

Version 1.0

PCI Parallel I/O

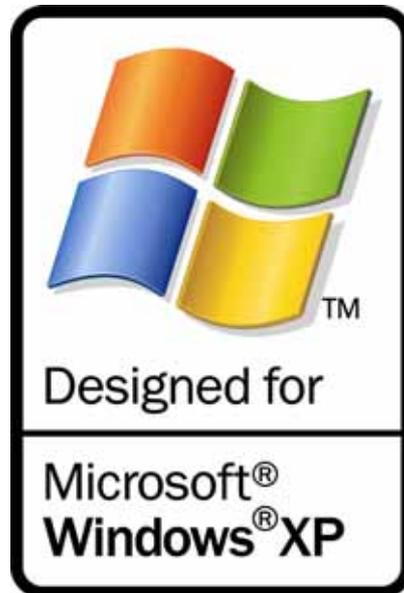
User's Manual

*Plug into A
Brand-new World*

◆ INDEX

WHQL Certification Approval.....	2
1.0 Introduction.....	3
2.0 Specification.....	3
➤ 2.1 Features	
➤ 2.2 Universal Parallel PCI Card	
➤ 2.3 Low Profile	
➤ 2.4 System Requirement	
➤ 2.5 Package List	
➤ 2.6 Pin Assignments	
3.0 Operation Environment.....	5
4.0 Driver Install/Uninstall	
➤ 4.1 Windows XP.....	6
➤ 4.2 Windows 2000.....	9
➤ 4.3 Windows 95/98SE/ME.....	14
➤ 4.4 Windows NT4.0.....	17
➤ 4.5 DOS.....	20
➤ 4.6 Windows 3.1.....	23
➤ 4.7 Linux.....	27
5.0 Configure LPT port	
➤ 5.1 How to connect your peripheral LPT device.....	27
➤ 5.2 Remap the Parallel Port I/O address.....	28
➤ 5.3 How to configure your I/O Card (NT4.0).....	29
➤ 5.4 How to configure LPT port (Windows3.1).....	30
6.0 Trouble shooting.....	32

WHQL Certification Approval



The Designed for Microsoft Windows XP logo identifies products that meet Microsoft's quality standards, our I/O products carry with this logo and listed on Windows Catalog.

CE FCC

◆ 1.0 Introduction

Thank you for purchasing of the **PCI Parallel Card**. This unique PCI I/O card allows you to attach your computer to support DB-25 F Parallel port, and get faster devices results.

The PCI I/O Card function of PCI Bus is for Plug and Play. Users do not need a jumper to set I/O address and IRQ location, and the system will search the device automatically. There is no conflict with other interface card or devices.

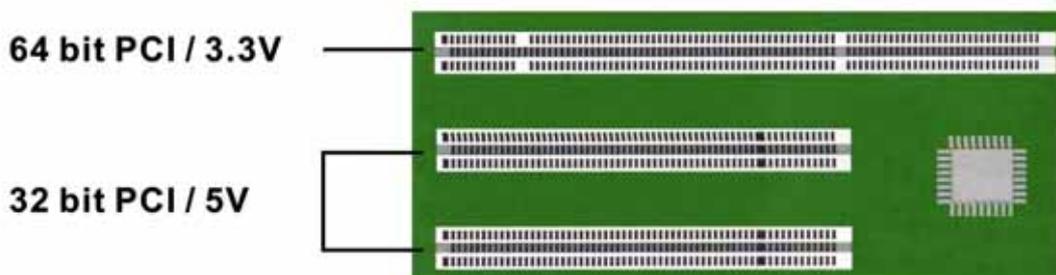
◆ 2.0 Specification

➤ 2.1 Features:

1. Improves I/O access speed up to 8 times faster than existing ISA-bus serial ports.
Reduces CPU load and improves system performance dramatically.
2. IRQ sharing feature eliminates IRQ conflicts
3. One or two high-speed parallel ports support all types of parallel port devices including a removable cartridge drives, CD-R/ RW, printers, scanners, tape drives and other parallel port devices.
4. Works with various type of parallel devices

➤ 2.2 Universal Parallel PCI Card:

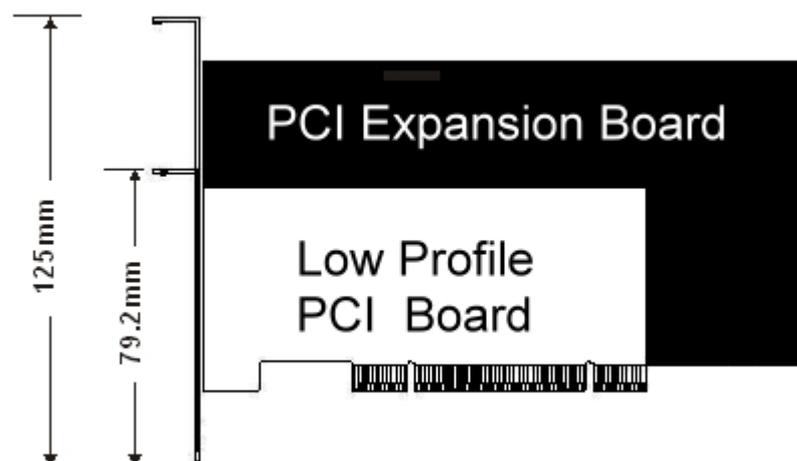
1. Bus type: Supports both 64-bit & 32-bit PCI Bus
3.3V & 5V connector keys



3. Interface: Support ECP(Enhance Capacity Port) / EPP(Enhance Parallerl Port)
SPP(Stander Parallerl Port) / BPP(Bi-direction Parallerl Port)
Conforms to IEEE 1284-1994 parallel port standard
4. Speed: Up to 770 KB/Sec SPP/BPP
Up to 21.4 MB/Sec ECP/EPP/SPP/BPP (PS-)
Full support for DOS and Windows based software
5. Port type: One or Two DB25F parallel ports.
6. FIFO Length: Built-in high-speed with 32-byte transmit/receive hardware FIFO buffers.
7. I/O Address: Plug and Play or RE-Map to ISA address 278, 378.
8. IRQ sharing feature eliminates IRQ conflicts.

➤ **2.3 Low Profile:**

Low Profile PCI cards are so small that they easily fit into almost any system.



➤ **2.4 System Requirements**

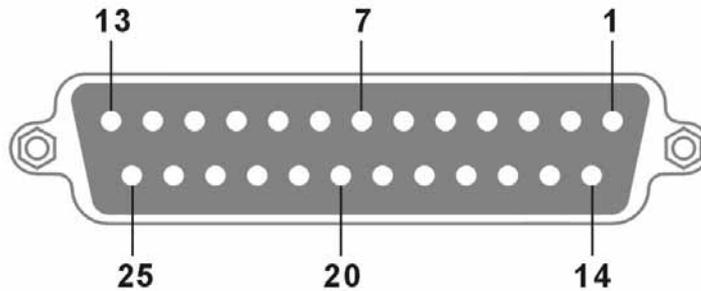
1. Pentium or equivalent computer with an available PCI slot.
2. CD-ROM / DVD-ROM required for software installation.
3. Windows 3.1x/ 95/98SE/ME/NT4.0/2000/XP, DOS, Linux.

