DHG535

digital | **BROADBAND**

DATA & VOICE GATEWAY

THOMSON

Important Information

C€

NORTH AMERICAN CABLE INSTALLER:

This reminder is provided to call your attention to Article 820-40 of the National Electrical Code (Section 54 of the Canadian Electrical Code, Part 1) which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building as close to the point of cable entry as practical.

PacketCable and DOCSIS compliant

The RCA DHG535 is a residential gateway product, which provides broadband Internet access and telephone capability all in one unit!   Also referred to as an Embedded Media Terminal Adapter (EMTA), this residential gateway connects to cable systems using DOCSIS and PacketCable standards. (Check with your cable operator for compatibility.)

The RCA DHG535 offers a high-speed connection to the Internet using a USB or Ethernet connection.

If you have subscribed to telephone service from your cable operator, then you will be able to place regular phone calls using your home phone(s) and/or fax machine. The RCA DHG535 provides two RJ-11 connectors for your phone or home phone system, allowing one or two line service.

Operating Information

Operating Temperature:	0˚ – 40˚ C	(32˚ – 104˚ F)
Storage Temperature:	–20˚ to 70˚ C	(–4°F to 158°F)
Humidity:	up to 90% non-condensing	

If you purchased this product at a retail outlet, please read the following:

Product Information

Keep your sales receipt to obtain warranty parts and service and for proof of purchase. Attach it here and record the serial and model numbers in case you need them. The numbers are located on the back of the product.

Model No. _____Serial No _____

Purchase Date: _____Dealer/Address/Phone: _____

Chapter 1: Connections and Setup

Chapter 1: Connections and Setup

Introduction

EMTA Features

- CableLabs DOCSIS 1.0/1.1/2.0 and PacketCable 1.0/1.1 Standard Compliant

- Support Multiple Provisioning Mode

- Support PacketCable NCS 1.0 MGCP1.0 (Media Gateway Control Protocol)

- Standard RJ-45 connector for 10/100BaseT Ethernet with auto-negotiation and MDIS functions

- USB Connector for USB interface

- Two RJ-11 Foreign Exchange Station (FXS) ports for IP telephony

- Support simultaneous voice and data communications

- Two simultaneous voice conversations in the different FXS ports with different CODEC: PCM A-law, PCM -law, G.723.1, G.729, G.729a, G.729e, G.728, G.726, BV16 and BV32.

- Echo Cancellation

- Voice Active Detection (VAD)

- DTMF detection and generation

- Comfort Noise Generation (CNG)

- Support V.90 fax and modem services

- Transparent bridging for IP traffic

- RSA and 56 bit DES data encryption security

- SNMP network management support

- Remote operating firmware downloading

- Support Web pages and private DHCP server for status monitoring

- Clear LED display

- Plug and Play

- Support maximum two battery packs (Optional)

Illustrations contained in this document are for representation only.

Chapter 1: Connections and Setup

What's on the CD-ROM

Insert the EMTA CD-ROM into your CD-ROM drive to view troubleshooting tips, the internal diagnostics, and other valuable information.

Note: You might need to use the CD-ROM to install the USB driver if you are connecting via the USB port.

CD-ROM Contents:

- Electronic copy of this user's guide in additional languages (PDF format)

- Adobe Acrobat Reader — application you can load to read PDF format, if you don't have it loaded already

- USB drivers — required if connecting by USB

- Links to Thomson and RCA web sites

DOCSIS and PacketCable are trademarks of Cable Television Laboratories, Inc.

Chapter 1: Connections and Setup

Computer Requirements

For the best possible performance from your EMTA, your personal computer must meet the following minimum system requirements (note that the minimum requirements may vary by cable companies):

	IBM PC COMPATIBLE	MACINTOSH**
CPU	Pentium preferred	PowerPC or higher
System RAM	16MB (32MB preferred)	24MB (32MB preferred)
Operating System	Windows* NT/2000/Me/XP, Linux	Mac OS** 7.6.1 or higher
Available Disk Space	125MB	50MB
Sound Card	Required for audio on CD-ROM	N/A
Video	VGA or better (SVGA preferred)	VGA or better (SVGA built-in preferred)
CD-ROM Drive	Required	Required
Ethernet	10BaseT or 100BaseT	10BaseT or 100BaseT
	An Ethernet card makes it possible for your computer to pass data to and from the internet. You must have an Ethernet card and software drivers installed in your computer. You will also need a standard Ethernet cable to connect the Ethernet card to your EMTA	
USB Port	USB (Windows 2000/ME/XP only)	
	The Universal Serial Bus is a high speed bus that enables your computer to communicate simultaneously with a variety of peripherals. However, if you have other peripherals that send and receive a lot of information, such as speakers, printers or scanners, we recommend using an Ethernet card to support this modem.	
Software	• A TCP/IP network protocol for each machine • Microsoft Internet Explorer 4.0 or later or Netscape Navigator 4.0 or later. (5.0 and 4.7 or later, respectively, are strongly recommended.)	

*Windows is a trademark of Microsoft Corporation.

**Macintosh and the Mac OS are trademarks of Apple Computer, Inc.

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Chapter 1: Connections and Setup

Wall Mounting

The number of the screw: 2 pcs

Direction for wall mounting: LED panel upward.

Dimension for the screw: TBD

There are 4 slots on the underside of the EMTA that can be used for wall mounting.

Note: When wall mounting the unit, ensure that it is within reach of the power outlet.

You will need 2 suitable screws which screw diameter would be 4.4 mm to wall mount the Cable Modem or the Battery Pack. Two different wall mount directions could be chosen for the Battery Pack.
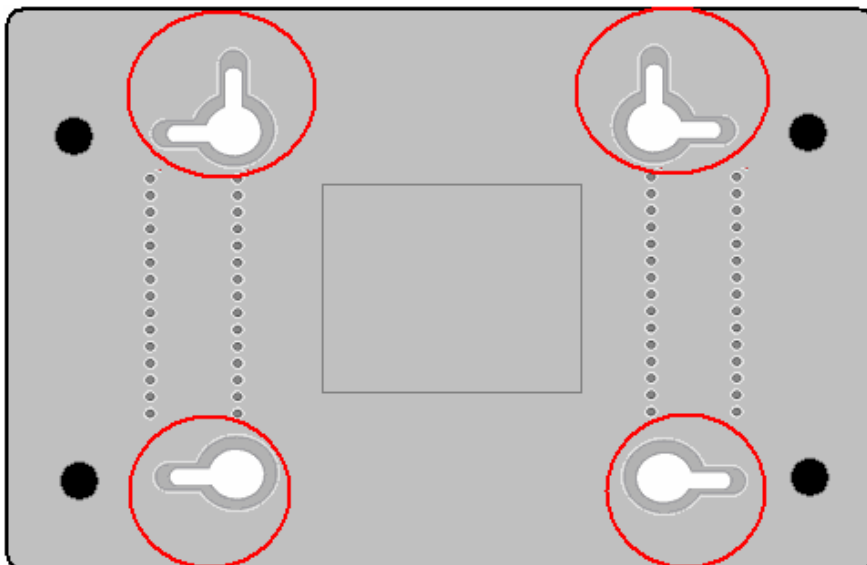

To do this:

1. Ensure that the wall you use is smooth, flat, dry and sturdy and use the 4 screw holes which are 101.6 mm apart from each other.

2. Fix the screws into wall, leaving their heads 3 mm (0.12 inch) clear of the wall surface.

3. Remove any connections to the unit and locate it over the screw heads.   When in line, gently push the unit on to the wall and move it downwards to secure.

