the PSTN:

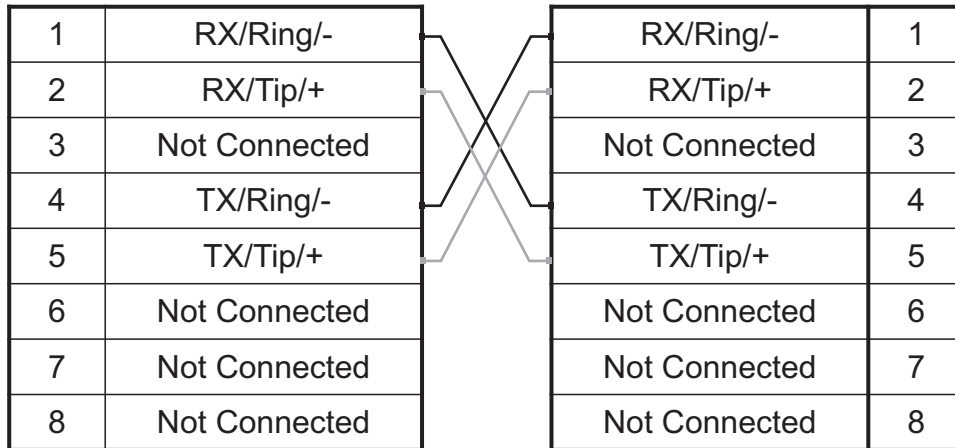
1. Start with port 0 located at the left-most position. Connect one cable between this port and the T1/E1/J1 line (figure 2.4 on page 11).
2. Repeat step 1, using the next available port.



Figure 2.4

8-Port Interface to the PSTN

**RJ 48C (T1/E1/J1) Wiring Schematic: Crossover Cable**



**RJ 48C (T1/E1/J1) Wiring Schematic: Straight Cable**

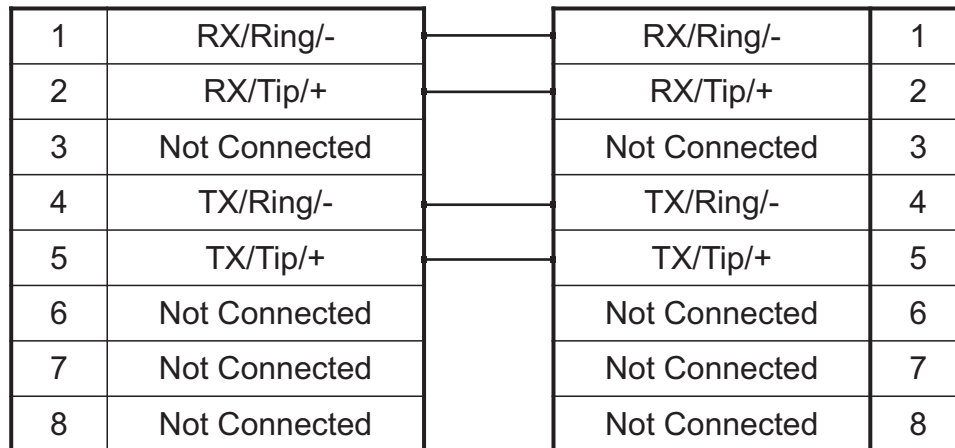


Figure 2.5 RJ48C Wiring Schematic

## 2.6 Powering Up

The TMG800 is furnished with one or optionally two AC or DC power connections. Only once all other equipment installation work has been completed should the TMG800 be powered up.

### 2.6.1 Prerequisites

To power the TMG800, you will need:

- A power source.
- One power cable for the TMG800. Optionally a second power cable is required if the TMG800 is furnished with a secondary power supply.

### 2.6.2 Connecting to AC Power

The TMG800 is furnished with one or optionally two AC power connectors.

**To connect the TMG800 to AC Power:**

1. Connect one AC power cable between the AC connector of the TMG800 and an AC supply. See figure 2.6 on page 14. If the TMG800 features a second AC power connect, use an additional AC power cable to connect it to a power source.