➤ **2.5 Package list :**

1. Hardware:
 - PCI Parallel IO Card × 1
 - Print Cable 25PIN Female cable (only for 2 ports card)
 - 44Pin -(25Pin female) cable × 1 (only for Low Profile card)
2. CD Driver
3. User's Manual

➤ *2.6 Pin Assignments :*

DB25 Female



PIN	Signal	PIN	Signal
1	STROBE	14	AUTO FEED
2	DATA0	15	ERROR
3	DATA1	16	INIT
4	DATA2	17	SELECT INPUT
5	DATA3	18	GROUND
6	DATA4	19	GROUND
7	DATA5	20	GROUND
8	DATA6	21	GROUND
9	DATA7	22	GROUND
10	ACKNOWLEDGE	23	GROUND
11	BUSY	24	GROUND
12	PAPER EMPTY	25	GROUND
13	SELECT		

◆ *3.0 Operation Environment*

1. Operation temperature: 0 ~ 57
2. Operation humidity: 5 to 95% RH
3. Storage temperature: -20 ~ 85

◆ 4.0 Driver Installation

➤ 4.1 Driver Installation Guide (Windows XP)

Follow the steps below on installing the PCI Parallel Printer Card for the first time:

1. Open your computer case and plug the PCI Parallel Printer Card into your PCI slot.
2. Power on your computer and screen will show the PCI device listing display in a very short time (The data is reference resources).

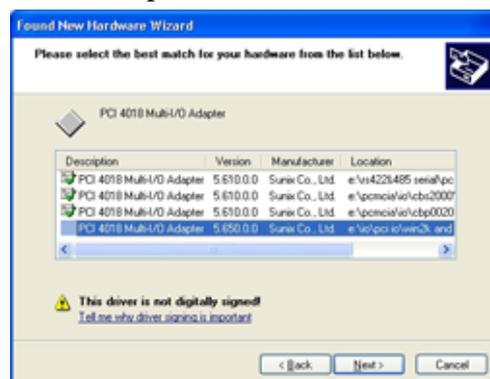
Bus No	Device No	Func No	Vendor ID	Device ID	Device Class	IRQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM. Controller	10

3. When PCI Parallel Printer Card working normally, the system will detect the **PCI Parallel controller** automatically and run the **Add New Hardware Wizard** to assist you in setting up the new device.

Please insert the CD Driver into the CD/DVD-ROM, and select “**Install the software automatically**”, then click “**Next**” to continue install driver.



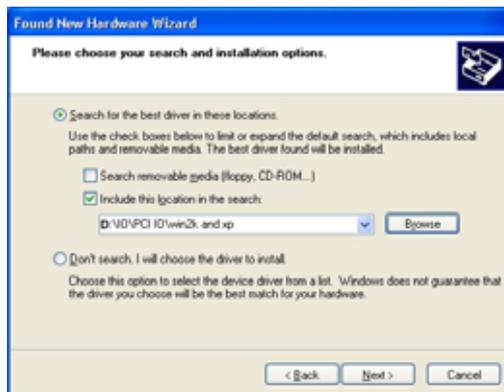
4. The system will search the driver automatically. Please choose the CD driver location: D:\IO\PCI\Win2k and xp, and click “**Next**”



*If the system can't find the suitable driver, please click "**Back**" and follow the step:
Please select "**Install from a list or specific location**", and click "**Next**"



Please select "**Specify a location**" and click **Browse**. Change the folder of your CD-ROM drive **D:\IO\PCI IO\Win2k and xp**. Please click "**Next**" to continue installation.



5. When this picture show up, please select "**Continue Anyway**".
The system will copy the needed files automatically.

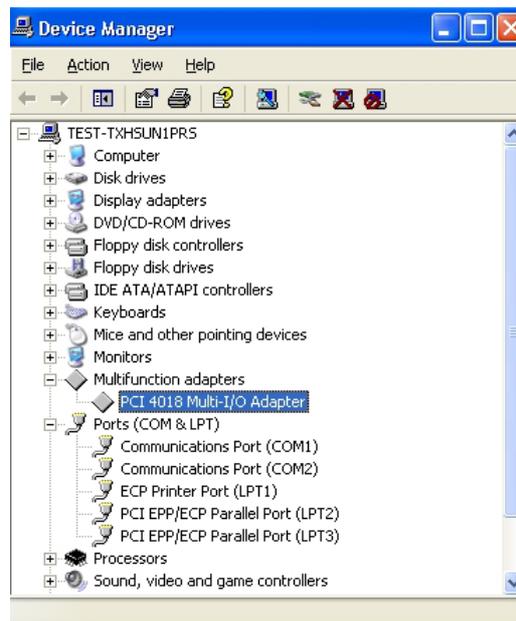


6. Please click "**Finish**" to finish installing the software.



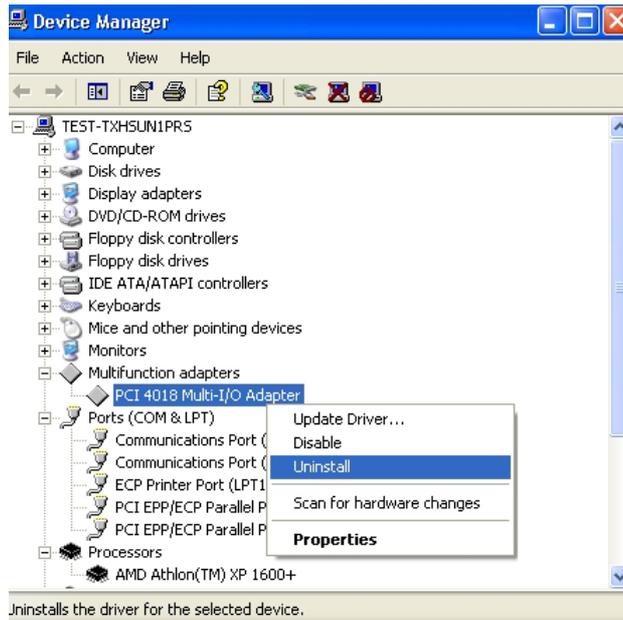
- Note: If you install PCI parallel ports to your system, you will be requested to restart your computer when you finish setting up each parallel port. Click **【Yes】** if all parallel ports have been installed, others click **【No】**. For example, if you install two parallel ports in your system, click **【No】** for the first System Setting Change and click **【Yes】** for the last System Setting Change.

7. When Windows finished installing the software. You have to check the Control Panel-System-Hardware-Device Manager-Ports[COM&LPT] will show the additional ports.

