MultiMobile™ USB

V.92 Portable USB Modem

MT9234MU-CDC

User Guide

MultiTech®
Systems

MultiMobile USB User Guide
V.92 Portable USB Modem
MT9234MU
S000470A Rev. A

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Revision	Date	Description
A	03/05/10	New CDC build option initial release.

Patents

This device is covered by one or more of the following patents: 6,031,867; 6,012,113; 6,009,082; 5,905,794; 5,864,560; 5,815,567; 5,815,503; 5,812,534; 5,809,068; 5,790,532; 5,764,628; 5,764,627; 5,754,589; 5,724,356; 5,673,268; 5,673,257; 5,644,594; 5,628,030; 5,619,508; 5,617,423; 5,600,649; 5,592,586; 5,577,041; 5,574,725; 5,559,793; 5,546,448; 5,546,395; 5,535,204; 5,500,859; 5,471,470; 5,463,616; 5,453,986; 5,452,289; 5,450,425; D353,598; 5,355,365; 5,309,562; 5,301,274. Other patents pending.

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Contacting Multi-Tech Support

Online Support Portal: https://support.multitech.com

In order to better serve our customers, manage support requests and shorten resolution times, we have created the online web portal allowing you to submit questions regarding Multi-Tech products directly to our technical support team. Get answers to your most complex questions, ranging from implementation, troubleshooting, product configuration, firmware upgrades and much more.
To create an account and submit a Support Case on the Portal, visit https://support.multitech.com.

Knowledge Base and Support Services: www.multitech.com/support.go

The Knowledge Base provides immediate answers to your questions and gives you access to support resolutions for all Multi-Tech products. Visit our support area on the website for other support services.

Technical Support

U.S. office hours are 9am – 5pm, CST

Country	By Email	By Phone
Europe, Middle East, Africa:	support@multitech.co.uk	(44) 118 959 7774
U.S., Canada, all others:	support@multitech.com	(800) 972-2439 or (763) 717-5863

Warranty

Warranty information can be found at: http://www.multitech.com/warranty.go

Contents

Chapter 1 – Product Description

Introduction

The MultiMobile USB V.92 Portable USB modem MT9234MU-CDC provides V.92/56K data rates, fax and file transfer capabilities and a hot-swappable USB interface. This modem, weighing only 2 ounces, is ideal for mobile users who want email and Internet access on the road. The MT9234MU-CDC modem can also serve as the mobile user's home office desktop modem.

This user's guide will help you install, configure, test and use your modem.

Features

Command Buffer	40 characters
Diagnostics	Power-on self test, local analog & local digital loop, remote digital loop.
LED Indicators	LEDs for Data, Carrier Detect, Off Hook, Terminal Ready
Intelligent Features	Fully AT command compatible; autodial, redial, repeat dial; pulse or tone dial; dial pauses; auto answer; caller ID; EIA extended automode; adaptive line probing; automatic symbol and carrier frequency during start-up, retrain, and rate renegotiation; call status display, auto-parity and data rate selections; keyboard-controlled modem options; non-volatile memory; on-screen displays for modem option parameters; command lines of up to 40 characters each; help menus; remote configuration.

Telecom Safety Warnings

- Never install telephone wiring during a lightning storm.

- Never install a telephone jack in wet locations unless the jack is specifically designed for wet locations.

- This product is to be used with UL and cUL listed computers.

- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

- Use caution when installing or modifying telephone lines.

- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.

- Do not use a telephone in the vicinity of a gas leak.

- To reduce the risk of fire, use only 26 AWG or larger telecommunication line cord.

- This product must be disconnected from the telephone network interface when servicing.

Shipping Package Contents

- MT9234MU-CDC modem
- One RJ-11 cable
- One MultiMobile USB CD

Inspect the contents for signs of any shipping damage. If damage is observed, do not power up (connect to a USB port) the unit. Contact Multi-Tech's Technical Support for advice (see page 2).

About AT Commands

AT Commands for this product are published in a separate document and included on the MT9234MU-CDC CD that accompanies your modem.

Technical Specifications

Trade Name	MultiMobile™ USB
Model Number	MT9234MU
Data Rates	56K download speeds from digital V.92/V.90 servers; 33.6K upload and download speeds from non-V.92/V.90 servers and other client modems
Fax Rates	33.6K and below

Standards:
    Data
    Error Correction
    Data Compression
    Fax
    Video
	
	V.92, V.90 enhanced, V.34 and below
	V.42
	V.44, V.42bis, MNP Class 5
	V.34, Class 2.1 & 1.0, V.17, Group 3; Class 1 & 2, Error Correction Mode
	V.80

Cables	1 USB series A 1 RJ-11
Operation	USB Port: 12 Mbps Line Type: Dial-up
Physical Description	1.3" w x 1.0" h x 3.1" d; 2 oz 3.0 cm w x 2.5 cm h x 8.0 cm d; 62 g
Operating Environment	Operating Temperature: -31° to +167° F (-35° to 75° C) UL listed at 60° C Humidity Range: 25–85% non-condensing
Approvals	**CE Mark** **EMC:** FCC Part 15 Class B, EN55024, EN55022 Class B, ICES-003 Class B **Safety:** UL/cUL 60950-1, IEC 60950-1 **Telecom:** 47CFR Part 68, CS03, TBR21, other countries also included
Power*	<table><tr><td></td><td>Sleep Mode</td><td>Typical</td><td>Maximum</td></tr><tr><td>Measured Volts</td><td>4.99</td><td>4.96</td><td>4.95</td></tr><tr><td>Current (AMPS)</td><td>0.099</td><td>0.130</td><td>0.172</td></tr><tr><td>Watts</td><td>0.494</td><td>0.645</td><td>0.851</td></tr></table>
Limited Warranty	2 years

* Multi-Tech Systems, Inc. recommends that the customer incorporate a 10% buffer into their power source when determining product load.

Chapter 2 – Installation
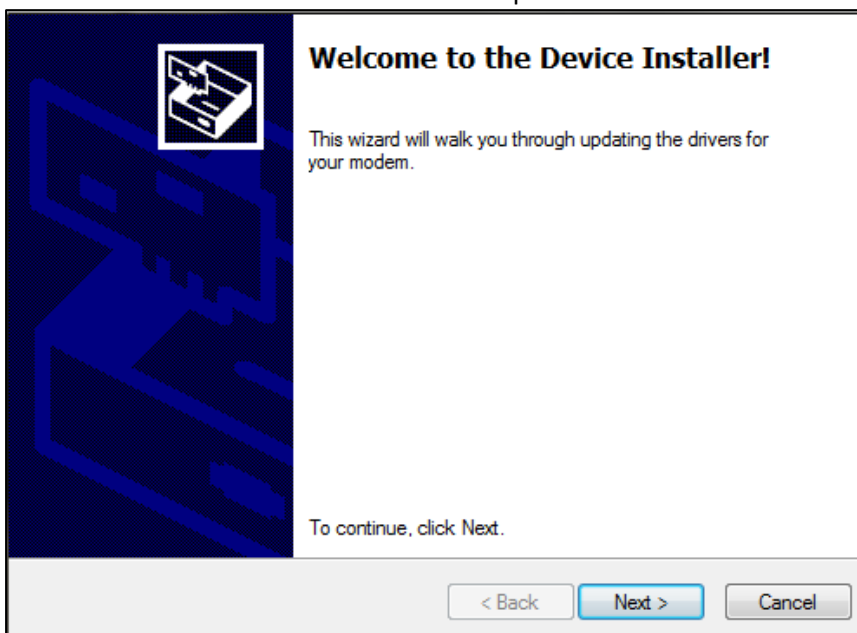
Install the Modem Driver

Windows Installer

Your product CD contains an installer program for current Windows operating systems (Windows XP and newer only) that should be used **before** plugging in your USB modem. Should you happen to connect your USB modem before using the installer program, please follow the directions in the following sections for your particular version of Windows.

1. Insert the product CD into a compatible drive. Do **not** connect your modem yet.
2. Click on the **Preinstall Windows Drivers** button from the main splash screen of the CD.

   Preinstall Windows Drivers

   Initial Setup & Country Sel

   Flash Wizard

   User Documentation
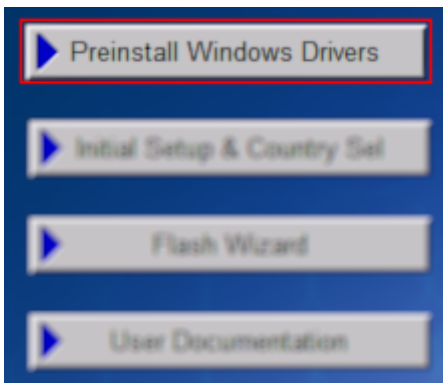
3. Click the button that matches your operating system [32-bit or 64-bit]. You can see what type of system you are using from the *Control Panel | System* screen.
   a. Windows may pop-up a User Account Control window. Select the YES button to continue with the driver installation.
4. Click on the next button to start the driver pre-installation.

