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# **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 F©

# **User Interface**

We provides User Interface software application program, user can use this software driver to control Serial cards **RS-232** hardware directly.



As the flowchart, plug the PCI card on the Motherboard, then install the User Interface software application program under O.S. (e.g. Windows XP). User can control and configure PCI Serial card hardware parameter through this application program..

- \* Configure the bits per second, Data bits, Parity, Stop bits and Flow control if you want to change.
- \*There are three kinds of flow control: Xon/Xoff, Hardware and None. Xon/Xoff is using software protocol. Hardware means the flow control is using RTS/CTS, but the RTS/CTS is controlled by software. None means there is no flow control.
- \*Configure the Enable Auto CTS/RTS Flow Control, 16/32/64 bytes FIFO length, and Receive/Transmit Buffer trigger level if you want to change.
- \*The detail of setting and configuring steps, please skip to page 30.

# **128K software FIFO**

FIFO (First-in-First-out) memories size decide computer interrupter frequency. The size of FIFO length is bigger, the data flow is more, the system will work constantly at anytime, and the resource of CPU will be saved, the system performance can be increased. The detail of FIFO adjust please skip to the page 30.

Testing Environment : CPU: Celeron 1 G M/B : MSI MS-6547 (P4) Memory : 128MB OS : Microsoft Windows XP

Testing Device : I/O Card : 4 port RS-232 PCI interface Card Test Driver : V5.560 Test program: Windows XP HyperTerminal



### Increased FIFO butter for better performance

#### 1.0 Introduction

Thank you for purchasing of the **Multi-I/O Card**. This unique PCI I/O card allows you to attach your computer to support DB-9M Serial & DB-25F Parallel ports, 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:

- Provides FIFO maximize size 128K memories, it is 1024 times faster than existing PCI-bus serial ports. Reduces CPU loading and improves system performance dramatically.
- 2. High speed serial ports support baud rates up to 921Kbps.
- 3. Plug and Play and Re-Map to ISA address 3F8, 3E8, 2F8, 2E8
- 4. Improves I/O access speed up to 8 times faster than existing ISA-bus serial ports. Reduces CPU load and improves system performance dramatically.
- 5. IRQ sharing feature eliminates IRQ conflicts
- 6. Works with various type of parallel DB25F & serial DB9M devices.

#### > 2.2 Universal Multi I/O PCI Card:

1. Bus type: Supports both 64-bit & 32-bit PCI Bus

3.3V & 5V connector keys



#### 2. Chip:

Serial-SUN1889 Parallel-SUN1689

#### 3. Interface:

Serial

High-Speed RS-232 Standard Serial-Interface ports. Parallel 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:**

Serial

Up to 921 Kbps

Parallel

Up to 21.4MBps ECP/EPP/SPP/BPP (PS-II) Full support for DOS and Windows based software

#### 5. Port type:

Two or four DB9 Serial ports & One or two DB25M parallel ports.

#### 6. FIFO Length:

#### Serial

Built-in high-speed with 32-byte transmit/receive hardware FIFO buffers, and support 128Kbyte software FIFO under OS Windows 2000/XP.

Parallel

Built-in high-speed with 32-byte transmit/receive hardware FIFO buffers

#### 7. I/O Address:

Serial

Plug and Play

Re-Map to ISA address 3F8, 3E8, 2F8, 2E8 (Re-Map function card only) Parallel

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 Multi IO Card × 1

Cable × 1

- 2. CD Driver
- 3. User's Manual

> 2.6 Pin Assignments :

# Serial:

	PIN	Signal
DB9 Male	1	DCD
	2	RD
1 5	3	TD
	4	DTR
	5	GROUND
	6	DSR
	7	RTS
6 9	8	CTS
	9	RI

### Parallel:



# ◆ 3.0 Operation Environment

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

#### ➤ 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	I RQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM.	10
					Controller	

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)

- Please shot 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 check 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	I RQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM.	10
<u>.</u>					Controller	

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.



