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MAGMA™
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Host Card Installation Guide



ExpressCard/54 Module

Model: EC54

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Preface

What's in this Guide

This Host Card Installation Guide is designed to accompany a Magma Expansion Chassis User Guide. This guide provides easy instructions to install your host card, verify the installation was completed correctly, and troubleshoot the installation, if necessary. The corresponding Expansion Chassis User Guide provides similar information for your Magma expansion chassis.

This manual is divided into the following parts:

Chapter 1: Provides General Specifications and Parts List.

Chapter 2: Explains Mobility Software Installation.

Chapter 3: Briefly explains ExpressCard module installation.

Chapter 4: Explains how to verify a successful installation.

Chapter 5: Provides troubleshooting assistance.

Chapter 6: Explains where to get technical support.

Advisories

Five types of advisories are used throughout this manual to provide helpful information, or to alert you to the potential for hardware damage or personal injury. They are **Note**, **Important**, **Caution**, **Warning**, and **Danger**. The following is an example of each type of advisory.



NOTE

Used to amplify or explain a comment related to procedural steps or text.



IMPORTANT

Used to indicate an important piece of information or special “tip” to help you



CAUTION

Used to indicate and prevent the following procedure or step from causing damage to the equipment.



WARNING

Used to indicate and prevent the following step from causing injury.



DANGER or STOP

Used to indicate and prevent the following step from causing serious injury or significant data loss.

Disclaimer: We have attempted to identify most situations that may pose a danger, warning, or caution condition in this manual. However, Mobility Electronics, Inc. does not claim to have covered all situations that might require the use of a Caution, Warning, or Danger indicator.

Chapter 1 Introduction

General Specifications

The Magma EC54 is the ExpressCard/54 connection to various Magma PCI Expansion Systems.

The ExpressCard™ standard was developed to carry forward the benefits of 'plug-in' I/O cards to the next generation of personal computing devices.



ExpressCard Technology
User's Reference

For more information:
www.expresscard.org

Welcome to ExpressCard Technology!

Congratulations on your decision to purchase an ExpressCard module. Your new ExpressCard module enables you to customize your computer with the latest in high-performance technology for networking, memory, wired/wireless communications, multimedia and security.

What is ExpressCard technology?

ExpressCard technology was developed by PCMCIA, a computer industry trade association. The integrated technology makes it easy to add new features to your computer without using an external attachment. ExpressCard modules will not work in a PC Card slot.

What does my ExpressCard module give me?

You have purchased a module that has passed a rigorous compliance program to earn the right to display the ExpressCard logo. This standard guarantees you features such as hot plug-n-play, auto-configuration and support for both USB and PCI Express in one slot.

Do ExpressCard modules come in more than one size?

There are two sizes of ExpressCard modules. Most applications are in the ExpressCard/34 format: 34 mm(W) x 75 mm(L) x 5 mm(H), but a few applications require the ExpressCard/54 format, which is 54 mm wide. ExpressCard/34 modules fit into the 54 mm wide Universal ExpressCard slot, but ExpressCard/54 modules will not fit into a 34 mm wide ExpressCard slot.

Where can I find out more?

Visit the ExpressCard web site at www.expresscard.org, an online resource for owners of ExpressCard computers.

The ExpressCard Standard was developed by PCMCIA, a non-profit trade association founded in 1989 to establish technical standards for PC Card technology and to promote interchangeability among computer systems.

© 2005. ExpressCard is a trademark of PCMCIA.

www.expresscard.org

Pre-Installation Information

Before using the Magma expansion chassis you should perform the following steps:

- Inventory the shipping carton contents for all of the required parts
- Gather all of the necessary tools required for installation
- Read this manual

Parts List

The following parts are provided:

Qty	Item
1	ExpressCard/54 Module
1	Software CDROM
1	Installation Guide (this document)

Chapter 2 Software Installation

Windows

A driver is required for Windows XP installation. Before attempting to install anything on a Windows XP system, you should ensure that you have set a new Restore Point. See your Windows XP manual to learn how to set a new Restore Point. You should ensure that all data files are closed and that you have a current backup.



STOP

Before installing drivers, you should ensure that you have a current system backup of all of your important data.

Failure to follow these instructions exactly could result in a system lock-up and potential loss of data.

Be alert

Be careful

Be protected

You must also disable your anti-virus software before continuing.