Chapter 1: Connections and Setup

Overview

Front Panel

The following illustration shows the front panel:
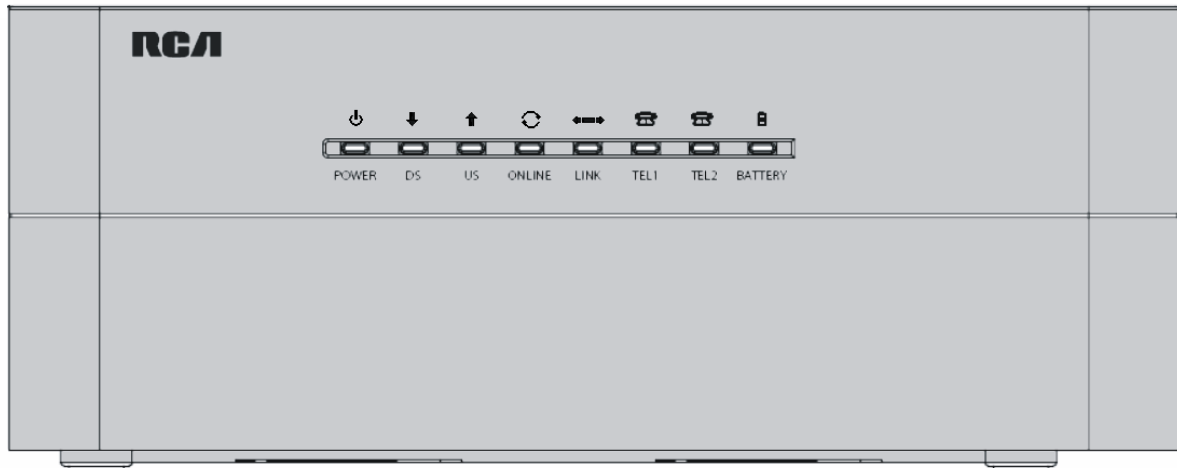
The LEDs on the front panel are described in the table below (from left to right):

DHG535	Power	Internet			Link	Tel 1	Tel 2	Battery	Description
		DS	US	Online					
Boot-up Operation	ON	ON	ON	ON	ON	ON	ON	X	Power on 0.25 sec
	ON	0.25 second							
	ON	FLASH	FLASH	FLASH	X	X	X	X	From power ON to system initialization complete
	ON	ON	ON	ON	X	X	X	X	Following system initialization complete to (before) DS scanning
		1 second							
DOCSIS Start-up Operation	ON	FLASH	OFF	OFF	X	X	X	X	During DS scanning and acquiring SYNC
	ON	ON	FLASH	OFF	X	X	X	X	From SYNC completed, receiving UCD to ranging completed
	ON	ON	ON	FLASH	X	X	X	X	During DHCP, configuration file download, registration, and Baseline Privacy initialization
	ON	ON	ON	ON	X	X	X	X	Operational (NACO=ON)
	ON	FLASH	FLASH	OFF	X	X	X	X	Operational (NACO=OFF)
MTA initialization	ON	ON	ON	ON	X	FLASH	OFF	OFF	MTA DHCP
	ON	ON	ON	ON	X	OFF	FLASH	OFF	MTA SNMP/TFTP
	ON	ON	ON	ON	X	FLASH	FLASH	OFF	RSIP
CPE Operation	ON	X	X	X	OFF / ON / FLASH	X	X	X	No Ethernet Link / Ethernet Link / TX/RX Ethernet Traffic
	ON	X	X	X	OFF / ON / FLASH	X	X	X	No USB Link / USB Link / TX/RX USB Traffic
AC Good Battery Good	ON	<CM Normal Operation>				ON	ON	ON	Both Lines On-Hook
	ON					FLASH	ON		Tel1 Off-hook, Tel2 On-hook
	ON					ON	FLASH		Tel1 On-hook, Tel2 Off-hook
	ON					FLASH	FLASH		Both Lines Off-Hook
AC Good Battery Low	ON	<CM Normal Operation>				ON	ON	FLASH	Both Lines On-Hook
	ON					FLASH	ON		Tel1 Off-hook, Tel2 On-hook
	ON					ON	FLASH		Tel1 On-hook, Tel2 Off-hook
	ON					FLASH	FLASH		Both Lines Off-Hook
AC Good Battery Bad	ON	<CM Normal Operation>				ON	ON	OFF	Both Lines On-Hook
	ON					FLASH	ON		Tel1 Off-hook, Tel2 On-hook
	ON					ON	FLASH		Tel1 On-hook, Tel2 Off-hook
	ON					FLASH	FLASH		Both Lines Off-Hook

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Chapter 1: Connections and Setup

DHG535	Power	Internet			Link	Tel 1	Tel 2	Battery	Description
		DS	US	Online					
AC Fail Battery Good	FLASH	OFF				ON	OFF	OFF	Both Lines On-Hook
						FLASH			Tel1 Off-hook, Tel2 On-hook
						ON			Tel1 On-hook, Tel2 Off-hook
						FLASH			Both Lines Off-Hook
AC Fail Battery Low						ON		FLASH	Both Lines On-Hook
						FLASH			Tel1 Off-hook, Tel2 On-hook
						ON			Tel1 On-hook, Tel2 Off-hook
						FLASH			Both Lines Off-Hook
AC Fail Battery Bad	< All LEDs may be unlit due to lack of battery power>							OFF	Both Lines On-Hook
									Tel1 Off-hook, Tel2 On-hook
									Tel1 On-hook, Tel2 Off-hook
									Both Lines Off-Hook
SW Download Operation	ON	FLASH	FLASH	ON	X	X	X	X	A software download and while updating the FLASH memory

## Rear Panel
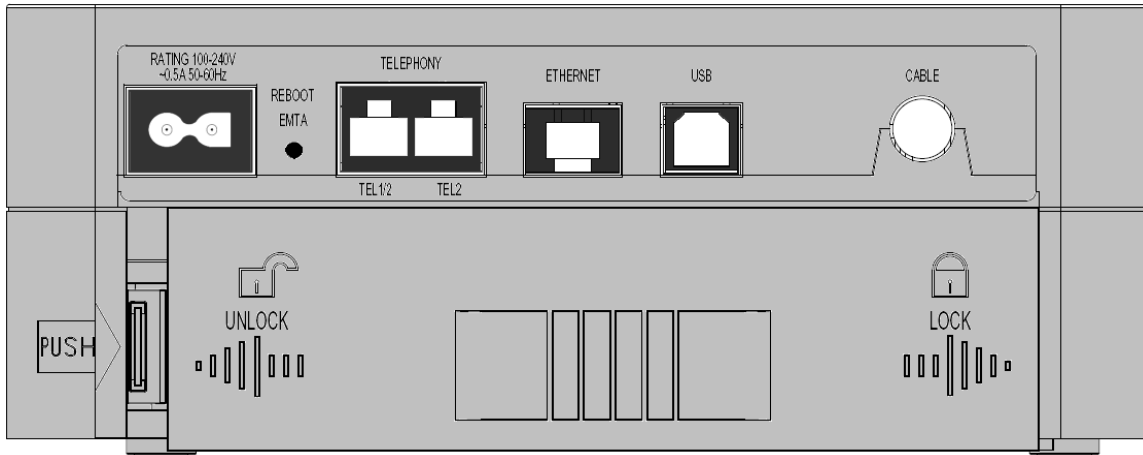
| Connector	Description
15VDC	Power connector
REBOOT EMTA	Reset EMTA
TEL 1/2 and TEL 2	RJ-11 Phone set connector
ETHERNET	Ethernet 10/100BaseT RJ-45 connector
USB	USB Connector
CABLE	F-Connector

Installing the Battery

This section provides information on installing batteries into the EMTA. Follow the steps below:

1. Ensure the power cord is unplugged.

2. Remove the battery cover on the rear panel. There are two battery compartments. You may install a single battery into either compartment.
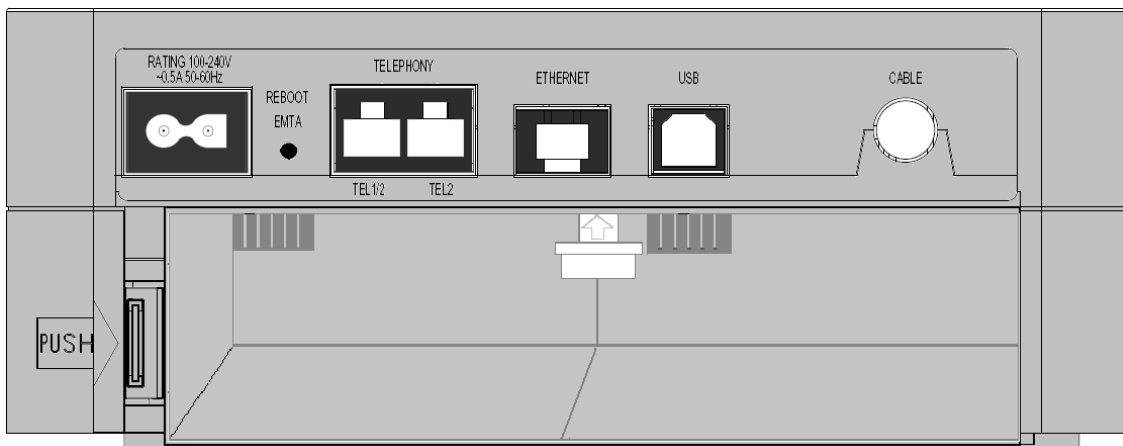
Chapter 1: Connections and Setup