---

**Note** If the TMG800 features a second power supply and it is not connected to an AC power source, the TMG800 will emit an audible alarm. To disable the alarm, make certain that each AC connector of the TMG800 is connected to AC power. See figure 2.6 on page 14.

---

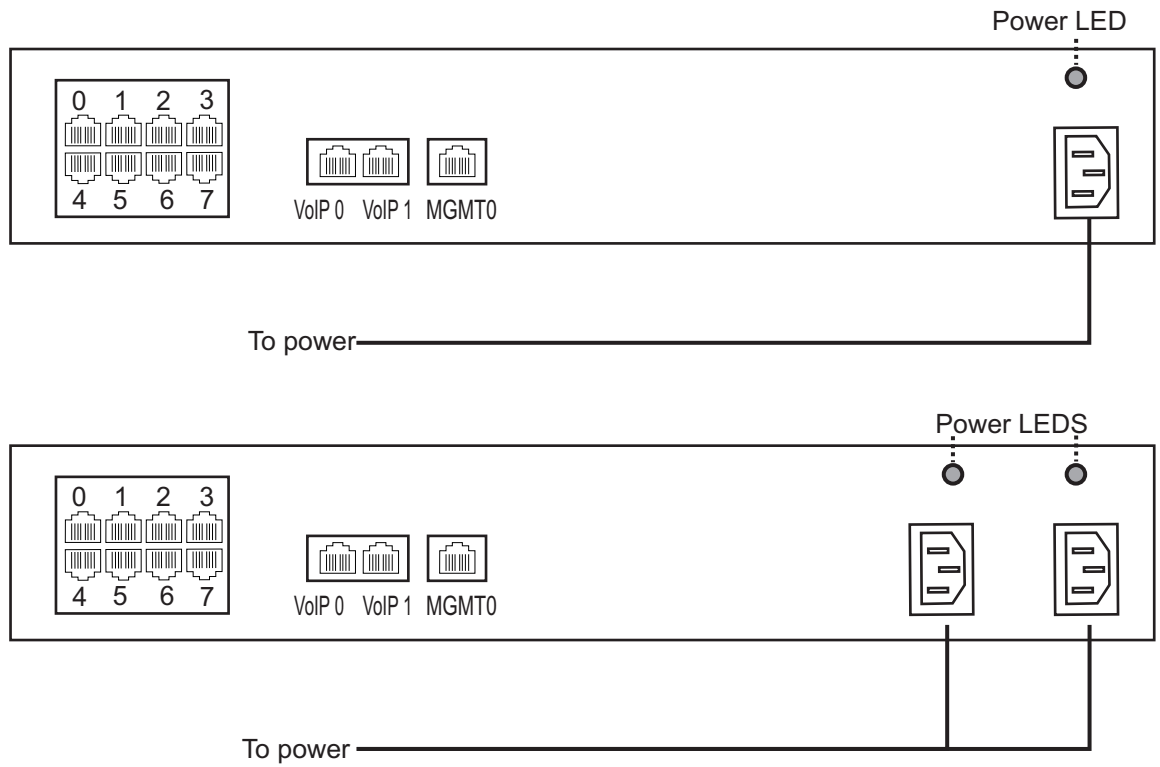


Figure 2.6 AC Power Connection

### 2.6.3 Connecting to DC Power

The TMG800 DC models are furnished with one or optionally two DC power connection ports. In addition, each DC powered TMG800 is supplied with a pair of DC power cables. The connection of DC power is described for:

- Single DC power connection port
- Dual DC power connection port

**To connect a TMG800 with a single DC port to power:**

1. Connect a ground wire to the ground lug located at the rear of the TMG800, as shown in figure 2.7 on page 15.
2. Connect a 14 AWG wire between the positive terminal of a DC power source and the terminal on the TMG800 labelled as  $\overline{+}$ .
3. Connect a 14 AWG wire between the negative terminal of a DC power source and the terminal on the TMG800 labelled as 48V.