For best success when installing the Magma driver:

- Have a current system backup or restore point
- Reboot and Shut down each time you are prompted
- Be logged in as 'System Administrator'
- Follow the installation instructions provided in this guide

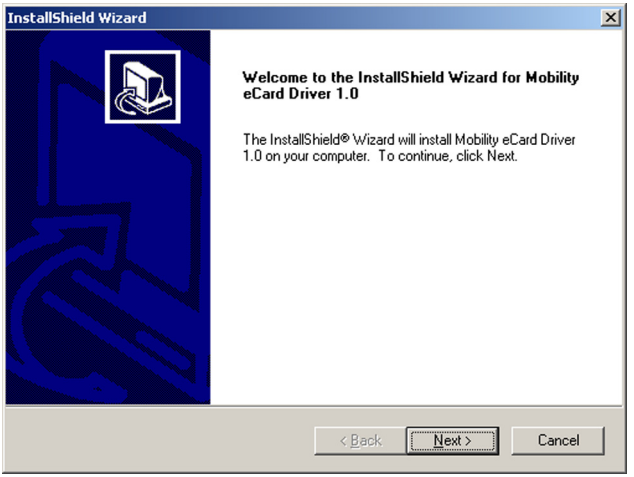
You must be logged in as 'System Administrator' while installing the Magma expansion chassis. You must remain logged in as 'System Administrator' until installation is complete.

Install Driver

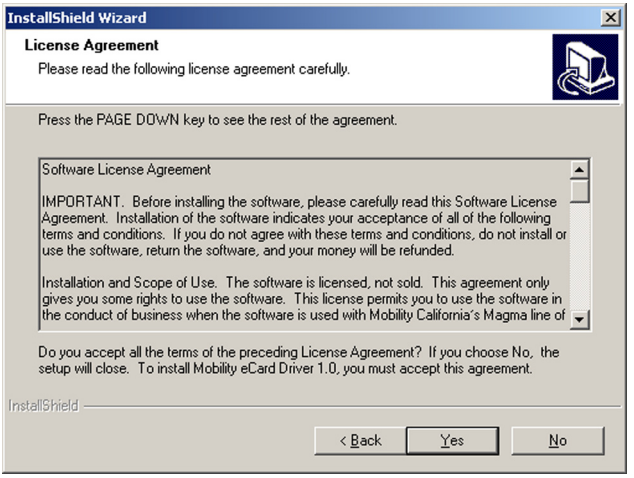
Insert the Magma CD in your computer. The CD should automatically start and display a page for Magma drivers and utilities. If the security settings on your computer do not allow CDs to automatically start, double-click on the '**My Computer**' icon and then double-click on the CD icon. Next, double-click on the "start.htm" file to open your web browser and display the menus.

Click on the **Install Mobility eCard Driver** link.

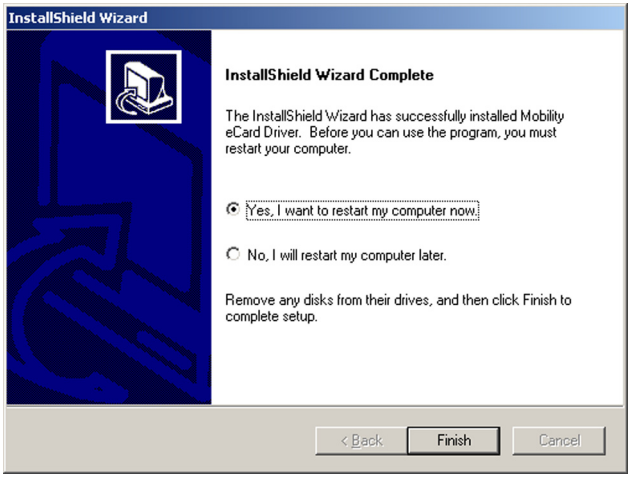
The setup program will prepare the necessary files and present the following window to start the driver installation.



Click **Next** to continue and review the licensing agreement.



Review the licensing agreement. If you agree, click **Yes** to continue. If you do not agree, click **No** to exit.



It is recommended that you click "**No, I will restart my computer later.**", and then click **Finish**.

MacOS X

This product is not compatible with Apple Computer products.

Linux RedHat 9

It is presently undetermined if any special configuration is required for proper operation, or if it will work correctly "out of the box."

Chapter 3 Hardware Installation

It is recommended that you refer to the separate Expansion Chassis User's Guide included with your product for complete system installation information. The following installation instruction briefly explains connection to the computer only.

