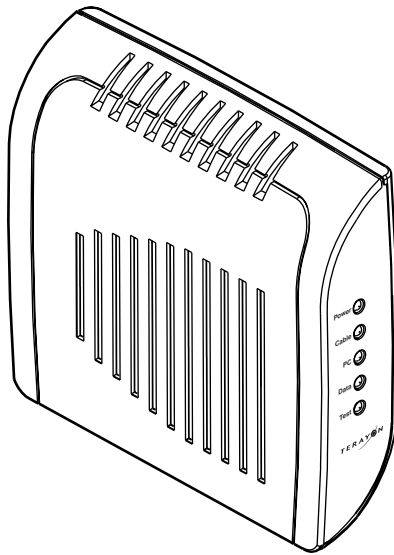


Terayon DOCSIS™ Modem Installation Guide

Model:

TJ 700 Series Modem



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Table of Contents

Congratulations	1
Getting Started	1
Package Contents	1
System Requirements	3
Installation Overview	3
Connecting the Modem	4
Modem Connectors	5
Connecting the CATV Coaxial Cable to the Modem	6
Connecting the Power Adapter to the Modem	8
Connecting the Modem to your PC	9
Starting the Modem	14
Reading Your Modem Lights	15
Wall Mounting	16
FAQs	17
Troubleshooting	19
Technical Support and General Inquires	21
Warranty	22

Installation Guide

READ ME FIRST!

Congratulations

Congratulations on your purchase of a Terayon DOCSIS Cable Modem. The Terayon TJ 700 Series DOCSIS Cable Modem is the perfect choice for connecting your personal computer to a fast broadband Internet connection.

Getting Started

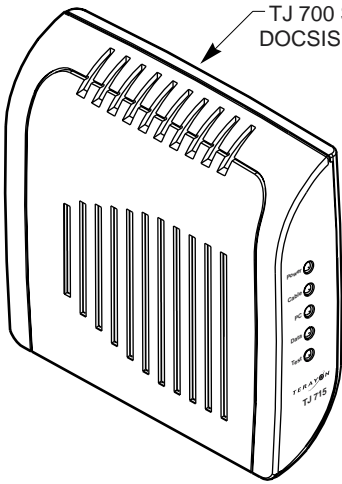
This installation guide is designed for anyone who wants all the “how-to” information about installing the Terayon TJ 700 Series Data-Over-Cable Interface Specification (DOCSIS) Cable Modem. You have probably heard of online help. Well, think of this installation guide as *onside* help. For best results, read each procedure beforehand — reviewing each procedure may answer some questions that could come up during the installation process. So let’s get started.

Package Contents

Please take a moment to unpack your modem and familiarize yourself with the all cables and components included in the box. Use the list below and Figure 1 to verify the contents of the box.

Terayon TJ 700 Series Cable Modem Package Contents

- Terayon Model TJ 700 Series DOCSIS Cable Modem
- Cable Modem Power Adaptor
- RJ-45 Ethernet Cable
- Universal Serial Bus (USB) Cable
- CD-ROM with USB Drivers



POWER ADAPTER

NOTE: The appropriate Power Adapter is included with your modem.

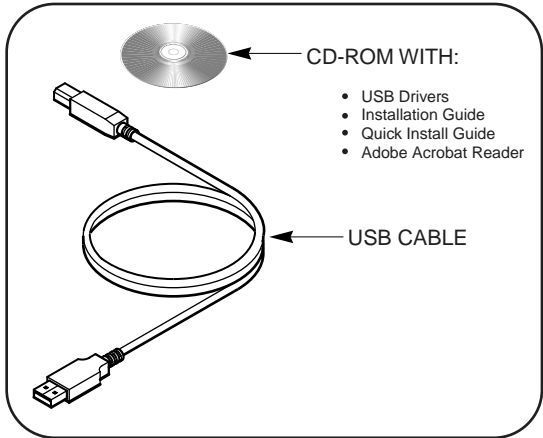
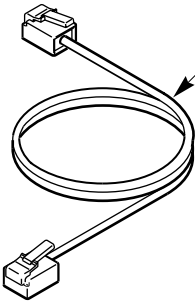
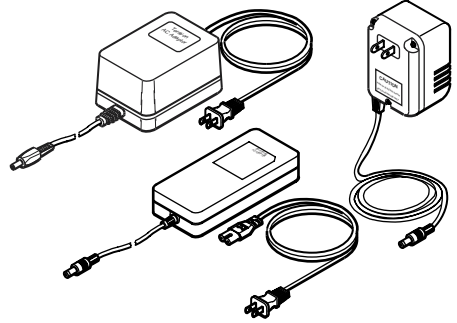


Figure 1 Contents of Cable Modem Box

System Requirements

Before you begin installing your new Terayon cable modem, make sure your computer system has the following hardware and software.

