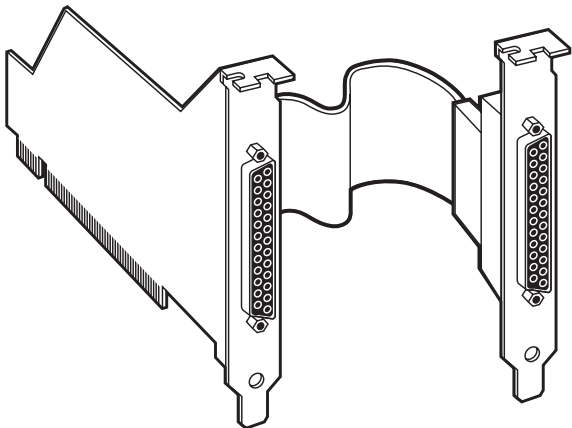




PC Plus Adapter— Dual Parallel PCI



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
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**FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

**NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT**

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

TRADEMARKS

The trademarks mentioned in this manual are the sole property of their owners.

NOTE

The software you received may call the PCI Adapter the “Lava” Adapter. Both refer to the PCI Plus Adapter—Dual Parallel PCI (part number IC146C).

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Windows NT 4.0 24

1. Specifications

Standards — PCI Specification 2.1

Connectors — (2) DB25 female

Power — From the PCI bus

Size — 3/4 card

Weight — 1 oz. (28 g)

2. Introduction

2.1 Description

With the PCI Plus Adapter—Dual Parallel PCI, you can connect two parallel peripherals to your PC via a PCI slot.

2.2 Features

- PCI bus dual 25-pin enhanced (EPP) parallel port—adds two accelerated LPT ports to any PCI-equipped PC.
- Both ports use PCI Bus Enhanced Parallel Port technology—up to 3 times faster than standard ISA and motherboard EPP parallel ports.
- Easy plug-and-play installation—automatically configures I/O addresses and IRQ.
- Both ports share one available PCI IRQ—saves valuable resources for other expansion cards.
- Configurable for standard ISA parallel port addresses (0278 and 0378) for compatibility with peripherals you already have (for example, Zip™ Drives).

- 100% compatible with any parallel-port device—including laser and color printers, external drives, parallel port scanners, and video-conferencing cameras.
- Complies with PCI specification 2.1.

3. Installing the Hardware

3.1 Normal Installation

Follow these steps:

1. Before opening the casing of your computer, make sure that all power is off.
2. Locate an unused PCI slot and insert the Dual Parallel PCI Adapter into it. Make sure that the Adapter is well-seated.
3. Locate an unused backplane slot in your PC casing (preferably one that does not correspond to a slot), and fit the Port B cable into it. Attach the metal backplanes of both the card and cable to your PC's casing and replace the PC's cover.

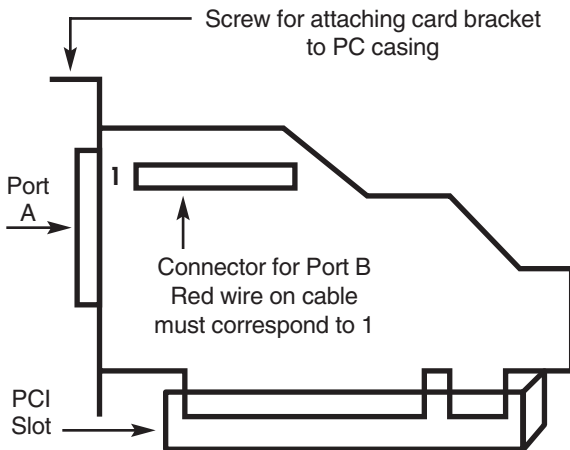


Figure 3-1. PCI Plus Adapter.

4. Installing the Software

NOTES

Because the PCI Plus Adapter uses PCI (not ISA) I/O address ranges, its ports will never be seen by your BIOS at boot-up as standard parallel ports (occupying 0278h or 0378h) even if you change one or more addresses in Windows. This is normal, and does not indicate a fault in your Adapter.