3. Insert the battery into one of the rear battery compartments, as shown below.

RATING 100-240V
~0.5A 50-60Hz

REBOOT
EMTA

TELEPHONY

ETHERNET

USB

CABLE

TEL1/2   TEL2

PUSH
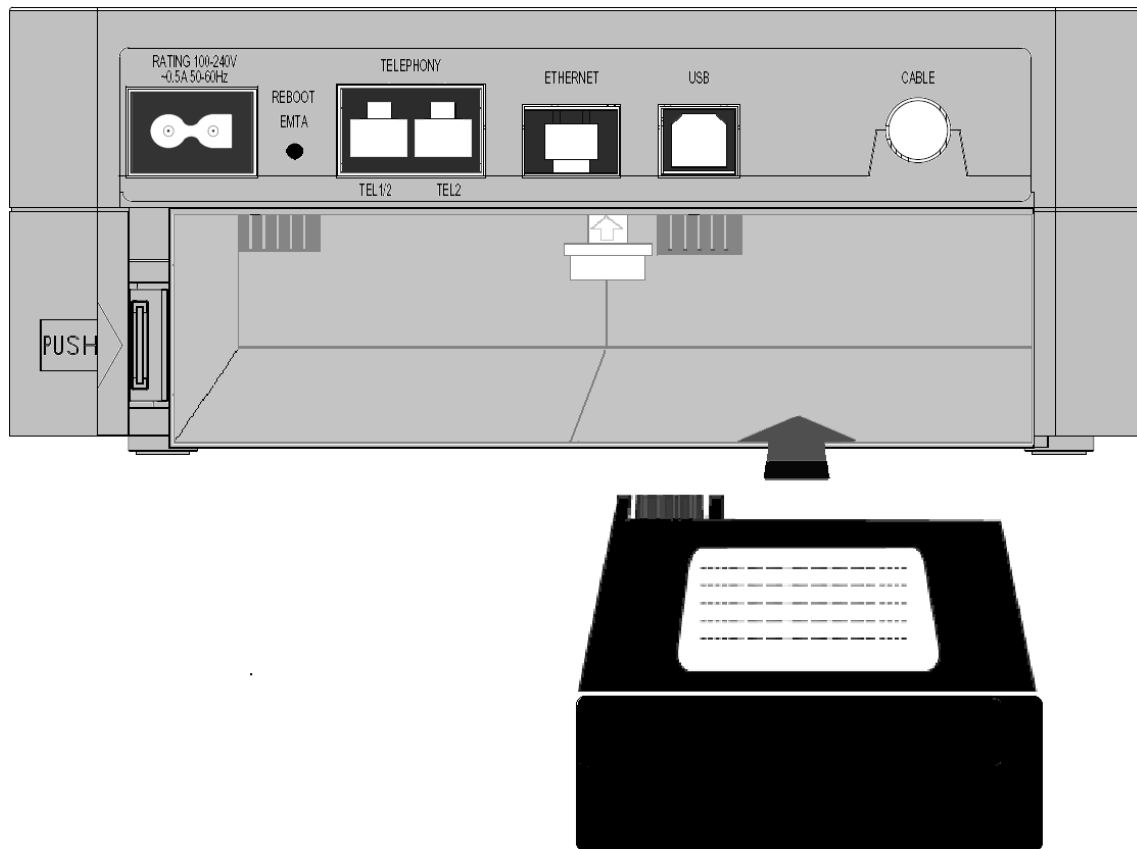
4. Reattach the battery cover.

5. Plug the power cord into an AC-recepticle that is always ON (non-switchable). It's best to secure the plug to the wall plate using an extended wall plate screw. The battery will fully charge within 4 hours.

Relationship among the Devices

This illustration shows a cable company that offers DOCSIS- and PacketCable-compliant voice/data services.

EMTA Gateway

Cable Company
(Internet Service Provider)

Internet

Computer, Phone, and Fax
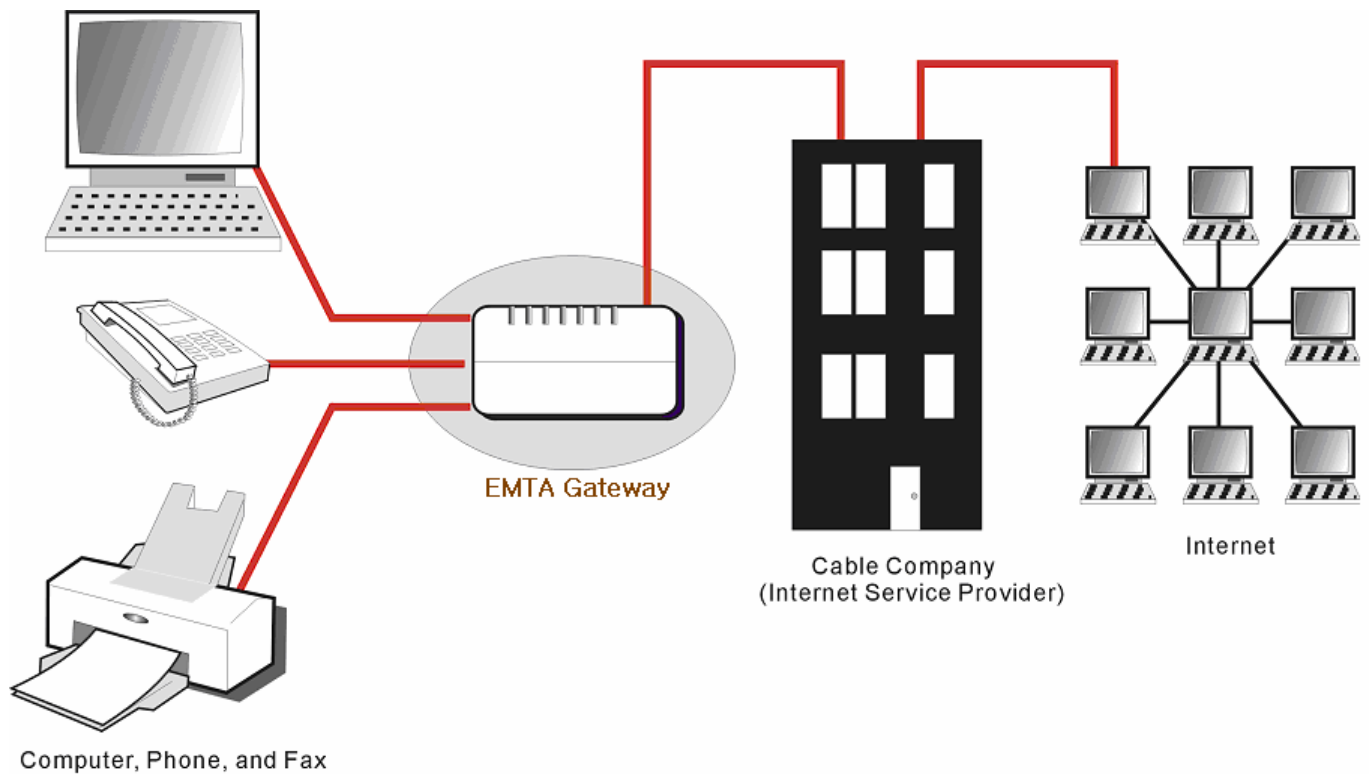
What the EMTA Does

The EMTA provides high-speed Internet access as well as cost-effective, toll-quality telephone voice and fax/modem services over residential, commercial, and education subscribers on public and private networks via an existing CATV infrastructure. It can inter-operate with the PacketCable compliant headend equipment and provide the IP-based voice communications. The IP traffic can transfer between the EMTA and DOCSIS compliant headend equipment. The data security secures upstream and downstream communications.

What the EMTA Needs to Do Its Job

☐ **The Right Cable Company:** Make sure your local cable company provides data services that use cable TV industry-standard Euro-DOCSIS or DOCSIS-compliant and Euro-PacketCable or PacketCable-compliant technology.

Chapter 1: Connections and Setup

☐ **The Internet/Telephony Service Provider (ISP/TSP):** Your cable company provides you access to an Internet Service Provider (ISP) and Telephony Service Provider (TSP). The ISP is your EMTA to the Internet and provides you with a pipeline to access Internet content on the World Wide Web (WWW). The TSP provides you with telephony access to other modems or other telephony services over the Public Switched Telephone Network (PSTN).

Check with your cable company to make sure you have everything you need to begin; they'll know if you need to install special software or re-configure your computer to make your cable internet service work for you.

Contact Your Local Cable Company

You will need to contact your cable company to establish an Internet account before you can use your EMTA. You should have the following information ready (which you will find on the sticker on the EMTA):

- The serial number

- The model number

- The Cable Modem (CM) Media Access Control (MAC) address

- The Terminal Adapter (EMTA) MAC address

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Chapter 1: Connections and Setup

Please verify the following with the cable company

■ The cable service to your home supports Euro-DOCSIS or DOCSIS compliant two-way modem access.

■ Your internet account has been set up. (The Media Terminal Adapter will provide data service if the cable account is set up but no telephony service is available.)