   Welcome to the Device Installer!

   This wizard will walk you through updating the drivers for your modem.

   To continue, click Next.

   < Back   Next >   Cancel

5. There will be a transitory screen, then the process will complete. Click on the **Finish** button.
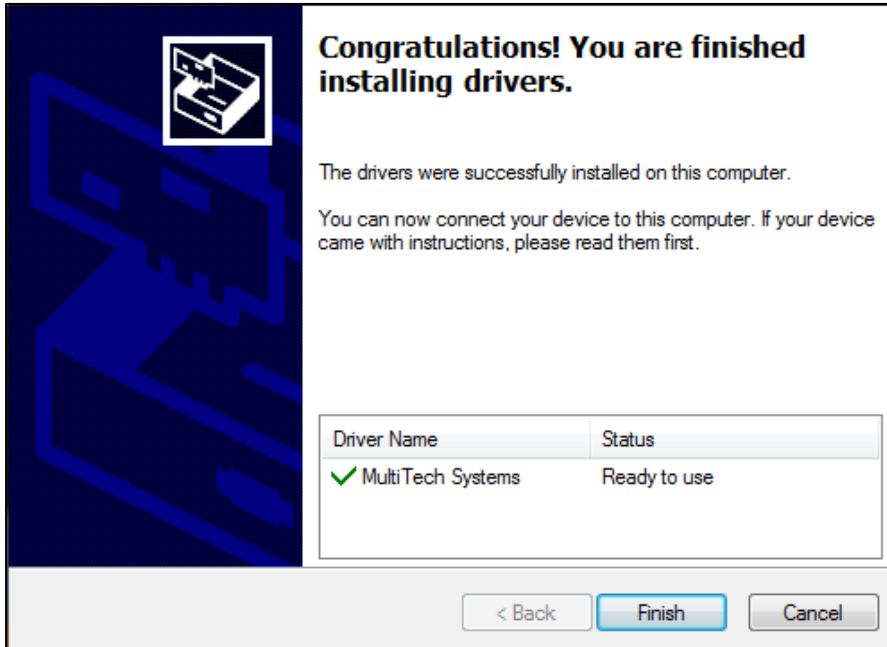
6. Connect your USB modem to an available port and Windows will detect and install the modem.
7. Your installation is complete.

After the installation has been completed, you should test the operation of your new MT9234MU by registering it. Key in the URL given below and follow the on-line instructions:
http://www.multitech.com/en_US/TOOLS/Forms/register/warranty.asp

Manually installing the modem in Windows 7

If you did not use the pre-installer for Windows, this is the process for installing your modem.

After connecting your MT9234MU-CDC to an available USB port, Windows 7 will report that the driver software was not successfully installed; Windows 7 no longer uses the new device wizard for installations. Pointing Windows 7 to the drivers needed is a simple process as shown below.

1. Insert your MT9234MU-CDC product CD into an available drive. You can ignore or close the CD Start Menu for now.

2. Click the Windows Start button and select **Control Panel** from the options in the right-hand pane.

3. Left-click the Hardware and Sound link.

4. In the Devices and Printers section at the top, click the **Device Manager** link at the end.
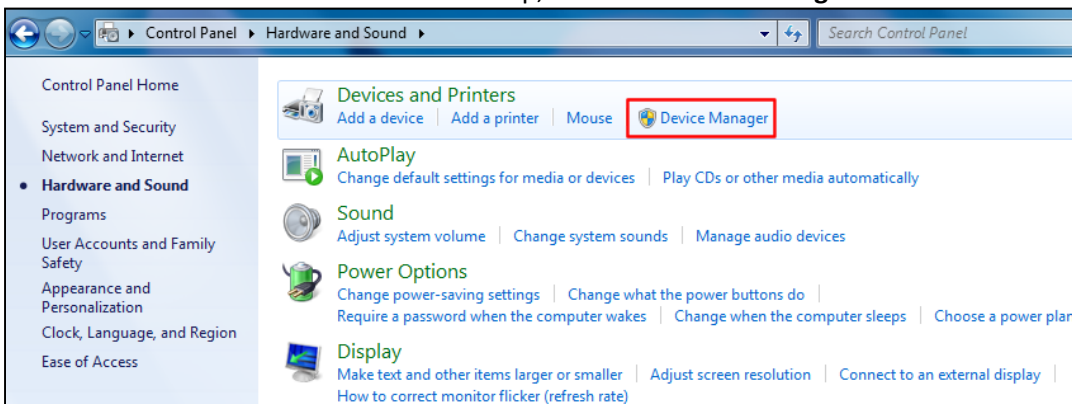
5. In the list of devices, you will see an item called **MT9234MU-CDC**. Right-click on this item and select **Update Driver Software**.
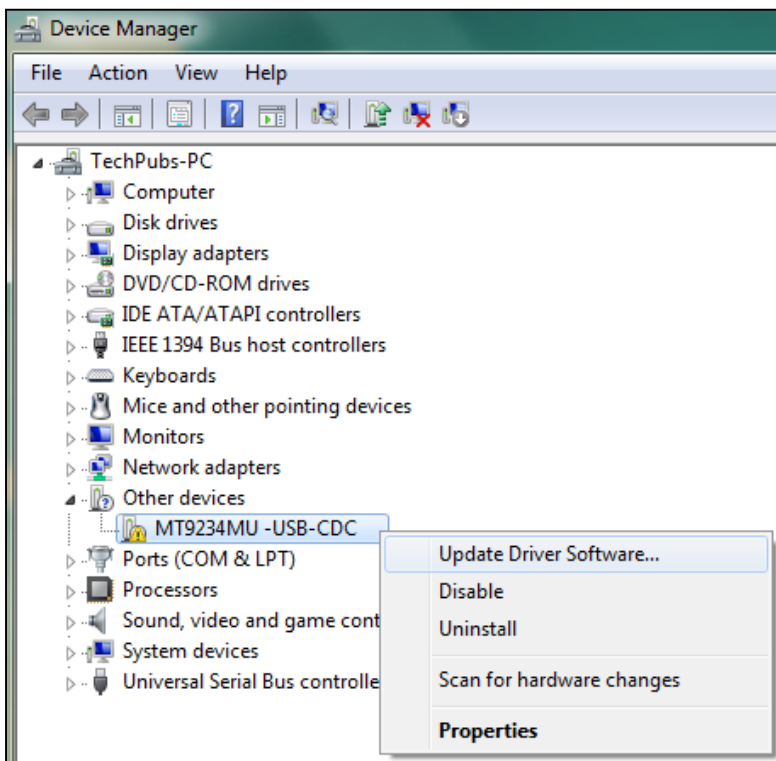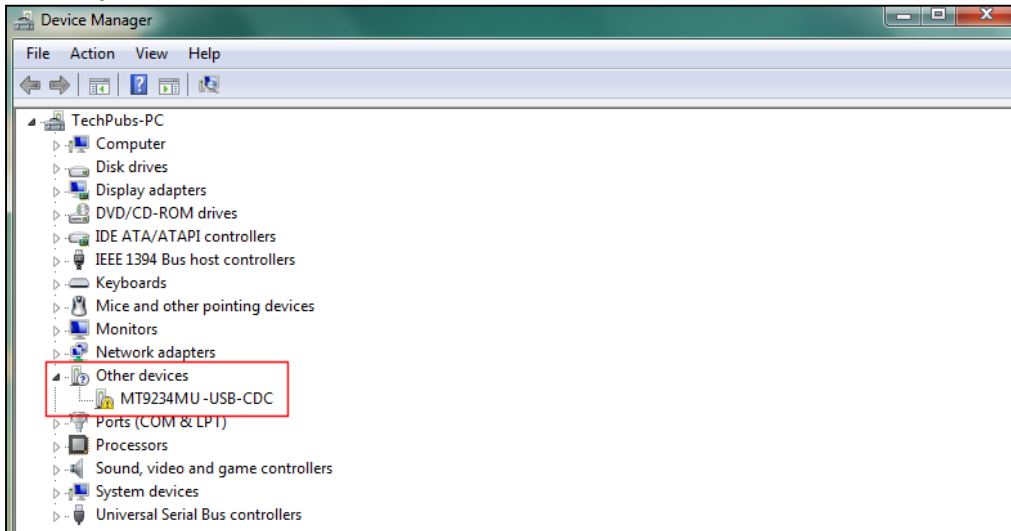
6. Choose the second option "Browse my computer for driver software" and left-click on it.