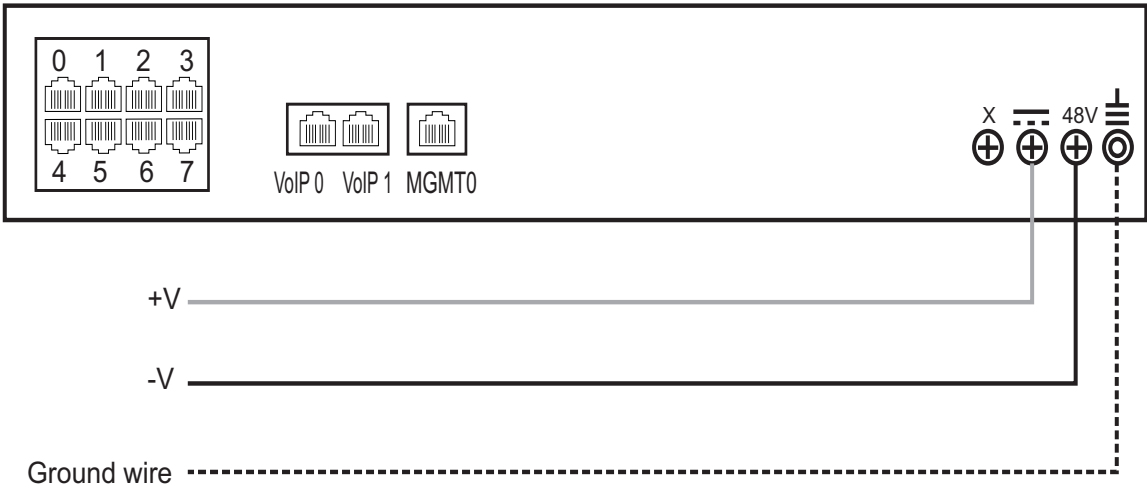


Figure 2.7 TMG800 DC wiring diagram

**To connect a TMG800 with dual DC power ports to power:**

1. Connect one DC cable supplied with the TMG800, as shown in figure 2.8 on page 16, to the DC outlet at the rear of the TMG800.

**Note** Two types of cable with different coloring are available. Refer to figure 2.8 on page 16 for the appropriate wiring information.

2. Connect one lead of the DC power cable to the positive terminal of the DC power source, as shown in figure 2.8 on page 16.
3. Connect the other lead of the DC power cable to the negative side of the DC power source.
4. Repeat steps 1-3 for the second power DC power source.