Hardware/Software	IBM PC or Compatible	Apple/Macintosh
CPU	Pentium class microprocessor or equivalent	Power PC 601 or later; iMac®
Memory (RAM)	32 MB	24 MB
Available Disk Space	50 MB	50 MB
Operating System	Windows® 95, 98, 2000, ME, Windows NT® 4.0 Workstation	OS 7.5.1 or later
Network Connectivity	Must have (any one): <ul style="list-style-type: none"> • USB Port • 10 Base-T Ethernet Card • PCMCIA Ethernet Card (laptop) 	Must have (any one): <ul style="list-style-type: none"> • 10 Base-T Ethernet Card • PCMCIA Ethernet Card (laptop)



IMPORTANT: *Computers using Windows 95, NT 4.0, or a Macintosh operating system must use an Ethernet port to connect to the TJ 700 Series Modem.*

Installation Overview

As you follow the self-installation process, you may be asked to perform some tasks you have not previously attempted. You will be guided through the following steps:

- Connecting the CATV Coaxial Cable to the Modem
- Connecting the Power Adaptor to the Modem
- Connecting the Modem to your Computer
- Starting the Modem.

What You Will Need

The following is a list of items you will need to install your new Terayon cable modem:

- This installation guide
- Your computer user manual
- The cable modem.

INSTALLING THE MODEM

Connecting the Modem

To install your new cable modem, you will need the following items:

- Two coaxial cables of a length appropriate to your installation
- One cable line splitter
- A 7/16 inch wrench.

When installing your new cable modem a cable splitter and two new cables are required. The cable splitter divides the incoming signal from the cable company into two signals, one for the household TVs, and one for the cable modem. No TV sets are allowed on the cable that connects to the cable modem. Figure 2 illustrates a typical cable modem installation.

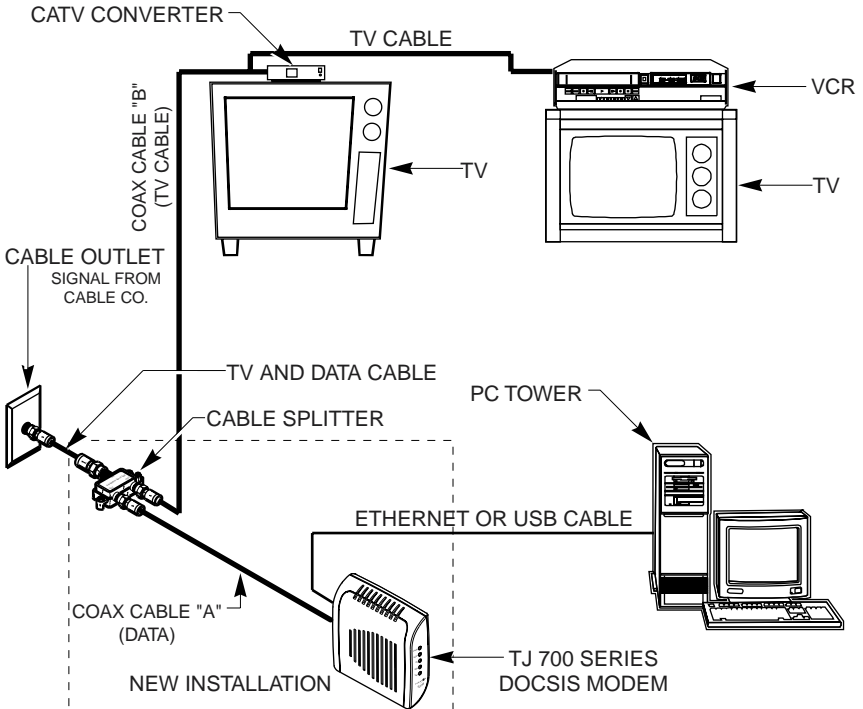


Figure 2 Typical Cable Modem Installation

Modem Connectors

Before you begin installing your new cable modem, take a moment to familiarize yourself with the modem connectors identified in Figure 3. An explanation of each connector follows the illustration.

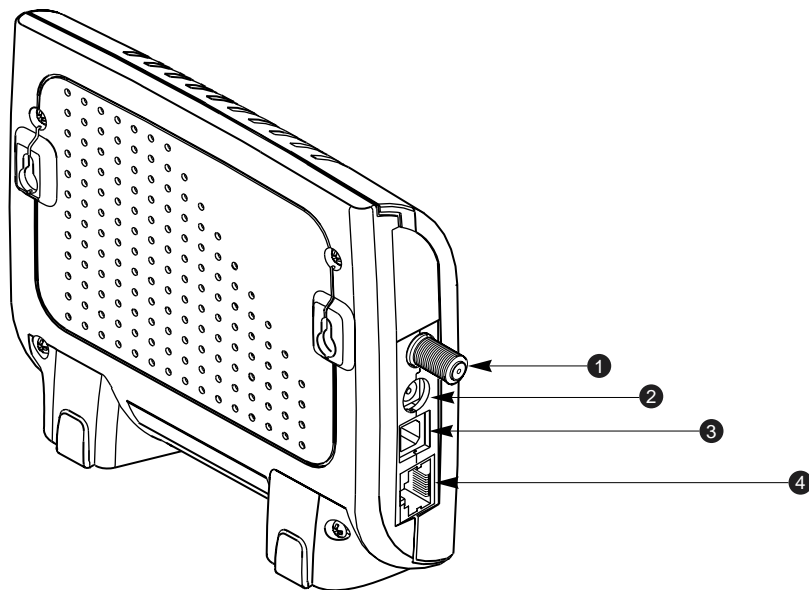


Figure 3 Modem Connectors

- | | |
|--------------------------------|--|
| 1 - RF Cable Connector | Connects the modem to the incoming signal from the cable company via a cable splitter. |
| 2 - DC Power Input-jack | Connects the modem to the Modem Power Adaptor. |
| 3 - USB Serial Port | Connects the modem to the USB port on your computer. |
| 4 - RJ-45 Ethernet Port | Connects the modem to the Ethernet port on your computer NIC card. |