■ You have a cable outlet near your PC and it is ready for Cable Modem service.

Note: It is important to supply power to the modem at all times. Keeping your modem plugged in will keep it connected to the Internet. This means that it will always be ready whenever you need.

Important Information

Your cable company should always be consulted before installing a new cable outlet. Do not attempt any rewiring without contacting your cable company first.

Illustrations contained in this document are for representation only.

Chapter 1: Connections and Setup

Connecting the EMTA to a Single Computer

This section of the manual explains how to connect your EMTA to the USB or Ethernet port on your computer and install the necessary software.   Please refer to Figure 1 to help you connect your Digital Cable Modem for the best possible connection.

Attaching the Cable TV Wire to the EMTA

1. Locate the Cable TV wire. You may find it one of three ways:

   a. Connected directly to a TV, a Cable TV converter box, or VCR. The line will be connected to the jack which should be labeled either IN, CABLE IN, CATV, CATV IN, etc.

   b. Connected to a wall-mounted cable outlet.

   c. Coming out from under a baseboard heater or other location. See Figure 1 for the wiring example.

Notes: For optimum performance, be sure to connect your EMTA to the first point the cable enters your home. The splitter must be rated for at least 1GHz.
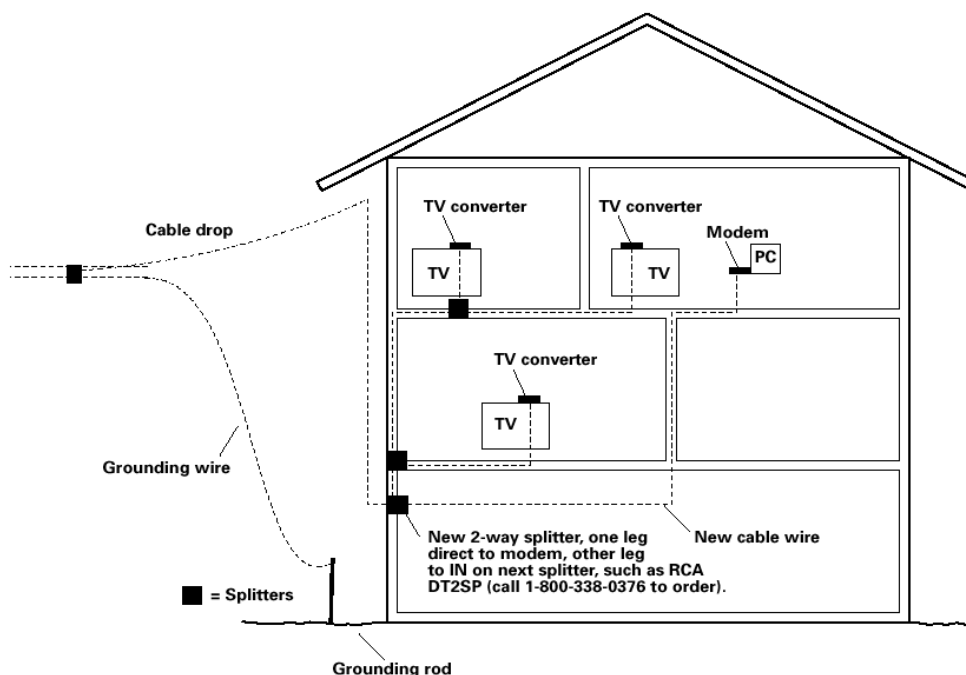
Fig. 1:   Basic Home Wiring

Chapter 1: Connections and Setup

Important Connection Information

The EMTA supports Ethernet and USB connections simultaneously.

Below are important points to remember before you connect the EMTA.

☐ For USB connections, follow the instructions on this page.

☐ For Ethernet connections, go to page 21.

☐ For telephone and fax connections, go to page 23.
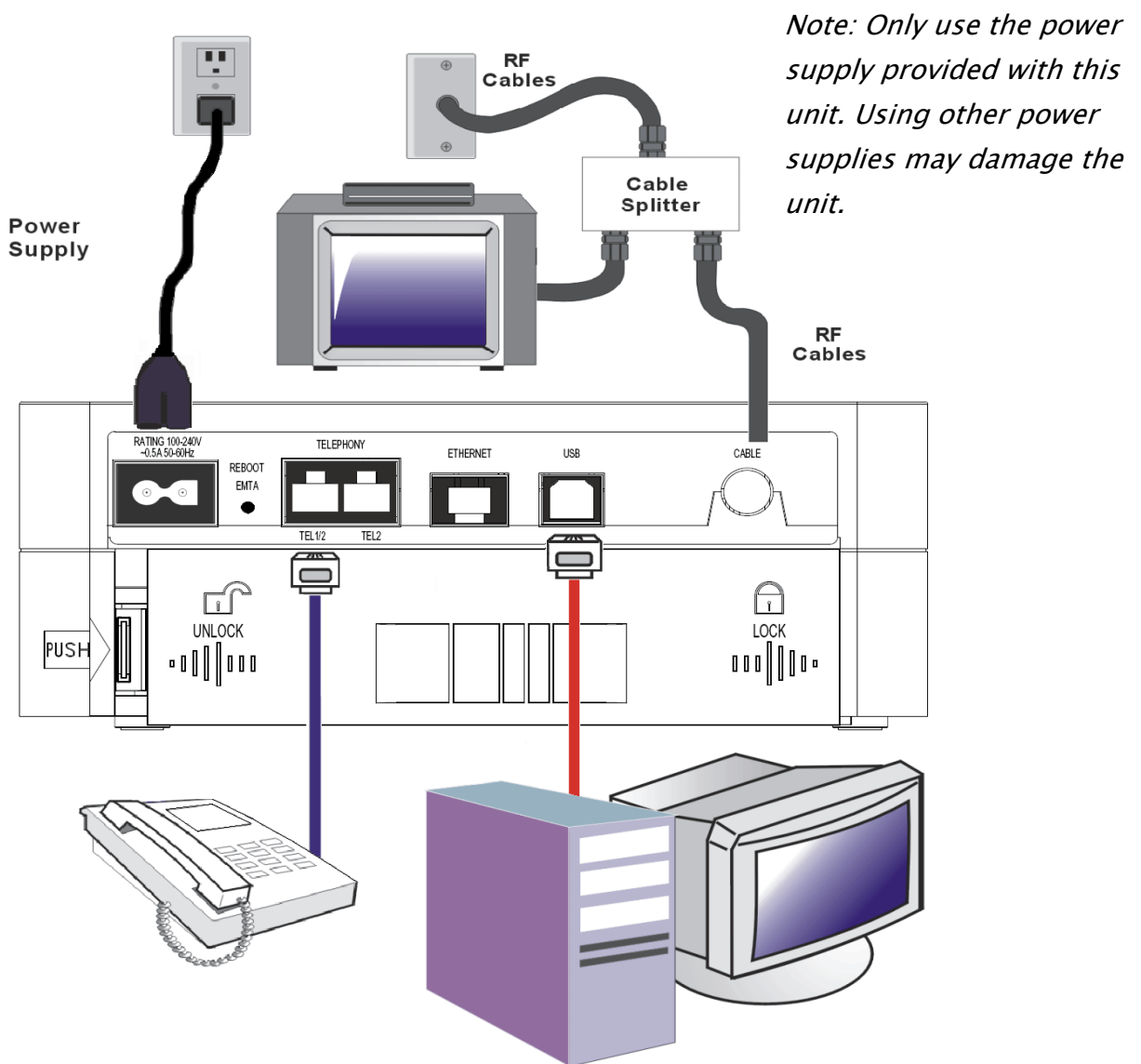
USB Connection to One Computer

Note: Only use the power supply provided with this unit. Using other power supplies may damage the unit.

Fig. 2: USB Connection

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Chapter 1: Connections and Setup

If you received an Installation/Quick Start kit with the purchase of your modem, you should use the software provided in that kit. If not, the EMTA CD included with your modem contains the drivers and other information you need to install your EMTA.

USB Connection

If you do not want to use the CD-ROM, follow instructions 1 through 5 to connect the EMTA to the USB port on your computer. **Instructions must be followed in the order they appear.**

1. Connect one end of the coaxial cable to the cable connection on the wall, and the other end to the CABLE jack on the EMTA.

2. Connect the plug from the AC power supply into the POWER AC ADAPTER jack on the EMTA and plug the power supply into an AC outlet.

3. Insert the supplied EMTA CD-ROM. Wait momentarily for the CD window display.

4. Close **all** open applications and dialog boxes, including the CD window.

Note: Some applications may interfere with your EMTA installation.

5. Connect one end of the USB cable to the USB port located on the back of your computer. Connect the other end of the USB cable to the USB port on the EMTA.

