
Intelligent Serial *Interface*

Server Cards

ISI5634UPCI & ISI9234PCIE

Quick Start Guide



**Quick Start Guide
P/N 82010753L, Revision D**

**Models ISI5634UPCI-4 & ISI5634UPCI-8
Models ISI9234PCIE-4 & ISI9234PCIE-8**

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Record of Revision

Revision	Date	Description
A	01/15/04	Manual released.
B	10/24/07	Add PCI Express-bus architecture.
C	04/14/08	Remove ISI Management Software procedures.
D	06/06/08	Remove ISI4604/8 Serial Cards, and add procedures for Windows Server 2008 Operating System support.

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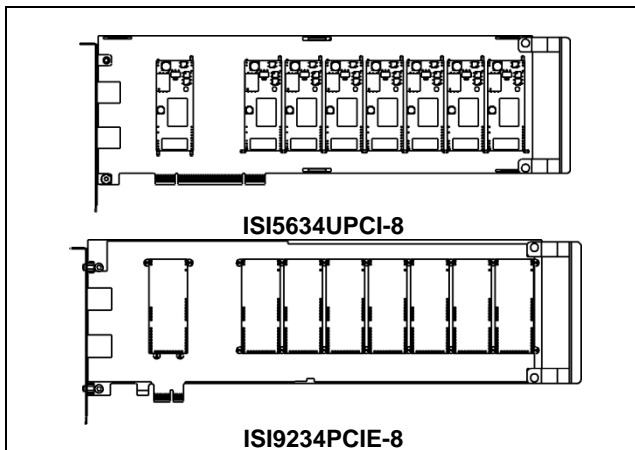
Safety Warnings

- This product must be installed by a qualified service person.
- When installing or servicing this product, the phone lines must be disconnected to remove the risk of hazardous voltages.
- Never install telephone wiring during a lightning storm.
- Never install telephone jacks 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 the telephone to report a gas leak in the vicinity of the leak.

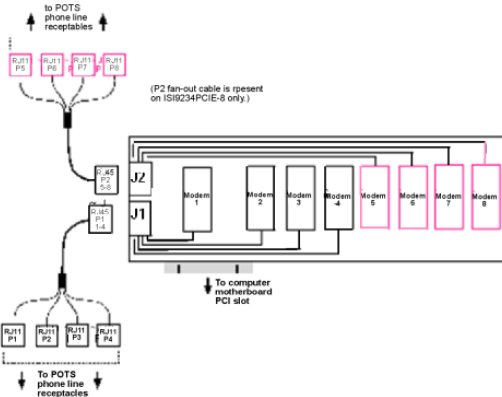
Hardware Installation Procedures

To install the ISI Card into your PCI-bus computer, follow the steps presented below.

1. Turn off your computer and any peripheral equipment connected to it. The ISI Card can be installed in a Pentium equivalent PCI bus computer.
2. Remove the cover of your computer as instructed in your computer's documentation.
3. Before handling the ISI Card, discharge any static in your body by touching a piece of grounded metal such as the computer chassis.



4. Carefully remove the ISI Card from its antistatic bag, handling it only by the mounting bracket and edges. Do not touch the gold-plated connectors along the bottom edge. (You may want to save packaging for possible future use.)
5. Locate the unused PCI slot you will be using for your ISI Card and remove the slot cover according to instructions in your computer's documentation.
6. Install the ISI Card into the selected expansion slot in the same manner as any other add-on card, as instructed in your computer's documentation.
7. Fasten the retaining bracket to the computer chassis and replace cover on the computer.
8. **Cabling.** The -4 card has one RJ-45 receptacle and one fan-out cable; the -8 card has two RJ-45 receptacles and two fan-out cables. Each fan-out cable extends connections for four modems from the RJ-45 plug to four RJ-11 plugs. Each RJ-11 plug should then be attached to a phone line receptacle. Attach the RJ-45 connector into the appropriate RJ45 receptacle on the ISI Server card.
To view a pinout diagram of the Server Card Fan-Out Cables, see Appendix A in the user guide.