Connecting the CATV Coaxial Cable to the Modem

In order for your cable modem and your computer to access the Internet, you need to connect the coaxial cable that comes from your cable outlet to the modem. This is typically done using a cable splitter. See Figure 2 on page 4.

To connect your modem to the CATV coaxial cable, follow these steps:

1. Locate the CATV coaxial cable connected to the cable outlet.
You can find it in one of three ways:
 - It may be connected to a TV, Converter Box, or a VCR.
 - It may be connected to a wall mounted outlet.
 - It may be coming out from under a baseboard or some other location.
2. When you locate the CATV coaxial cable, disconnect it from the TV, Converter Box, or VCR.
You may need to use a wrench to disconnect the cable.
3. Locate the cable splitter, then using Figure 2 and Figure 4 as guides, connect the CATV coax cable you disconnected in step 2 to the IN connector on the cable splitter. Tighten the connector with a 7/16 inch wrench.

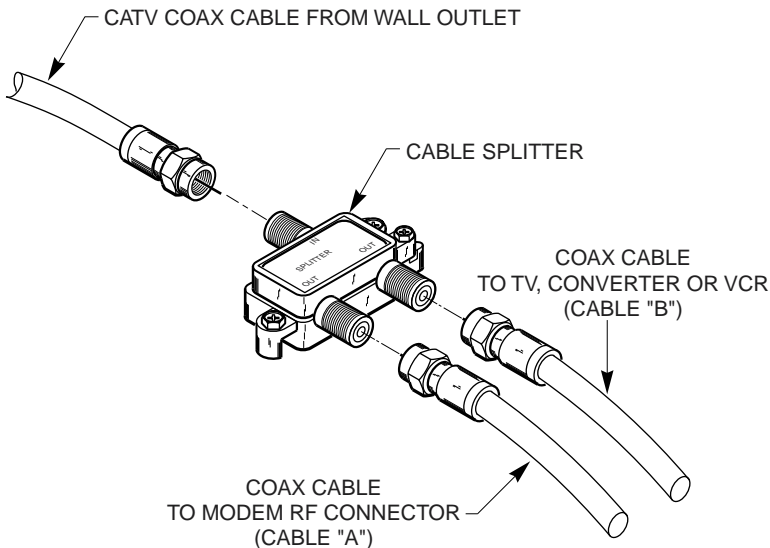


Figure 4 Connecting Coax Cables to Cable Splitter

4. Using Figure 2 and Figure 4 as guides, connect one end of a coax cable (Cable “B”) to one of the OUT connectors on the cable splitter. Tighten the connector with 7/16 inch wrench.
5. Connect the remaining end of Cable “B” (TV Cable) to the same TV, Converter Box, or VCR.
6. Again, using Figure 2 and Figure 4 as guides, connect one end of coax Cable “A” (Data) to the remaining OUT connector on the cable splitter. Tighten the connection with a 7/16 inch wrench.
7. Remove your new cable modem from its box and place it near your computer.
8. Connect the remaining end of coax Cable “A” (Data) to the RF connector on the modem as shown in Figure 5. Tighten the connection with a 7/16 wrench.