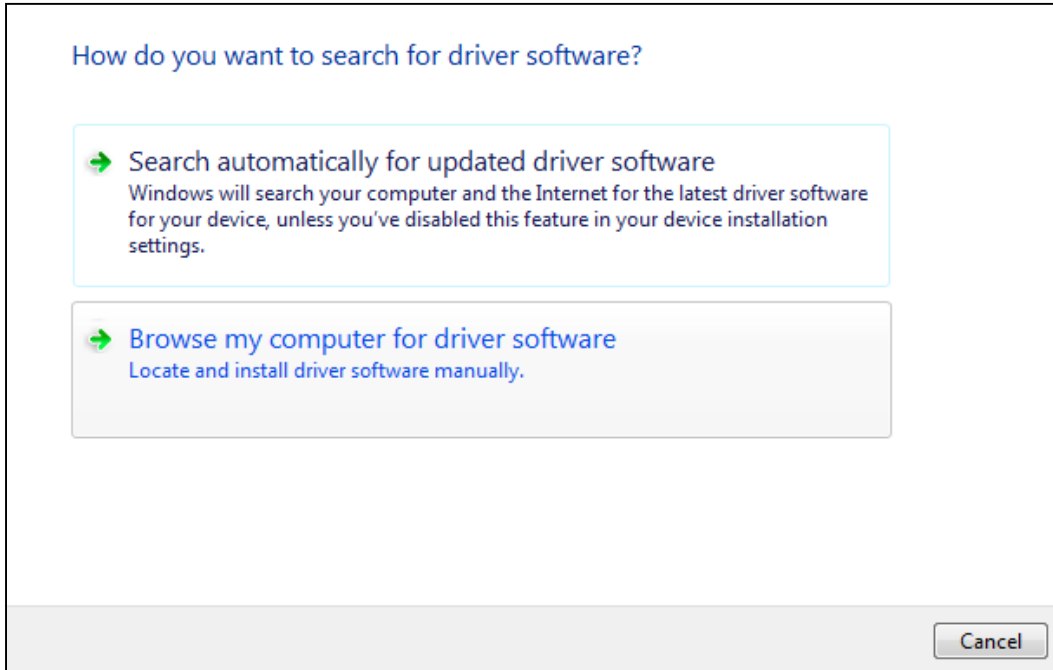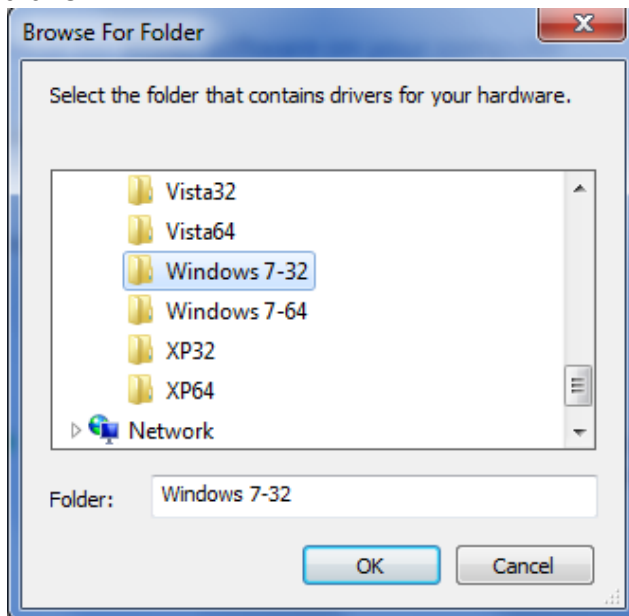How do you want to search for driver software?

→ Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.

→ Browse my computer for driver software
Locate and install driver software manually.

Cancel

7. Click on the Browse button and navigate to the drive containing the MT9234MU-CDC CD and double click to open that.

8. Select the folder containing the appropriate drivers for your install (either 34-bit or 64-bit) and click OK.

Browse For Folder

Select the folder that contains drivers for your hardware.

Vista32
Vista64
Windows 7-32
Windows 7-64
XP32
XP64
Network

Folder: Windows 7-32

OK   Cancel

9. Click the Next button at the bottom of the Update Driver Software window to continue the installation.

Browse for driver software on your computer

Search for driver software in this location:

D:\   Browse...

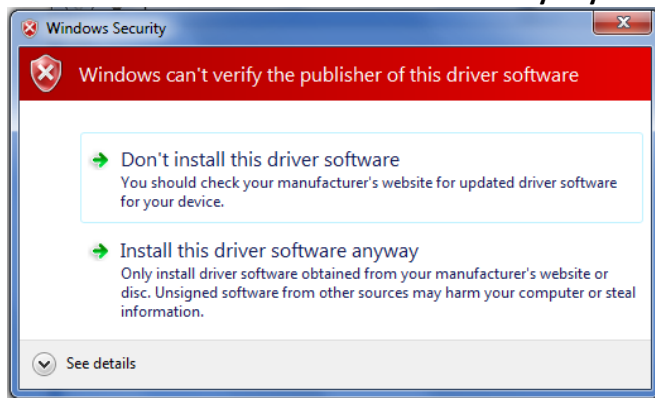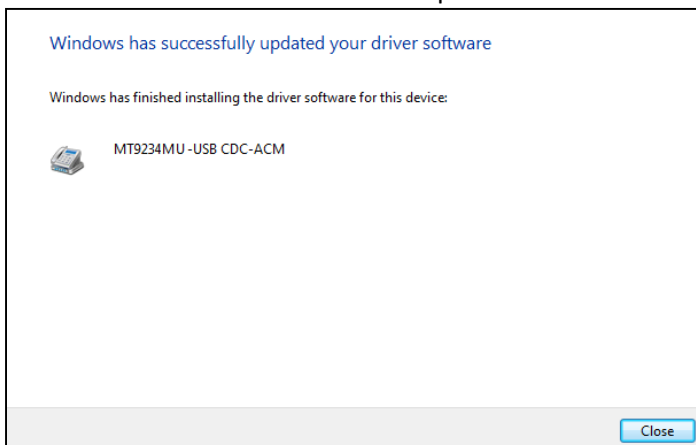☐ Include subfolders

➡ Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.

Next   Cancel
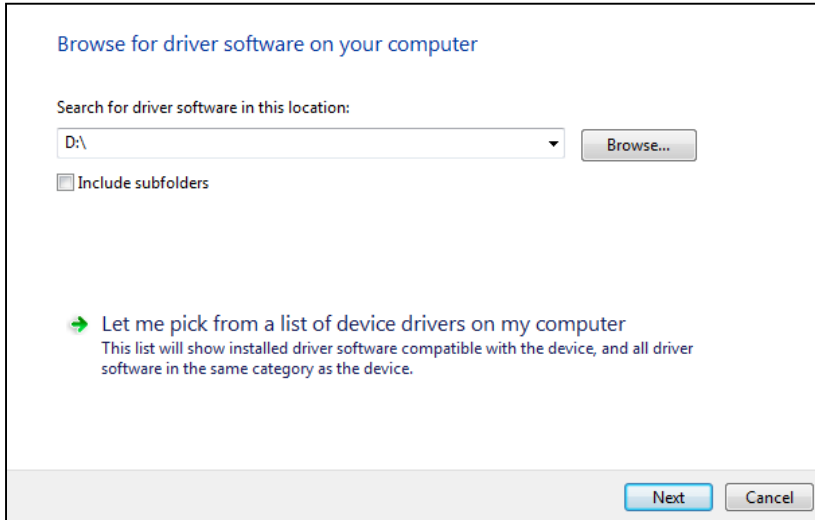
10. At this point you may see a Windows Security window stating that the publisher cannot be verified – click **Install this driver software anyway**.

Windows Security

Windows can't verify the publisher of this driver software

➡ Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.

➡ Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.

⌄ See details

11. There will be a transitory screen as the installation completes.

12. Click **Close** on the last screen to complete the installation.

Windows has successfully updated your driver software

Windows has finished installing the driver software for this device:

MT9234MU -USB CDC-ACM

Close

13. Your modem is now installed and ready to use.

After the installation has been completed, you should test the operation of your new MT9234MU by registering it. Key in the URL given below and follow the on-line instructions:
http://www.multitech.com/en_US/TOOLS/Forms/register/warranty.asp

Installing the Modem in Windows Vista

If you did not use the pre-installer for Windows, this is the process for installing your modem.

1. Power up your computer.

2. If you have not already done so, connect the modem's USB cable to a USB port on the computer and connect the phone line between the modem and a telephone wall jack.

