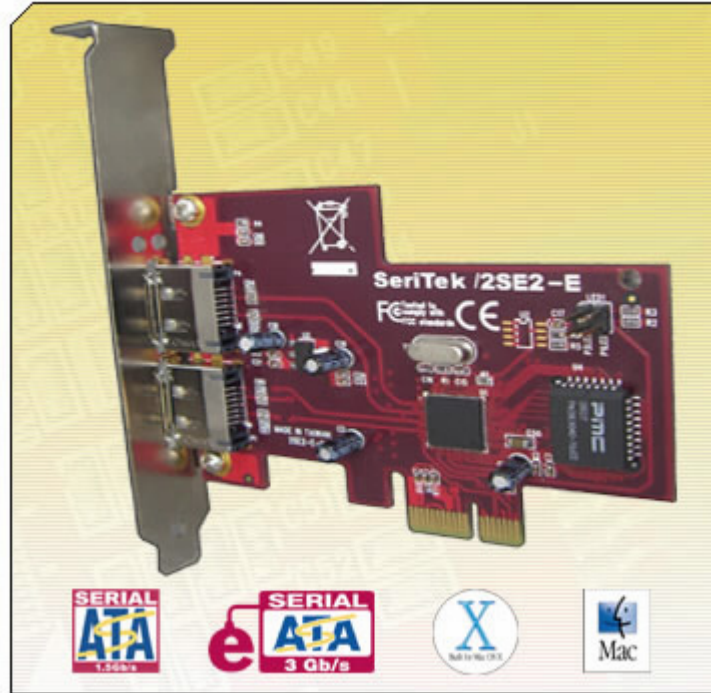


# FirmTek

*Store and Share your Digital Creations*



## SeriTek™/2SE2-E

Two External Port Hot-Swap Serial ATA PCI Express Host Adapter

*User Manual for Windows PC*

**FirmTek, LLC**  
**www.firmtek.com**

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### **Changes**

FirmTek reserves the right to make any changes to product design, specifications, or details without notice. Actual product photos or screenshots may look different from those provided.

### **Notice**

The material content of this manual is for informational purposes only. It is possible the content of this manual may contain technical inaccuracies, typographical, or other errors. FirmTek assumes no liability for any errors, omissions, or from the use of this manual that may result from such errors, including, but not limited to loss of data or profits.

Before installing the SeriTek/2SE2-E or any other hardware or software, you are responsible for backing up data contained on any storage devices. After hardware or software installation, you are responsible for backing up data on any storage devices at frequent intervals. FirmTek, LLC is not liable for any loss of data or damage to equipment resulting from the use of the SeriTek/2SE2 host adapter.

### **External Shielded Serial ATA Cable**

The SeriTek/2SE2-E host adapter uses specially shielded external Serial ATA cables to ensure integrity during data transfers. Please use caution and handle the cables carefully. When inserting and removing cables, hold the connector at the ends (not the cable itself) when inserting and removing the cable from the SeriTek/2SE2-E, and external enclosure. To maintain peak performance keep the number of cable insertions and removals to a minimum.

**Note:** The SeriTek/2SE2-E supports the newer style Serial ATA connectors, called “eSATA” connectors. These connectors provide improved reliability with special metal shielding and retention springs for positive locking. See the “Connecting External Enclosures” section of this document for more details.

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## I. Introduction

### Welcome

Congratulations and thank you for purchasing the SeriTek/2SE2-E Serial ATA host adapter. This product is yet another innovative solution from the innovative folks at FirmTek.

### About This User's Manual

This User's Manual was written with the assumption you are familiar with your computer, and are comfortable with opening its case. For further information, and to get acquainted with your computer, please refer to your computer user's manual.

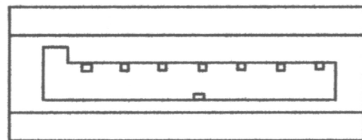
### About Serial ATA Technology

An evolutionary replacement for Parallel ATA, Serial ATA (Advanced Technology Architecture) is an interface that allows you to add hard drives and peripherals to your Computer. Serial ATA offers insulated cables that are thinner and longer with smaller 7-pin connectors which results in easier installation and improved airflow, compared to wider and shorter Parallel ATA cables. Improved airflow translates into a cooler operating environment for your Computer.