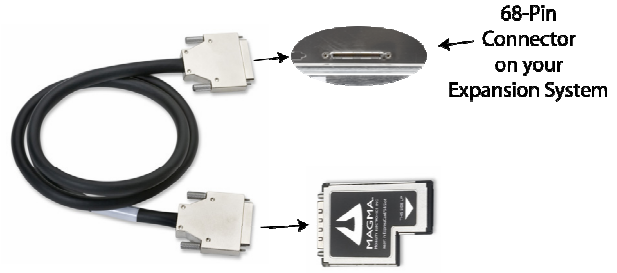


NOTE

The Magma EC54 can only be used in systems that support ExpressCard/54 modules. This card will not fit in ExpressCard/34 only slots.

1. Power down your laptop computer. Use the procedures for shutting down your operating system and shutting off power to your system provided in your owner's manual or system documentation.

2. Using the captive thumbscrews on the cable, attach one end of the PCI expansion cable to the Magma EC54 and the other end to the connector on the back of the expansion chassis. No tools are required to attach the PCI expansion cable.



3. Insert the Magma EC54 with the logo side up, into the ExpressCard/54 slot. Gently push the card until it is firmly seated. Be sure to check your laptop's User Manual for the correct location of your ExpressCard slot, which may have a "spring-loaded" catch or a "push-button" for removing the card. Ensure you are not trying to insert the card into a PCMCIA slot, which is not compatible with ExpressCard modules.



NOTE

If your laptop's ExpressCard slot is the "spring-loaded" kind, be sure that your ExpressCard/54 card is inserted correctly. It is very easy for this style slot to partially release a card if touched slightly.

4. Following the instructions in the Expansion Chassis User's Guide, you must apply power to the Magma expansion chassis BEFORE you power up your computer.

For more information on using ExpressCard modules, please refer to your computer's user manual or system documentation.

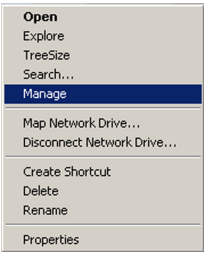


STOP

DO NOT TURN ON THE MAGMA EXPANSION CHASSIS UNTIL YOU HAVE SHUT DOWN YOUR LAPTOP COMPLETELY! It can cause a system lockup and loss of any unsaved data.

Chapter 4 Verify Installation

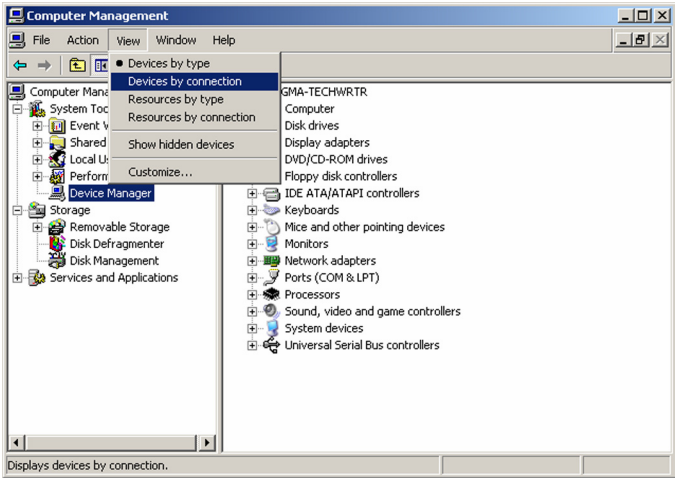
To verify a successful installation, use the '**My Computer**' icon on your desktop or on the Start Menu.



Right-click and select '**Manage**.'

Using the Windows Device Manager

Select '**Device Manager**' from the items in the left side of the Computer Management Window. Then click on the **View** Menu and select **View Devices by Connection.**



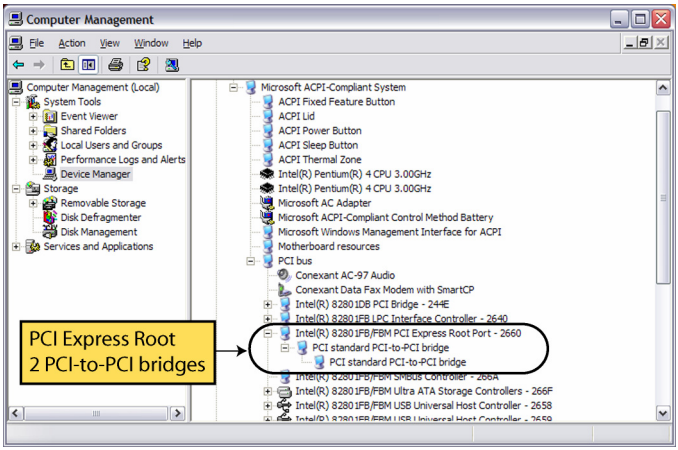
To see if your installation is completed:

- Click on the '**+**' sign to the left of the **ACPI** (BIOS) to open it. This is typically found at the top of the Device Manager Window.