The Adapter may not work at address 0278h or 0378h if it is installed in a PCI slot that is behind a PCI-to-PCI bridge. If you have trouble installing the Adapter, try seating it in a different slot.

4.1 Installing the PCI Plus Adapter under DOS for Use with Windows 3.x or DOS

4.1.1 THE DOS UTILITY

You can enable the PCI Plus Adapter from DOS. An included utility program configures DOS to accept the Adapter and it may set the PCI bus address to what you have set as a parameter. You can leave that parameter out and DOS will be configured to what the PCI bus on your system has configured the Adapter to.

DOS can have a maximum of three parallel ports enabled. So you can have up to three parallel PCI cards in a system as long as there are no other parallel ports in the system. The three standard addresses are 3BC, 378,

and 278. Installing the PCI Plus Adapter on 3BC may cause problems with video cards. You may assign the Adapter any address you wish other than 3BC. You must omit parameter 2 and 3 if there is only one parallel PCI card in your system.

4.1.2 INSTALLATION INSTRUCTIONS

Follow these steps to install the Adapter in DOS:

1. Insert the PCI Plus Adapter—Dual Parallel PCI into a free PCI slot, as described in **Section 3.1**.
2. Boot into DOS.
3. With the parallel PCI floppy diskette in the floppy drive, copy the `setaddr.sys` file to the root directory of the hard drive. Use the following command:

```
copy a:\DOS\setaddr.sys c:\
```

4. Add the following line to your `config.sys` above following all devices to be loaded such as HIMEM and EMM386, or if you are running DOS under Windows 95, add this line also to your `config.dos`.

```
device=c:\setaddr.sys [1] [2] [3]
```

where [1] [2] [3] are the I/O addresses that you wish to assign to the PCI Plus Adapters starting with the lowest PCI slot number. Consult your motherboard manual to verify which slot is the lowest slot number. You can use other addresses for the PCI Plus Adapter such as 378 or non-standard addresses such as 288, 238, 2B8, and 338.

NOTE

Do not use the standard address 3BC! Using this address could cause problems with your video.

Here are some examples:

- 1 Parallel PCI installed on address 278:
device=c:\setaddr.sys 278
- 1 Parallel PCI installed on address assigned by PCI bus: device=s:\setaddr.sys
- 2 Parallel PCI installed on address assigned by PCI bus: device=c:\setaddr.sys
- 3 Parallel PCI installed on address assigned by PCI bus: device=c:\setaddr.sys
- 2 Parallel PCI cards installed on address 278 and 378—first card 378, second card 278:
device=c:\setaddr.sys 378 278

3 Parallel PCI cards installed on address 378, 278, 288—first card 378, second card 278, third card 288: device=c:\setaddr.sys 378 278 288

You can also leave out these parameters and the parallel PCI Adapter will be given the PCI bus assigned address like 6000, 5000...

5. Reboot into DOS and out setaddr.sys utility will report the IRQ and address assigned to the Adapter.

4.2 Installing the PCI Plus Adapter for Windows NT 4.0

Follow these steps:

1. Shut down the system and place the PCI Plus Adapter—Dual Parallel PCI in a free (unused) PCI slot, as described in **Section 3.1**.
2. Boot into Windows NT 4.0, log on as Administrator, and place the Installation and Utilities diskette into the floppy drive.
3. Run install.exe in the NT 4.0 directory on the floppy.

4. Assign the address. If you are connecting a printer to the Adapter, choose the PCI bus assigned address. If you are installing a non-printer peripheral such as a scanner or external drive, choose either 0278 – 027F or 0378 – 037F. Make sure that you do not assign the Adapter to an address used by your on-board parallel port. To find the address of your on-board parallel port, look in Start→Programs→Administrative Tools→Windows NT diagnostics. Go to the Resources tab, then click the Devices button. Double-click Parport. This will list the parallel port address assignment. You can also verify the successful installation of the Adapter here.
5. Reboot Windows NT 4.0.