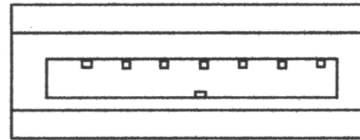
### About the SeriTek/2SE2-E Serial ATA PCI Host adapter

The SeriTek/2SE2-E extends Serial ATA's 3.0 Gbits/sec performance to the outside of the computer chassis, enabling users to take advantage of external Serial ATA enclosures. It utilizes the PCI Express local computer interface, which is the expansion card technology found in newer computers. With two external ports, the SeriTek/2SE2-E host adapter provides the high bandwidth necessary to meet the needs of performance-hungry applications while offering hot-swap flexibility similar to that of Universal Serial Bus (USB) and FireWire.

The SeriTek/2SE2-E host adapter provides the latest I-shaped eSATA connectors:



Original L-shaped  
Serial ATA connector



Newer rectangular  
eSATA I-shaped  
connector

### About PCI Express

PCI Express technology has become the standard motherboard expansion interface for next generation computing. It is a new serial I/O technology built around a bidirectional serial 1-bit point-to-point connection known as a "lane". This new architecture provides much improved performance compared to the older PCI interface technology, which is a bus-based system where all the devices share the same unidirectional, 32-bit, parallel bus.

### SeriTek/2SE2-E Package Contents

- SeriTek/2SE2-E SATA host adaptor board
- User manual on CD-ROM

### **SeriTek/2SE2-E Key Features and Benefits**

- Two external ports with hot-swap capability
- Plug-and-Play ease of use, completely self-contained booting functionality, no driver installation necessary
- Boosts overall system performance with per-port data transfer rates of up to 300 MBytes/sec or 3.0 Gbits/sec
- PCI Express (1x) bus support
- Compatible with Windows 2000, Windows XP, and Windows 2003 PCs with an available PCI Express slot
- Data protection: Supports Windows 2000/XP/2003 RAID capabilities
- Ideal for multimedia-intensive applications: audio/video capture and editing, and graphics manipulation/publishing
- User-upgradeable firmware
- 48-bit LBA support for drive sizes larger than 137GB
- Bus mastering operation enhances multitasking during disk transfers and increases CPU efficiency: The CPU is free to handle other tasks during data transfers between the PCI Express bus and system memory
- Includes a one-meter, fully shielded, thin and flexible 1-meter Serial ATA cable with 7-pin
- Reduced setting on storage devices (no master/slave) means easier installation and replacement