3. Windows will detect that the new modem is present and start the New Hardware wizard. Select the '**Locate and install driver software (recommended)**' option.
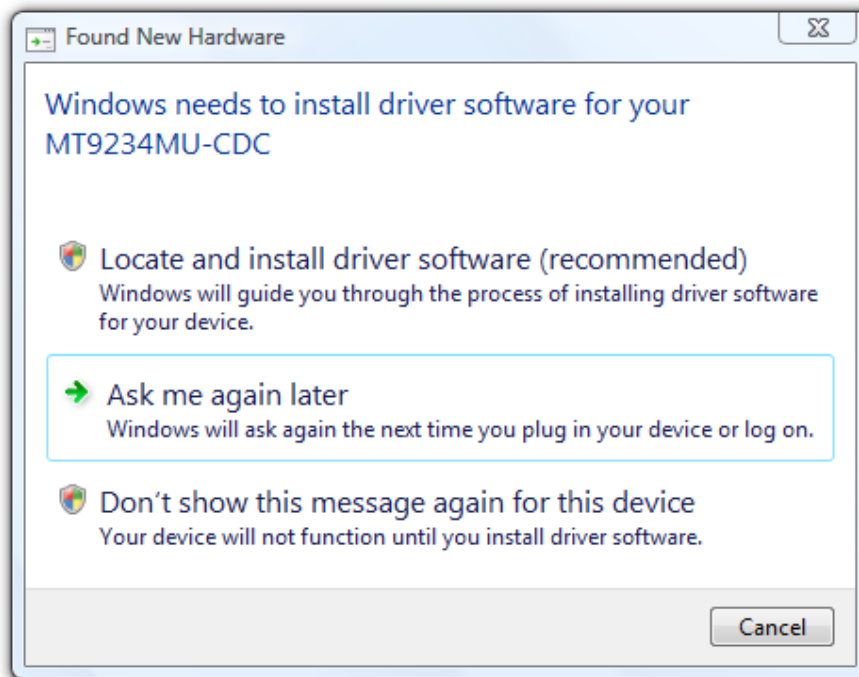

Note: Throughout the installation, you may be prompted by the Vista 'User Account Control' (hereafter referred to as the UAC). When prompted, please click the **Continue** button to proceed with the installation.

4. The New Hardware wizard will now ask if you want to search online for drivers, select '**Don't search online**.'
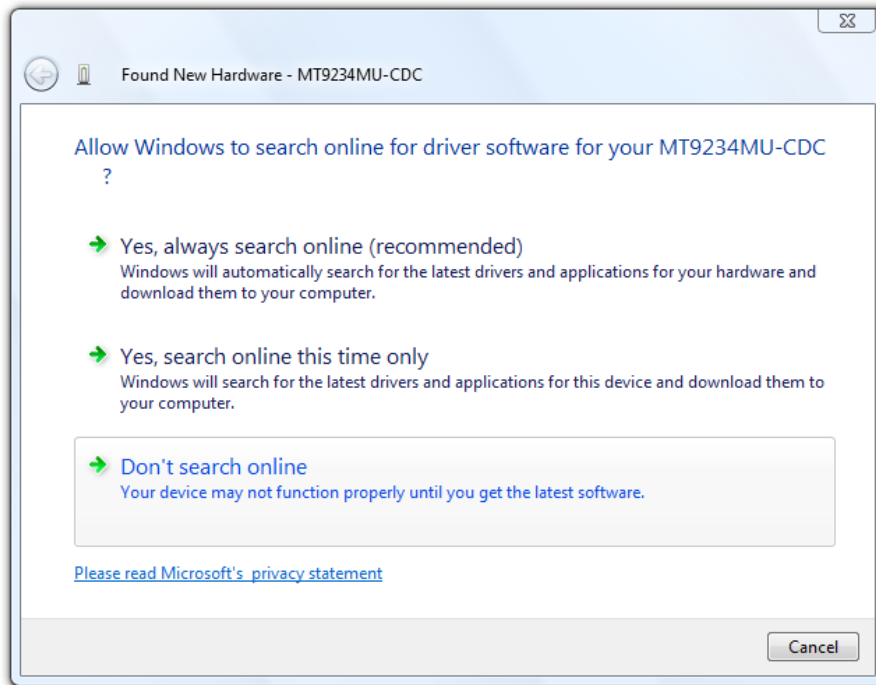
5. Windows will now direct you to insert the disc that came with your device – if you have not already done so, put the MT9234MU-CDC disc into your optical drive.

   Note: The CD for the MT9234MU-CDC utilizes the Autorun feature. You should exit the CD menu if it appears during the install process.
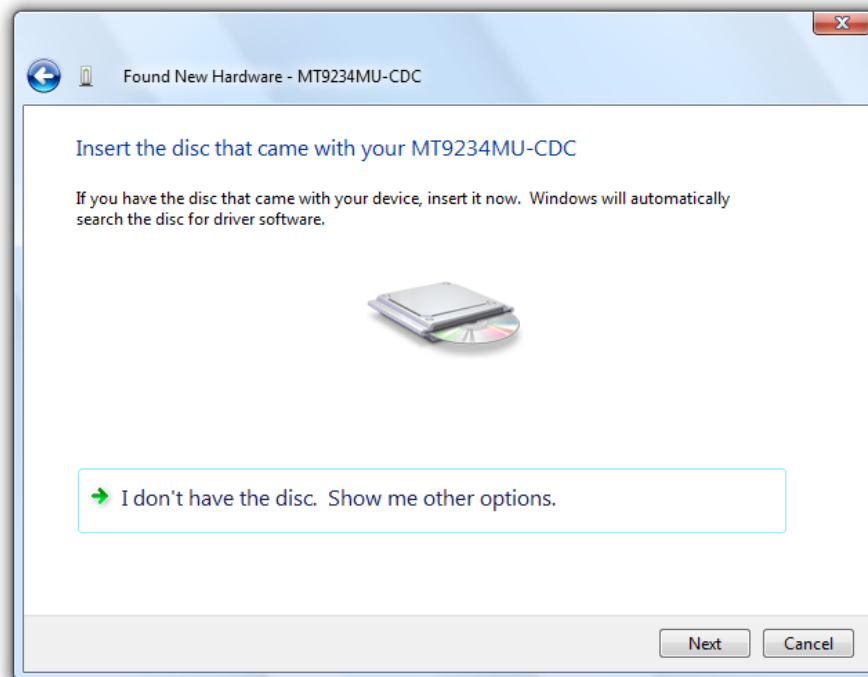
Click the **Next** button.

6. After searching the CD and finding the necessary file, a pop-up window for Windows Security will ask if you want to install the device software from Multi-Tech Systems Incorporated.
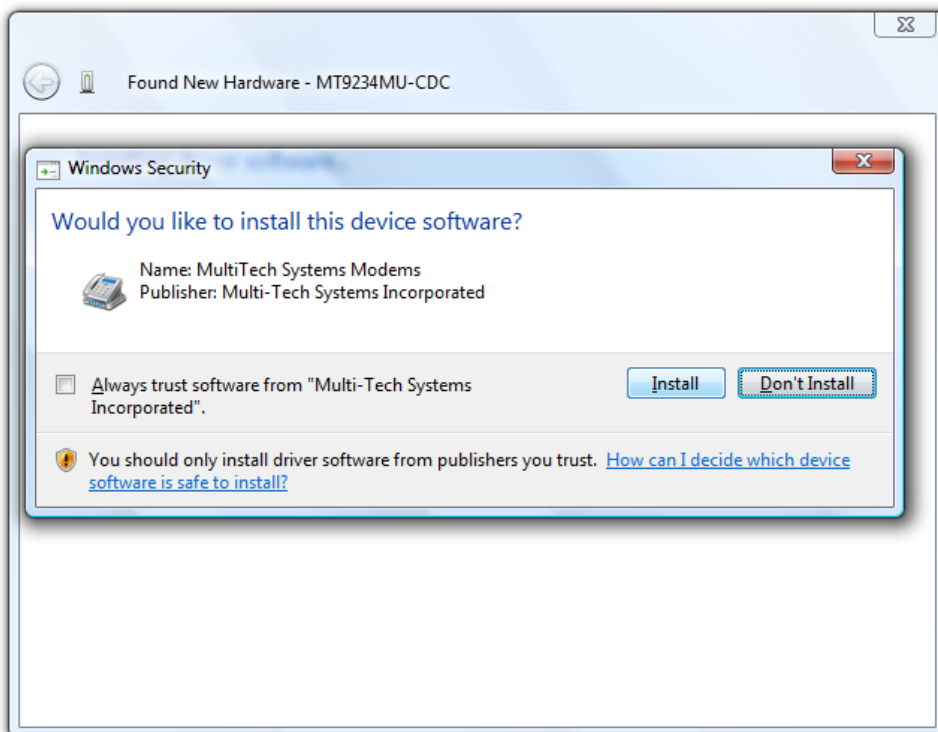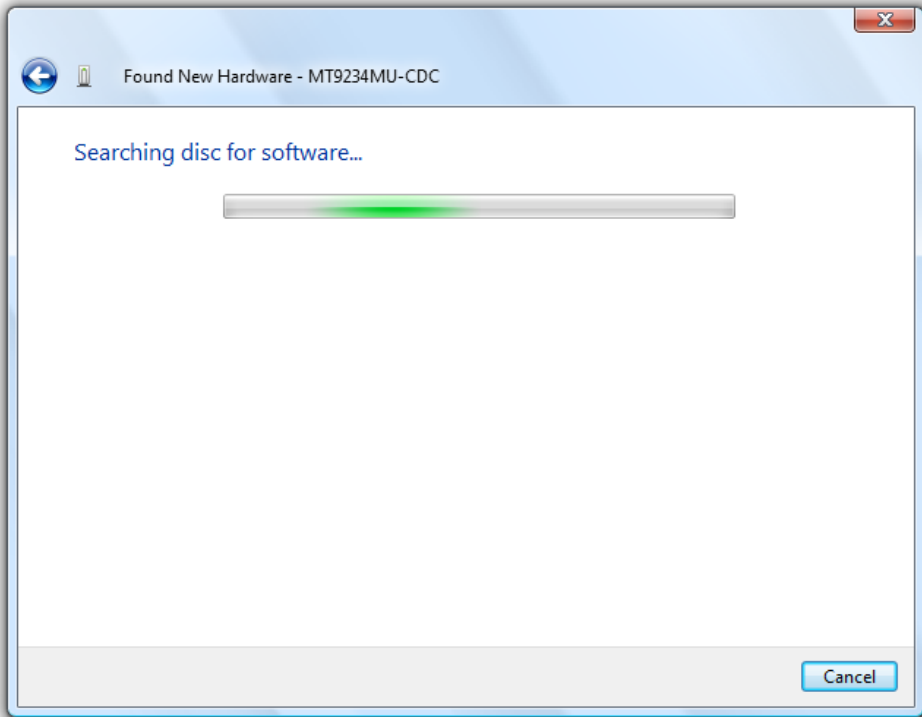
Click the **Install** button.