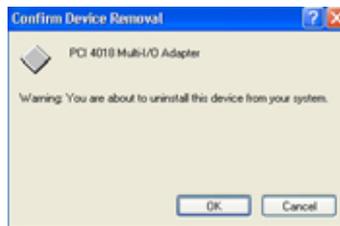


➤ ***Driver Uninstall Guide (Windows XP)***

1. Please shut down your computer, and remove **PCI I/O Card** from PCI slot.
The system will uninstall the device automatically after rebooting the computer, or follow the step to uninstall:
2. Please check the Control Panel-System-Hardware-Device Manager-Multifunction adapters-**PCI Multi-I/O Adapter**, and right click the mouse select **“Uninstall”**.



3. Please click “OK” to uninstall the device.



➤ **4.2 Driver Installation Guide (Windows 2000)**

Follow the steps below on installing the PCI Parallel Printer Card for the first time:

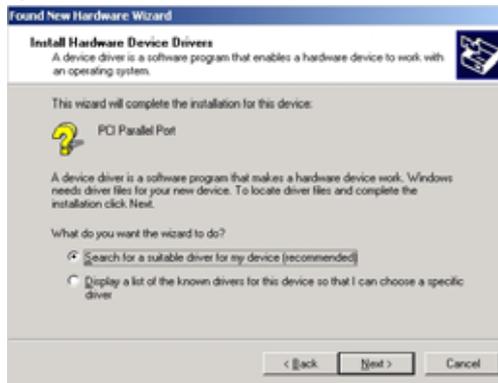
1. Open your computer case and plug the PCI Parallel Printer Card into your PCI slot.
2. Power on your computer and screen will show the PCI device listing display in a very short time (The data is reference resources).

Bus No	Device No	Func No	Vendor ID	Device ID	Device Class	IRQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM. Controller	10

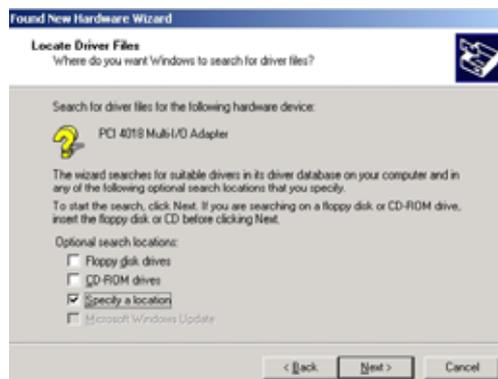
3. When PCI Parallel Printer Card working normally, the system will detect the **PCI Parallel controller** automatically and run the **Add New Hardware Wizard** to assist you in setting up the new device. Click “Next” to continue.



4. Please insert the CD Driver into the CD/DVD-ROM, and select “**Search for a suitable driver for my devices**”, then click “**Next**” to continue install driver.



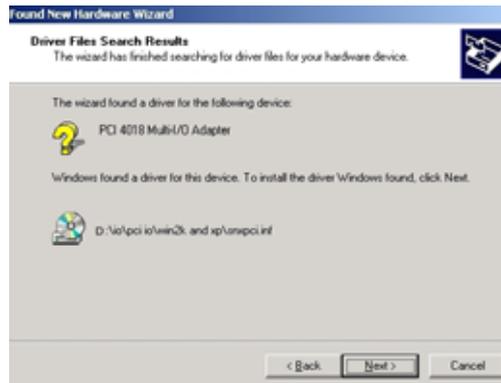
5. Please select “**specific location**”, and click “**Next**”.



6. Click “**Browser**” to install driver from CD-ROM “**D:\IO\PCI IO\Win2k and xp**”. Please click “**Next**” to continue installation.



7. Windows will detect the driver (snxpci.inf) and shows the device: **PCI Multi IO Adapter**. Click “**Next**” to copy the needed files to your computer .

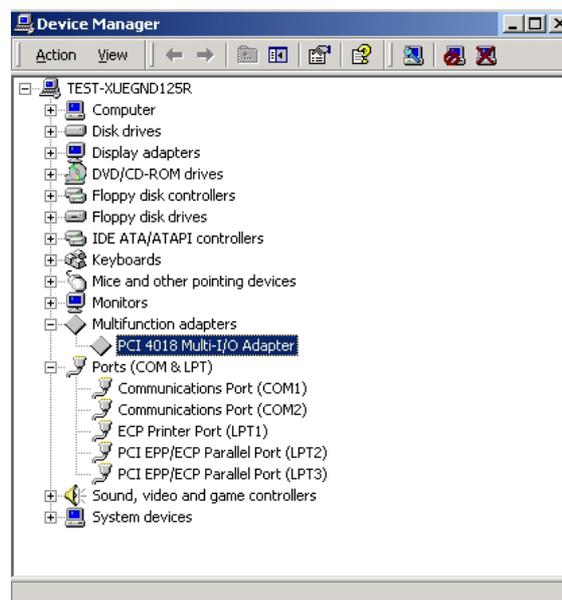


8. e Please click “**Finish**” to finish installing the software.



- Note: If you install PCI parallel ports to your system, you will be requested to restart your computer when you finish setting up each parallel port. Click **【Yes】** if all parallel ports have been installed, others click **【No】**. For example, if you install two parallel ports in your system, click **【No】** for the first System Setting Change and click **【Yes】** for the last System Setting Change.

9. When Windows finished installing the software. You have to check the Control Panel-System-Hardware-Device Manager-Ports[COM&LPT] will show the additional ports.



➤ **Driver Uninstall Guide (Windows 2000)**

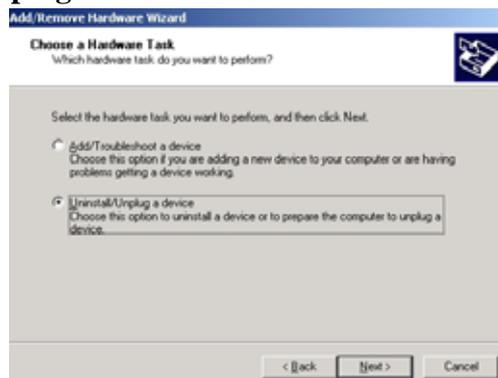
1. Please shut down your computer, and remove **PCI I/O Card** from PCI slot.
The system will uninstall the device automatically after rebooting the computer, or follow the step to uninstall:
2. Click the “Hardware Wizard” in “Hardware” of System Properties.



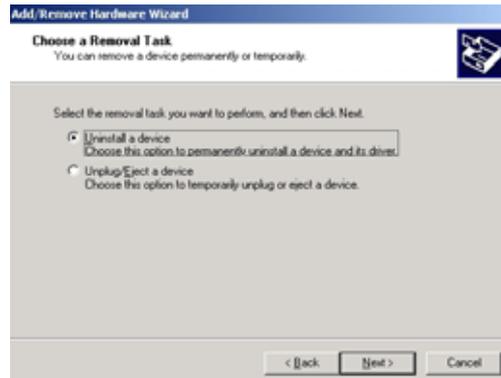
3. Please “Next” to continue.