Fan-Out Cable for ISI Server Card

Software Installation

Introduction

The ISI Card ships with software/drivers for each of the following operating systems: Windows® 2008, Vista, XP, 2003, 2000 Server, and 2000 Advanced Server, and Linux. You may need to configure the modems for your country/region, the procedure for doing this is at the end of this Guide.

For additional Windows Operating System Software Installation Procedures, refer to the User Guide.

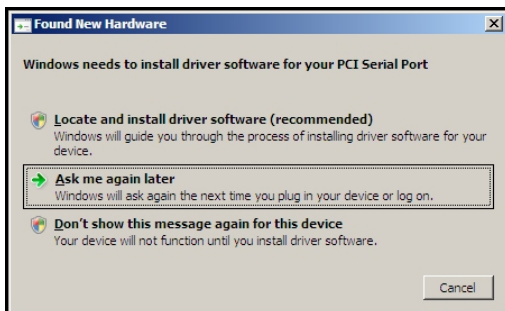
Installing a device driver modifies your system. For this reason, only the *super user* (system administrator) is allowed to perform the installation. If you cannot login as **administrator**, find the person in your organization with this authorization (i.e., password). To begin driver installation, login as **administrator**.

Driver Installation for Windows Server 2008 and Vista

The following driver installation procedure is based on Windows Server 2008 64-bit Operating System. The procedure may vary slightly for the Windows Server 2008 32-bit Operating System

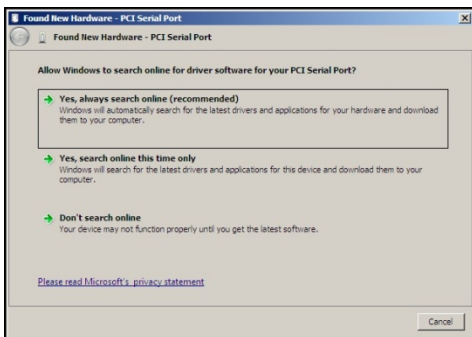
Card Driver Installation

1. Power up your computer.
2. Windows Server 2008 will detect the ISI Card. A screen from the tray area, at the bottom right of the screen will appear briefly Installing Device Driver Software.
3. The Found New Hardware screen appears for Windows to install driver software for your PCI Serial Port.



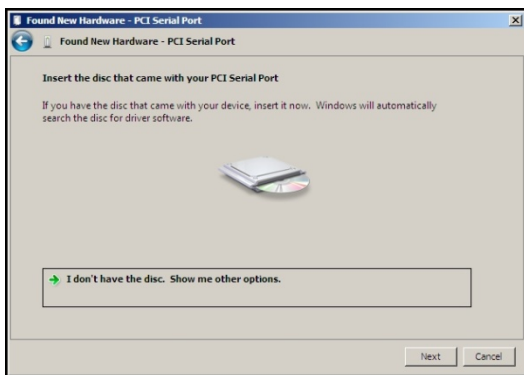
Click on **Locate and install driver software (recommended)**. Windows will guide you through the process of installing driver software for your device.

4. A Found New Hardware – PCI Serial Port screen appears and asks: Allow Windows to search online for driver software for your PCI Serial Port?



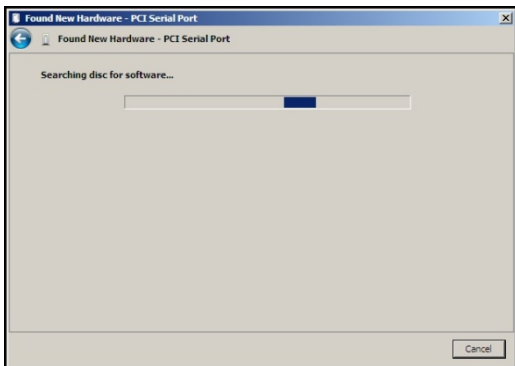
Select Don't search online.

5. The next screen prompts you to **Insert the disc that came with your PCI Serial Port**. If you have the disc that came with your card, insert it now.