- Click on the '**+**' sign to the left of the **PCI Bus** to see all PCI Bus connections.

- Click the '**+**' sign to the left of the line containing the words "Express Root" or something similar. You should now see the **PCI Standard PCI-to-PCI bridge** immediately below it.

When installed correctly, you will see two "PCI-to-PCI bridges" below your system's PCI Express Root Port.



If everything is OK, then the Mobility eCard Driver installation is complete and you can proceed to the separate Expansion Chassis User's Guide for help installing 3rd Party PCI Cards.

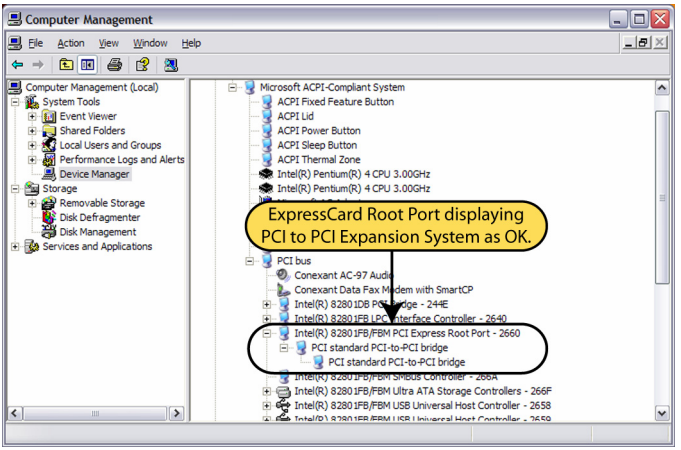
If the installation was unsuccessful you may see a small yellow  (bang) in front of the PCI to PCI Bridge, or it may not be visible at all. In either case, proceed to Chapter 5 Troubleshooting for installation problems.

If any of these devices are not displayed as shown above, you should shut down your system (laptop first, then the expansion chassis) and reconnect the cables and the Magma EC54 to ensure that you have a solid connection. Restart the Magma expansion chassis, followed by the laptop. Next, try to verify the installation again, as shown above. If you are still having problems, review Chapter 5 Troubleshooting before contacting Mobility Technical Support at (858) 530-2511.

Chapter 5 Troubleshooting

Identifying the Problem

The ExpressCard to PCI Expansion System is correctly displayed as a **"PCI standard PCI-to-PCI bridge"**. When connected and functioning correctly, this Expansion System will be displayed as follows:



If the above Device Manager image is not what you are seeing when you verify your installation, you may want to try the following troubleshooting steps to help you locate and resolve your installation issues – without having to call Technical Support.

If you have trouble with the Magma expansion system, you must identify the problem before you can fix it. First, verify that all cards are inserted correctly and securely in the correct slot and that all cables are connected properly. For information about your particular expansion chassis, refer to the separate Expansion Chassis User's Guide.

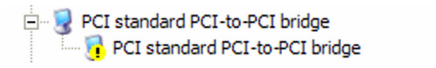
Always remember to power **On** and **Off** correctly when rechecking and testing your installation.

This chapter is divided into the following sections:

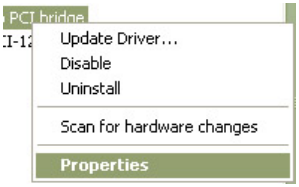
- Device Manager Shows a Bang
- Computer Can't Find the PCI Expansion System
- Windows Error Codes
- Uninstall the Mobility eCard Driver
- Uninstall the Mobility eCard Patch