## SeriTek/2SE2-E Specifications

General System Hardware Requirements	<ul style="list-style-type: none"> <li>• PC with available PCI Express expansion slot</li> </ul>
Operating Systems Supported	<ul style="list-style-type: none"> <li>• Windows NT</li> <li>• Windows 2000</li> <li>• Windows XP</li> <li>• Windows 2003</li> </ul>
Bus Type	<ul style="list-style-type: none"> <li>• PCI Express 1x lane</li> <li>• Can be inserted in any available PCI Express slot (4x, 8x, etc)</li> </ul>
External Connectors	<ul style="list-style-type: none"> <li>• 2-port external Serial ATA (SATA) interface connectors support up to 2 external hard drives or peripherals (eSATA type/L-shape connectors)</li> </ul>
Drive Types Supported	<ul style="list-style-type: none"> <li>• Serial ATA hard drive</li> <li>• Backward compatible with Ultra DMA 133/100/66 hard drives*</li> </ul>
ATAPI Device Support	<ul style="list-style-type: none"> <li>• Yes*</li> </ul>
Data Transfer Rates	<ul style="list-style-type: none"> <li>• Up to 300 MBytes/second or 3.0 Gbits/second burst data transfer rate</li> </ul>
Drive Modes Supported	<ul style="list-style-type: none"> <li>• Serial ATA</li> <li>• UltraDMA modes 6/5/4/3/2/1/0, PIO modes 4/3/2/1/0*</li> </ul>
Advanced Data Features	<ul style="list-style-type: none"> <li>• Fully compliant with Serial ATA 1.0a specification</li> <li>• Bus Mastering off-loads data I/O handling from CPU</li> <li>• Complete 32-bit CRC error checking, for all bits transmitted (command, data, and status), offers enhanced data protection for high-speed Serial ATA drives</li> <li>• Dual independent data channels allows for separate device timings</li> <li>• Automatically identifies and configures drive types*</li> <li>• Automatically detects and supports devices utilizing many transfer modes including UltraDMA 6/5/4/3/2/1/0, PIO 4/3/2/1/0*</li> </ul>
Onboard Flash ROM	<ul style="list-style-type: none"> <li>• Allows easy upgrades to the latest firmware</li> </ul>
Cables Supported	<ul style="list-style-type: none"> <li>• 7-pin shielded SATA cable, up to 1 meter in length</li> </ul>
Warranty	<ul style="list-style-type: none"> <li>• Two year limited parts &amp; labor</li> </ul>
Physical Dimensions	<ul style="list-style-type: none"> <li>• 89mm(L) x 1.6mm(W) x 64mm(H) (not including bracket)</li> </ul>
Power Requirements	<ul style="list-style-type: none"> <li>• 5V <math>\pm</math> 5%</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• Temperature: Operating: +5°C to +55°C Non-Operating: -25°C to +70°C</li> <li>• Relative humidity: Operating: 20% to 80% Non-Operating: 15% to 90%</li> </ul>
EMC Compliance	<ul style="list-style-type: none"> <li>• EN55022/1998, EN55024/1998 (European Community)</li> <li>• FCC Part 15 Class B (US)</li> </ul>

\* IDE to Serial ATA converter module required for Parallel ATA and Ultra ATA133/100/66 drives

## **SeriTek/2SE2-E System Requirements**

### **Operating System**

- Windows 2000
- Windows XP
- Windows 2003

### **Hardware Requirements**

- PC with available PCI Express expansion slot (The SeriTek/2SE2-E can be installed in any available PCI Express slot: 1X, 4X, 8X, etc.)
- External powered enclosure equipped with Serial ATA hard drive(s) or Parallel ATA hard drives (Parallel ATA hard drives require compatible Serial ATA to Parallel ATA converters contained within the enclosure).

### **Materials Required**

- Standard medium-sized Phillips screwdriver

## II. Installing the SeriTek/2SE2-E



### **Caution:**

Prior to installing the SeriTek/2SE2-E host adapter and hard drive(s) or peripheral(s), please make sure your data is backed up.

The SeriTek/2SE2-E host adapter and your PC contain sensitive components that can be permanently damaged by Static Electric Discharge. Be sure you're working in an area free of static electricity to prevent them from being damaged. Use a wrist grounding strap if you have one or regularly touch a metal part of the computer chassis such as the power supply case or a port access cover to discharge any built-up static electricity from your body. Make sure to handle the SeriTek/2SE2-E host adapter by its bracket or around its edges to avoid damage to the card by static electricity.

### **Introduction**

This section describes the proper method of installing your SeriTek/2SE2-E.

#### **SeriTek/2SE2-E PCI Express Host Adapter Installation:**

1. Properly shut down your PC and disconnect the AC power cord.
2. Depending on the model of your PC, open the side panel or top cover. Please refer to your PC user's manual for more information about gaining access to the PCI Express slots.
3. Choose an empty PCI Express expansion slot where you will install the SeriTek/2SE2-E (The SeriTek/2SE2-E can be installed in any available PCI Express slot – 1X, 4X, 8X, etc.)
4. Remove the screw and detach the PCI Express expansion port access cover secured to the computer case.
5. Remove the SeriTek/2SE2-E from its protective materials. Make sure to hold the card around by its bracket or around its edges to avoid touching components which might be damaged by static electricity.
6. Position the PCI Express card bracket by facing it towards the rear of the computer. Align the gold connectors of the SeriTek/2SE2-E over the PCI Express slot and gently press it into the PCI Express slot until the card is firmly seated. If the card is properly seated, the upper ear of the PCI Express card bracket should line up with the screw mounting location.
7. Using the same screw that was removed earlier; secure the card to the computer case (See Figure 1).