 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.

und New Hardware Wizard	
	Completing the Found New Hardware Wizard PCI 4018 Multi/D Adapter Windows has finished installing the software for this device.
	To close this wizard, click Finish.
	CRASE Frida Convel
	- 100 COLOR

- 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)

- Please shot 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".

Select the device you want to u	minstall.	
Devices		-
AMD-768 Power Managerr	vent Controller	
PCI standard PCI-to-PCI br	dge	
NVidia Riva TNT2 Model 6	34	
PCI 4010 Multi-I/O Adapter	r i i i i i i i i i i i i i i i i i i i	
Primary IDE Channel		
Secondary IDE Channel		
E. Logical Dick Manager		*

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



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

dd/Remove Hardware Wiza	rd
	Completing the Add/Remove Hardware Wizard You have successfully completed the Add/Remove Hardware wizard.
	Windows successfully uninstalled the selected device.
	To close this wizard, click Finish.
	Gack Finish Cancel

#### > 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	I RQ
0	7	1	8086	7010	IDE Controller	14
0	13	0	1409	7268	Simple COMM.	10
					Controller	

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.

Add New Hardware Wiz-	ard
	This wicard searches for new drivers for: PCI Parallel Controller A device driver is a software program that makes a hardware device work.
	Cancel

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)

Select Other Driver						
	Windows has found more I matches your language an	han one driver that may work for your hardware. Pleas d device.	se select the driver that			
	Driver Description	Location	Driver Date			
	Multi IO Controller	D:\IO\PCIIO~7\WIN9X\SPCIMIO.INF	7-15-2001			
	Multi IO Controller	D:\R\$422~19\PCI\WIN9X\\$PCIMIO.INF	7-15-2001			
			)K Cancel			

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.

Add New Hardware Wiz	sard
	Windows will search for new drives in its driver database on your hard drive, and in any of the following selected locations. Dick Newt to start the search.         Dppy drik drives         Dp ADM drive         Microsoft Windows Update         Specify a jocation:         D-VO/PC/Winftx         Upgever.
	<pre>Cancel</pre>

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 .

dd New Hardware Wo	and Windows driver life search for the device: Multi ID Controller
	Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue. Location of driver. EVO/PCIID=7NwINDrASPCIMID.INF
	< Back Next > Cancel

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.

System 9	Settings Change 🛛 🕅
?	To finish setting up your new hardware, you must restart your computer.
	Do you want to restart your computer now?
	<u>Yes</u> <u>N</u> o

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"

Add/Remo	ive Programs Properties				
Instal/Un	Install/Uninstall Windows Setup   Startup Disk				
2	To instal a new program from a floppy disk or CD-PiOM drive, click Instal.				
	jnstal				
7	The following software can be automatically removed by Windows. To remove a program or to modily its installed components, select it from the list and click Add Plenove.				
AMD B AMD IF AMD P PO Au	us Mater DC Driver 10 Driver v1 20C M FF Installation do Driver 2800 Crist				
	Add@emove				
	OK Cancel Acoly				

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

Confirm	×
?	Are you sure to remove Multi I/O Card drivers ?
	Yes No

4. Click "Yes" to restart the computer.

Confirm	×
?	Driver has been removed, restart windows now ?
	Yes No

- ➢ 4.4 Driver installation Guide (NT4.0)
- 1. Run the **setup.exe** program in CD Driver (D:IO\PCI IO\WinNT)

💐 Exploring - Win_NT				
<u>F</u> ile <u>E</u> dit ⊻iew <u>T</u> ools <u>H</u> elp				
All Folders	Contents of 'Win_NT	1		
🚔 Desktop 🔺	Name	Size	Туре	Modified
🚊 🚚 My Computer	Setup.exe	481KB	Application	01/01/2000 8:00 AM
⊕	🐻 Setup.ini	1KB	Configuration Setti	01/01/2000 8:00 AM
	SNPCICTL.cpl	584KB	Control Panel exte	01/01/2000 8:00 AM
hpw5	🗑 SNUnInst.exe	395KB	Application	01/01/2000 8:00 AM
	🔊 snxpar.sys	22KB	System file	01/01/2000 8:00 AM
win_Ni	SNXSER.sys	76KB	System file	01/01/2000 8:00 AM
1 object(s) selected 481KB				11