Device Manager Shows a Bang

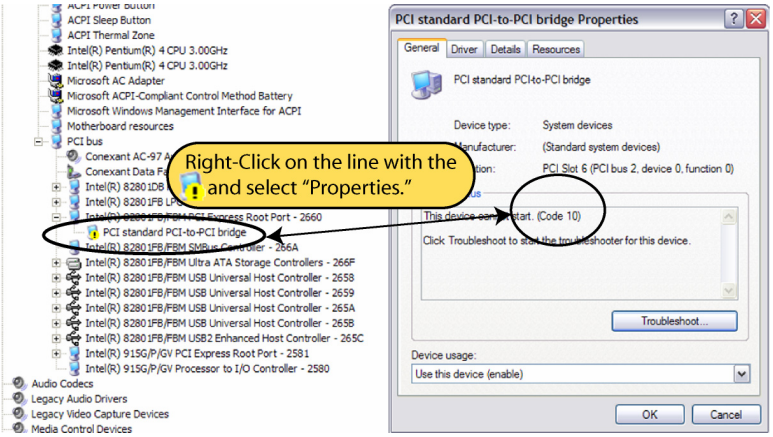
If the PCI to PCI Bridge is visible, but contains a (bang) in front of it, it has a problem that must be fixed.



To identify the problem, right-click on the line, and select “Properties” from the pop-up menu.



Look for the “Error Code” in the box in the center of the Properties Window and then go to the following *Windows Error Code* section for information on how to resolve this issue.

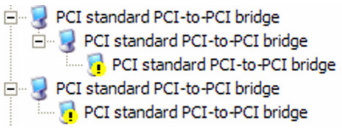


Refer to the *Windows Error Code* section for information about error codes.

CAUTION

Do **NOT** click on the Driver tab and attempt to reinstall the driver. This will not help resolve the issue and may even complicate the problem.

If the PCI to PCI Bridge is visible, but contains two (2) lines with a (bang) in front of them, your laptop may require a BIOS update or the Mobility eCard Patch. Refer to the next sections *Upgrade BIOS* and *Mobility eCard Patch* for additional information.





IMPORTANT

If the PCI-to-PCI Bridge seems OK and does not show any problems, but a different device on the PCI Bus **now** shows a problem where none previously existed, you may also need a System BIOS update. Either update your BIOS or install the Mobility eCard Patch found under **Utilities** on the CD.

Upgrade BIOS

Because the ExpressCard specification is fairly new, some BIOS do not handle ExpressCard module configuration perfectly.

As a result, the BIOS on some computers may cause conflicts with other platform devices when using ExpressCard modules. It could even prevent the system from booting when the Magma expansion system is attached.

You should visit your laptop manufacturer's website to determine if a newer BIOS is available for your computer. Laptop manufacturers will provide instructions required to install the new BIOS on your computer. Contact your laptop manufacturer for help with BIOS related questions.



DANGER

BIOS upgrades should ONLY be installed by experienced personnel. Always follow upgrade instructions exactly. Always have a good backup before attempting a BIOS upgrade. ***A failed upgrade can disable your laptop.***

Mobility eCard Patch

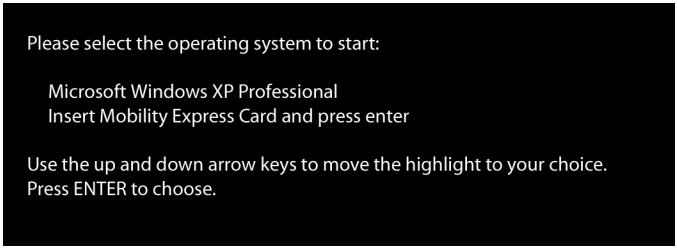
If a BIOS update did not resolve the problem, you should try the Mobility eCard Patch. The patch is available from a link in the **Utilities** section of the CD included with your Magma EC54.



IMPORTANT

After installing the Mobility eCard Patch, you must always start your laptop without the Magma EC54 in the ExpressCard slot. After the BIOS loads, the boot process will stop and display a message prompting you to insert the Magma EC54 and then press <Enter> to continue loading Windows. The necessary resources to allow the Magma EC54 to function properly should now have been assigned.

As your computer boots up, it will pause briefly to allow you to insert the ExpressCard/54 module before continuing. The following screen shows what your boot screen will typically look like.



Simply insert the Magma EC54 module and ***press any key to continue***.

Computer Can't Find the PCI Expansion System

If the expansion system is not visible in your Windows Device Manager you should to turn off your computer (first) and then the Magma expansion chassis (second) and test all cords and cables to ensure you have everything connected correctly. If everything seems to be connected correctly, and you are sure you have applied power correctly (power up expansion chassis first and then the computer), then try these additional troubleshooting steps:

- Double-check the Magma EC54 to ensure it is in an ExpressCard slot and inserted correctly. Be careful, some ExpressCard slots are "spring-loaded" and can easily partially eject the ExpressCard module without your knowledge.