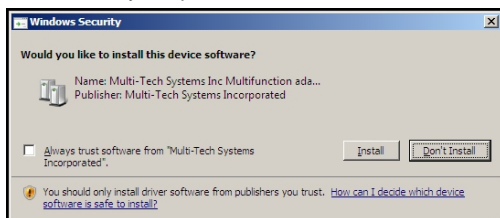


Click **Next**. [Windows may prompt you to search online, but this is not necessary.](#)

6. Searching disc for software...screen appears.

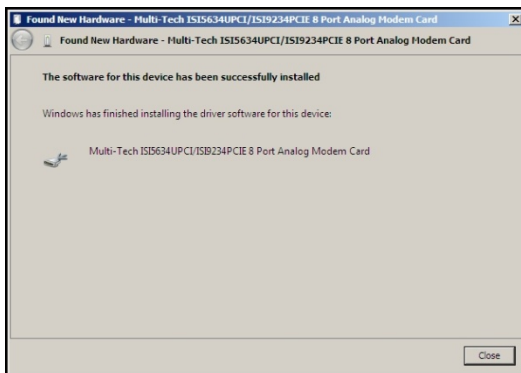


7. Windows can't verify the publisher of this driver software screen appears.



Click **Install**.

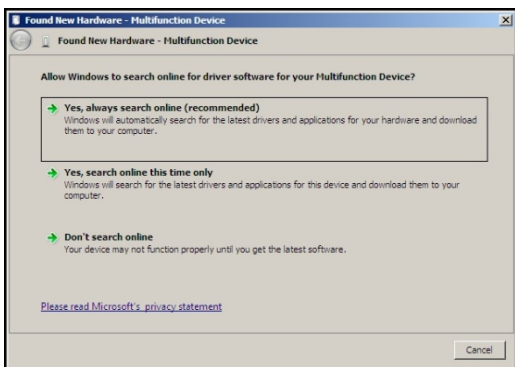
8. When the **software for this device has been successfully installed** screen appears, Windows has finished installing the driver software for this device: Multi-Tech ISI5634UPCI/ISI9234PCIE 8 Port Analog Modem Card.



Click **Close**.

Installation of the Communications Port

9. A Found New Hardware – Multifunction Device screen appears and asks: Allow Windows to search online for driver software for your Multifunction Device?



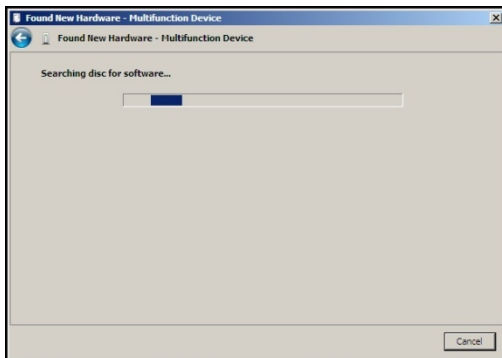
Select **Don't search online**.

10. The Found New Hardware – Multifunction Device screen appears. If you have the disc that came with your device, insert it now.



The ISI Card CD is still in the CD_ROM drive. Click **Next**.

11. Searching disc for software...screen appears.

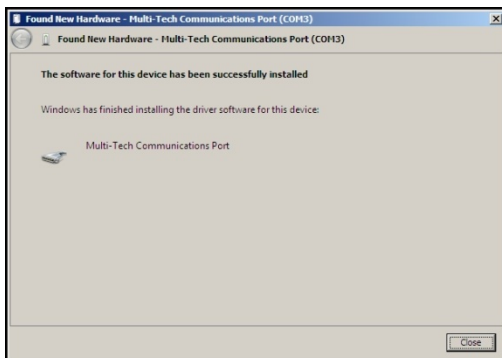


12. Windows can't verify the publisher of this driver software screen appears.



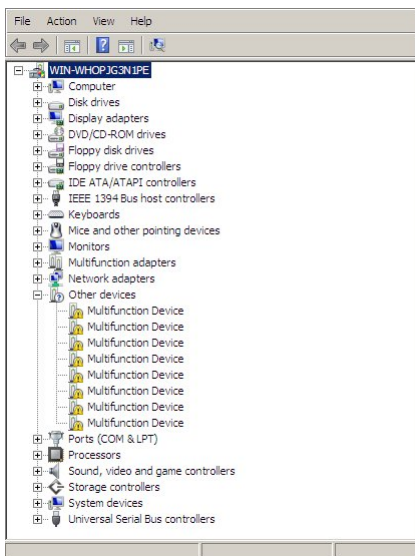
Click **Install**.