Note: Use only the power supply that accompanied this unit. Using other power supplies may damage the unit.

Next, you need to install the USB driver for your operating system.

Using Windows 2000 for USB Connection

Follow steps 6 through 14 if you have a Windows 2000 operating system:

6. When the "Found New Hardware Wizard" appears, click "Next" to initiate the search for drivers for your USB device.


Note: If Windows 2000 does not recognize the presence of the EMTA, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact the customer service department of the computer company.

7. Choose the "Search for a suitable driver for my device (recommended)" option, and click "Next".

Chapter 1: Connections and Setup

8. Choose **ONLY** the "CD-ROM drives" option and click "Next".
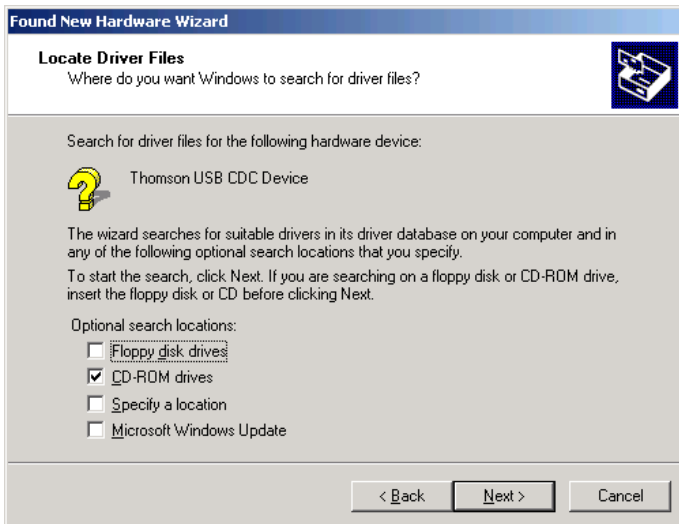
9. The search should find the driver for the "Thomson USB CDC Devices". Confirm that this is the case, and click "Next" to continue and proceed to step 11; otherwise, see step 10.
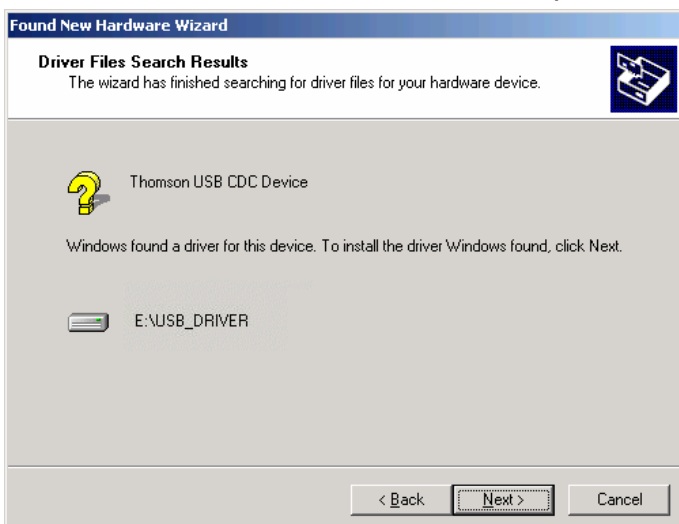
Important: Do NOT continue if the search finds "USB Composite Device" driver. Proceed to step 10.

10. Follow these instructions **ONLY** if the driver found was NOT the "Thomson USB CDC Devices."

    A. Click "Back" to return to the previous window.

    B. Ensure that you have selected the "CD-ROM" option.

    C. In **addition** to the CD-ROM option, choose "Specify a location." Click on "Next" to continue.

    D. In the location box, key in your CD-ROM drive. For example, if your CD-ROM is located on the E: drive, type "E:\." Click "Ok" to continue.

    E. Click "Next" to continue.

    F. The search should find either "RCA or Thomson USB Cable Modem".

11. Windows should now prompt you to install the "Thomson USB CDC Devices". Click "Next" to install the driver.

   At this point your PC needs to copy Windows 2000 specific files. If these files are not located on your hard drive, you may need to insert your Windows 2000 installation media (i.e., Windows 2000 CD-ROM), but first remove the EMTA CD-ROM.

12. After the Windows specific files are copied, you may be asked for another USB driver file named "NETRCACM.SYS," located on the EMTA CD-ROM. Remove the Windows 2000 CD-ROM (if necessary), and reinsert the CD-ROM that accompanied your EMTA.

13. Click on "Finish" to complete the process.
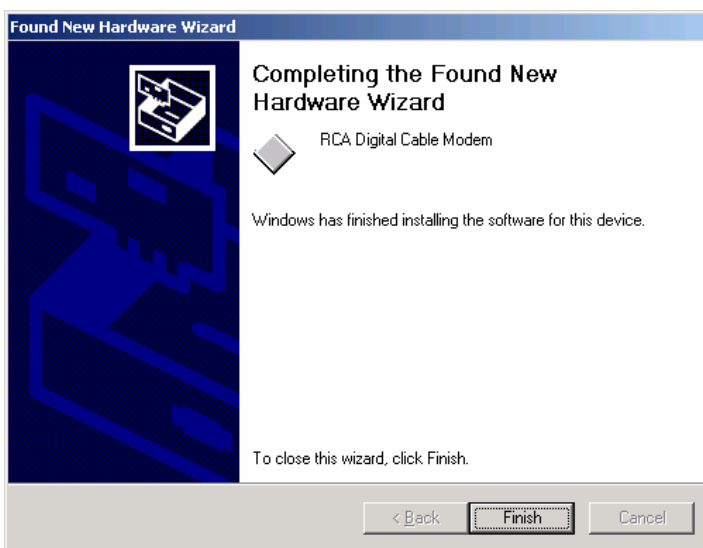
14. The installation is now complete. To validate a proper installation, perform the following instructions:
   A. Click on the "Start" icon in the lower left-hand corner of your screen.
   B. Select "Settings," followed by "Control Panel." The "Control Panel" window appears.
   C. Double-click on the "System" icon, select the "Hardware" tab, and choose "Device Manager."
   D. Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."
   E. The "RCA Digital Cable Modem" should exist. If the "RCA or Thomson Digital Cable Modem" does not exist, the EMTA was **NOT** installed correctly. Please install again.

Illustrations contained in this document are for representation only.

Chapter 1: Connections and Setup

Using Windows Me for USB Connection

Follow steps 6 through 9 if you have a Windows Me operating system:

6. Windows Me will briefly display the "Found New Hardware Wizard," and automatically proceed to the "Add New Hardware Wizard".
   Choose the "Automatic search for a better driver (Recommended)" option, and click "Next."

Note: If Windows Me does not recognize the presence of the EMTA, i.e., the "Add New Hardware Wizard" did not automatically appear, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact your computer's customer service department.

7. The automatic search should find and install the driver for the "RCA or Thomson Digital Cable Modem". Click on "Finish" to complete the process.

8. When the "System Settings Change" window appears, click "Yes" to restart your computer.

9. The Thomson Digital Cable Modem installation is now complete. To validate a proper installation, perform the following instructions:
   A. Click on the "Start" icon in the lower left-hand corner of your screen.
   B. Select "Settings," followed by "Control Panel." The "Control Panel" window will appear.
   C. Double-click on the "System" icon, and select the "Device Manager."
   D. Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."
   E. The "RCA or Thomson Digital Cable Modem" should exist. If "RCA or Thomson Digital Cable Modem" does not exist, the Digital Cable Modem was **NOT** installed correctly.