- Check to make sure you haven't accidentally inserted the Magma EC54 into your laptop's PCMCIA or CardBus slot.

- Double-check the expansion cable to ensure it is connected correctly at both ends. Try another cable, if you have one.

- If the expansion system is still not visible after trying all of the above steps, go to Chapter 6 How to Get More Help.

Windows Error Codes

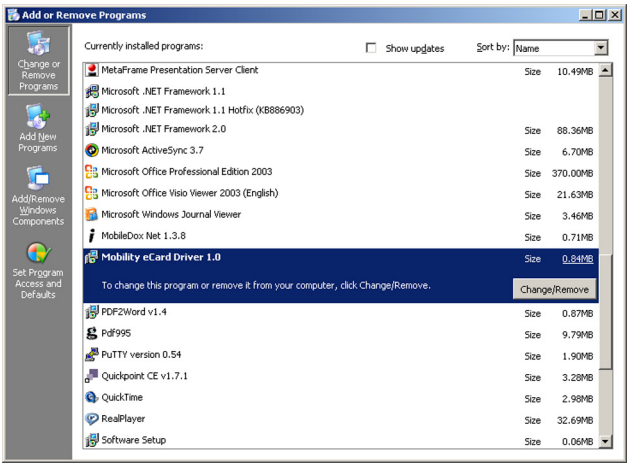
If you are having a problem with one of your devices, and the Device status box shows a Windows Error Code, refer to the following list of error codes for guidance:

Error Code	Description/Action
10	**This code indicates that there is a problem with the 3rd Party PCI Card driver.** If necessary, contact the PCI Card's manufacturer for updated PNP compatible drivers. If all else fails, contact Mobility Technical Support for further assistance.
12	**On the Bridge:** If you receive error code 12 on the first PCI to PCI Bridge, call Mobility Technical Support. **On the PCI Card**: This usually means the memory, I/O, or prefetch is more than has been allocated. Call Mobility Technical Support.
28 (PCI Card)	The driver for the PCI Card is not installed on your system. Reinstall the PCI Card driver following the manufacturer's instructions. If that fails to fix the problem, call the card manufacturer for new drivers.
1	The PCI host card or expansion chassis are not working correctly. Reinstall the PCI host card into the computer's PCI slot and recheck all cable connections. If the error code remains, try another PCI slot. If you still have the error, call Mobility Technical Support.
Other Codes	For all other error codes, call: **On the PCI to PCI Bridge:** Mobility Technical Support **On the PCI Card:** Card Manufacturer's Technical Support, after first verifying that the Magma expansion system is installed properly.

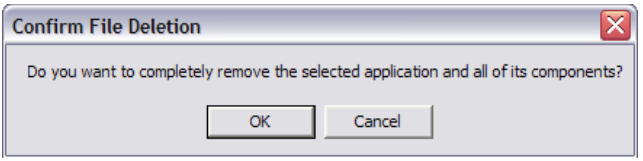
If you are still having problems, contact Mobility Technical Support for more help.

Uninstall the Mobility eCard Driver

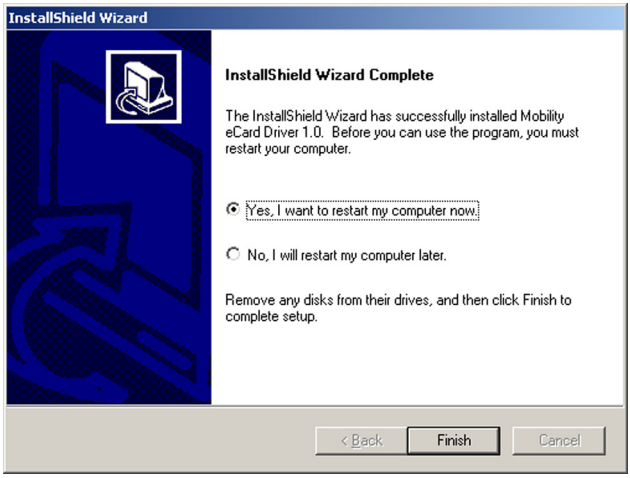
If you need to uninstall, or reinstall, the Mobility eCard Driver, go to the Windows Control Panel and double-click on the Add/Remove Programs icon.



Select the **Mobility eCard Driver** and then click on **Change/Remove**.



Click on the **OK** button to finish removing the driver.



The final step is to reboot your system by clicking on the **Finish** button.

Refer to installation instructions in Chapter 2 Software Installation for help reinstalling the Mobility eCard Driver.