**Caution:** The SeriTek/2SE2-E host adapter support external cables that may be plugged in to one of its two external receptacles. If the SeriTek/2SE2-E is not properly secured when a cable is inserted into one of the receptacles, it may become loose from the PCI Express slot and damage the computer.

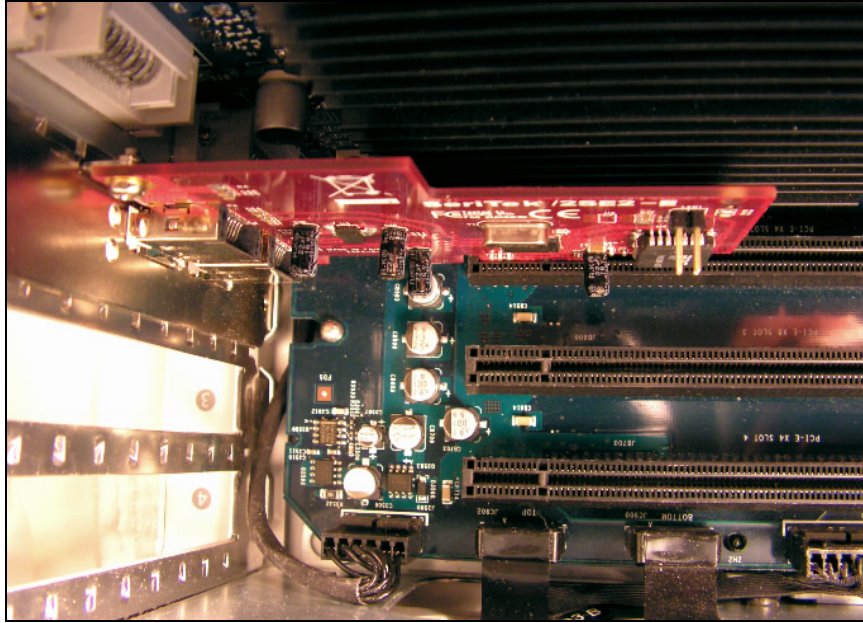


Figure 1: Inserting and securing the SeriTek/2SE2-E

8. Close your PC case and re-attach the AC power cord.

### **Ready for Use**

Your SeriTek/2SE2-E host adapter is now installed.

### III. Connecting External Enclosures

#### Introduction

This section describes how to connect external hard drive enclosures.

#### Connecting the SeriTek/2SE2-E to an External Enclosure

1. The SeriTek/2SE2-E host adapter is compatible with a wide range of external enclosures. Enclosures must meet basic requirements which include:
  - Adequate power and cooling to support the hard drives (dedicated power supply).
  - 7-pin shielded receptacles compatible with FirmTek's shielded cables (original I-shaped or newer eSATA cables); see below.
  - Support for Serial ATA Version 1.0 or Serial ATA Version 2.0
  - Serial ATA hard drives, or Parallel ATA hard drives with compatible Serial ATA to Parallel ATA converter
2. Install hard drives into the external enclosure according to the instructions included with the enclosure.
3. Attach one end of FirmTek's shielded Serial ATA cable(s) to the Serial ATA receptacle(s) on the SeriTek/2SE2-E and connect the other end(s) to the external enclosure.
4. The external enclosure's may be powered on or off at this time. If it is off, power it on.

Note: FirmTek Serial ATA cables were specially designed to be compatible with PC and Macintosh computers. Please use only FirmTek external shielded Serial ATA cables with the SeriTek/2SE2-E.

- *The original Serial ATA connectors have an L-shaped opening, see Figure 2A.*
- *The newer eSATA connectors have a rectangular I-shaped opening, see Figure 2B*

The SeriTek/2SE2-E uses the newer eSATA connectors, also known as I-shaped connectors, yet some drive enclosures require cables that utilize an L-shaped connector. For these types of enclosures, the cable required will have a rectangular I-shaped eSATA connector on one end, and an L-shaped SATA connector on the other end as shown below in Figure 2. This cable is available to purchase on FirmTek's website.