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Using Windows XP for USB Connection

Follow steps 6 through 9 if you have a Windows XP operating system:

6. Windows XP will display the "Welcome to the Found New Hardware Wizard" window, and ask whether you would like the Windows to connect to Windows Update to search for software, Choose "No, not this time" and click "Next".
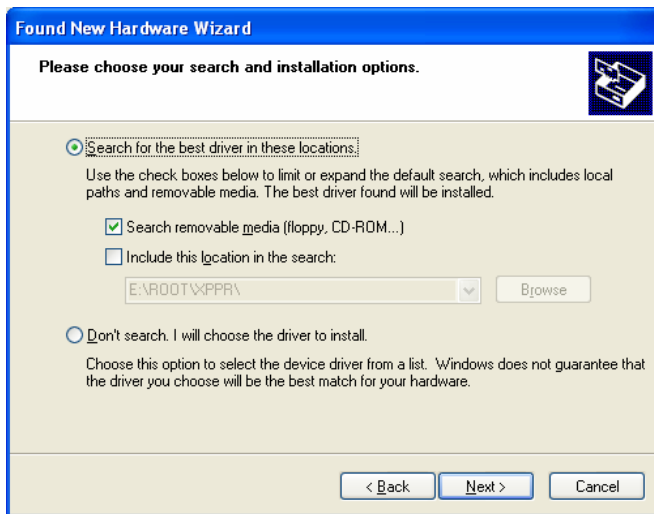

7. The "Found New Hardware Wizard" will then display the device name and ask you to insert the installation CD-ROM that came with the unit. Choose the "Install from a list or specific location (Advanced)" option, and click "Next."
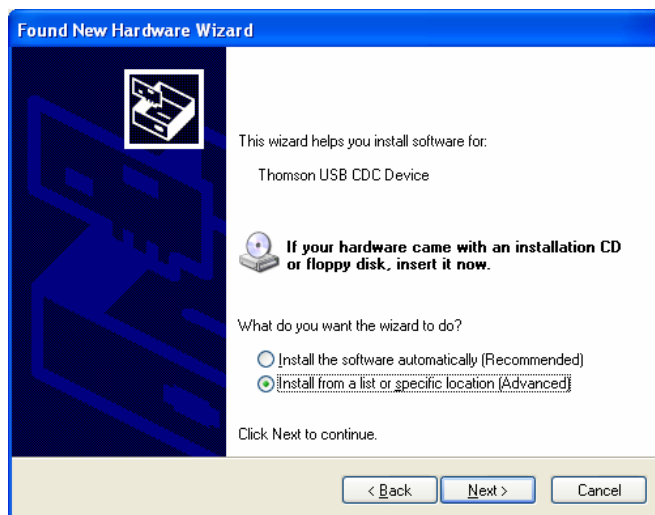
Note: If Windows XP does not recognize the presence of the EMTA, i.e., the "Welcome to the New Hardware Wizard" did not automatically appear, your BIOS settings may not permit USB and/or Plug-and-Play devices. Please contact the customer service department of the computer company.

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Chapter 1: Connections and Setup

8. Select "Search Removable Media (floppy, CD-ROM...)" and click on "Next", then your computer will install the drivers for the "RCA or Thomson Digital Cable Modem".

9. When the "Completing the Found New Hardware Wizard" window appears, click "Finish" to complete the process.
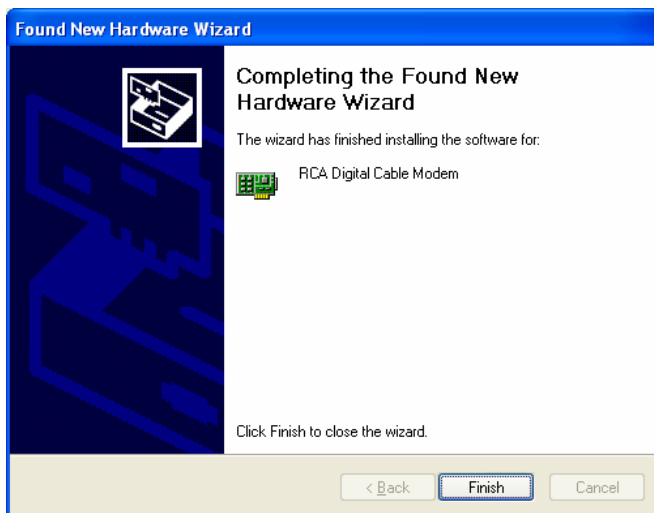
10. The EMTA installation is now complete. To validate a proper installation, perform the following instructions:

    A. Click on the "Start" icon in the lower left-hand corner of your screen.

    B. Select "Settings," followed by "Control Panel." The "Control Panel" window will appear.

    C. Double-click on the "System" icon, and select the "Device Manager."

    D. Scroll down the list until you come to "Network Adapters." Double-click on "Network Adapters."

    E. The "RCA or Thomson Digital Cable Modem" should exist. If "RCA or Thomson Digital Cable Modem" does not exist, the EMTA was **NOT** installed correctly.

Ethernet Connection to One Computer

Make the connections to the modem in the following sequence:

1. Connect one end of the coaxial cable to the cable connection in the wall, and the other end to the CABLE jack on the EMTA.

2. Connect the plug from the AC power supply into the POWER AC ADAPTER jack on the EMTA, and plug the power supply into an AC outlet.

3. Connect one end of the Ethernet cable (straight-wired, see below) to the Ethernet port on the back of your computer, and the other end to the ETHERNET port on the EMTA.

   Make sure that the Ethernet cable is straight-wired (not "null" or crossover-wired). However, you will need a crossover-type cable if you are connecting the modem to a hub, or a hub within a port switch that provides the same function.
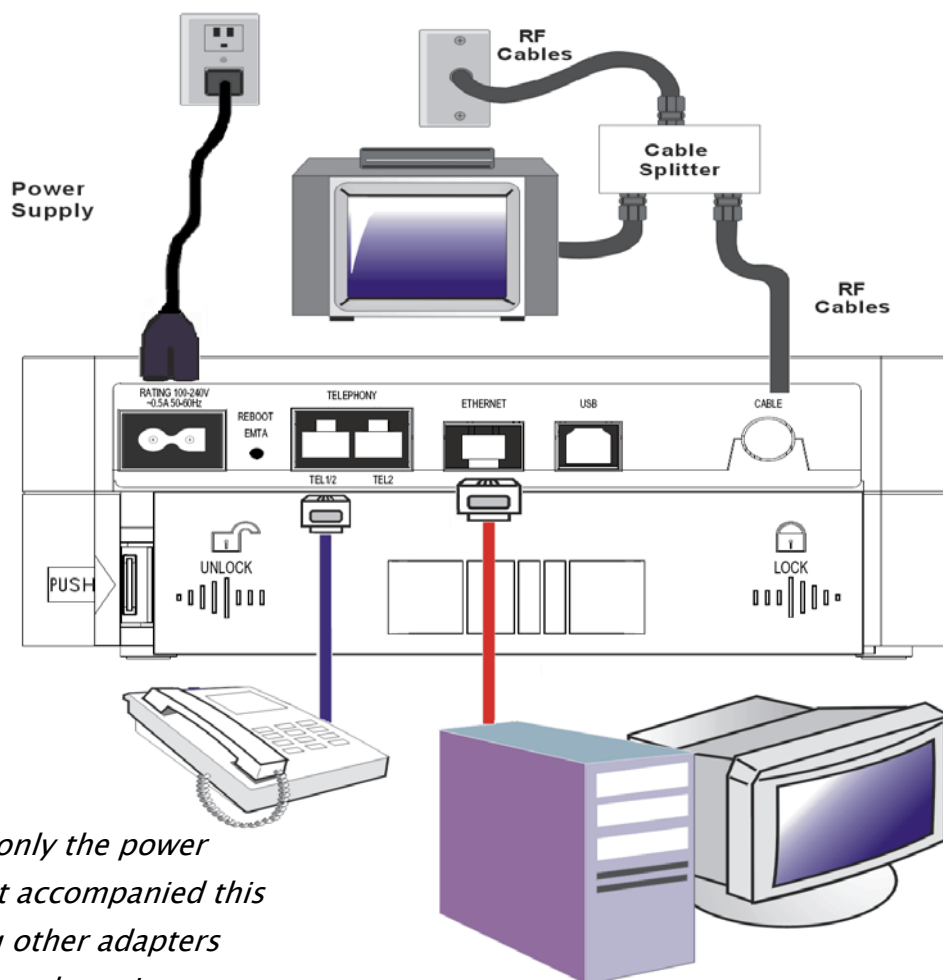
Note: Use only the power supply that accompanied this unit. Using other adapters may damage the unit.

Fig.3: Ethernet Connection

Illustrations contained in this document are for representation only.

Chapter 1: Connections and Setup

Connecting More Than Two Computers to the EMTA

If you need to connect more than two computers or if you need to connect two computers, but USB is not available, you'll need the following additional equipment:

- Crossover–wired, or "null," category 5 Ethernet cable for the EMTA to be connected to the hub

- 10BaseT or 100BaseT Hub or Switch

- Straight through, or standard, category 5 Ethernet cable (one for each computer to be connected)

If you have a hub with an uplink port*, a straight through cable can be used in combination with that port in lieu of the crossover cable.

