

## IEEE 1394a ExpressCard



## ● Introduction

ExpressCard, the next evolution of the PC Card, combines a smaller form factor and faster performance with the PC Card reliability and ease of use. This card is a single-chip solution for IEEE 1394a compact size ExpressCard/34 module and the interface has a potential transfer rate of up to 500 MB/sec (or 250 MB/sec in each direction) using a single-lane (or x1) PCI Express link. The 1394a OHCI controller function is fully compatible with IEEE Standard 1394a-2000 and the latest 1394 Open Host Controller Interface (OHCI) specification.

This card was created to meet the need of the ExpressCard market where notebooks, desktops, and docking stations could add two additional 1394a ports via a single slim-type ExpressCard. Users will benefit from ExpressCard plug-n-play ease of use, which eliminates the need to open the chassis to add new features. This FireWire400 Expresscard allows you to connect IEEE 1394 compatible devices to your computer, such as DV cameras and camcorders. You can also make a fast network connection between two Windows XP systems with a FireWire connection, which has a data transfer speed of up to 400 Mbps.

## ● IEEE1394 Features

IEEE 1394a standard is a high-speed serial bus designed to deliver high data transfer speeds at a low cost, and with the low degree of latency required by a peripheral bus or by a backup to a traditional parallel bus. Among its key features are:

- **High Speed:** Speeds of 100, 200, and 400 Mbps are currently supported.
- **Isochronous Support:** Deterministic bandwidth allocation guarantees bandwidth for time-sensitive applications, such as real-time video feeds, that could otherwise be disrupted by heavy bus traffic.
- **Flexible Topology:** Devices can be daisy-chained and no central bus supervision is required. Besides, it supports peer to peer function and allows up to 63 devices to be connected in a chain through its standard 6-pin FireWire ports.
- **Hot-Plug Support:** The bus is dynamically reconfigured whenever new nodes are added, which means users don't have to configure node IDs or unique termination schemes.
- **Cable Power:** Low-cost peripherals can be powered directly from the 1394 cable, so no dedicated power supply is needed.
- **1394 End devices:** IEEE 1394 interfaces have already been incorporated into a variety of devices, including PC cameras, DV camcorders, DV recorders, digital cameras, hard disk drives, enclosures, CD/DVD drives.

## ● Specifications

- Designed to meet PCI Express Base Specification Revision 1.1.
- Single-lane (or x1) PCI Express throughput supports rates of 2.5 Gbps.
- Compliant with ExpressCard 34mm wide module specification.
- Built-in two external independent 6-pin FireWire400 ports.
- Fully support 1394 Open Host Controller Interface Specification 1.1.
- IEEE Std 1394a-2000 fully compliant cable ports at 100, 200 and 400 Mbps.
- Equips one DC jack for using power adapter to provide 12VDC power output.
- Compliant with provisions of IEEE Std 1394-1995 for a high-performance serial bus and IEEE Std 1394a-2000.
- Hot-swapping feature allows you to connect/disconnect devices without powering down the system.
- Support Microsoft Windows 2000, XP, Sever2003 and Linux operation system.

## ● System Requirement

1. Pentium-class notebook or desktop with one available ExpressCard 34/54 slot.
2. Microsoft Windows 2000, XP and Sever2003 operation system.
3. Recommended system for Digital Video creating/editing:
  - Pentium4 2.0GHz computer
  - 256MB RAM and CD/DVD-ROM drive
  - 400MB of available hard disk space or above
  - Video card with 32MB RAM or above

## ● Hardware Guide



## NOTE:

IEEE1394 ExpressCard 6-pin connectors do not provide power to peripherals. If your device needs power from host, please using DC power adapter to satisfy it.

## ● Package List

Please check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

1. IEEE1394a ExpressCard
2. User's Manual (this document)

Optional Accessories:

1. IEEE1394 Cable
2. Power Adapter DC 12V / 1A
3. ULEAD DVD/VCD Editing Software

## ● Hardware Installation

Due to the hot-plug feature of the ExpressCard, the installation of this card quite straight forward. Please insert the IEEE 1394a ExpressCard into your portable system or Notebook ExpressCard 34/54 wide slot. (Please note the direction of the ExpressCard should match the direction of the slot)



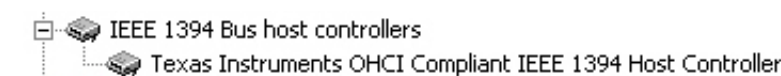
## ● Driver Installation

Once the Windows 2000, XP and 2003 startup, IEEE1394 PCI Express card will be installed automatically without driver installing. Please update your operation system to Windows 2000 service pack 4, Windows XP service pack 2, and Windows Sever2003 service pack1 or later version.