7. Windows will now finalize the installation.
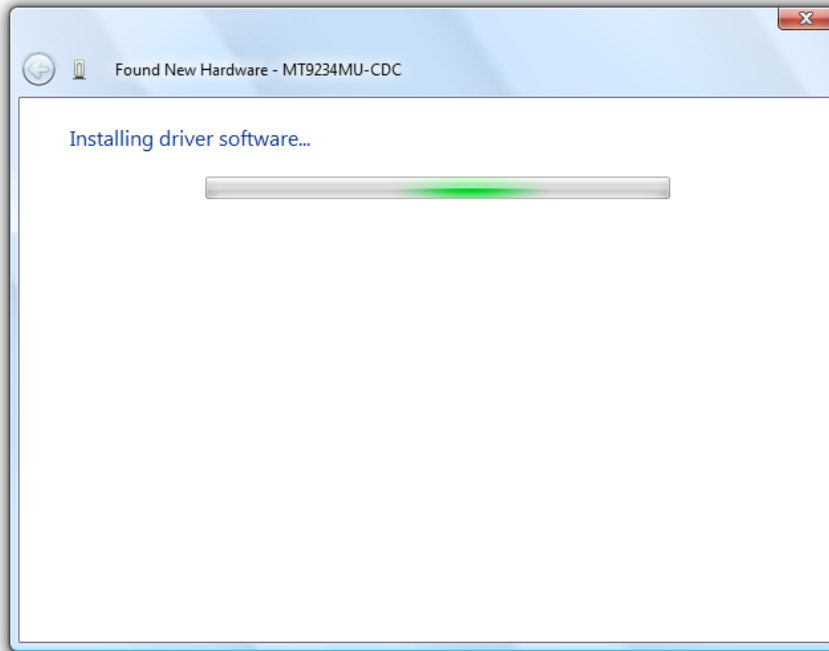
8. When the software for this device has been successfully installed screen appears with Windows has finished installing the driver software for this device: MultiMobile MT9234MU-CDC.
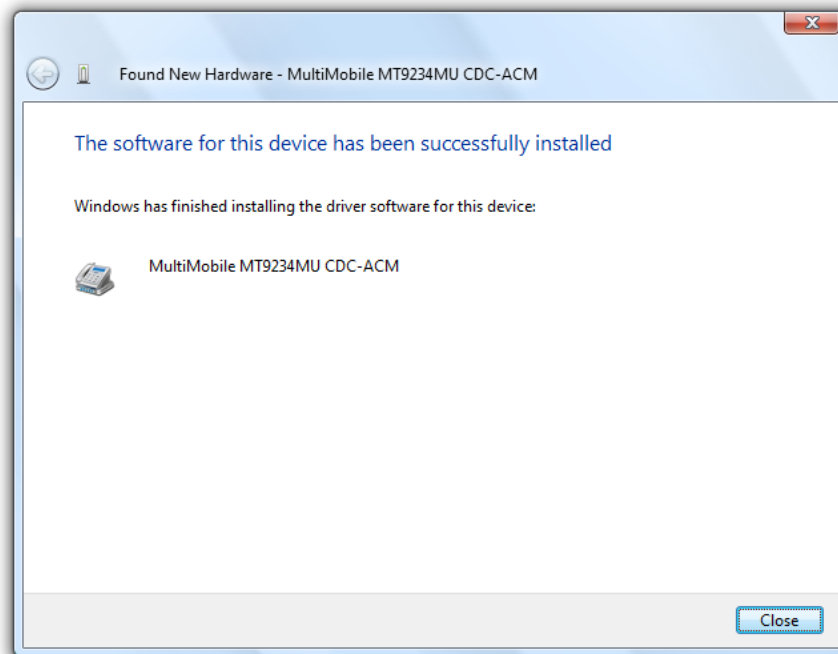
Click **Close**.

After installation has been completed and you have Internet access setup, you should test the operation of your new MT9234MU-CDC by registering it. Key in the URL given below and follow the on-line instructions:

http://www.multitech.com/en_US/TOOLS/Forms/register/warranty.asp

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Installing the Modem in Windows XP and Server 2003 or 2008

If you did not use the pre-installer for Windows, this is the process for installing your modem.

This installation assumes a Windows Server 2008, XP, or 2003 operating system. The procedure below was completed with Windows XP; the other operating systems listed will have a similar sequence and screens.

1. Connect the USB cable between the MultiModem and the PC.

2. Insert the MultiMobile MT9234MU-CDC CD into your CD-ROM drive. The CD uses the Autorun feature, and after a brief delay, the *MultiMobile MT9234MU-CDC Setup – Welcome* screen appears. Close the *Welcome* screen.

   In some situations, the operating system will display a *Found New Hardware Wizard* screen and asks you: *Can Windows connect to Windows Update to search for software*?

   Select **No, not this time**. Then click **Next**.

3. The *Found New Hardware Wizard* screen helps you install the software for MT9234MU-CDC.
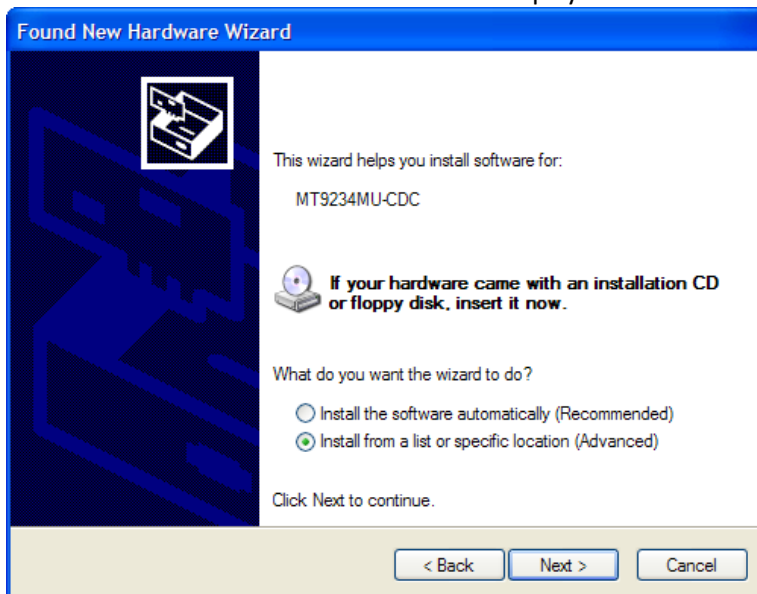
   Click **Install from a list or specific location (Advanced)**, and then click **Next**.