Uninstall the Mobility eCard Patch

To uninstall the Mobility eCard Patch, insert the driver CD in your computer. The CD should automatically start and display a home page for Magma drivers and utilities. If the security settings on your computer do not allow CDs to automatically start, browse to the CD and double-click on the "start.htm" file to open your web browser and display the menus.

Next, click on the Uninstall Mobility eCard Patch link under **Utilities** to start uninstall the Mobility eCard Patch.



NOTE

Uninstalling the Mobility eCard Driver will also automatically uninstall the Mobility eCard Patch.

However, uninstalling the eCard Patch from the menu selection on the CD will NOT uninstall the Mobility eCard Driver.

Chapter 6 How to Get More Help

Frequently Asked Questions (FAQ)

You can visit the Magma Technical Support FAQ pages on the Internet at:

www.magma.com/support/

Contacting Technical Support

Our support department can be reached by fax at (858) 530-2733 or by phone at (858) 530-2511. Support is available Monday through Friday, 8:00 AM to 5:00 PM PT. When contacting Magma Technical Support, please be sure to include the following information:

1) Name
2) Company Name
3) Phone Number
4) Fax Number
5) Email Address
6) Model Number
7) Serial Number
8) Computer Make
9) Computer Model
10) Operating System and Version
11) Make/Model of PCI cards in expansion chassis
12) Detailed description of the problem

You can also visit our web site at:

www.magma.com/support/

For a quick response, use the Technical Support and RMA Request Form available in the Support Section of the website. Simply complete the form with all required information. Please make sure that your problem description is sufficiently detailed to help us understand your problem.

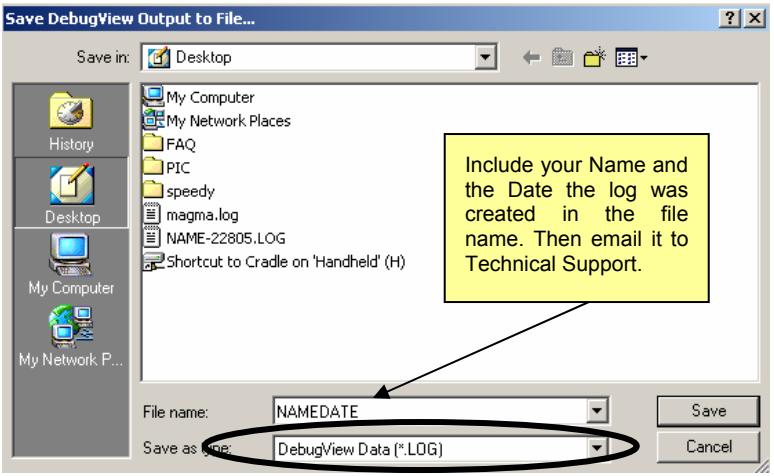
For example: Don't say "Won't boot up." Do say "Tried all the steps in the Troubleshooting Section and it still won't boot up."

For faster diagnosis of your problem, please run the two utility programs described in the following sections and include the diagnostic files they generate with your email.

Magma Debug Utility

Occasionally, Mobility Technical Support may request Windows users to produce and email a Magma debug log file to help them resolve your problem. This file should be emailed to support@magma.com. This file should have a ".log" file extension. To create the *.log file, follow these instructions:

1. Locate a file called **dbgview.exe** on the Magma CDROM.
2. Double-click on the file **dbgview.exe**
3. While the **dbgview** screen is open, locate and double-click on a file called **dump.exe** on the Magma CDROM.
4. Switch back to the **dbgview** screen, which is now filled with data.
5. Save this file and email to support@magma.com upon request.



Use the "Save As Type" drop-down arrow to select a file type of (*.LOG).

PCIScope Software Utility

PCIScope is a powerful tool for Windows users. It was designed by a Germany company called APSoft. This software utility is a valuable resource to explore, examine and debug the PCI subsystem of your computer. It was made to fit the requirements of the most demanding users, especially engineers, programmers, and system administrators, and to integrate all advanced functions and tools into one product. Please visit www.tssc.de for more information about the capabilities of **PCIScope** and other utilities offered by APSoft.