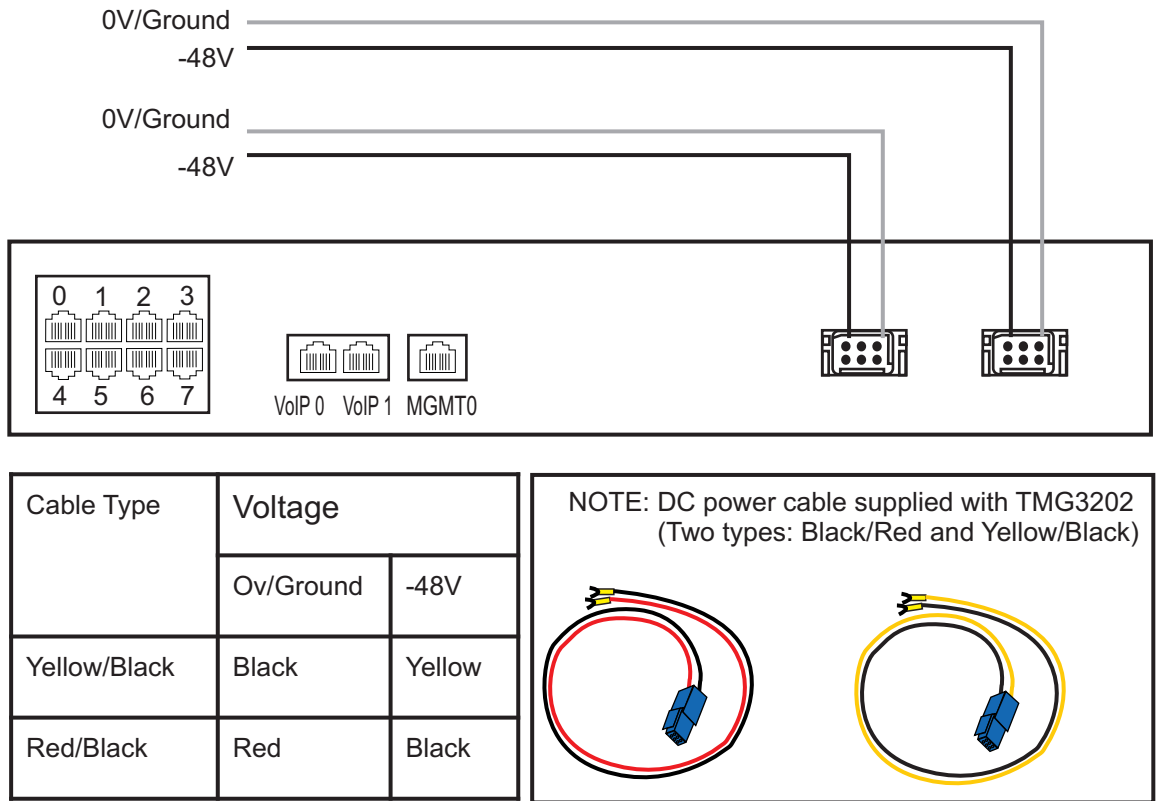






Figure 2.8 TMG800 Redundant DC Supply Wiring Diagram

## 2.6.4 Verifying the LED Status Indications

### Front of Unit

When the TMG800 has been powered, verify the front panel to determine that all indications are normal. See Table 2.2 on page 17.

Table 2.2 Tmedia Unit Displays

LED	Description
	<ul style="list-style-type: none"> <li>Unused</li> </ul>
	<ul style="list-style-type: none"> <li>Off: Not Ready</li> <li>Flashing Red: Unit has failed during the boot up process.</li> <li>Flashing Orange: The unit will shut down in a few minutes.</li> <li>Flashing Green: The unit is performing a boot up.</li> <li>Steady Green: The unit has successfully performed a boot up.</li> </ul>
	<ul style="list-style-type: none"> <li>Off: Unpowered</li> <li>Steady Red: Initial Startup sequence</li> <li>Steady Green: Powered</li> </ul>
	<ul style="list-style-type: none"> <li>Off: No hard drive activity</li> <li>Steady Green: Read/Write activity on the hard drive.</li> </ul>

**Note** An alarm will sound if one of the power supplies is faulty. There is no alarm button to disable the alarm. To stop the alarm, you must remove the faulty power supply.



Figure 2.9 Front display and LEDs

**Note** Pressing the Reset button for 1 second will force the unit into a **graceful** shutdown. This will take a few minutes.

Pressing the reset button for 10 seconds will force the TMG800 into an **ungraceful** shutdown. This method should only be used in extreme cases.





# Chapter 3 Initial System Configuration

This chapter provides the initial procedures that are required in order for you to be able to configure your TMG800.

The following topics are covered:

- Connecting to the TMG800
- Retrieving TMG800 Information
- Changing the TMG800 Management Port IP Address
- Changing the TMG800 Management Port Passwords
- Setting the TMG800 Time Zone
- Configuring the TMG800 Using the Web Portal
- Changing VoIP IP Interface Addresses

### 3.1 Connecting to the TMG800

The TMG800 is shipped with the TMG-CTRL preinstalled. In order to make changes to the system configuration, you must connect the port labelled MGMT0 at the rear of the TMG800 to a terminal.

To access the TMG800, you must use an SSH connection. The password is set at the factory and is indicated on the shipment sheet.

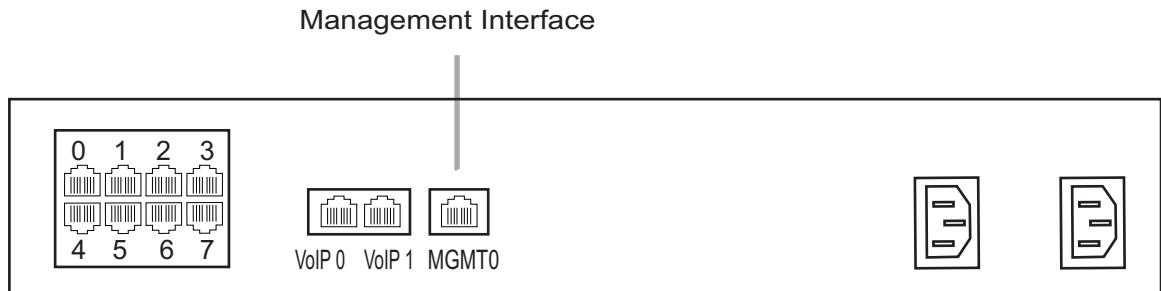


Figure 3.1 Tmedia Management Interface

### 3.2 Retrieving TMG800 Information

The TMG800 enables you to retrieve system information with the following shell commands:

- `tbproduct` (retrieve the Tmedia product type). See [http://docs.telcobridges.com/mediawiki/index.php/TMG:Get\\_Product\\_Type](http://docs.telcobridges.com/mediawiki/index.php/TMG:Get_Product_Type), for further information.
- `tbserial` (retrieve the Tmedia serial number). See [http://docs.telcobridges.com/mediawiki/index.php/TMG:Get\\_Serial\\_Number](http://docs.telcobridges.com/mediawiki/index.php/TMG:Get_Serial_Number), for further information.

### 3.3 Changing the TMG800 Management Port IP Address

The management port of the TMG (labeled MGMT0) is configured using DHCP by default. It is possible to modify it using the following shell script:

- `tbchangeip`. See [http://docs.telcobridges.com/mediawiki/index.php/TMG:Change\\_Management\\_IP\\_Address](http://docs.telcobridges.com/mediawiki/index.php/TMG:Change_Management_IP_Address), for further information.

### 3.4 Changing TMG800 Management Port Passwords

Once logged in to the TMG800, type “passwd”, in order to change the password being used. The following information will be displayed:

```
[root@TB003540 ~]# passwd
Changing password for user root.
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully.
```

## 3.5 Setting the Time Zone

It is possible to modify the time zone of the TMG800 using the *tbtimezone* shell command. For information and examples about changing time zones refer to:

[http://docs.telcobridges.com/mediawiki/index.php/TMG:Change\\_Time\\_Zone](http://docs.telcobridges.com/mediawiki/index.php/TMG:Change_Time_Zone)

## 3.6 Configuring the TMG800 Using the Web Portal

To change the default configuration of the Toolpack system using the Web Portal, follow the steps described in the Web Portal System Configuration Tutorial Guide. This document can be obtained from TelcoBridges TB Wiki at:

[http://docs.telcobridges.com/mediawiki/index.php/Web\\_Portal](http://docs.telcobridges.com/mediawiki/index.php/Web_Portal)

The Web Portal can be accessed with a Web browser. The default url is: `http://[Tmedia MGMT0 IP address]:12358`

The default login information for the Web Portal application is:

- Username: root
- Password: root

## 3.7 Changing VoIP Interface Addresses

The default address of the VoIP interfaces of the TMG800 can be modified. To learn how this is done, refer to the Web Portal tutorial guide on the Telcobridges TB Wiki at:

[http://docs.telcobridges.com/mediawiki/index.php/Change\\_VoIP\\_Interface\\_IP\\_Address](http://docs.telcobridges.com/mediawiki/index.php/Change_VoIP_Interface_IP_Address)



# Chapter 4 System Upgrades

Refer to the TMG800 Installation guide for information about system upgrades at:

[http://docs.telcobridges.com/mediawiki/index.php/Upgrading\\_Toolpack](http://docs.telcobridges.com/mediawiki/index.php/Upgrading_Toolpack)

## 4.1 Installing a New License

In order to install a new license on a Tmedia system, follow the steps described at the following link:

[http://docs.telcobridges.com/mediawiki/index.php/Add/Change\\_Licenses](http://docs.telcobridges.com/mediawiki/index.php/Add/Change_Licenses)

---

**Note:** A license upgrade may require an interruption of service. A time extension of a temporary license will not cause a service interruption, however changing features will.

---



# Chapter 5 Troubleshooting Tools

This chapter provides guidance in what actions to take when encountering system problems prior to contacting TelcoBridges Customer Support.