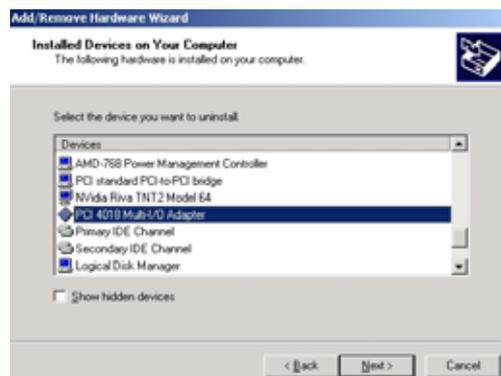
4. Select “Uninstall/Unplug a device” and click “Next”.



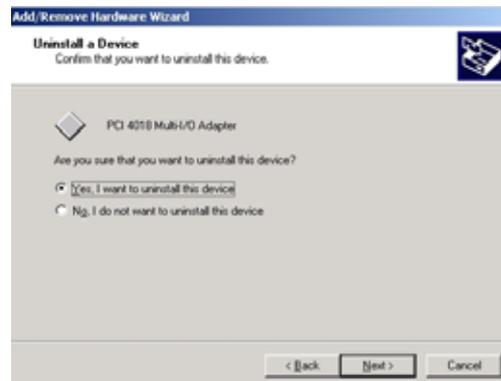
5. Select “Uninstall a device and click “Next”.



6. Select the “PCI Multi I/O Adapter” and click “Next”.



7. Select the “Yes, I want to uninstall this device” and click “Next”



8. Please click “Finish” to complete the Add/Remove Hardware wizard.



➤ **4.3 Driver Installation Guide (Windows 95/98SE/ME)**

Follow the steps below on installing the PCI Parallel Printer Card for the first time:

1. Open your computer case and plug the PCI Parallel Printer Card into your PCI slot.
2. Power on your computer and screen will show the PCI device listing display in a very short time (The data is reference resources).

Bus No	Device No	Func No	Vendor ID	Device ID	Device Class	IRQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM. Controller	10

3. When PCI Parallel Printer Card working normally, the system will detect the **PCI Parallel controller** automatically and run the **Add New Hardware Wizard** to assist you in setting up the new device. Click **“Next”** to continue.



4. Please insert the CD-Driver into your CD/DVD-ROM.

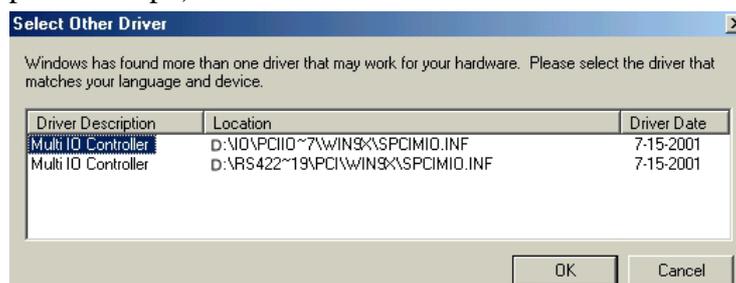
Please select **“Search for the best driver for your device”** and click **“Next”**.



Windows ME will search the drive automatically. Please select the driver:

“Multi IO Controller” “E:\IO\PCI IO\Win9x\SPCIMIO.INF and click **“OK”**

(Please skip to the step7)



5. Please select “**Specify a location**” and click **Browse**. Change the folder of your CD-ROM drive **D:\IO\PCI IO\Win9x**. Please click “**Next**” to continue installation.



6. Windows will detect the driver (SPCIMIO.INF) and shows the device: **Multi IO Controller**. Click “**Next**” to copy the needed files to your hard disk .



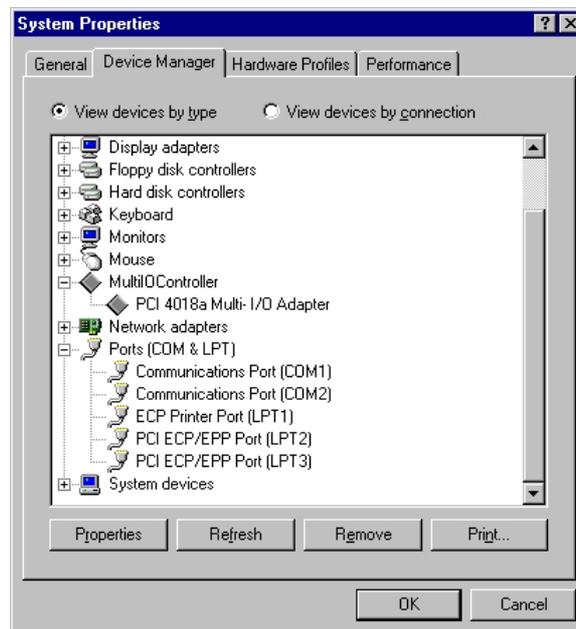
7. The system will show that **Multi IO Controller** software had been installed successfully, and please click “**Finish**”.



- Note: If you install PCI parallel ports to your system, you will be requested to restart your computer when you finish setting up each parallel port. Click **【Yes】** if all parallel ports have been installed, others click **【No】** . For example, if you install two parallel ports in your system, click **【No】** for the first System Setting Change and click **【Yes】** for the last System Setting Change.



7. When Windows finished installing the software. You have to check the Control Panel-System-Hardware-Device Manager-Ports[COM&LPT] will show the additional ports.



➤ **Driver Uninstall Guide (Windows 95/98SE/ME)**

1. Double click **Add/Remove Programs** in Control Panel.



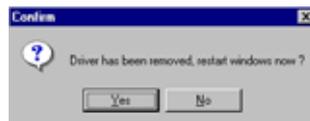
2. Choose **“PCI Multi-I/O Card”**, and click **“Add/Remove”**, and click **“OK”**



3. Click “Yes” to remove Multi-I/O Card driver

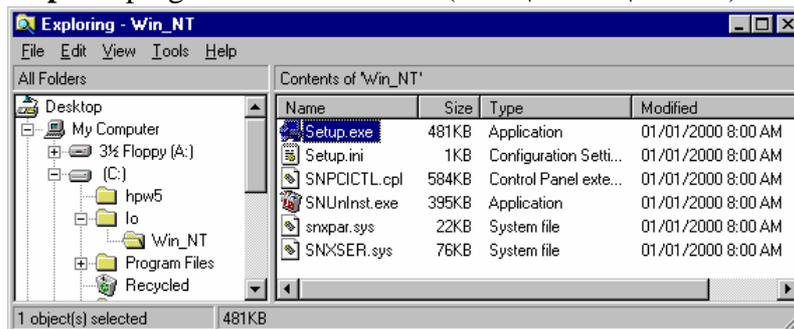


4. Click “Yes” to restart the computer.

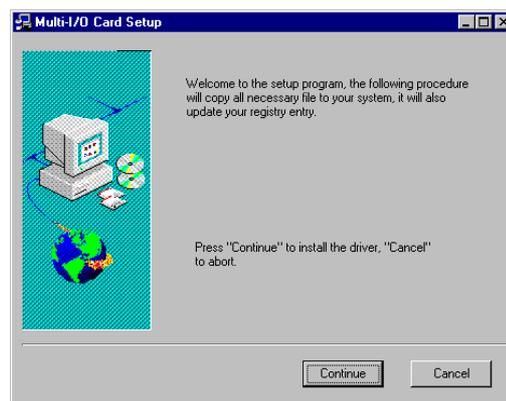


➤ 4.4 Driver installation Guide (NT4.0)