13. The **Found New Hardware – Multi-Tech Communications Port (COM3)** screen appears. The software for this device has been successfully installed. Windows has finished installing the driver software for this device: **Multi-Tech Communications Port**.



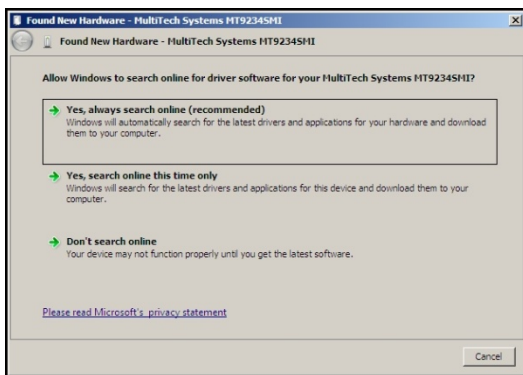
Click **Close**.

14. If you open Device Manager, you will see Other devices with four Multifunction Devices for the ISI-4 Card. Similarly, for the ISI-8 Card you will see eight Multifunction Devices.



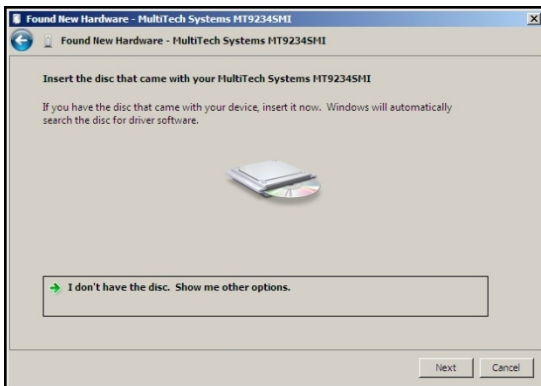
Installation of the Modem

15. A Found New Hardware – Multifunction Device screen appears and asks: Allow Windows to search online for driver software for your MultiTech Systems MT9234SMI?



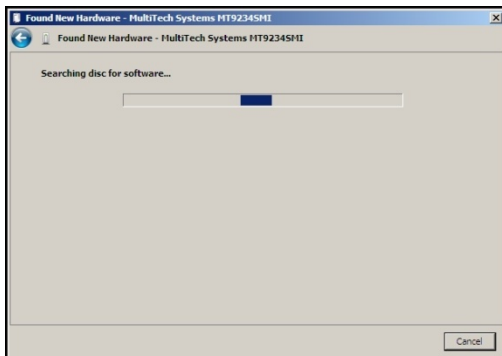
Select **Don't search online**.

16. The Found New Hardware – MultiTech Systems MT9234SMI-V92 screen appears. If you have the disc that came with your device, insert it now.

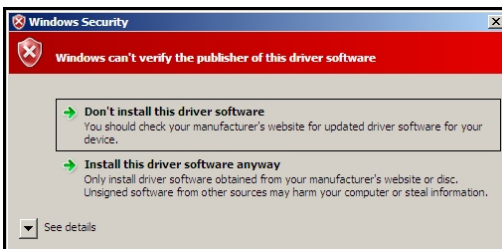


The ISI Card CD is still in the CD_ROM drive. Click **Next**.