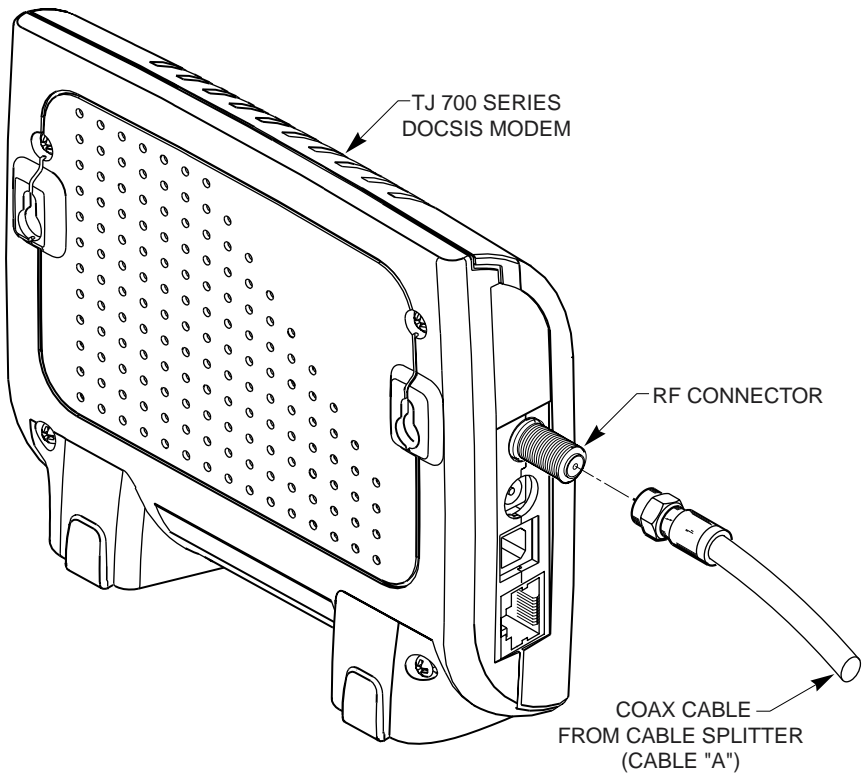


Figure 5 Connecting the RF Cable to the Modem

Connecting the Power Adapter to the Modem

Power for your cable modem is generated by the Power Adapter unit that comes with the modem. The Power Adapter and power cord shipped with your TJ 700 Series modem is one of the adapters shown in Figure 6, in compliance with the requirements of your country.

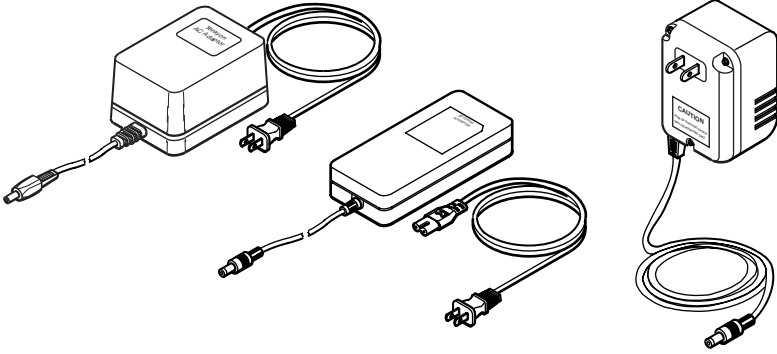


Figure 6 Power Adapters

To connect the Power Adapter to the modem, do the following:

1. Remove the modem Power Adapter from the modem cable box.
2. Using Figure 7 as a guide, insert the Power Adapter output connector into the DC Power input jack on the back of the modem.

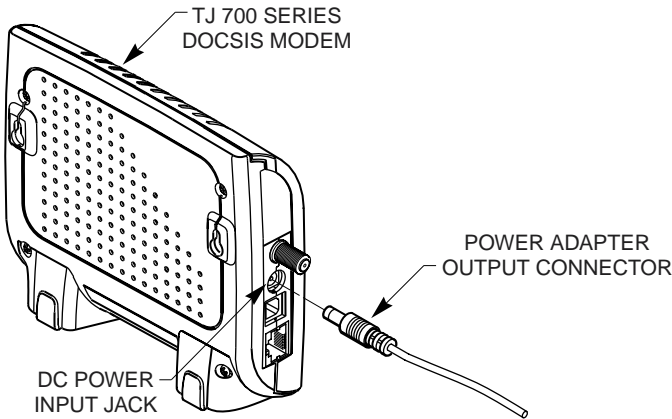


Figure 7 Connecting the Power Adapter to the Modem



IMPORTANT: Do not connect the adaptor to an AC outlet at this time.

Connecting the Modem to your PC

In order for your computer to communicate with your new modem and the Internet, it must be equipped with a network interface. Today's computers are typically equipped with either a 10 Base-T Ethernet port or a Universal Serial Bus (USB) port. TJ 700 Series modems come equipped with RJ-45 Ethernet and USB connectors, allowing the modem to connect to either an Ethernet port or a USB serial port. To connect your new modem to your PC, do the following:

1. Before you begin connecting the modem to your PC, look in your computer user manual or look at the back of your PC to see what kind of network interface your PC is equipped with.



IMPORTANT: *If you do not have a network interface installed in your computer, you will need to purchase one from a retailer or your local cable company, and install it according to manufacturer instructions.*

2. If your PC is equipped with a 10 Base-T Ethernet card, proceed to “Connecting the 10 Base-T Ethernet Cable” on page 10. If your PC is equipped with a USB Serial Port, proceed to “Connecting the USB Cable” on page 12.



IMPORTANT: *Do not connect the modem to both the PC Ethernet and the USB port. Use either the USB or the Ethernet port, not both. Note that the Ethernet connection is preferable to the USB connection if both are available. The Ethernet connection is the fastest speed connection and will not be shared with other devices.*

Connecting the 10 Base-T Ethernet Cable

To connect the 10 Base-T Ethernet cable, follow these steps:

1. Retrieve the 10 Base-T Ethernet cable from the box the modem came in. Use Figure 1 on page 2 to identify the cable.
2. Using Figure 8 as a guide, connect one end of the 10 Base-T Ethernet cable to the RJ-45 Ethernet port on the back of the modem.