CAUTION

The following devices are NOT compatible with Windows NT 4.0:

IOmega ZIP drive

SyQuest SPARQ

4.3 Installing the PCI Plus Adapter in Windows 95/98

1. Shut down the system and place the PCI Plus Adapter—Dual Parallel PCI in a free (unused) PCI slot, as described in **Section 3.1**.

2. Power on the PC. When Windows 95/98 starts, it will find a Parallel PCI Controller and will ask you for a driver for this device. When prompted, insert the Adapter driver diskette into your floppy drive. After copying the necessary files from the diskette, Windows will ask if you wish to restart your PC in order to complete the installation. Choose “no.”
3. Windows must detect each of the parallel ports on the Dual Parallel PCI Adapter individually. The second port will therefore only be detected after the first port has been installed. Once both ports have been detected, Windows must be restarted in order to complete the installation.
4. The Adapter’s ports will appear in Control Panel→System→Device Manager under Ports, as shown in **Figure 4-1**. If required, settings may be customized by clicking on a particular port and then clicking Properties.

NOTE

Changes to default settings may be required by users connecting a non-printer peripheral to one of the Adapter’s ports (see **Section 4.3.1**). Users connecting to a printer should use default settings.

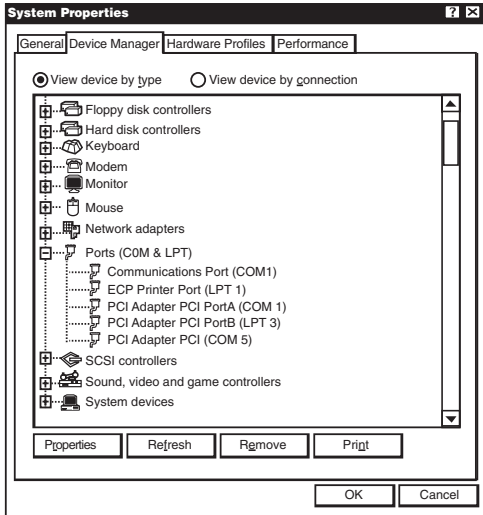


Figure 4-1. System Properties, Device Manager tab.

4.3.1 CONNECTING A NON-PRINTER DEVICE (FOR EXAMPLE, AN EXTERNAL DRIVE OR A PARALLEL SCANNER) TO ONE OF YOUR PORTS

Some parallel-port devices require parallel ports that use standard ISA LPT addresses (0278h or 0378h). Because the Adapter is a fully compliant PCI device, the default

address (Input/Output Range) for each of its ports is beyond the standard range of ISA I/O addresses. In order to connect such a peripheral to one of the PCI card's ports, the I/O address range of that port must therefore be changed manually. Follow the steps listed next.

1. Open Control Panel→System→Device Manager and find the appropriate listing under Ports. Click Properties, and proceed to the Resources tab. The screen shown in **Figure 4-2** will appear.

NOTE

The Input/Output Range an Interrupt of your particular configuration may differ from the one in **Figure 4-2**.

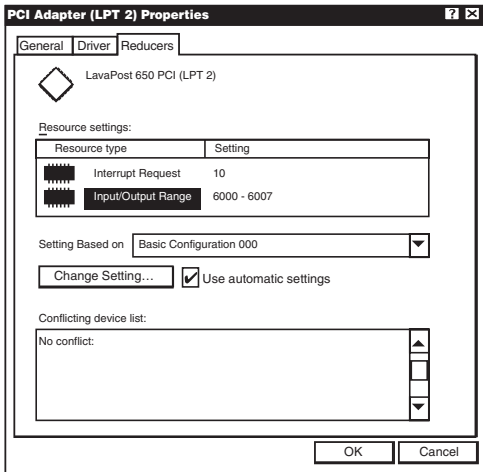


Figure 4-2. Properties Screen, Resources tab.

2. Remove the check mark from the Use Automatic Settings box.
3. Double-click on the words Input/Output Range. The screen shown in **Figure 4-3** will appear.