17. Searching disc for software screen appears.

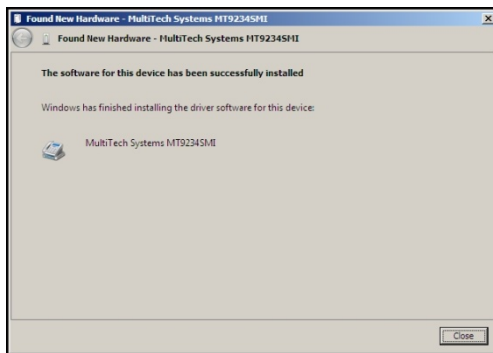


18. Windows can't verify the publisher of this driver software screen appears.



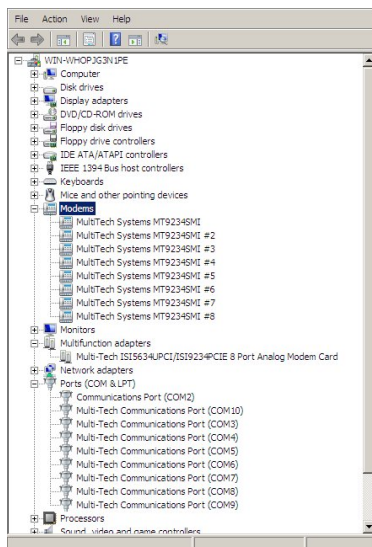
19. Select Install this driver software anyway

20. The software for this device has **been** successfully installed screen appears. Windows has finished installing the driver software for this device: **MultiTech Systems MT9234SMI.**



Click **Close**.

21. View the Device Manager as the Modems are being installed. For the ISI1-4, the installation wizard must install four Multifunction Devices. Similarly, for the ISI1-8, the installation wizard must install eight Multifunction Devices under Other Devices.



When Multi-Tech Systems MT9234SMI-v92 #8 is displayed, the eight modems on the ISI Card are successfully installed.

22. When all modems have been installed, you need to reboot.

Installing the ISI Card Driver in Linux

MultiTech's version 1.01 driver for the ISI Cards works with the 2.4.x Linux kernel. It has been tested with RedHat Release Versions 7.3, 8.0, and 9.0.

System Requirements, Prerequisites, & Conditions of Use

Hardware Platform:	Intel x86
Linux kernel version:	2.4.x
GNUC Compiler version:	2.72 or later
ISI capacity per computer:	up to 4 boards
Drivertype:	use MultiTech driver only; do not use any drivers included with the Linux OS (like Exar drivers).
FullLinux Installation:	For the ISI card to operate properly, all components of the Linux OS should be installed. If the ISI card does not operate properly in a Linux installation where some components are missing, then those missing Linux components should be added and the ISI card should be uninstalled and re-installed. (The 'make' utility, the GNU C compiler, and the kernel sources need to be installed on your system. If any of these are missing, the compilation will fail. Most later Linux OSs install these elements automatically. In any event, for best results, the Linux OS installation should include all elements.)

Linux Driver Installation Overview

The Linux driver files can be obtained from the Multi-Tech FTP site, or from the ISI Card Product CD. Installation consists of three processes:

- (A) building the driver using the 'make install' script,
- (B) creating tty device names, and
- (C) verifying successful loading of the driver.

We describe this installation in detail in the sections below.

Note: All Linux line command expressions are case-sensitive. The commands shown in this procedure will work only if you use capital letters and lower-case letters exactly as shown.

Building the Linux Driver

1. Create a temporary directory: "mkdir /mtsi_upci"
2. Copy the tar file to the temporary directory "cp ISI_U_PCI_LINUX_V_1_01.tar.gz /mtsi_upci"
3. Go to the temporary directory "cd /mtsi_upci"
4. Untar the file, "tarxvfzISI_U_PCI_LINUX_V_1_01.tar.gz". This command will unzip the source files to the "mtsi_upci_driver" directory.
5. Switch to the newly created directory "cd mtsi_upci_driver"
6. Run the "make" command. The files "mtsi_upci.o" and "resetport" will be created.
7. Run the "make install" script. The script will create the driver module and tty devices, and modify the rc files in order to load the driver automatically on system reboot. Successful compilation and loading of the module is displayed on the screen. Specifically, when the script has finished running successfully, it will display the message "MultiTech ISIPCI driver loaded successfully YY" The script will also create the "ttyMUxy" ports and list the ports it has created. If this message and a list of ports do not appear, watch for error messages.