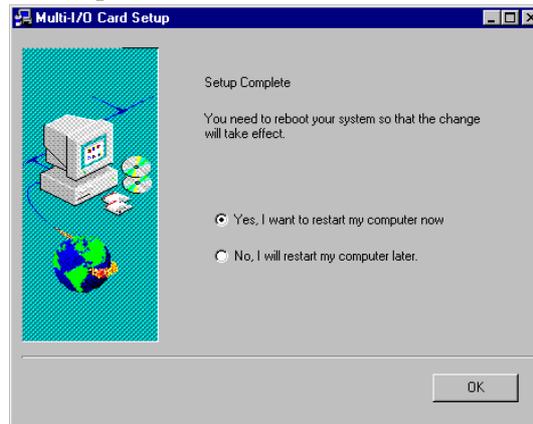
1. Run the **setup.exe** program in CD Driver (D:IO\PCI IO\WinNT)



2. Press “Continue” to install the driver.

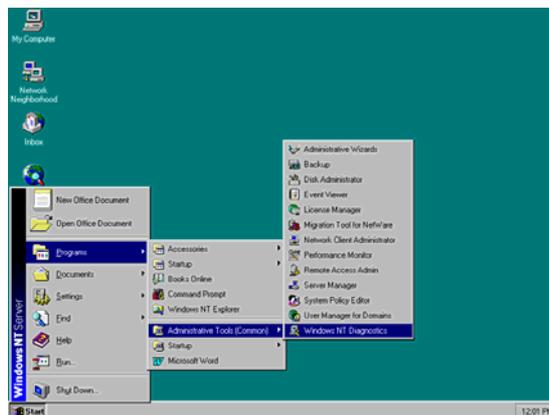


3. Click “OK” to reboot computer to load the new installed driver to NT.

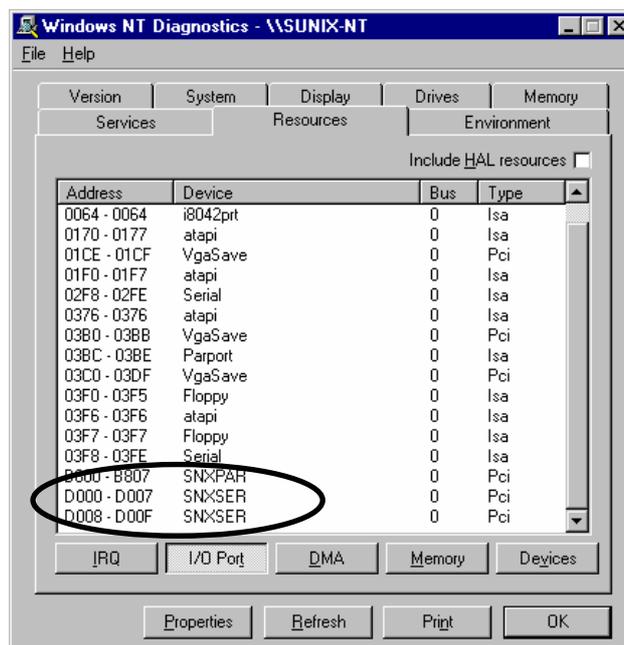


4. Check Your Windows NT 4.0 Installation

Click 【Start】 【Programs】 【Administrative Tools [Common]】
 【Windows NT Diagnostics】



➤ Press Resources then press I/O port. You can find the I/O address of one parallel port (SNXPAR) and two serial ports (SNXSER). You can find the IRQ information by press “IRQ”. You can find the IRQ information by press “IRQ”.



➤ *Windows NT 4.0 Uninstall Guide*

1. Double click **Add/Remove Programs** in Control Panel.



2. Select Multi-I/O Card Uninstall, press **“Add/Remove”**.



3. Press **“OK”** to remove Multi-I/O Card driver.



4. Click **“OK”** to reboot the computer.



➤ 4.5 Driver installation Guide (DOS)

This installation guide describes the procedures to install the PCI parallel ports in MS-DOS environment.

Normally serial and parallel I/O ports can be supported by BIOS call services in DOS environment. However there are only support 4 serial ports (3F8h,2F8h,3E8h,2E8h) and 3 parallel ports (3BCh/378h/278h) are supported by BIOS/DOS.

In case the PCI parallel ports are different from the above configurations (e.g. I/O address or more than 4 serial ports / 3 parallel ports), they are not supported by BIOS/DOS directly. However some applications (e.g. "PComm Plus" could support 8 serial ports and each I/O address is settable) have their own driver, thus the PCI cards could work correctly.

[DOS platform]

- Microsoft DOS : V5.0/V6.0/ V6.22

[Installation Steps]

- (1) **Run Install.exe** (from CD Drive disk : \PCI IO\DOS\INSTALL.exe)

```
Please enter the directory path for installation
C:\PCI_DOS (return for default)
```

- (2) **Enter the destination subdirectory**

You could enter your preferred destination subdirectory for installation, RETURN for default path. Once the dos driver has been installed successfully, the response looks like below.

```
succeed ...Press Any Key
```

Note:

1. The installation program will add the dos driver (one command line) "C:\SunixPCI.exe AUTO" to autoexec.bat file. The original batch file will be saved to autoexec.SNX.
2. For uninstallation, just restore autoexec.snx into autoexec.bat.

(3) Start the dos driver automatically

Once the installation is completed, Install.exe will start the dos driver (SunixPCI.exe) automatically. This means that it is not necessary to restart the system once again.

On-Board/ISA Serial COM1	3f8H		
On-Board/ISA Serial COM2	2f8H		
PCI Serial COM3 Remap	3e8H,IRQ	11	
PCI Serial COM4 Remap	2e8H,IRQ	11	
On-Board/ISA Parallel LPT1	3bcH		
PCI Parallel LPT2 Remap	378H,IRQ	11	

Note : This display is dependent on which PCI card you have.

(4) Check / inquire the PCI card information

You could run SunixPCI.exe any time to inquire the PCI parallel port's I/O address & IRQ information.