## ● Hardware Verify

Click on the "Device Manager" tab in System Properties, which you access from the Windows Control Panel. You should see an entry for the driver you installed under the 1394 Bus Controller item. (The device name will be different in product what you bought)

**Start > Controller Panel > System > Device Manager**



# IEEE 1394a ExpressCard

## ● Troubleshooting

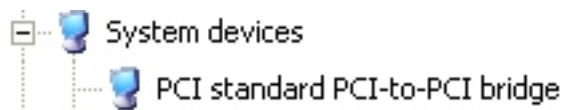
### ■ If the card and devices connected to the computer do not seem to be working properly, please perform following basic troubleshooting steps:

1. Check that all cables are correct and securely connected.
2. Make sure the devices are turned on.
3. Make sure the devices are getting the power they require.
4. If a powered repeater is connected, make sure it is turned on.
5. If the devices are connected in a daisy chain and you have problems after disconnecting a device, please reconnect the device. Normally, the device will be enabled. If not, please restart the computer and see if the problem clears up.
6. Make sure there is no problem with the card installation.

### ■ The computer can NOT detect the IEEE 1394 ExpressCard

1. Make sure that the ExpressCard is correctly plugged into the ExpressCard 34/54mm wide slot; if not, please plug it in again.
2. If the ExpressCard is plugged in correctly, see if the golden connectors on the card are clean; if not, clean the connector surface.
3. Please entry "Device Manager" affirming "PCI standard PCI-to-PCI bridge" message appears in the sub-tree of "System device".

Start > Control Panel > System > Device Manager



If you can not find this information in the device manager, please upgrade your notebook (motherboard) BIOS to the latest version. If it still not work, contact your notebook (motherboard) vendor asking the advanced supporting for BIOS updated.

4. The board itself might be defective. You can try another notebook testing IEEE 1394 ExpressCard working or not.

### ■ I can NOT install IEEE 1394 ExpressCard driver properly.

IEEE1394 driver bounds with Microsoft Windows system, please upgrade the latest "Service Packs" on your software vendor website, for example <http://www.microsoft.com>. We suggest updating your operation system to Windows 2000 service pack 4, Windows XP service pack 2, and Windows Sever2003 service pack1 or later version.

### ■ Computer failed to start after inserting the IEEE 1394 ExpressCard.

Please remove the IEEE 1394 ExpressCard, and try to restart notebook. If notebook starts successfully, then the IEEE1394 ExpressCard might be defective or not plugged into ExpressCard slot properly. Please contact the dealer you bought the card from or re-plug it in again.

### ■ How to deal with there is a yellow exclamation point on Texas Instruments OHCI IEEE 1394 Host controller.

This exclamation point usually means there is a resource conflict between the IEEE 1394 ExpressCard and another card in your system. Removing the card from ExpressCard slot then shutdown your computer. Before restarting computer, please insert the card into ExpressCard slot properly. Windows will then re-configure itself and re-assign resources. Check your device manager again. If the exclamation point is still there then repeat the process until it no longer appears.

### ■ Why no sound is obtained from the camera in video software?

Connect the camera's sound output to the "LINE-IN" on your sound card.

### ■ Digital video device failed to work.

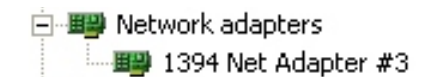
1. If the connection between your notebook and DV devices terminates (e.g. the error message starts with can NOT initialize...), try turning the DV device off and then turning on again, or disconnect the cable between the notebook and the device and then reconnects it again!!
2. You may need to restart your system. Turn off computer and DV device, wait several seconds, turn on your computer, and then turn on your DV or tape deck when your computer has completed the star-up process.
3. If the device needs an external power supply, please using 12VDC power adapter. Connection between your notebook and DV devices must use IEEE 1394 6pin-to-6pin cable.
4. Please check IEEE1394 cable working or not.

### ■ I get choppy sound or video that does not appear smooth:

Check the amount of RAM in your system. The recommended amount is 256MB or higher, preferably 512MB or more. Editing DV takes up large amounts of disk space. As your hard drive fills up the slower it performs. Try to free up space on your hard drive by deleting unneeded programs and files. Optimized your system..

### ■ How to use IEEE 1394 network in Windows XP ?

A '1394 Net Adapter' will also be installed automatically in Windows XP. This can be used to make a fast network connection between two Windows XP systems via a FireWire connection. (Please check the device manager)



If you have two computers which operate Windows XP (for example, a PC and a NB) and both computers have a FireWire connection, then you can make a direct, fast network connection between these computers via one FireWire cable.

**Note:** This network connection cannot be used together with an existing LAN network and it works under Microsoft Windows XP and Sever 2003 operation system only.

Follow the instructions as below:

1. Connect the FireWire cable to the FireWire port on both computers.
2. Start Windows XP on both systems.
3. Click on "Start > All Programs > Accessories > Communications > Network Setup Wizard" to start the network configuration program.
4. Follow the on-screen instructions.
5. Select the '1394 Net Adapter' as the network connection.
6. Enter the network settings which you require. For example, you can make a shared Internet connection if one computer has a modem.
7. Follow the Wizard on both computers.
8. After completing the Wizard, click on "Start > Connect to > Show All Connections". If the card has been installed correctly, the FireWire (IEEE 1394) network will be displayed here.

See the Windows XP and Sever2003 Help function for detailed information on how to create and manage the network connection.