4. The next screen is the Please choose your search and installation options.
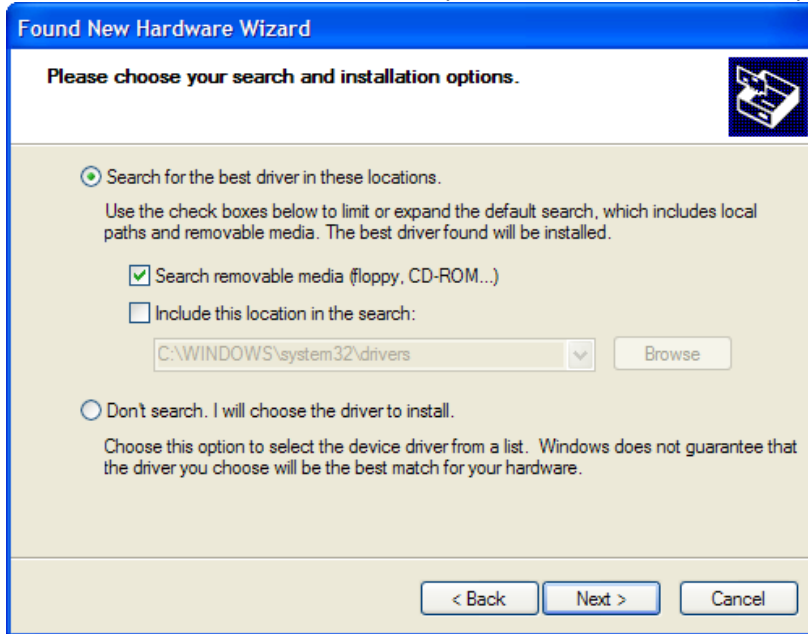
   Select only **Search removable media (floppy, CD-ROM...)**.

   Click **Next**.

5. Please wait while the wizard searches for the MT9234MU-CDC.
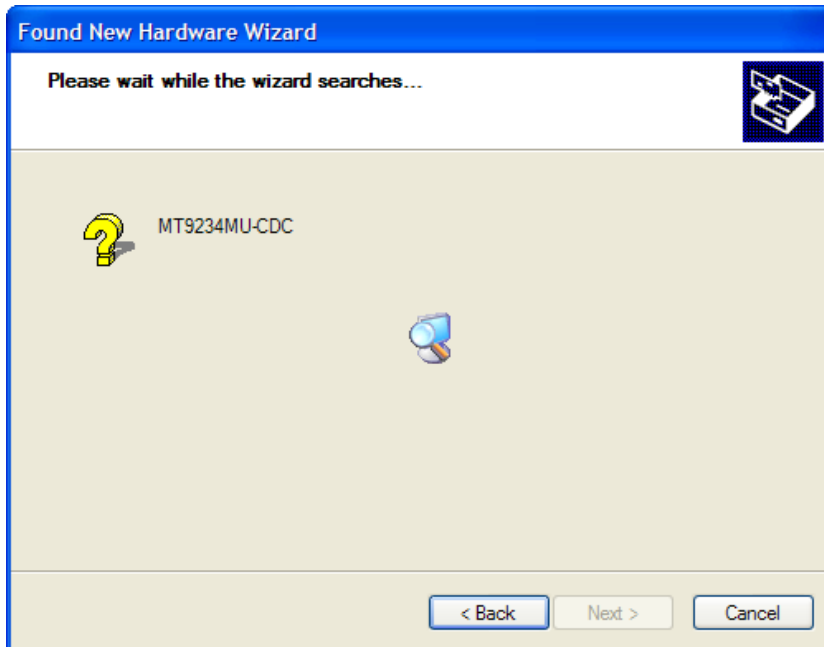
6. You may be prompted by the Windows Logo check. It is safe to continue (select to **Continue Anyway**) as the installation file has passed certification testing for Windows Vista (all other operating systems may display a certification warning).

Hardware Installation

⚠ The software you are installing for this hardware:

MultiMobile MT9234MU CDC-ACM

has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)

Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.

[Continue Anyway]   [STOP Installation]

7. Please wait while the wizard installs the software.

Found New Hardware Wizard

Please wait while the wizard installs the software...

MultiMobile MT9234MU CDC-ACM

Setting a system restore point and backing up old files in case your system needs to be restored in the future.

[< Back]   [Next >]   [Cancel]

8. At the 'Completing the Found New Hardware Wizard' screen for the MultiMobile MT9234MU-CDC click **Finish**.
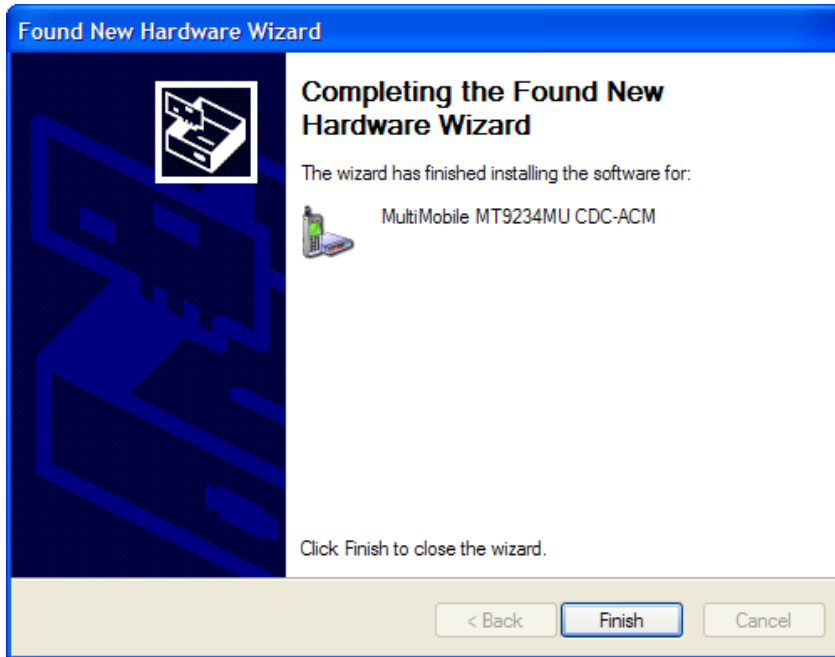
Installation is now complete.

After the installation has been completed and you have Internet access setup, you should test the operation of your new MT9234MU-CDC by registering it. Key in the URL given below and follow the on-line instructions:

http://www.multitech.com/en_US/TOOLS/Forms/register/warranty.asp

Configuring the Modem for Your Country

Different countries have different requirements for how modems must function. Therefore, before you use the modem, you must configure it to match the defaults of the country in which you are using it. You can configure the MT9234MU-CDC either manually using AT commands or with the Global Wizard. Both methods are described below.

Using the Global Wizard Utility to Configure Country Code

The Global Wizard configuration utility is recommended for computers running Windows Vista, Windows Server 2008, XP, and 2003. The Global Wizard can configure your modem for a specific country with just a few mouse clicks.

1. Insert the MT9234MU-CDC Installation CD into the CD-ROM drive. The Autorun dialog box appears.
2. Click Initial Setup and Country Selection. The Global Wizard dialog box appears. Click **Next**.
3. View the Global Wizard as it searches for your modem and identifies it. Click **Next**.
4. Select the country in which the modem will be used and then click **Next**.
5. Review your choice of country. If it is correct, click **Next** to configure the modem.
6. When Global Wizard announces that the parameters have been set, click **Finish** to exit.

Using AT Commands to Configure Country Code

If you are comfortable using AT commands, you can configure your modem using AT commands. You must enter these commands in your communication program's terminal window. If you do not have a terminal program available, please use the Global Wizard Utility as outlined above.

To configure the modem for a specific country, execute the following AT commands:

1. Type **AT%T19,0,nn** (where *nn* represents the country code). Press **Enter**.
2. The modem will respond "OK."
3. Type **AT&F&W** (this saves changes). Press **Enter**.
4. The modem will respond "OK."
5. Type **ATI9** (this verifies that country code has been chosen). Press **Enter**.
6. The modem will display the country code in decimal format followed by an "OK."
7. Check to be sure the code for your country is displayed.
   If not, repeat procedure to correct.

Here is an example of country, command, and result codes.

Example	Country/Region	AT Command (Hexadecimal)	Country Code (Decimal)
	Euro/NAM*	AT%T19,0,34 (default)	52

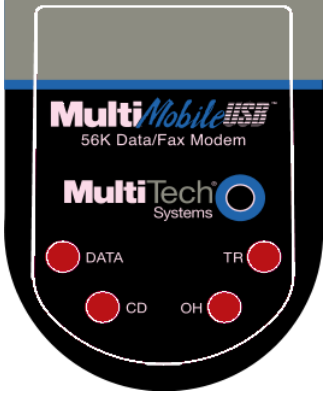The complete list of country/region codes can be found on the Multi-Tech Web site at:

http://www.multitech.com/en_US/PRODUCTS/Categories/Device_Networking/global_modems/configuration.asp#chart

Then click on global modems. The Global Modem Country Approvals page displays. On this page you can view approvals, configuration strings and responses by country and product.