Creating Linux TTY Device Names

1. This driver retains the standard serial device properties: dial-in port files (named in the form "ttyMUxy"), and call-out port files (named in the form "cumxy"). File names of these two special types become associated with each serial port. The first file type is for the dial-in port and has a name of the form "ttyMUxy" where the "x" denotes the card number and the final "y" denotes the port number on that card. The second file type is for the call-out port and has a name of the form "cumxy" where, again, the "x" denotes the card number and the "y" denotes the port number on that card.
2. Consider the situation of installing two 8-port serial cards in the server computer. In that case, the driver would create TTY devices "ttyMU1a" to "ttyMU1h" and devices "cum1a" to "cum1h" under the "/dev" directory for card 1. Similarly, devices ttyMU2a to ttyMU2h and devices "cum2a" to "cum2h" would be created for card 2. (If a 4-port card were installed as card 1, the driver would create TTY devices "ttyMU1a" to "ttyMU1d.")

Verifying Successful Loading of the Linux Driver

1. To confirm the successful loading of the driver, execute the command "lsmod". The driver **"mtsi_upci"** should be listed in the list of modules. If the driver is not listed, invoke the "lsmod" command again and watch for errors.
2. Check that the tty devices (with names of the form "ttyMUxy") are listed under the /dev directory. If the tty devices are not listed, invoke the "/mknod_script" command again (it was previously run as part of the "make install" script in step 7 of the "Building the Linux Driver" procedure) and watch for errors.
3. To confirm that the tty devices function for each modem on the ISI card, execute the utility "minicom" and dial out on each modem.

Un-Installing the Linux ISI Driver

1. Run the "make clean" script. You must run this command from the "mtsi_upci_driver" directory.
The "make clean" script will delete the "resetport" and "mtsi_upci.o" files.
2. Run the "make uninstall" script.
You must run this command from the "mtsi_upci_driver" directory. The "make clean" script will remove the module "mtsi_upci".
3. Execute the "lsmod" command. The "mtsi_upci" module should no longer be listed. If this module is still listed, then invoke the command "rmmod mtsi_upci" and check again to see whether or not the module is listed.
4. Delete serial ports (these are files with names of the form "ttyMUxy").
To do so, go to the "dev" directory.
Enter the command "rm ttyMUZ".

Using the Linux Port Reset Utility

For the serial cards, the port-reset utility allows you to reset ports without rebooting. For the modem cards, the port-reset utility allows you to reset both ports and modems without rebooting.

To reset a serial port, the DTR pin is set to the low logic level for one second. To reset the modem port, the Reset pin is toggled (i.e., its logic state is inverted and then restored).

1. To reset the port (for serial card) or modem (for modem card) run the command "resetport /dev/ttyMUxy"
(where 'x' stands for card number and 'y' for the port number).
2. On the serial cards, the DTR LED will toggle indicating that the reset has occurred and this toggling might be observable on the modem attached to the port (if the modem is equipped for this indication). There is no similar indication of successful reset on the modem cards.

Configuring your Modems for your Country

Different countries have different requirements for how modems must function. Therefore, before you use the modems in your ISI card, you must configure them to match the defaults of the country in which you are using them. Use the Global Wizard to configure each modem as described below. The Global Wizard configuration utility works with computers running Windows 2008/Vista/XP/2003/2000.

1. Insert the ISI product CD into the CD-ROM drive. The main splash screen appears.
2. Click **Initial Setup & Country Sel.**
3. The Global Wizard page appears. You can select to run the Global Wizard from the CD or install it on your hard drive. Click on the Install or Run button.
4. The **Global Wizard** dialog box appears. Click **Next**.
5. The Global Wizard searches for your modems and identifies them. Click **Next**. Select a modem to configure. Click **Next**.
6. Select the country in which the modem will be used, and then click **Next**.
7. Review your choice of country. If it is correct, click **Next** to configure the modem.
8. When Global Wizard announces that the parameters have been set, click **Finish** to exit.
9. Repeat steps 4 through 8 for each modem on the ISI card.

Patents

This device 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; 7082106;7082141;7092406. Other Patents Pending



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