ISA	PCI	Setup	Card	About
On-Board/ISA Serial COM1			3f8H	
On-Board/ISA Serial COM2			2f8H	
PCI Serial COM3 Remap			3e8H,IRQ	11
PCI Serial COM4 Remap			2e8H,IRQ	11
On-Board/ISA Parallel LPT1			3bcH	
PCI Parallel LPT2 Remap			378H,IRQ	11
PCI Parallel LPT3 Remap			278H,IRQ	10

ESC: Exit

- ISA : Detect on-board/ISA legacy serial /parallel ports.
- PCI : Find PCI serial /parallels ports.
- Setup: Remap PCI serial port to legacy port / display port resources.
- Card : Display PCI card model.
- About : Version Information.

NOTE :

1. All the PCI parallel ports are possible to be remapped to legacy I/O address (378h,278h), thus the DOS driver will start remapping function automatically if any one of legacy ports is free.

2. Since some PCI Serial ports can support the remapping function (e.g. /4027D/4037D/4056D/4079D). Thus please check it by PCIDOS.exe

Clock= 1.8432 Mhz for remapable port in DOS

Item	Actual Baudrate	BIOS/DOS setting	Remark
1	921600		Do not support
2	460800		Do not support
3	230400		Do not support
4	115200	115200	
5	57600	57600	
6	38400	38400	
7	19200	19200	
8	9600	9600	
9	4800	4800	
10	2400	2400	
11	1200	1200	
12	300	300	

3. Since the PCI serial card are driven by a higher CLK (14.7456 Mhz), thus the actual baud rate is 8 times higher than the BIOS/DOS baud rate setting. The below table shows the relation.

Clock=14.7456 Mhz for all non-remapable port

Item	Actual Baud rate	BIOS/DOS setting	Remark
1	921600	115200	
2	460800	57600	
3	230400	28800	Non BIOS standard
4	115200	14400	Non BIOS standard
5	57600	7200	Non BIOS standard
6	38400	4800	
7	19200	2400	
8	9600	1200	
9	4800	600	Non BIOS standard
10	2400	300	
11	1200	150	
12	300	37.5	Non BIOS standard

➤ **4.6 Driver installation Guide (Windows3.1)**

This installation guide describes the procedures to install the PCI parallel ports in MS WINDOWS 3.1 environment.

Normally serial and parallel I/O ports can be supported by WINDOWS 3.1 default device driver. However there are only 4 serial ports (3F8h,2F8h, 3E8h,2E8h) and 3 parallel ports (3BCh/378h/278h) are supported by default.

Most likely the PCI serial ports are different from the above configuration (eg. I/O address or IRQ), these ports setting need to be changed / modified in WINDOWS 3.1 manually. However it is necessary to inquire these PCI serial and parallel ports' resources in advance.

[OS platform]

Microsoft WINDOWS : V3.1/V3.11

[Installation Steps]

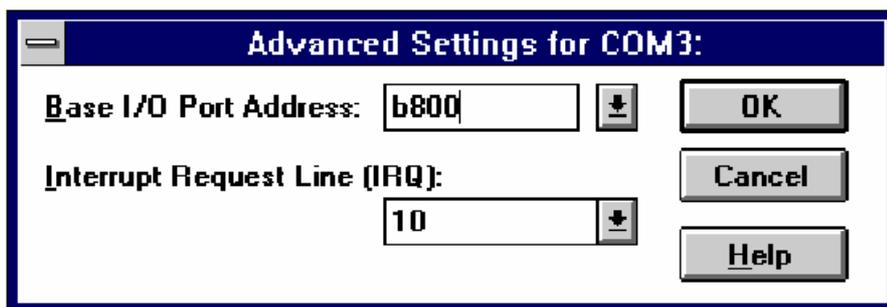
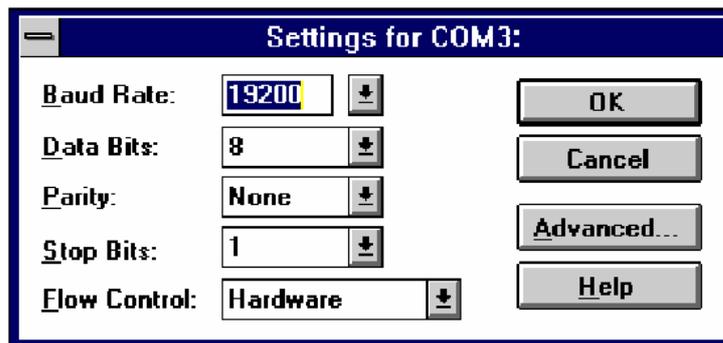
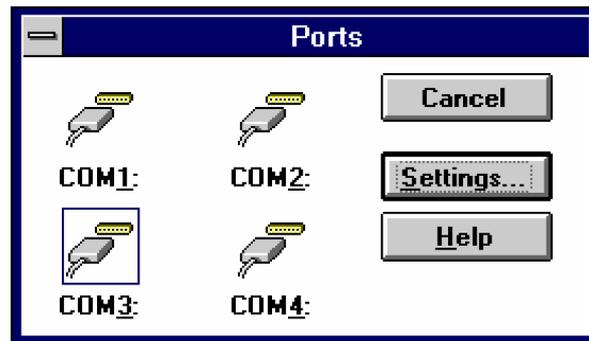
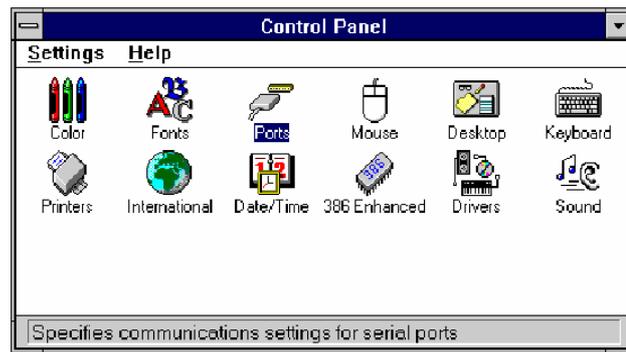
Run PCIDOS.exe (from CD Drive disk : \PCI IO\DOS\ PCIDOS.exe)

On-Board/ISA Serial COM1	3f8H
On-Board/ISA Serial COM2	2f8H
PCI Serial COM3	b800H, IRQ 10
PCI Serial COM4	b808H, IRQ 10
On-Board/ISA Parallel LPT1	3bcH