Chapter 3 – Operation

Front Panel

The MT9234MU-CDC has 4 LEDs on the front panel indicating status, configuration, and activity:

Data. The Data LED flashes when the modem is transmitting/receiving data to/from another modem.
[CD] Carrier Detect. The CD LED lights when the modem detects a valid carrier signal from another modem. It is on when the modem is communicating with the other modem and off when the link is broken.
[OH] Off-Hook. The OH LED lights when the modem is off-hook, which occurs when the modem is dialing, online, or answering a call. The LED flashes when the modem pulse-dials.
[TR] Terminal Ready. The TR LED lights when Windows detects and initializes the modem.

Connecting to the Internet

Your Multi-Tech modem is your gateway to the Internet and the World Wide Web. To access the Internet and Web via your modem, you must establish a dial-up account with an Internet service provider (ISP). To locate an ISP near you, look in a local directory or computer publication. Your ISP should provide you with the following information:

- User name (also called user ID)
- Password
- Access number (the number you call to connect to the server)
- Host name and/or domain name
- Domain Name Server (DNS) server address

If, besides the Web, you use the Internet for e-mail and newsgroups, your ISP should also provide you with the following information:

- E-mail or POP mail address
- POP server address
- Mail or SMTP address
- News or NNT server address

Internet Connection

Before you can connect to the Internet, you must set up a remote-node client program on your computer to make the connection. Most, if not all, Web browsers can automatically open this connection. For instructions on how to set up this connection, consult your ISP or your operating system's online help or printed documentation. Many ISPs include with their service a program that will install and configure this connection automatically for you.

Chapter 4 – Remote Configuration

Remote configuration is a network management tool that allows you to configure modems anywhere in your network from one location. With password protected remote configuration, you can issue AT commands to a remote MT9234MU-CDC modem for maintenance or troubleshooting as if you were on site.

Basic Procedure

The following steps are valid regardless of whether the connection is established by the local or the remote Multi-Tech modem.

1. Establish a data connection with a remote MT9234MU-CDC modem.
2. Send three remote configuration escape characters followed by **AT** and the setup password, and press ENTER. Example: **%%%ATMTSMODEM**. You have four tries to enter the correct password before being disconnected. If the password is correct, the remote modem responds with **OK**.
3. You can now send AT commands to configure the remote modem.
4. When you have finished configuring the remote modem, save the new configuration by typing **AT&W0**, and pressing **Enter**.
5. Type **ATO** and press **Enter** to exit remote configuration. You can then break the connection in the normal way.

CAUTION: If you hang up while you are in remote configuration mode, it may lock up the remote modem.

Setup

Multi-Tech modems are shipped with a default setup password (MTSMODEM). Because anyone who has an owner's manual knows the default setup password, for security you should change the password and possibly also the remote configuration escape character.

Changing the Setup Password

1. Open a data communications program such as HyperTerminal.
2. To change the password, type **AT#S=xxxxxxxx**, where xxxxxxxx stands for the password, and press ENTER. The password can include any keyboard character, and must be one to eight characters long. The modem responds with **OK**.
3. The new password is saved automatically. You can now either enter more AT commands or exit the data communications program. The next time you remotely configure the modem you must use the new setup password.

Note: You can only change the setup password locally; you cannot do it remotely. Also, passwords are case sensitive. The next time you enter the password, it must be in the same case as you set it up.

Changing the Remote Escape Character

To increase security, you can change a remote modem's remote configuration escape character. The remote configuration escape character is stored in register *S9*. The factory default is 37, which is the ASCII code for the percent character (%). For ASCII code characters, refer to Appendix D. Setting *S9* to 0 (zero) disables remote configuration entirely—but if you do this remotely, you won't be able to change it back remotely!

1. Establish a remote configuration link with the remote modem as described in "Basic Procedure."
2. Type **ATS9=*n***, where *n* is the ASCII code for the new remote configuration escape character, then press ENTER.
3. Save the new value by typing **AT&W** and pressing ENTER.
4. Type **ATO<CR>** to exit remote configuration.

Appendix A – Regulatory Compliance

FCC Part 15 Class B Statements

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to 47 CFR Part 15 regulations. The stated limits in this regulation 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 to 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.
- Plug the 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.

This device complies with Part 15 of the 47 CFR rules. Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada

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

Cet appareil numerique de la classe B respecte toutes les exigences du Reglement sur le material brouilleur du Canada.

FCC Part 68 Telecom

1. This equipment complies with part 68 of the Federal Communications Commission Rules. On the outside surface of this equipment is a label that contains, among other information, the FCC registration number. This information must be provided to the telephone company.

2. The suitable USOC jack (Universal Service Order Code connecting arrangement) for this equipment is shown below. If applicable, the facility interface codes (FIC) and service order codes (SOC) are shown.

3. An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. See installation instructions for details.

4. The ringer equivalence number (REN) is used to determine the number of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the device not ringing in response to an incoming call. In most, but not all, areas the sum of the RENs should not exceed 5.0. To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the local telephone company.

5.   If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify you as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

6.   The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications in order to maintain uninterrupted service.

7.   If trouble is experienced with this equipment (the model of which is indicated below) please contact Multi-Tech Systems, Inc. at the address shown below for details of how to have repairs made. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

8.   No repairs are to be made by you. Repairs are to be made only by Multi-Tech Systems or its licensees. Unauthorized repairs void registration and warranty.

9.   This equipment should not be used on party lines or coin lines.

10. If so required, this equipment is hearing-aid compatible.

11. Manufacturing Information:

Manufacturer:	Multi-Tech Systems, Inc.
Trade Name	MultiMobile USB
Model Number:	MT9234MU
Registration Number:	AU7MM04B9234MU
Service Center in USA:	Multi-Tech Systems, Inc.
	2205 Woodale Drive
	Mounds View, MN 55112
	U.S.A.
	(763) 785-3500
	(763) 785-9874 Fax

Canadian Limitations Notice

Notice: The ringer equivalence number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the ringer equivalence numbers of all the devices does not exceed 5.

Notice: The Industry Canada label identifies certificated equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Industry Canada label does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment or equipment malfunctions may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

EMC, Safety, and R&TTE Directive Compliance

The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

- Council Directive 2004/108/EC of 15 December 2004 on the approximation of the laws of Member States relating to electromagnetic compatibility;
  and
- Council Directive 2006/95/EC of 12 December 2006 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits;
  and
- Council Directive 1999/5/EC of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

International Modem Restrictions

Some dialing and answering defaults and restrictions may vary for international modems. Changing settings may cause a modem to become non-compliant with national telecom requirements in specific countries. Also note that some software packages may have features or lack restrictions that may cause the modem to become non-compliant.

New Zealand Telecom Warning Notice

1. The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

   This equipment is not capable under all operating conditions of correct operation at the higher speed which it is designated. 33.6 kbps and 56 kbps connections are likely to be restricted to lower bit rates when connected to some PSTN implementations. Telecom will accept no responsibility should difficulties arise in such circumstances.

2. Immediately disconnect this equipment should it become physically damaged, and arrange for its disposal or repair.

3. This modem shall not be used in any manner which could constitute a nuisance to other Telecom customers.

4. This device is equipped with pulse dialing, while the Telecom standard is DTMF tone dialing. There is no guarantee that Telecom lines will always continue to support pulse dialing.

   Use of pulse dialing, when this equipment is connected to the same line as other equipment, may give rise to 'bell tinkle' or noise and may also cause a false answer condition. Should such problems occur, the user should not contact the Telecom Faults Service.

   The preferred method of dialing is to use DTMF tones, as this is faster than pulse (decadic) dialing and is readily available on almost all New Zealand telephone exchanges.

5. Warning Notice: No '111' or other calls can be made from this device during a mains power failure.

6. This equipment may not provide for the effective hand-over of a call to another device connected to the same line.

7. Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated equipment shall be set to operate within the following limits for compliance with Telecom's Specifications:

For repeat calls to the same number:

- There shall be no more than 10 call attempts to the same number within any 30-minute period for any single manual call initiation, and
- The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

For automatic calls to different numbers:

- The equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

  For automatically answered incoming calls:

- The equipment shall be set to ensure that calls are answered between 3 and 30 seconds of receipt of ringing.

8. For correct operation, total of the RNs of all devices connected to a single line at any time should not exceed 5.

South African Notice

This modem must be used in conjunction with an approved surge protection device.

Thailand Approval

Translation in Thai

"This telecom device and equipment is conform to technical standard no…."
or
"This telecom device and equipment is conform to requirement to NTC"

"เครื่องโทรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามมาตรฐานทางเทคนิค เลขที่………"
or
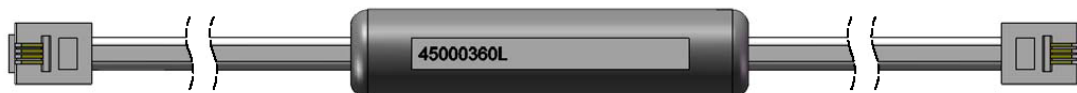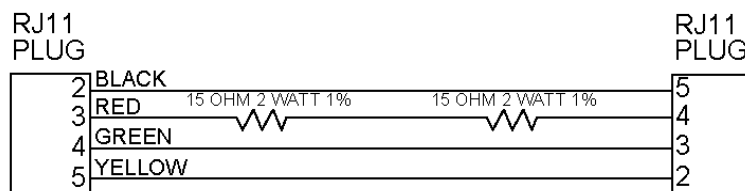"เครื่องโทรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามข้อกำหนดของ กทช."