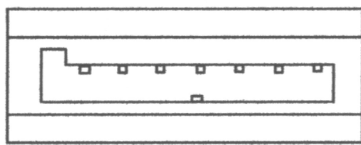


Fig: 5A  
Figure 2A: Original  
L-shaped SATA  
connector

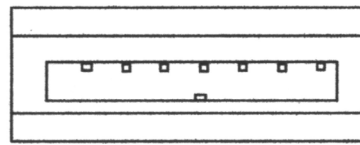


Figure 2B: Newer  
rectangular eSATA  
I-shaped connector

Figure 2: Serial ATA Connector Types: Original L-shaped and newer eSATA I-shaped

Note: If you are using your SeriTek/2SE2-E host adapter with a drive enclosure that uses eSATA connectors then you will require SATA cables that have two rectangular I-shaped eSATA connectors, just like the two connectors shown below in Figure 3.



Figure 3: Using SeriTek/2SE2-E with a drive enclosure that has I-shaped eSATA connectors; both cable connectors will be identical.

### **Making the SATA Connections:**



**Caution:** Be sure to connect the cable using the proper orientation to your SeriTek host adapter and external enclosure. It should easily snap into place. Please do not force the cable connector onto the host adapter and hard drive or peripheral interface.

Remember that male and female connectors must be of the same type for them to fit: L-shaped female to L-shaped male or eSATA female to eSATA male.

- First check that you are connecting the correct type of connectors to each other
- If your connectors still do not fit, rotate the cable and try again

## IV. Installing Windows Drivers

### Introduction

This section describes how to install Windows NT/2000/XP/2003 drivers. This section assumes the Windows operating system has already been installed on the PC.

### Windows Driver Installation

#### Windows 2000/XP Systems

- Boot up Windows after the Serial ATA PCI Express Host Adapter is installed and attached to external drives/enclosures.
- Log into the system using an account with administrator privileges.
- When the "Found New Hardware Wizard" appears, click the radio button to select the option "Install from a list or a specific location" and click "Next."
- Insert the SeriTek/2SE2-E CD-ROM
- Click the option "Search for the best driver in these locations" and then click the box next to "Include this location in the search:" Click the "Browse" button and browse to the Windows driver directory on the CD-ROM (\SeriTek-2SE2-E\drivers\Windows2000-XP) on the SeriTek/2SE2-E CD-ROM and click OK. Then click the "Next" button.
- If you see a message that states the driver has not passed Windows Logo testing, click "Continue Anyway."
- Remove the SeriTek/2SE2-E CD-ROM and restart Windows 2000/XP

#### Windows XP/2003 64-bit Systems

- Boot up Windows after the Serial ATA PCI Express Host Adapter is installed and attached to external drives/enclosures.
- Log into the system using an account with administrator privileges.
- When the "Found New Hardware Wizard" appears, click the radio button to select the option "Install from a list or a specific location" and click "Next."
- Insert the SeriTek/2SE2-E CD-ROM
- Click the option "Search for the best driver in these locations" and then click the box next to "Include this location in the search:" Click the "Browse" button and browse to the Windows driver directory on the CD-ROM (\SeriTek-2SE2-E\drivers\WindowsXP-2003-64bit) on the SeriTek/2SE2-E CD-ROM and click OK. Then click the "Next" button.
- If you see a message that states the driver has not passed Windows Logo testing, click "Continue Anyway."
- Remove the SeriTek/2SE2-E CD-ROM and restart Windows 2000.

#### Windows NT Systems

- Boot up Windows after the Serial ATA PCI Express Host Adapter is installed and attached to external drives/enclosures.
- Log into the system using an account with administrator privileges.
- Click Start.
- Under Settings, click Control Panel.
- Select SCSI Adapters from the Control Panel.
- Select the Drivers tab and click Add.
- Click Have Disk.
- Insert the SeriTek/2SE2-E CD-ROM, and click Have Disk
- Type the path to the Windows NT driver directory on the SeriTek CD-ROM (\SeriTek-2SE2-E\drivers\WindowsNT)
- Press Enter.
- If prompted, choose the Silicon Image Sil 3132 SATALink Controller and click OK.