The following topics are covered:

- Connecting to the Serial Port of the TMG800
- Configuring the Terminal Emulator Application
- Reporting a Problem
- Preparing Your Setup Information
- TbDebug Debug Dump Files
- Application Logs
- Backdoor Tools
- tbsigtrace Signaling Traces

## 5.1 Connecting to the Serial Port of the TMG800

The serial port interface enables administrators to perform management tasks on the TMG800.

### To connect to the serial port of a Tmedia unit:

1. Connect a RJ45 CAT5 straight cable (supplied with unit) between the com port of your computer and the serial port (labelled I0I0I) of the TMG800 as shown in figure 5.1 on page 26. See figure 5.3 on page 27 for a RJ-45 pinout description.
2. If your computer's serial port features a DB9 connector, use the DB9 to RJ45 adapter supplied with your Tmedia unit. If your computer's serial port features a USB connector, you will need to provide a USB to DB9 adaptor. Refer to figure 5.2 on page 26.

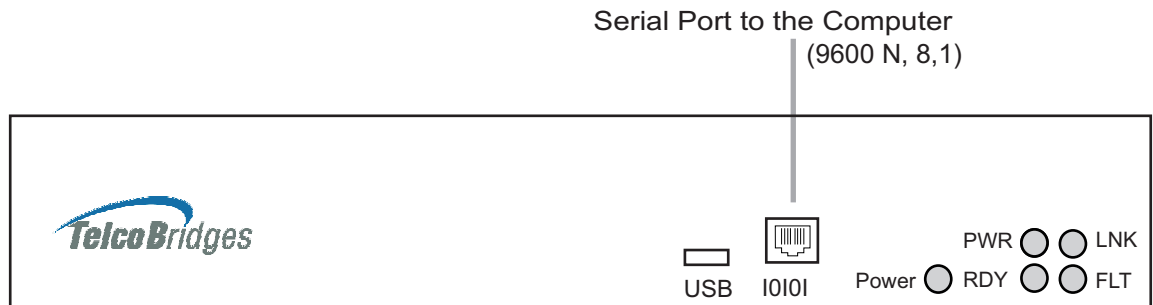


Figure 5.1 Computer to TMG800 Serial Port Connection

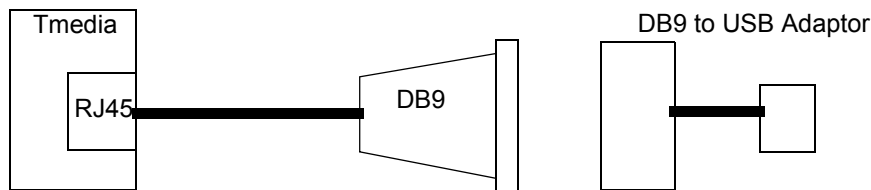


Figure 5.2 Conceptual View of a Serial Connection from the TMG800 to a Computer



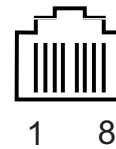
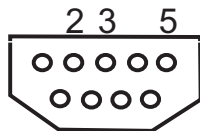
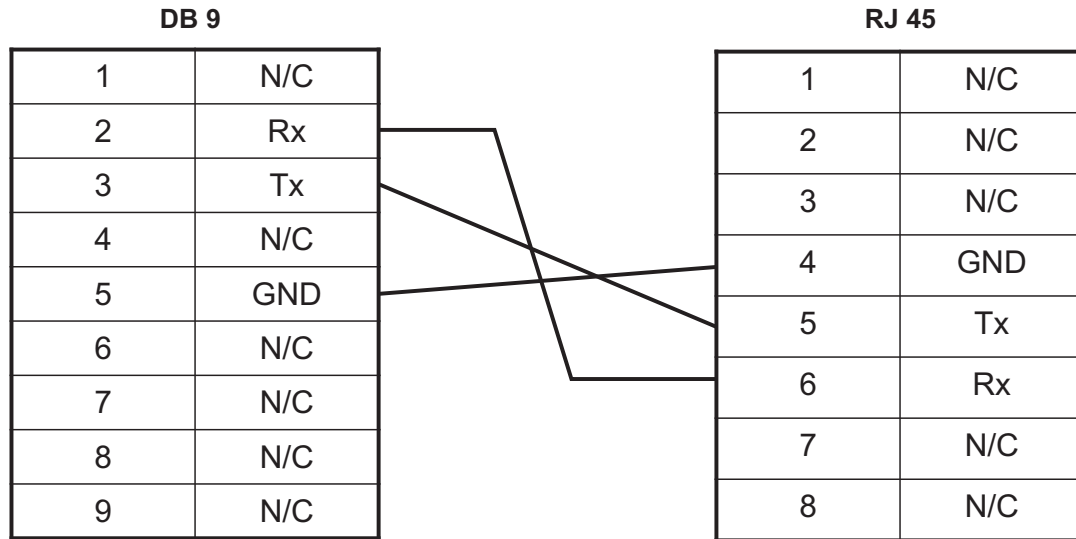