Brazil Regulatory Special Cable Requirement

Model: MT9234MU – special cable needed.

Attention:
A special phone cable is required for regulatory compliance.

Um cabo especial para telefone é requerido para a conformidade regulatória.

Restriction of the Use of Hazardous Substances (RoHS)

Multi-Tech Systems, Inc.

Certificate of Compliance

2002/95/EC

Multi-Tech Systems, Inc. confirms that this product now complies with the chemical concentration limitations set forth in the directive **2002/95/EC** of the European Parliament (Restriction Of the use of certain Hazardous Substances in electrical and electronic equipment - **RoHS**)

These Multi-Tech Systems, Inc. products do not contain the following banned chemicals:

Lead, [Pb] < 1000 PPM

Mercury, [Hg] < 1000 PPM

Hexavalent Chromium, [Cr+6] < 1000 PPM

Cadmium, [Cd] < 100 PPM

Polybrominated Biphenyl, [PBB] < 1000 PPM

Polybrominated Diphenyl Ether, [PBDE] < 1000 PPM

Maximum Soldering temperature = 260C (wave only)

Notes:

1. Lead usage in some components is exempted by the following RoHS annex; therefore, higher lead concentration could be found.
   a. Lead in high melting temperature type solders (i.e., tin-lead solder alloys containing more than 85% lead).
   b. Lead in electronic ceramic parts (e.g., piezoelectronic devices).

REACH Statement

Registration of Substances:
After careful review of the legislation and specifically the definition of an "article" as defined in EC Regulation 1907/2006, Title II, Chapter 1, Article 7.1(a)(b), it is our current view Multi-Tech Systems, Inc. products would be considered as "articles". In light of the definition in § 7.1(b) which requires registration of an article only if it contains a regulated substance that "is intended to be released under normal or reasonable foreseeable conditions of use," our analysis is that Multi-Tech Systems, Inc. products constitute nonregisterable articles for their intended and anticipated use.

Substances of Very High Concern (SVHC)
Per the candidate list of Substances of Very high Concern (SVHC) published October 28, 2008 we have reviewed these substances and certify the Multi-Tech Systems, Inc. products are compliant per the EU "REACH" requirements of less than 0.1% (w/w) for each substance. If new SVHC candidates are published by the European Chemicals Agency, and relevant substances have been confirmed, that exceeds greater than 0.1% (w/w), Multi-Tech Systems, Inc. will provide updated compliance status.

Multi-Tech Systems, Inc. also declares it has been duly diligent in ensuring that the products supplied are compliant through a formalized process which includes collection and validation of materials declarations and selective materials analysis where appropriate. This data is controlled as a part of a formal quality system and will be made available upon request.

Appendix B – Waste Electrical and Electronic Equipment

July, 2005

The WEEE directive places an obligation on EU-based manufacturers, distributors, retailers, and importers to take-back electronics products at the end of their useful life. A sister Directive, ROHS (Restriction of Hazardous Substances) complements the WEEE Directive by banning the presence of specific hazardous substances in the products at the design phase. The WEEE Directive covers all Multi-Tech products imported into the EU as of August 13, 2005. EU-based manufacturers, distributors, retailers and importers are obliged to finance the costs of recovery from municipal collection points, reuse, and recycling of specified percentages per the WEEE requirements.

Instructions for Disposal of WEEE by Users in the European Union
The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the seller from whom you purchased the product.

Appendix C – C-ROHS HT/TS Substance Concentration

依照中国标准的有毒有害物质信息

根据中华人民共和国信息产业部 (MII) 制定的电子信息产品 (EIP)
标准－中华人民共和国《电子信息产品污染控制管理办法》（第 39 号），也称作中国 RoHS，下表列出了
Multi-Tech Systems Inc. 产品中可能含有的有毒物质 (TS) 或有害物质 (HS)
的名称及含量水平方面的信息。

成分名称	有害/有毒物质/元素					
	铅 (PB)	汞 (Hg)	镉 (CD)	六价铬 (CR6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板	O	O	O	O	O	O
电阻器	X	O	O	O	O	O
电容器	X	O	O	O	O	O
铁氧体磁环	O	O	O	O	O	O
继电器/光学部件	O	O	O	O	O	O
IC	O	O	O	O	O	O
二极管/晶体管	O	O	O	O	O	O
振荡器和晶振	X	O	O	O	O	O
调节器	O	O	O	O	O	O
电压传感器	O	O	O	O	O	O
变压器	O	O	O	O	O	O
扬声器	O	O	O	O	O	O
连接器	O	O	O	O	O	O
LED	O	O	O	O	O	O
螺丝、螺母以及其它五金件	X	O	O	O	O	O
交流-直流电源	O	O	O	O	O	O
软件/文档 CD	O	O	O	O	O	O
手册和纸页	O	O	O	O	O	O
底盘	O	O	O	O	O	O

X 表示所有使用类似材料的设备中有害/有毒物质的含量水平高于 SJ/Txxx-2006 限量要求。

O 表示不含该物质或者该物质的含量水平在上述限量要求

Appendix D – ASCII Conversion

ASCII Conversion Chart

CTRL	CODE	HEX	DEC	CODE	HEX	DEC	CODE	HEX	DEC	CODE	HEX	DEC
@	NUL	00	0	SP	20	32	@	40	64	`	60	96
A	SOH	01	1	!	21	33	A	41	65	a	61	97
B	STX	02	2	"	22	34	B	42	66	b	62	98
C	ETX	03	3	#	23	35	C	43	67	c	63	99
D	EOT	04	4	$	24	36	D	44	68	d	64	100
E	ENQ	05	5	%	25	37	E	45	69	e	65	101
F	ACK	06	6	&	26	38	F	46	70	f	66	102
G	BEL	07	7	'	27	39	G	47	71	g	67	103
H	BS	08	8	(	28	40	H	48	72	h	68	104
I	HT	09	9	)	29	41	I	49	73	i	69	105
J	LF	0A	10	*	2A	42	J	4A	74	j	6A	106
K	VT	0B	11	+	2B	43	K	4B	75	k	6B	107
L	FF	0C	12	,	2C	44	L	4C	76	l	6C	108
M	CR	0D	13	-	2D	45	M	4D	77	m	6D	109
N	SO	0E	14	.	2E	46	N	4E	78	n	6E	110
O	SI	0F	15	/	2F	47	O	4F	79	o	6F	111
P	DLE	10	16	0	30	48	P	50	80	p	70	112
Q	DC1	11	17	1	31	49	Q	51	81	q	71	113
R	DC2	12	18	2	32	50	R	52	82	r	72	114
S	DC3	13	19	3	33	51	S	53	83	s	73	115
T	DC4	14	20	4	34	52	T	54	84	t	74	116
U	NAK	15	21	5	35	53	U	55	85	u	75	117
V	SYN	16	22	6	36	54	V	56	86	v	76	118
W	ETB	17	23	7	37	55	W	57	87	w	77	119
X	CAN	18	24	8	38	56	X	58	88	x	78	120
Y	EM	19	25	9	39	57	Y	59	89	y	79	121
Z	SUB	1A	26	:	3A	58	Z	5A	90	z	7A	122
[	ESC	1B	27	;	3B	59	[	5B	91	{	7B	123
\	FS	1C	28	<	3C	60	\	5C	92			7C	124
]	GS	1D	29	=	3D	61	]	5D	93	}	7D	125
^	RS	1E	30	>	3E	62	^	5E	94	~	7E	126
_	US	1F	31	?	3F	63	_	5F	95	DEL	7F	127

NUL	Null, or all zeros	VT	Vertical Tab	SYN	Sync.
SOH	Start of Header	FF	Form Feed	ETB	End Transmission Block
STX	Start of Text	CR	Carriage Return	CAN	Cancel
ETX	End of Text	SO	Shift Out	EM	End of Medium
EOT	End of Transmission	SI	Shift In	SUB	Substitute
ENQ	Enquiry	DLE	Data Link Escape	ESC	Escape
ACK	Acknowledge	DC1	Device Control 1	FS	File Separator
BEL	Bell or Alarm	DC2	Device Control 2	GS	Group Separator
BS	Backspace	DC3	Device Control 3	RS	Record Separator
HT	Horizontal Tab	DC4	Device Control 4	US	Unit Separator
LF	Line Feed	NAK	Negative Acknowledge	DEL	Delete

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