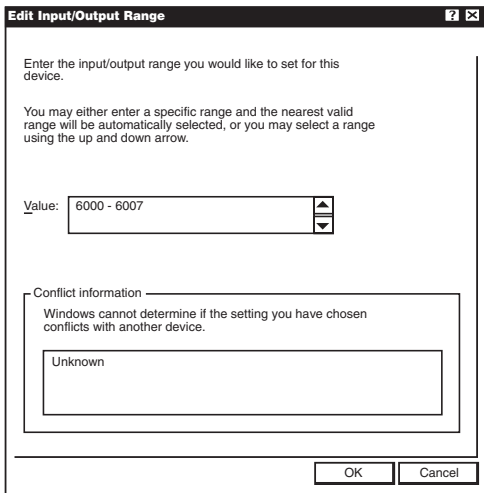


Figure 4-3. Edit Input/Output Range.

4. Use the up/down arrow keys to scroll to one of the following two range settings, or type them in manually:

0278–027F

0378–037F

5. After one of these has been entered, click OK. Windows will ask you to verify that you would like to force this particular configuration rather than the automatic one that it had previously chosen. Click Yes.
6. Verify that there are no conflicts with other parallel ports already in your PC. If no conflicts are found, restart Windows.

4.3.2 OPTIMIZING THE ADAPTER FOR USE WITH IOMEGA ZIP™ DRIVES

1. Connect your Zip Drive to one of the Adapter's ports, and install it as instructed in the Iomega documentation. On the Iomega installation diskette, you will find a utility called "Parallel Port Accelerator." After the Zip Drive is installed, run this utility.
2. For maximum speed and performance, we recommend one further step after running the Parallel Port Accelerator utility. Open Control Panel→System→Device Manager and find the Iomega Parallel Port Zip Interface listing under SCSI Controllers. Click Properties and go to the Settings tab. The screen shown in **Figure 4-4** will appear.

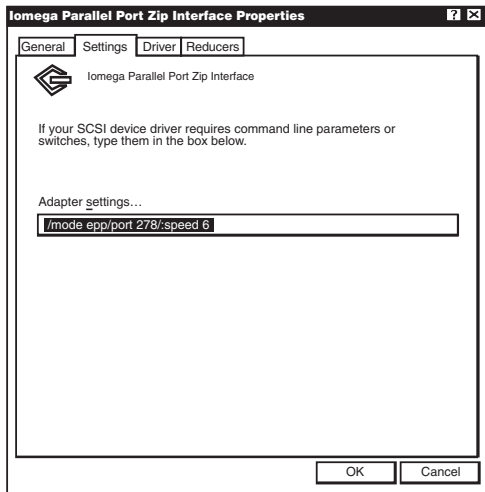


Figure 4-4. Iomega Parallel Port Zip Interface Parameters.

3. The Parallel Port Accelerator Utility will have inserted a text string into the area shown on this screen. The first part of this string will read:

/mode:bdir

Change this string to read:

/mode:epp

NOTE

Do NOT change the spacing or the order of the text in the string. Doing so may result in the Zip Drive not functioning at all.

4.4 Installing the PCI Plus Adapter in an Operating System other than DOS, Windows 3.11, Windows 95/98, or Windows NT 4.0

A utility that reports the IO address and IRQ assigned by the PCI bus on your system is included with your Adapter. You must run this utility from the DOS level. You can run it from a DOS boot disk to report the IO address range and IRQ that the PCI bus on your system has configured the Adapter to. Use this utility if you wish to configure a parallel port in an OS other than DOS or Windows, using the makedev parallel command. Consult the documentation for the operating system for the appropriate commands.

Create a DOS boot disk in DOS compatible system (not NT 4.0) with the following command:

```
format a:/s
```

Copy the file Lavaconf.exe to that diskette.

If this reports an address that ends with 0, then the ending address will end in 7.

If this reports an address that ends with 8, then the ending address will end in F.

Lavaconf reports:

10F0

then in the OS, enter 10F0–10F& for the Input/Output Range.

Lavaconf reports:

10F8

then in the OS, enter 10F8–10FF for the Input/Output Range.



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