Figure 5.3 Console pinout

## 5.2 Configuring the Terminal Emulator Application

Before communicating with the Tmedia Management Interface, you must first configure a terminal emulator or console application to communicate with the TMG800 in order to configure initial settings. Available terminal emulation software includes:

- HyperTerminal
- Putty
- Minicom

**To configure the terminal emulator application:**

1. Set the baud rate (bits per second) to **9600**
2. Set the data rate to **8 bits**
3. Set the parity to **None**
4. Set the stop bits to **1**
5. Set the flow control to **None**

## 5.3 Reporting a Problem

TelcoBridges has developed extensive tools to gather information about a Tmedia system to solve problems quickly. Users **MUST** gather all related logs before reporting a problem to TelcoBridges Support via Email or MSN. Various logging methods are described in the following sections.

Once information is gathered and sent to the TelcoBridges Support group ([support@telcobridges.com](mailto:support@telcobridges.com)), the Support group will assign a tracking number to the problem. All follow-up correspondence, whether it be by E-mail, MSN, or phone call must refer to the tracking number which the problem has been assigned.

## 5.4 Setup Information

The setup information must include:

- Physical connections. If necessary, describe it in a network diagram.
- Specifying that your product is a TMG800.
- Telecommunication connectivity diagram (for example: E1/T1/J1, DS3, STM-1/OC-3, VoIP Ethernet switch, etc)
- Remote access to system (SSH, VPN, VNC, Remote desktop, etc.)
- For a signaling-related problem, specify which side is initiating the call

## 5.5 Tbdebug Dump Files (Mandatory)

The tbdebug copies information about Telcobridges libraries and TMG800 into log files. This includes the software release running on the host, the firmware release running on the TMG800, and other TMG800 information, such as: available features, configuration, and status information.

The tbdebug files must be sent when a problem is reported. If the problem is reproducible, the tbdebug dump files are verified before and after the problem is reproduced. This will aid in identifying the problem quickly.

For further information about Tbdebug, refer to Telcobridges TB Wiki at:

[http://docs.telcobridges.com/mediawiki/index.php/Toolpack\\_Debug\\_Application:Tbdebug](http://docs.telcobridges.com/mediawiki/index.php/Toolpack_Debug_Application:Tbdebug)

## 5.6 Application Logs

All Toolpack applications will produce logs. The trace level can be set to vary the amount of logs that are received from the system. Trace level 0 is the most verbose and 4 is the least. Important errors are always logged. To learn about:

- Application logs, see:  
[http://docs.telcobridges.com/mediawiki/index.php/Web\\_Portal\\_Sections:Logs](http://docs.telcobridges.com/mediawiki/index.php/Web_Portal_Sections:Logs)
- Database backups, see:  
[http://docs.telcobridges.com/mediawiki/index.php/Web\\_Portal\\_Sections:Backups](http://docs.telcobridges.com/mediawiki/index.php/Web_Portal_Sections:Backups)

---

**Note** This data is collected by tbdegub.

---

## 5.7 Backdoor Tools

A number of backdoor tools are available as follows:

- `tbx_cli_tools_remote`
- `tbshowls`
- VoIP Traffic Capture
- Wireshark
- `tbstreamlisten`
- Stream server audio packets to wave file
- `tbsigtrace`

### 5.7.1 `tbx_cli_tools_remote`

The `tbx_cli_tools_remote` tool can be used to get the text-based GUI control of TB applications like `Toolpack_Engine`, `Toolpack_sys_manager`, `tbstreamserver`, and others which are run in background.