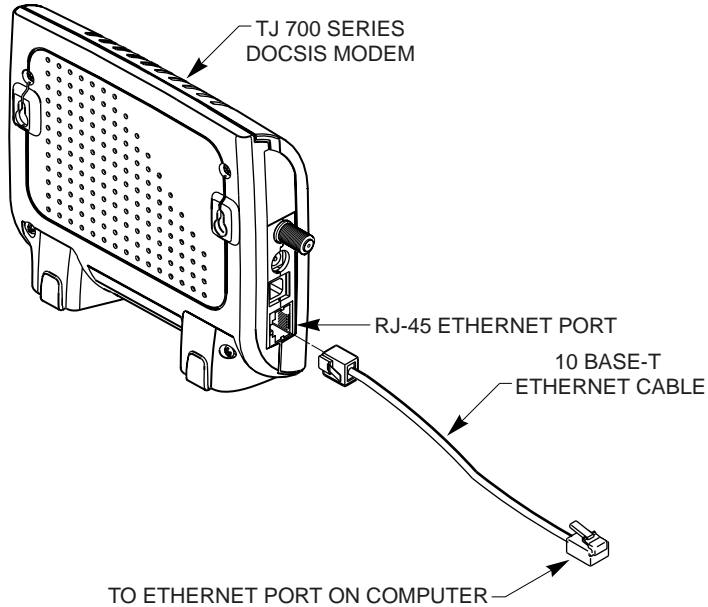


Figure 8 Connecting the Ethernet Cable to the Modem

3. Connect the remaining end of the 10 Base-T Ethernet cable into the RJ-45 Ethernet port on the Ethernet Interface Card as shown in Figure 9.
4. Proceed to “Starting the Modem” on page 14.

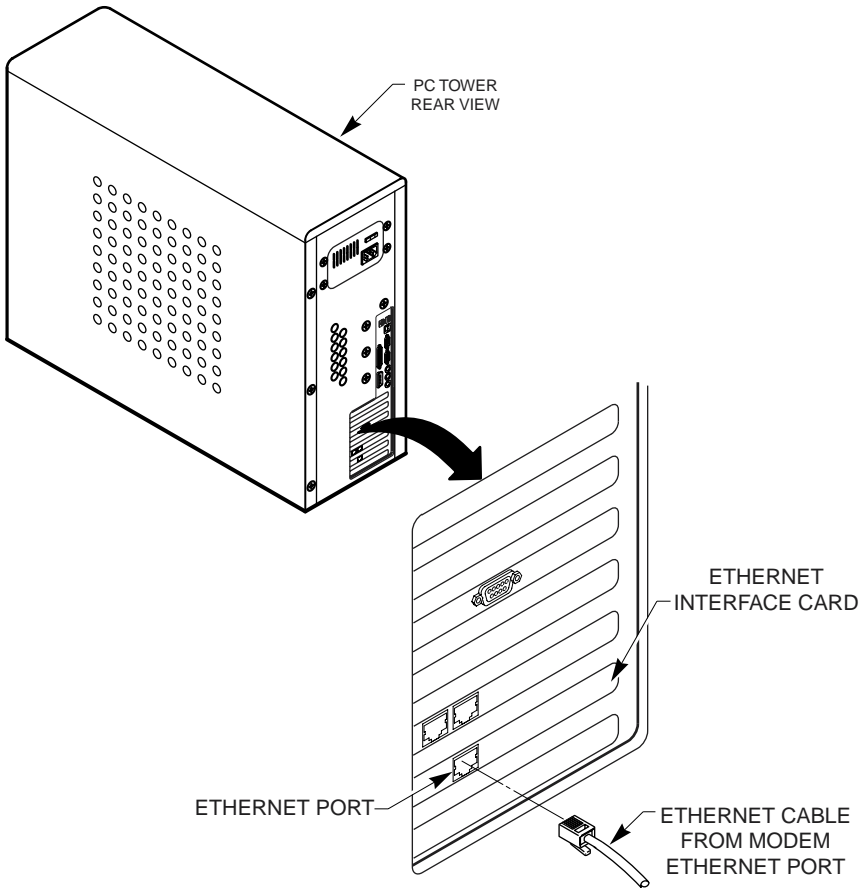
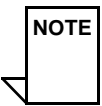


Figure 9 Ethernet Cable to Ethernet Card Connection



NOTE: *Your computer may be a desktop model or a tower model and may look different than the illustration shown in Figure 9.*

Connecting the USB Cable

In order for your computer USB Interface to pass data back and forth to the Terayon TJ 700 Series Modem, you must connect a USB cable to the modem USB port and the USB port on the back of the computer.

To connect the USB cable, follow these steps:

1. Retrieve the USB cable from the box the modem came in.
Use Figure 1 on page 2 to identify the cable. Notice that the USB cable has two types of connectors, an “A” type, and a “B” type. Figure 10 identifies the connector types.

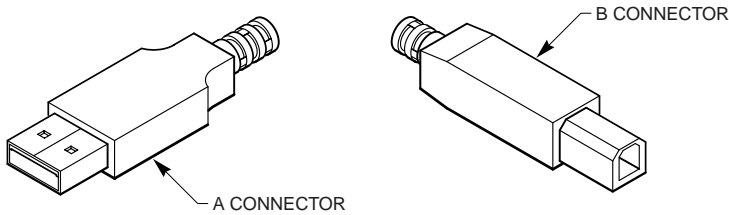


Figure 10 USB Cable Connectors

2. Using Figure 11 as a guide, insert the USB cable “B” connector into the USB Serial port on the back of the TJ 700 Series modem.