**Verifying Proper Installation for Windows NT**

- Double click on My Computer icon, select Control Panel, and click on the SCSI Adapters icon.
- The Silicon Image Sil 3132 SATALink Controller should be displayed under the Device and Driver tabs.
- To view information about the devices attached to the controller, double click on the Silicon Image ATA Controllers applet icon in the Control Panel. Select the controller from the list at the top of the dialog. Then select the device from the Device Location drop down list to view its information.

**Verifying Proper Installation for Windows 2000/2003 or Windows XP**

- Right-click on "My Computer," click "Manage," and then click "Device Manager."
- Open "SCSI and RAID Controllers," then double-click "Silicon Image Sil-3132 Serial ATA Controller" to display driver properties.
- If the message "This device is working properly" is displayed in the dialog box, the driver has been correctly installed.

## V. Formatting Hard Drives

### Introduction

If the hard drive(s) connected to the SeriTek/2SE2-E are not formatted for use with Windows, they will not be recognized. This procedure explains how to format your hard drives. Be careful not to inadvertently delete partitions you use with other systems, such as a Macintosh computer.



### Caution:

Please make sure your data is backed up before attempting to format or change the partition layout of your hard drives.

### Create, Delete, and Format Partitions for Windows 2000/XP/2003

- Run the Disk Management utility: Right-click on “My Computer,” click “Manage,” and then select “Disk Management.”
- Create, change, or delete partitions using Windows Disk Management. If you are unfamiliar with using Windows Disk Management, please refer to Microsoft Windows system documentation (Start/Help and Support) or Microsoft’s website (<http://www.microsoft.com>).

## **VI. Product Support**

### **Technical Support**

For additional information on how to use SeriTek/2SE2-E, download the latest firmware updates, or for technical assistance, please visit us at [www.firmtek.com](http://www.firmtek.com), or email us at [support@firmtek.com](mailto:support@firmtek.com).

Please provide the following information when contacting us:

- Product model and serial number
- Driver version (You may use Windows Device Manager to determine the driver version).
- Computer type and model
- Computer operating system type and version (example: Windows XP with Service Pack 1)
- Other Hardware and software installed on your system
- Contact information including daytime telephone number and email address
- A detailed description of the question or problem

### **Return Merchandise Authorization**

If FirmTek technical support determines the product needs to be repaired or replaced, a Return Merchandise Authorization (RMA) number and shipping address will be provided. Please pack in the original shipping container all of the original packaging - including the static bag, all hardware, software, cables, and other accessories that came with the original product. You are responsible for shipping and insurance costs, and any damage incurred due to improper packaging or transport.

FirmTek reserves the right to determine whether the product is to be repaired or replaced with new or refurbished parts, or with a new or refurbished product. Standard United States return shipping charges will be paid by FirmTek. Foreign and other shipping methods such as express shipping are available for an additional charge.

Write down the RMA number on the outside of the shipping container, and include the following information with the shipment:

- A description of the problem
- A copy of the original purchase invoice
- Return shipping address
- Contact information including daytime telephone number and email address

FirmTek, LLC reserves the right to refuse shipments missing a valid RMA number.

## **VII. Product Warranty and Disclaimers**

FirmTek warrants to the original buyer only that this product shall be free from defects in material and workmanship for a period of 2 years from the original date of purchase. This warranty is valid only when the original purchase invoice is provided. This warranty shall not apply to any defects resulting from improper handling, misuse, misapplication, abuse, or unauthorized modification(s) which are performed by end user.

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## **VIII. Regulatory Compliance Statements**

### **Federal Communications Commission Radio Frequency Interference Statement**

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. However, if this equipment does cause interference to radio or television equipment 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 equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.
- Use a shielded and properly grounded I/O cable and power cable to ensure compliance of this unit to the specified limits of the rules.

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.

### **CE European Union Compliance Statement**

EMC compliance:

Emissions: EN55022: 1998, Class B

Immunity: EN55024: 1998

EN61000-4-2: 1995+A1: 1998

EN61000-4-3: 1995+A1: 1998

EN61000-4-4: 1995

EN61000-4-6: 1996

EN61000-4-8: 1993