For further information about `tbx_cli_tools`, refer to Telcobridges TB Wiki at:

[http://docs.telcobridges.com/mediawiki/index.php/Toolpack\\_Application:tbx\\_cli\\_tools\\_remote](http://docs.telcobridges.com/mediawiki/index.php/Toolpack_Application:tbx_cli_tools_remote)

## 5.7.2 Line/Trunk Status (Tbshowls)

```
tbshowls (/tb/bin/release/[OS version]/)
```

tbshowls can be used to show trunk alarm and performance counters. The tool will check the trunk status periodically to show the most updated trunk status. Users can use the up/down/left/right arrow keys to show the performance data on different trunks. Use a-s-d-x to scroll and view other lines services.

Options 'G' and 'S' enable you to get and set the trunk interface parameters.

Option 'R' can be used to reset the performance counter value to zero.

It is also possible to allocate all line interfaces in different configurations. This is useful for DS3 and OC3/STM-1 configurations, in order to help users understand the configuration.

---

**Note** Trunk status and alarms can be viewed from the *Status* menus of the Web Portal.

---

## 5.7.3 VoIP Traffic Capture

When troubleshooting VoIP related issues, it is possible to use VoIP port mirroring to capture all incoming and outgoing network packets from a VoIP network interface using the other VoIP interface. A direct physical connection can be established with a host's Gigabit Ethernet interface and the other VoIP interface of the TMG800. Wireshark or tcpdump is used on the host to capture network packets.

**To capture VoIP Traffic from VoIP0 using VoIP1, do the following:**

1. Connect the VoIP1 interface to the Ethernet port of a server
2. Connect to the telecom platform
  - 2a. Using telnet, for example: [root@TB005375 ]# telnet 172.31.1.1  
or
  - 2b. Using minicom, for example: [root@TB005375 ]# minicom
3. Enter the following command:

```
voipnetworkcapture <traffic><inPort>
traffic: EGRESS|INGRESS|FULL|NONE
inPort: VOIP0|VOIP1 (outPort is the other one)
```

4. Start pcap capture on the server Ethernet port (either wireshark or tcpdump)
5. To stop the tracing:

```
mv88eMonitor 0 0 1
```

## 5.7.4 Network Analysis Tools

The following network analysis tools may be used:

- Wireshark
- tcpdump

### 5.7.4.1 Wireshark (formerly called Ethereal)

Wireshark is useful for capturing both VoIP traffic as well as IP-based protocol packets

This program is available at this site: [www.wireshark.org](http://www.wireshark.org)

### 5.7.4.2 tcpdump

tcpdump is a packet analyzer for Linux systems. This tool is available using your Linux distribution package manager.

This program is available at this site: [www.tcpdump.org](http://www.tcpdump.org)

## 5.7.5 Tbstreamlisten

```
tb\apps\tbstreamlisten\release\[OS version]
```

This allows the recording of the raw data from a TDM stream. Please ask customer support for instructions regarding this function.

## 5.7.6 Stream Server Audio Packets to Wave File

It is possible to capture all audio packets transmitted to and from the Stream Server and to convert them into wave files for analysis. You can use Wireshark or tcpdump on the server running the tbstreamserver application.

The conversion tool, streamserver\_pkt\_to\_wav can be found at the following location:

```
/tb/bin/release/[OS version].
```

## 5.7.7 tbsigtrace Signaling Traces

The tbsigtrace program is a tool used to capture TDM-based (SS7, ISDN, CAS) and IP-based (SIP, SIGTRAN, H.248/MEGACO) protocols packets.

---

**Note** This application can be started using the Web Portal. For further information, refer to the TelcoBridges TB Wiki at:  
[http://docs.telcobridges.com/mediawiki/index.php/Toolpack\\_Debug\\_Application:Tbsigtrace](http://docs.telcobridges.com/mediawiki/index.php/Toolpack_Debug_Application:Tbsigtrace)

---