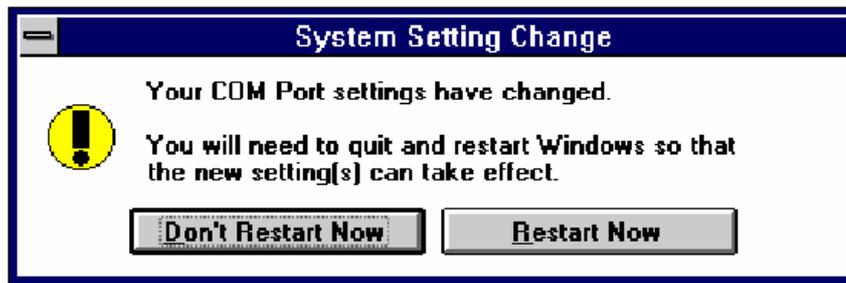
Start the WINDOWS 3.1



Change the port setting in Control Panel

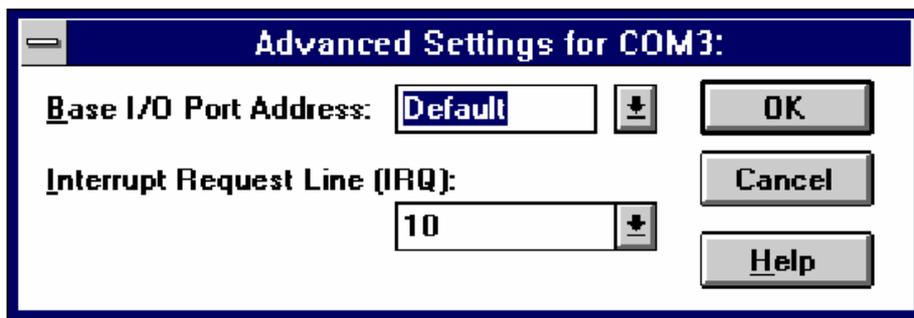


Restart the system



Check the new setting

After system restart, the I/O port setting maybe become DEFAULT.



At this time, it is possible to check the PCI serial port setting in
\\windows\\system.ini file.

.....

.....

[386Enh]

.....

.....

COM3Base=B800

COM4Base=B808

COM3Irq=10

COM4Irq=10

...

NOTE :

1. Since some PCI serial ports can support the remapping function (4025D/4027D/4028D/4036D/4037D/4038D/4079D/E/F), thus please check the PCI card by SunixPCI.exe utility.

Clock= 1.8432 Mhz for remapable port

Item	Actual Baudrate	BIOS/DOS setting	Remark
1	921600		Do not support
2	460800		Do not support
3	230400		Do not support
4	115200	115200	
5	57600	57600	
6	38400	38400	
7	19200	19200	
8	9600	9600	
9	4800	4800	
10	2400	2400	
11	1200	1200	
12	300	300	

2. Since PCI serial card are driven by a higher CLK (14.7456 Mhz), thus the actual baud rate is 8 times higher than the BIOS/DOS baud rate setting. The below table shows the relation.

Clock= 14.7456 Mhz for all non-remapable port

Item	Actual Baud rate	BIOS/DOS setting	Remark
1	921600	115200	
2	460800	57600	
3	230400	28800	Non BIOS standard
4	115200	14400	Non BIOS standard
5	57600	7200	Non BIOS standard
6	38400	4800	
7	19200	2400	
8	9600	1200	
9	4800	600	Non BIOS standard
10	2400	300	
11	1200	150	
12	300	37.5	Non BIOS standard

➤ **4.7 Driver installation Guide (Linux)**

Please read the detail files about the Linux OS system installation step from

CD ROM: \ IO\ PCI IO\Linux\Red Hat V8.0.pdf

CD ROM: \ IO\ PCI IO\Linux\Red Hat V6.0.pdf

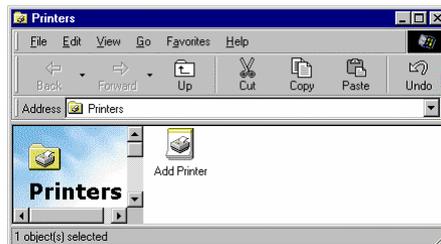
◆ **5.0 Configure LPT port**

➤ **5.1 How to connect your peripheral LPT device**

1. Be sure your printer or other parallel peripheral had connected to PCI Multi I/O Parallel card.
2. Double click my computer icon, Double click **“Printers”** icon.



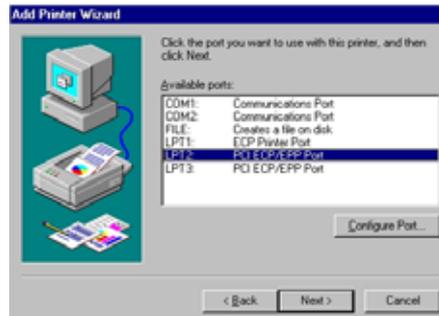
3. Double click Add Printer icon and click **“Next”**.



4. Please click **“Next”** when Add Printer Wizard show up.



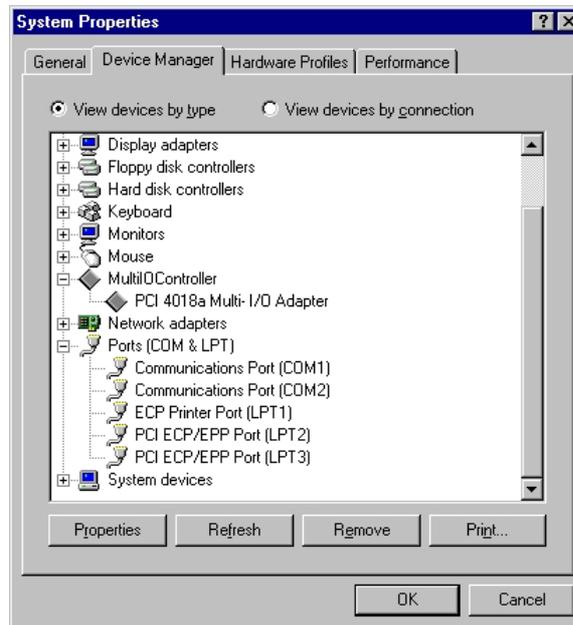
5. Please install your printer driver. If you want to connect the printer to your PCI Multi I/O Parallel Card, select PCI ECP/EPP Port to your device. Please click “**Next**”, and finish the add new printer step.



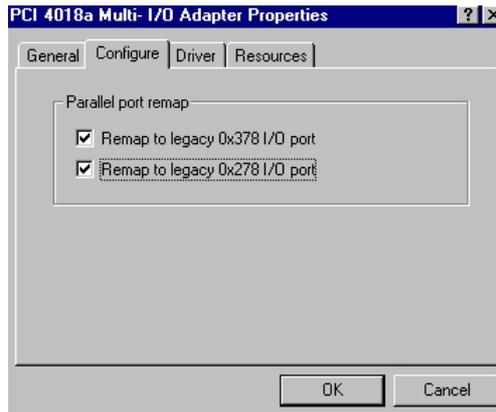
Note: If you want to connect the scanner or the zip disk to PCI multi I/O Card, you need to remap the Parallel Port I/O address to 0x378 or 0x278.

➤ **5.2 Remap the Parallel Port I/O address**

1. Double click “**Multi IO Controller**” in Device Manager of System Properties. Select **PCI Multi-I/O Adapter**, and right click the mouse choose “**Properties**”.