*An uplink port has a small switch on it to change the polarity of the connection. It can accept either a crossover or a straight cable, depending on the setting.
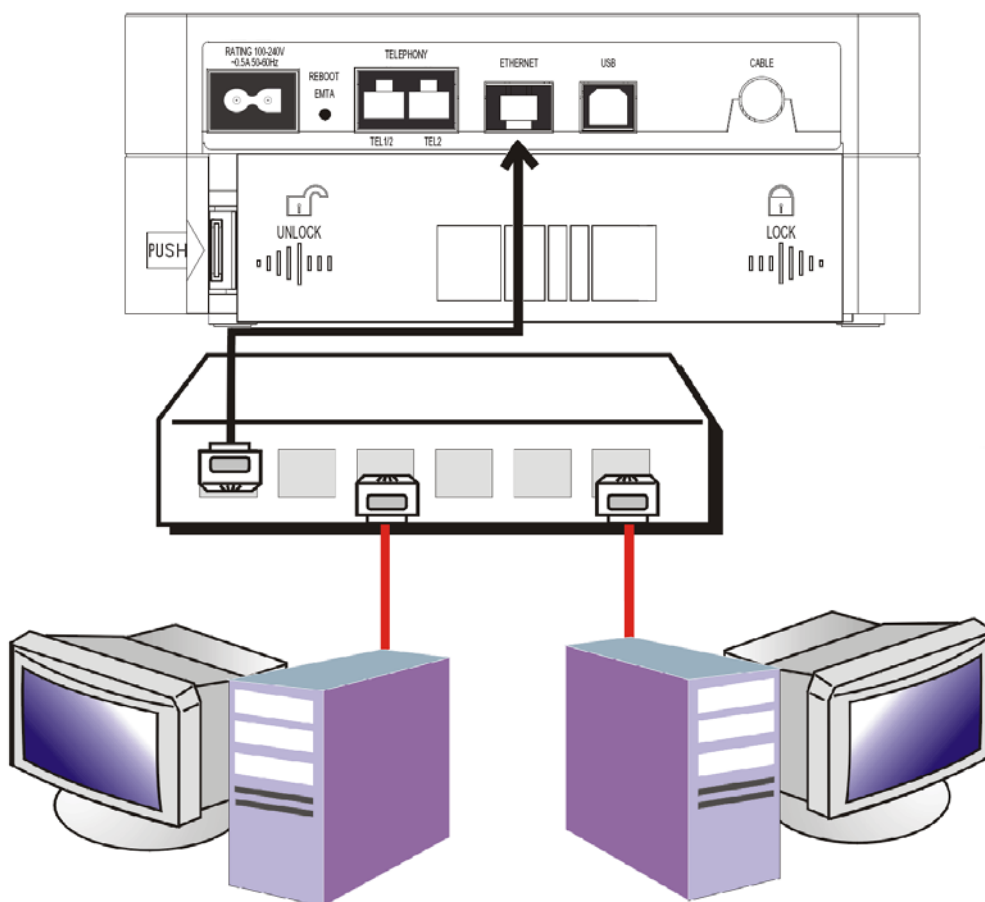
Fig.4: Hub Connection

Note: You may need to check with your service provider in order to connect multiple computers.

Telephone or Fax Connection

When properly connected, most telephony devices can be used with the EMTA just as with conventional telephone service. To make a normal telephone call, pick up the handset; listen for a dial tone, then dial the desired number. For services such as call waiting, use the hook switch (or FLASH button) to change calls. The following procedures describe some of the possible connection schemes for using telephony devices with the EMTA.

1. Connect a standard phone line cord directly from the phone (fax machine, answering machine, caller ID box, etc.) to one of the LINE jacks on the EMTA.

2. If there is a phone line in your home which is NOT connected to another telephone service provider, connect a standard phone line cord from a jack on this line to one of the LINE jacks of the EMTA. Connect a standard phone line cord directly from the phone (fax machine, answering machine, caller ID box, etc.) to one of the other jacks in the house that uses that line.

3. If you have a multi-line telephone, connect a standard phone line cord (not an RJ-14 type line cord) from the phone to the LINE jacks on the EMTA. (Other phones can be added to each line by using standard phone line splitters.
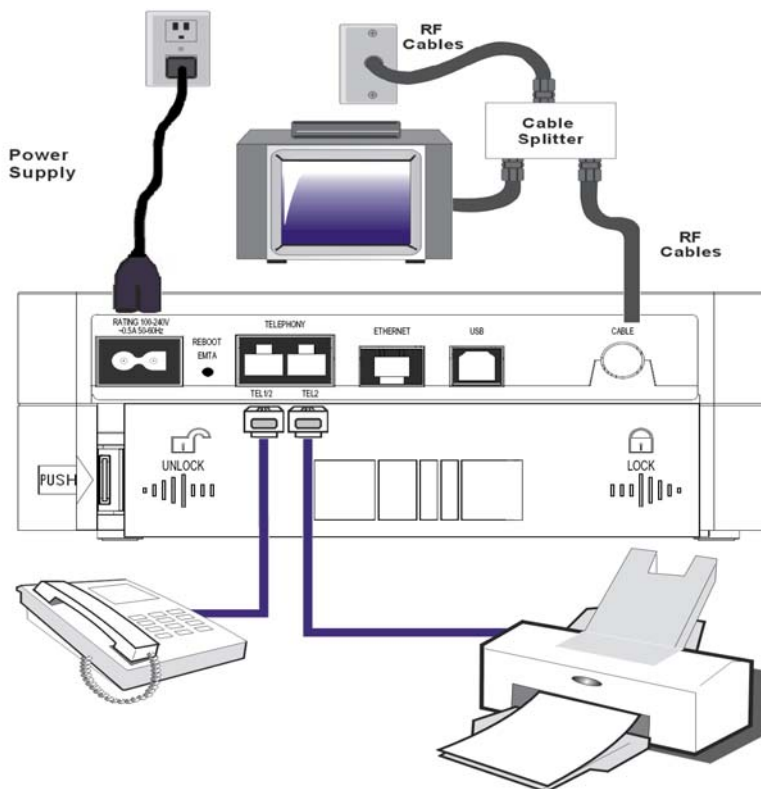
Fig. 5: Phone/Fax Connection

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Chapter 1: Connections and Setup

Activating the EMTA

After installing the EMTA and turn it on for the first time (and each time the modem is reconnected to the power), it goes through several steps before it can be used. Each of these steps is represented by a different pattern of flashing lights on the front of the modem.

Note: All indicators flash once before the initialization sequence.

If all of the lights are flashing sequentially, it means the EMTA is automatically updating its system software. Please wait for the lights to stop flashing. You cannot use your modem during this time. Do not remove the power supply or reset the EMTA during this process.

Chapter 2: Advanced Information

To make sure that you can access the Internet successfully, please check the following first.

1. **Make sure the connection (through Ethernet or USB) between the EMTA and your computer is OK.**

2. **Make sure the TCP/IP protocol is set properly.**

3. **Subscribe to a Cable Company.**

Accessing the Internet

Once your host PC is properly configured; please proceed as follows:

1. Start your web browser and type the private IP address of the EMTA on the URL field: **192.168.100.1.**

2. After connecting to the URL, you can see the basic status of this device. The web pages display information about basic LAN, Hardware info, event log, and CM state.

Chapter 2: Advanced Information

Basic Status Web Page Group

Basic LAN

The screen will be shown as below. This page displays the RF parameters, the status of the EMTA, and the interface parameters.

You can choose any interface, such as LAN, CABLE, USB, or MTA, from the drop down list to see the parameters for it.

Chapter 2: Advanced Information
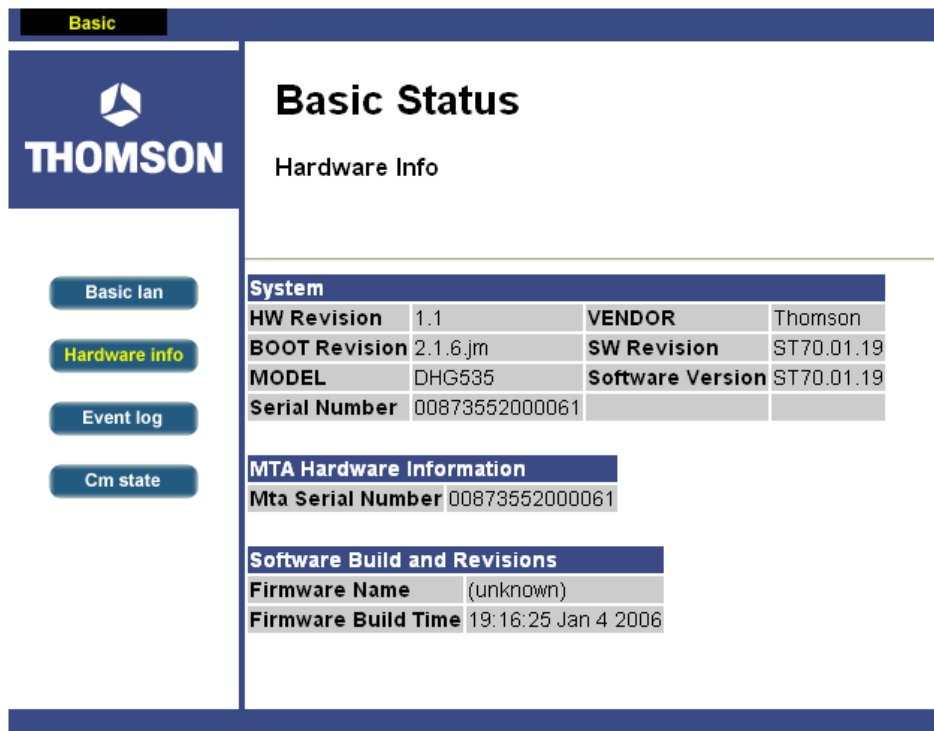
Hardware Info

This page offers the hardware info for this device, containing the system information, MTA serial number, firmware name and build time, and so on.