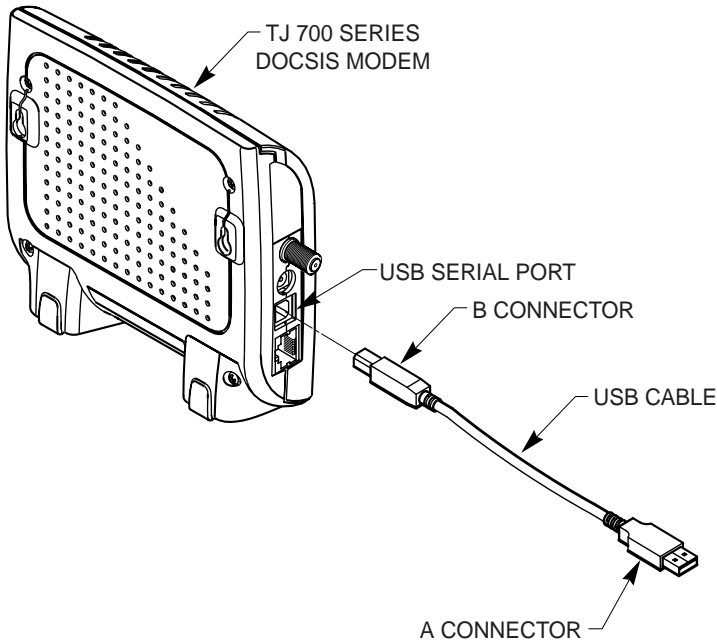
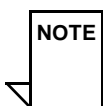


Figure 11 Connecting the USB Cable

3. Insert the USB cable “A” connector into the computer USB Serial port on the back of your computer as shown in Figure 12.



NOTE: *Your computer may be a desktop model or a tower model and may look different than the illustration shown in Figure 12.*

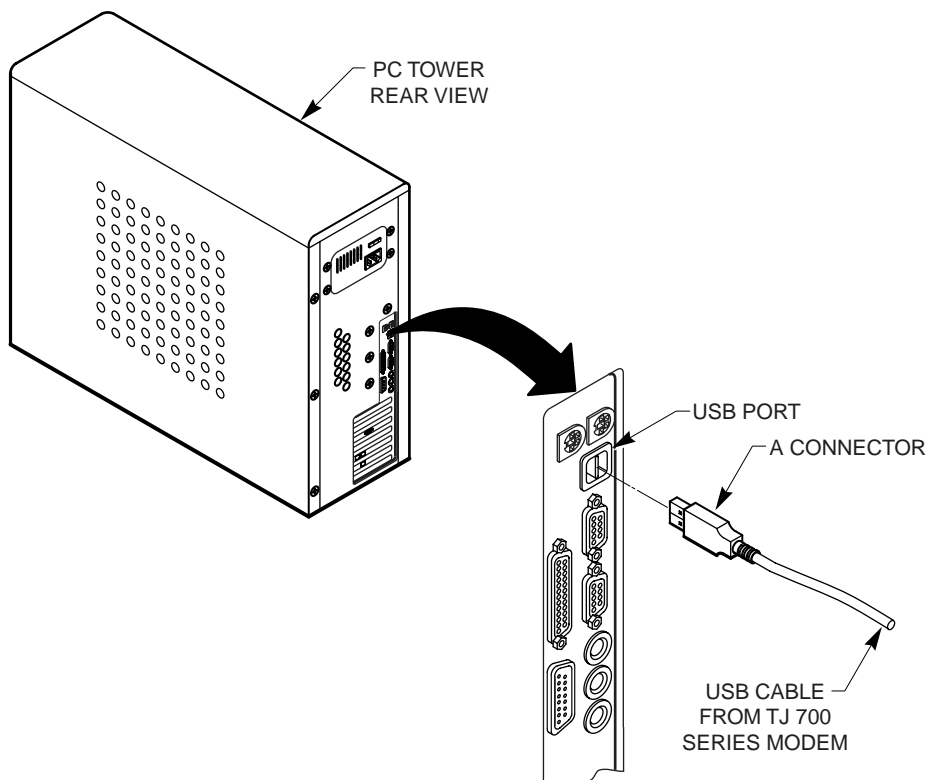


Figure 12 USB Cable to Computer USB Port Connection

4. Proceed to “Starting the Modem” on page 14.

Starting the Modem

To start operating your new Terayon cable modem, do the following:

1. Plug the Power Adaptor into an appropriate AC power outlet.

Once your Terayon cable modem is properly connected and the Power Adapter is connected to an AC power outlet, it will automatically boot-up and start scanning for the active cable modem channel from your cable company server.

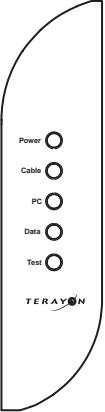


IMPORTANT: *When you power up the Terayon DOCSIS cable modem for the first time, it can take up to 10 minutes for the modem to complete its boot-up and scanning sequence. Do not turn modem power off during the boot-up and scanning sequence, unless your cable operator instructs you to do so.*

2. Verify the Cable and PC LED indicators on the modem front panel are ON. If the Cable and PC LEDs are ON and not blinking, you have successfully installed your new Terayon cable modem. If the Cable and PC LEDs are not ON or are blinking, see “Troubleshooting” on page 19.