2. Please choose the “**Configure**” page. If you want to remap I/O address, select Remap to legacy 0x378 and/or 0x278 I/O ports. Click ”**OK**”, then it will be set after reboot computer

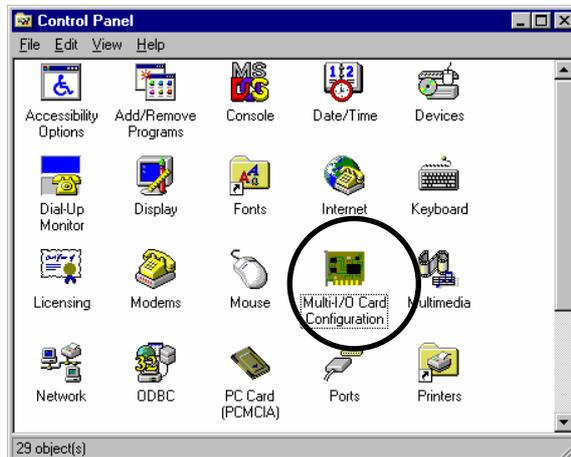


3. After reboot computer, you can check Parallel Port I/O address from System Properties.

Note: If you don't want to remap Parallel Port I/O address to 0x378 or 0x278, unselect Remap to legacy 0x378 and/or 0x278 I/O port. Click "OK", then it will be set after reboot computer.

➤ **5.3 How to configure LPT port (NT4.0)**

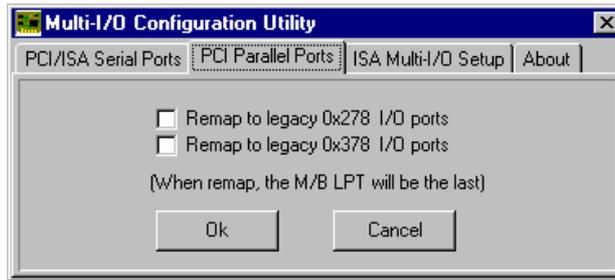
1. Double click Multi-I/O Card Configuration icon.



Click PCI Parallel Ports to configure the I/O address of parallel port.

Select Remap to legacy 0x378 and/or 0x278 I/O Ports, if you want to remap I/O address to 0x378 and/or 0x278.

Click "Ok"



It will be set after reboot computer.

Note:

The on board parallel port is always LPT1 if the remap function is disabled. When the parallel port is remap to 0x378 or 0x278, the on board parallel port will become the last LPT port.

When you connect the scanner to the remap parallel port, you must turn on the scanner before the computer.

➤ **5.4 How to configure LPT port (Windows 3.1)**

Since WINDOWS 3.1 only support 3 parallel port (3BCh, 378h,278h) by default device driver. Thus the PCI parallel ports can be recognized in WINDOWS 3.1 if the DOS driver is activated in advance.

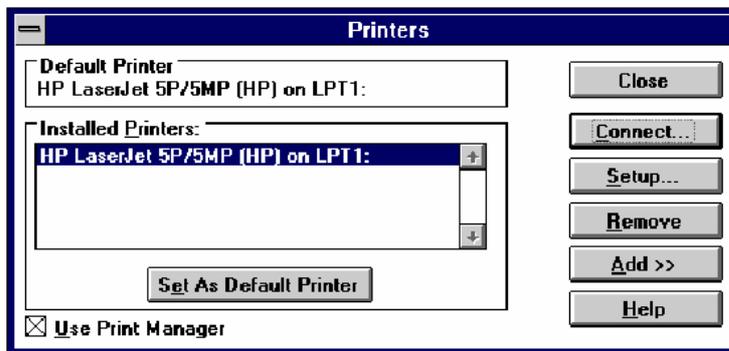
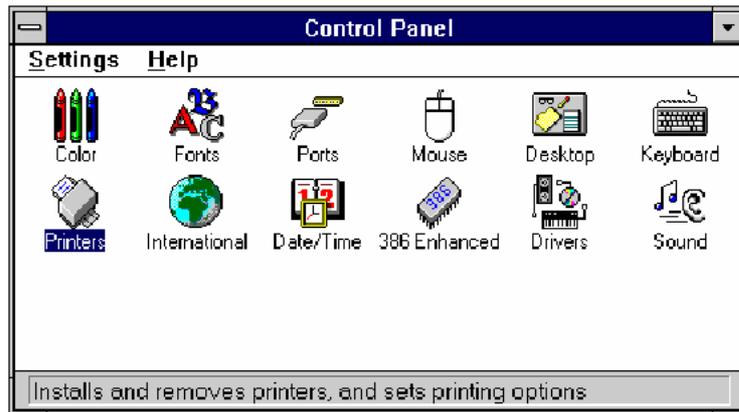
[Installation Steps]

Check the PCI parallel port resources in DOS

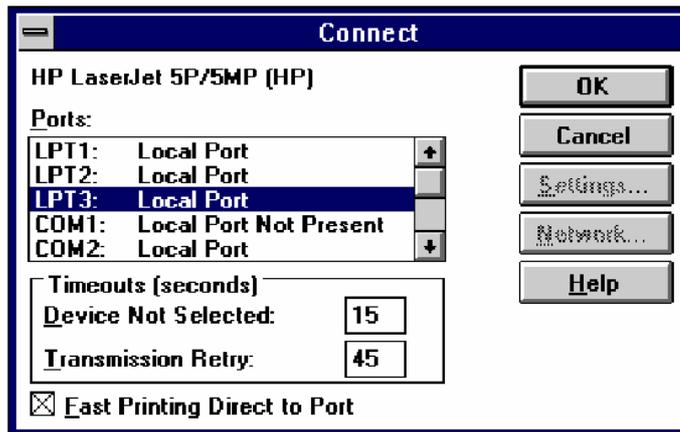
Run PCIDOS.exe (from CD Drive disk : \PCI IO\DOS\ PCIDOS.exe)

On-Board/ISA Serial COM1	3f8H
On-Board/ISA Serial COM2	2f8H
PCI Serial COM3	b800H, IRQ 10
PCI Serial COM4	b808H, IRQ 10
On-Board/ISA Parallel LPT1	3bcH

Install the Printer in Control Panel



Select Parallel Port for Printer Connection



NOTE :

All PCI parallel ports are possible to be remapped to legacy I/O address (378h,278h), thus the DOS driver will start remapping function automatically if any one of the legacy ports is free.

For the better compatibility, it is recommended that on-board LPT1 is set to 3BCh.

◆ 6.0 Trouble Shooting

1. When Display Vendor ID, Device Id, Device Class or IRQ aren't DISPLAY or ERROR value.

Ans: Because motherboard ignore the screen or show that immediately, you can press "Pause" key on the keyboard to see the message when PCI device listing display. If the Device Class or IRQ value error, please change other slot, clean your slot, or clean PCI card golden finger.

The problem still can't be solve, and please return PCI I/O card to manufacture.