Chapter 2: Advanced Information

Event Log

This page records the event log for DOCSIS, PacketCable, and NCS Audit.

You can clear the logs by pressing the "Clear Log" button.

CM State

You can find the cable modem state on this page.

Chapter 2: Advanced Information

Frequently Asked Questions

Q. What if I don't subscribe to cable TV?

A. If cable TV is available in your area, data and voice service may be made available with or without cable TV service. Contact your local cable company for complete information on cable services, including high-speed internet access.

Q. How do I get the system installed?

A. Professional installation from your cable provider is strongly recommended. They will ensure proper cable connection to the modem and your computer. However, your retailer may have offered a self installation kit, including the necessary software to communicate with your cable ISP.

Q. Once my EMTA is connected, how do I get access to the Internet?

A. Your local cable company provides your internet service*, offering a wide range of services including email, chat, and news and information services, and a connection to the World Wide Web.

Q. Can I watch TV, surf the Internet, and talk to my friends through the EMTA at the same time?

A. Absolutely!

Q. What do you mean by "Broadband?"

A. Simply put, it means you'll be getting information through a "bigger pipe," with more bandwidth, than a standard phone line can offer. A wider, "broader" band means more information, more quickly.

Q. What is DOCSIS and what does it mean?

A. "Data over Cable Service Interface Specifications" is the industry standard that most cable companies are adopting as they upgrade their systems. Should you ever decide to move, the Cable Modem will work with all upgraded cable systems that are DOCSIS-compliant.

Q. What is PacketCable and what does it mean?

A. Like DOCSIS, Euro-PacketCable/PacketCable is the industry standard for telephony services that most cable companies are adopting as they upgrade their systems. Should you ever decide to move, the EMTA will work with all upgraded cable systems that are PacketCable-compliant.

* Monthly subscription fee applies.

Chapter 3: Additional Information

General Troubleshooting

You can correct most problems you have with your product by consulting the troubleshooting list that follows.

I can't access the internet.

- Check all of the connections to your EMTA.

- Your Ethernet card or USB port may not be working. Check each product's documentation for more information.

- The Network Properties of your operating system may not be installed correctly or the settings may be incorrect. Check with your ISP or cable company.

All of the lights are flashing in sequence.

- This means the EMTA is automatically updating its system software. Please wait for the lights to stop flashing. The updating process typically lasts less than one minute.

- Do not remove the power supply or reset the EMTA during this process.

I can't get the modem to establish an Ethernet connection.

- Even new computers don't always have Ethernet capabilities – be sure to verify that your computer has a properly installed Ethernet card and the driver software to support it.

- Check to see that you are using the right type of Ethernet cable.

The modem won't register a cable connection (Online light not on continuously).

- If the modem is in Initialization Mode, the INTERNET lights will be flashing. Call your Cable Company if it has not completed this 5-step process within 30 minutes, and note which step it is getting stuck on. (See page 24 for details.)

- The modem should work with a standard RG-6 coaxial cable, but if you're using a cable other than the one your Cable Company recommends, or if the terminal connections are loose, it may not work. Check with your Cable Company to determine whether you're using the correct cable.

- If you subscribe to video service over cable, the cable signal may not be reaching the modem. Confirm that good quality cable television pictures are available to the coaxial

connector you are using by connecting a television to it. If your cable outlet is "dead", call your Cable Company.

- Verify that the Cable Modem service is DOCSIS-compliant and PacketCable-compliant by calling your cable provider.

I don't hear a dial tone when I use a telephone.

- Telephone service is not activated. If the rightmost light on the EMTA stays on while others flash, check with your TSP or cable company.

- If the EMTA is connected to existing house telephone wiring, make sure that another telephone service is not connected. The other service can normally be disconnected at the Network Interface Device located on the outside of the house.

- If using the second line on a two-line telephone, use a 2-line to 1-line adapter cable.

For more Usage and Troubleshooting Tips use the web site links provided on the CD-ROM:

http://www.cable-modem.rca.com/help

Chapter 3: Additional Information

FCC Declaration of Conformity and Industry Canada Information

This device complies with Part 15 of the FCC Rules.   Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Trade Name:	RCA Model: DHG535
Equipment Classification:	Computing Device Accessory
Responsible Party:	Thomson Inc.
	10330 N. Meridian Street
	Indianapolis, IN 46290
	Telephone 317-415-4151

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.   These limits are designed to provide reasonable protection against harmful interference in a residential installation.   This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.   However there is no guarantee that interference will not occur in a particular installation.   If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect this equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

FCC regulations state that unauthorized changes or modifications to this equipment may void the user's authority to operate it.

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

Chapter 3: Additional Information

Service Information

If you purchased or leased your EMTA directly from your cable company, then warranty service for the Digital Cable Modem may be provided through your cable provider or its authorized representative. For information on 1) Ordering Service, 2) Obtaining Customer Support, or 3) Additional Service Information, please contact your cable company. If you purchased your EMTA from a retailer, see the enclosed warranty card.

Chapter 3: Additional Information

Glossary

10BaseT – Unshielded, twisted pair cable with an RJ-45 connector, used with Ethernet LAN (Local Area Network). "10" indicates speed (10 Mbps), "Base" refers to baseband technology, and "T" means twisted pair cable.

Authentication – The process of verifying the identity of an entity on a network.

DHCP(Dynamic Host Control Protocol) – A protocol which allows a server to dynamically assign IP addresses to workstations on the fly.

Ethernet card – A plug-in circuit board installed in an expansion slot of a personal computer. The Ethernet card (sometimes called a Network Interface Card or NIC) takes parallel data from the computer, converts it to serial data, puts it into a packet format, and sends it over the 10BaseT or 100BaseT LAN cable.

DOCSIS (Data Over Cable Service Interface Specifications) – A project with the objective of developing a set of necessary specifications and operations support interface specifications for Cable Modems and associated equipment.

F Connector – A type of coaxial connector, labeled CABLE IN on the rear of the EMTA, that connects the modem to the cable system.

HTTP (HyperText Transfer Protocol) – Invisible to the user, HTTP is used by servers and clients to communicate and display information on a client browser.

Hub – A device used to connect multiple computers to the EMTA.

IP Address – A unique, 32-bit address assigned to every device in a network. An IP (Internet Protocol) address has two parts: a network address and a host address. This modem receives a new IP address from your cable operator via DHCP each time it goes through Initialization Mode.

Key exchange – The swapping of mathematical values between entities on a network in order to allow encrypted communication between them.

MAC Address – The permanent "identity" for a device programmed into the Media Access Control layer in the network architecture during the modem's manufacture.

Network Driver – A file that is loaded on the computer to allow the computer to recognize the Ethernet card or USB port.

NID – Network Interface Device, the interconnection between the internal house telephone wiring

Chapter 3: Additional Information

and a conventional telephone service provider's equipment. These wiring connections are normally housed in a small plastic box located on an outer wall of the house. It is the legal demarcation between the subscriber's property and the service provider's property.

PacketCable – A project with the objective of developing a set of necessary telephony specifications and operations support interface specifications for EMTAs and associated equipment used over the DOCSIS-based cable network.

PSTN (Public Switched Telephone Network) – The worldwide voice telephone network which provides dial tone, ringing, full-duplex voice band audio and optional services using standard telephones.

Provisioning – The process of enabling the Media Terminal Adapter (MTA) to register and provide services over the network.

TCP/IP (Transmission Control Protocol/Internet Protocol) – A networking protocol that provides communication across interconnected networks, between computers with diverse hardware architectures and various operating systems.

TFTP – Trivial File Transfer Protocol, the system by which the Media Terminal Adapter's configuration data file is downloaded.

TSP – Telephony Service Provider, an organization that provides telephone services such as dial tone, local service, long distance, billing and records, and maintenance.

Universal Serial Bus (USB) – USB is a "plug-and-play" interface between a computer and add-on devices, such as an EMTA.

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Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

Thomson Inc.

10330 North Meridian Street

Indianapolis, IN 46290

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