Reading Your Modem Lights

The indicator LEDs on the front panel of the Terayon cable modem tell you what's happening during a communications session. The table below tells you what each LED indicator means

	LED	Color	Definition
	Power	Green	<ul style="list-style-type: none"> • Dark when power is Off. • Solid when power is On.
	Cable	Green	<ul style="list-style-type: none"> • Dark for no downstream RF carrier present or power Off. • Flashing slowly for downstream RF carrier present and ranging in process. • Flashing fast when registration is in process, or if flashing fast continuously, network access has been disabled by your cable company. • Solid for modem registration complete and ready to transfer data.
	PC	Green	<ul style="list-style-type: none"> • Dark when no carrier is present to or from PC, or power is Off. • Solid when carrier is present to or from PC.
	Data	Green	<ul style="list-style-type: none"> • Dark when no data is passing through modem or power is Off. • Flashing when data is passing through modem.
	Test	Amber	<ul style="list-style-type: none"> • Dark when initial modem self-test is OK, or power is Off. • Flashing when modem self-test is in process, or when modem is receiving software updates. • Solid when modem fails the initial self-test.

Wall Mounting

To save space on your workstation desk top, you can mount a TJ 700 Series modem to a wall near your computer or mount it to the workstation desk. Figure 13 shows mounting options. Figure 14 illustrates how to mount the modem.

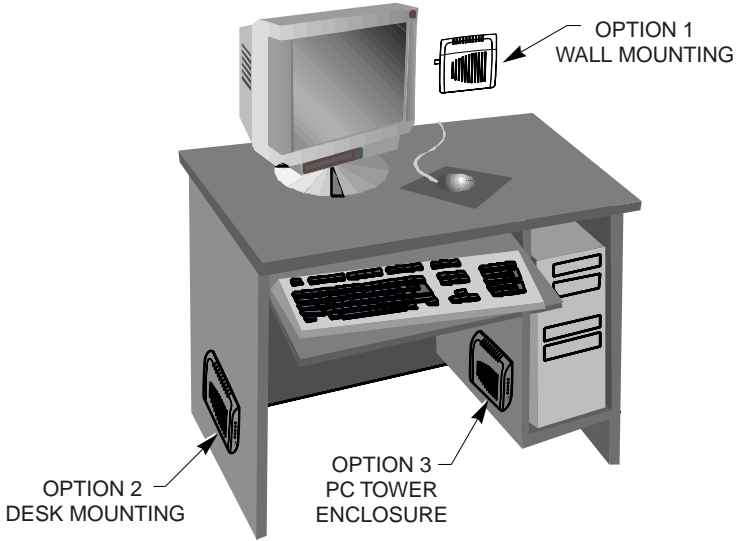


Figure 13 Mounting Options

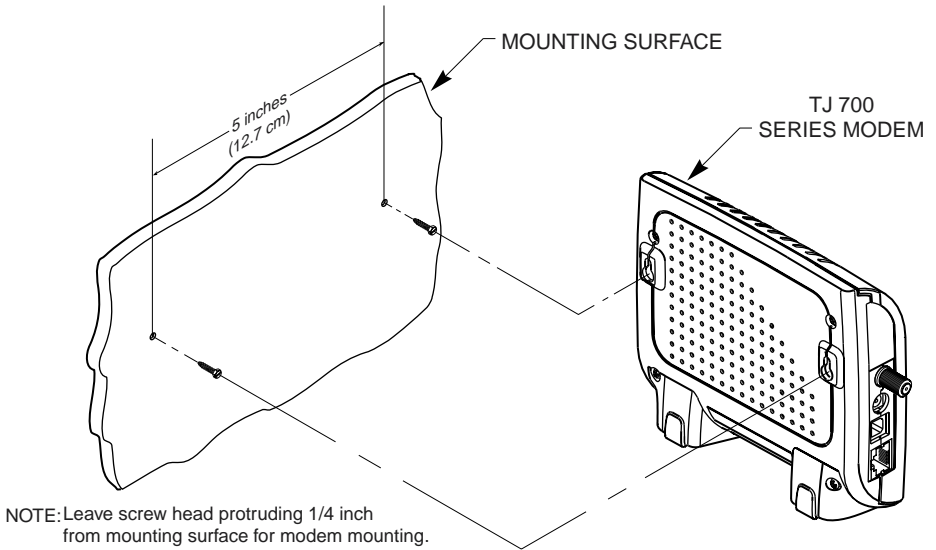


Figure 14 Modem Mounting Diagram

FREQUENTLY ASKED QUESTIONS

FAQs

Q. *Can I have more than one computer attached to a Terayon modem?*

A. Yes, Terayon cable modems do provide this capability, but you will need to install a hub into your system and you must arrange for this service with your cable service provider. Some service providers limit the number of computers connected to the modem.