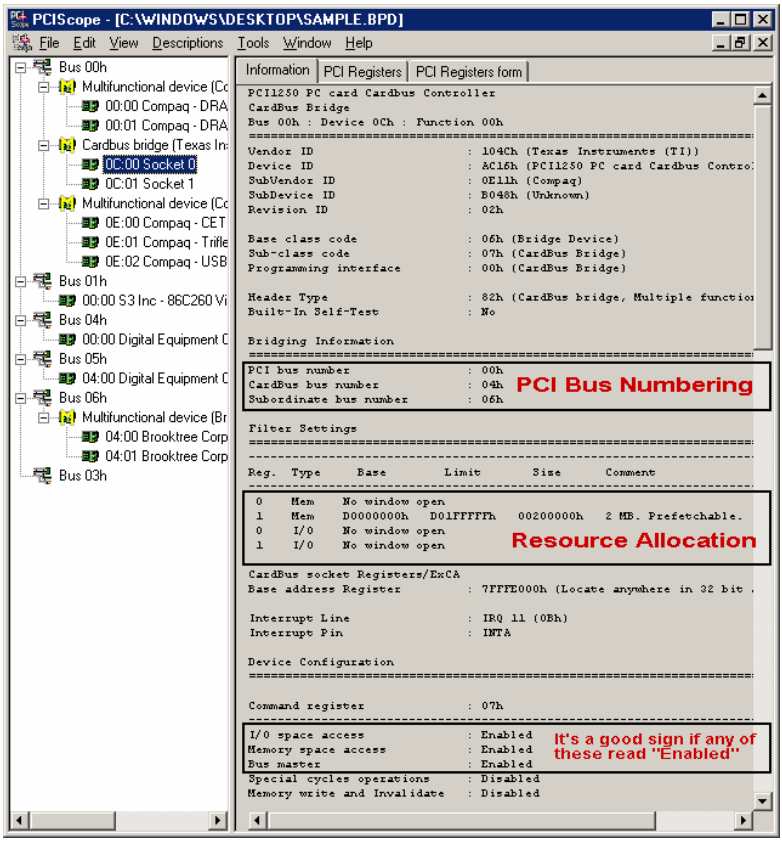
An evaluation version of **PCIScope** is available for download at www.tssc.de. (You can purchase an inexpensive license from APSoft for use beyond the evaluation period.)

PCIScope has proven to be extremely useful when verifying and debugging configurations involving the Magma PCI Expansion Systems under any Windows platform.

PCIScope can provide information to you and our Technical Support Group such as PCI Bus Numbering, Resource Allocation, and other information that may prove useful when debugging expansion chassis or PCI card problems.

If you are experiencing problems setting up your system, you should run **PCIScope** before contacting the Mobility Technical Support Group.

With the Magma expansion chassis powered up and connected to your computer, load and launch the **PCIScope** application. The **PCIScope** Program will be installed on your computer and a window similar to the one shown below will appear. (The example was taken from a Compaq Armada 7400)



You should save this data as a file on your computer. Please include your name and date as part of the file name with an extension of ".bpd." Then email this file to support@magma.com if you are experiencing configuration problems.

Returning Merchandise to Mobility

If factory service is required, a Service Representative will give you a Return Merchandise Authorization (RMA) number. Put this number and your return address on the shipping label when you return the item(s) for service. **Mobility will return any product that is not accompanied by an RMA number**. Please note that Mobility WILL NOT accept COD packages, so be sure to return the product freight and duties-paid.

Ship the well-packaged product to the address below:

MAGMA RETURNS DEPT.
RMA # _____
9918 Via Pasar
San Diego, CA 92126
USA

It is not required, though highly recommended, that you keep the packaging from the original shipment of your Magma product. However, if you return a product to Magma for warranty repair/ replacement or take advantage of the 30-day money back guarantee, you will need to package the product in a manner similar to the manner in which it was received from our plant. Magma cannot be responsible for any physical damage to the product or component pieces of the product (such as the host or expansion interfaces for PCI expansion chassis) that are damaged due to inadequate packing. Physical damage sustained in such a situation will be repaired at the owner's expense in accordance with Out of Warranty Procedures. Please, protect your investment, a bit more padding in a good box will go a long way to insuring the device is returned to use in the same condition you shipped it in. Please call for an RMA number first.

APPENDIX A Compliance

FCC

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

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



NOTE

The assembler of a personal computer system may be required to test the system and/or make necessary modifications if a system is found to cause harmful interferences or to be noncompliant with the appropriate standards for its intended use.

Industry Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numériqué de la classe A est conformé à la norme NMB-003 du Canada

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives. Mobility will not retest or recertify systems or components that have been reconfigured by customers.

MOBILITY ELECTRONICS, INC.®

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PCI Expansion Products

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