Q. *Can I connect the Terayon cable modem to a hub or switch?*

A. Yes, you can connect the Terayon cable modem to a hub or switch. There are two ways to successfully complete a physical connection.

1. Buy a cross-over cable and connect the port labeled 10Base-T on the Terayon cable modem to one of the ports on the hub or switch.
2. Many newer hubs and switches have an “uplink” port specifically designed for cascading. Connect this uplink port to your Terayon cable modem and it should work without a cross-over cable. Connect your PC to another available port.

NOTE: *While you may be able to successfully complete a physical connection to a hub or switch indicated by a green PC LED, you cannot obtain additional IP addresses unless your subscription allows for more than one IP address. Contact your cable operator for more information.*

Q. *Can I download new modem software drivers or do something to optimize the modem configuration in order to improve my performance?*

A. No, modem configuration and downloading of software drivers can only take place over the cable TV cable and are provided by the cable operator.

But, improving the performance of your cable modem does not give the cable operators access to your computer so your personal privacy and security are not affected.

Q. *If I don't subscribe to cable TV, can I still get a cable modem Internet connection?*

A. Yes, but this is a question for your cable service provider or Broadband Service Provider (BSP) and depends on their policies.

Q. *The product specifications define varying data rates, why don't I see those?*

A. The cable operator has the flexibility to set different performance levels to differentiate between different types of subscribers. In general, individual residential subscribers will not be allocated the entire channel bandwidth.

Q. *Can I watch TV and surf the Internet at the same time?*

A. Yes, neither television or data signals are affected by simultaneous use.

TROUBLESHOOTING

Troubleshooting

Problem:

I cannot access my E-mail or Internet Service.

Possible solution:

Check all connections. Make sure the cable line is securely connected to the cable jack on the back of the modem. Verify the Ethernet or USB cable is securely plugged into both the modem and your network interface card or USB network interface. Make sure your Power Adaptor is properly plugged into both the modem and a wall outlet or surge protector. If your cable modem is properly connected, the Cable and PC indicator lights on the modem front panel should be a solid color.

If the Cable and PC indicator lights (LEDs) are solid green (not blinking), your cable modem is operating properly. Try shutting down and powering off your computer and then turning it back on. This will cause your computer to re-establish communications with your cable company server.

1. If you are using the cable line splitter, try bypassing the splitter by disconnecting it and running a single coaxial cable between the cable modem and your cable wall jack. Try reconnecting after making this change. If reconnecting is successful, you may have a bad splitter.
2. Your network interface card may be malfunctioning. Refer to the Manufacturer's documentation for troubleshooting information.
3. Call your cable company to verify their service is two-way. This modem is designed for use with two-way cable plants. Verify your account is activated.

Problem:

The Cable LED never stops blinking.

Possible Solution:

The signal from your cable company equipment may be too weak or the cable line may not be properly attached to the modem. If the cable line is properly connected to the modem, call your cable company to verify whether or not a weak signal may be the problem.

Problem:

The power on my modem goes on and off sporadically. The Cable LED never stops blinking.

Possible Solution:

You may be using the wrong power supply. Check that the power supply you are using is the one that came with your cable modem. If you cannot connect to the Internet at all, use this checklist to help identify possible problems:

- Make sure your computer and monitor are turned on.
- Make sure all power plugs are completely inserted into their sockets. Your computer and cable modem should be plugged into grounded outlets.
- If you are using a power strip, make sure it is turned on.
- Make sure all data cables are firmly connected at both ends.
- If you still do not have a connection, call your cable service to confirm they have properly set you up for service. If so instructed, reset your modem.

TECHNICAL SUPPORT

Technical Support and General Inquires

Welcome to Terayon DOCSIS Cable Modem Support. Terayon provides service and support in the following ways:

E-mail Support

terajet.support@terayon.com

Find Terayon Support on the Terayon Web Site

Visit our web site at:

<http://www.terayon.com>

Talk to a Technical Support Agent

To speak directly with a support agent who specialized in Terayon DOCSIS cable modem information, call this toll-free number: 1-888-859-3242. Hours of operation are Monday through Friday 8:00AM - 5:00 PM, Pacific Time.

WARRANTY

Warranty

Terayon warrants that for a period of one (1) year from the date of purchase from Terayon or an authorized reseller the product will be free from defects in material and workmanship under normal use. If this product is not in good working order as warranted, the sole and exclusive remedy shall be, at Terayon's option and expense, to repair the defective product or to provide an equivalent replacement product. All products that are replaced will become the property of Terayon. Replacement products may be new or products reconditioned to a like-new condition.

Restrictions - This warranty does not apply if the product (a) has been altered, except by Terayon, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Terayon, (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident, or (d) used in ultra hazardous activities.

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IN NO EVENT WILL TERAYON OR ITS SUPPLIERS BE LIABLE FOR ANY LOST REVENUE, PROFIT, OR DATA, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY ARISING OUT OF THE USE OF OR INABILITY TO USE THE PRODUCT, EVEN IF TERAYON OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In no event shall Terayon's or its suppliers' liability of the Customer, whether in contract, tort (including negligence), or otherwise, exceed the price paid by Customer for the product. The foregoing limitations shall apply even if the above-stated warranty fails of its essential purpose.