2. Press "Continue" to install the driver.

🚰 Multi-I/O Card Setup	
	Welcome to the setup program, the following procedure will copy all necessary file to your system, it will also update your registry entry.
<b>8</b>	Press "Continue" to install the driver, "Cancel" to abort.
	Continue

3. Click "**OK**" to reboot computer to load the new installed driver to NT.

Setup Complete You need to reboot your system so that the change will take effect.	Setup Complete You need to reboot your system so that the change will take effect. • Yes, I want to restart my computer now • No, I will restart my computer later.	Setup Complete You need to reboot your system so that the change will take effect.
Yes, I want to restart my computer now     O No, I will restart my computer later.		O No, I will restart my computer later.
<b>*</b>		

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".

٨	Vindows NT Di	agnostics	- \\SUNIX-NT		_ 🗆 ×
<u>F</u> ile	<u>H</u> elp				
	Version Services	System	Display Resources	Drives	Memory rironment
	Address	Device			
<	0064 - 0064 0170 - 0177 01CE - 01CF 01F0 - 01F7 02F8 - 02FE 0376 - 0376 03B0 - 03BB 03BC - 03BE 03C0 - 03BF 03C0 - 03F5 03F6 - 03F5 03F6 - 03F5 03F6 - 03F7 03F8 - 03F7 03F8 - 03F2 03F8 - 03F5	i8042prt atapi VgaSave atapi Serial atapi VgaSave Parport VgaSave Floppy atapi Floppy Serial SNXPAR SNXSER SNXSER	>		sa Isa Isa Isa Isa Isa Pci Isa Pci Isa Pci Pci Pci Pci Isa
	IRQ	1/0 Port	<u>D</u> MA	Memory	De <u>v</u> ices
	E	roperties	<u>R</u> efresh	Pri <u>n</u> t	ОК

#### 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".

Add/Remo	ve Programs Properties	? ×			
Install/Uni	nstall   Windows NT Setup				
Ð	To install a new program from a floppy disk or CD-R drive, click Install.	ом			
	Install				
3	The following software can be automatically remove Windows. To remove a program or to modify its inst- components, select it from the list and click Add/Remove.	ed by alled			
lomega\ Microsol	IomegaWare for Windows NT Microsoft Office 97, professional Edition Multi-UC Earch Langed all				
Multi-I/D Card Uninstall Ulead PhotoImpact 3.01 SE Special Edition					
	Add/ <u>B</u> emove	ə			
	OK Cancel A	ylqq			

3. Press "OK" to remove Multi-I/O Card driver.

🗑 Mulit-1/0 Card Uninst	all 🗵
Do you want to remove I	Multi-I/O Card drivers?
ОК	Cancel

4. Click "**OK**" to reboot the computer.



#### ➢ 4.5 Driver installation Guide (DOS)

This installation guide describes the procedures to install PCI serial / 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 serial and 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:\Sunix\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	3£8H	
On-Board/ISA Serial COM2	2£8H	
PCI Serial COM3 Remap	3e8H,IRQ	11
PCI Serial COM4 Remap	2e8H,IRQ	11
On-Board/ISA Parallel LPT1	3bcH	
DCT Darallal I.DT? Roman	<b>२78</b> म т₽∩	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 serial and parallel port's I/O address & IRQ information.

ISA PCI	Setup	Card	About
On-Board/ISA S	erial COM1	3f8H	
On-Board/ISA S	erial COM2	2£8H	
PCI Serial COM	3 Remap	3e8H,IRQ	11
PCI Serial COM	4 Remap	2e8H,IRQ	11
On-Board/ISA P	arallel LPT1	3bcH	
PCI Parallel L	PT2 Remap	378H,IRQ	11
PCI Parallel L	PT3 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 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

Item	Actual Baudrate	<b>BIOS/DOS</b> 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	

Clock= 1.8432 Mhz for remapable port in DOS

3. Since PCI serial card are drived 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	<b>BIOS/DOS</b> 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 PCI serial / 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 changed / modified in WINDOWS 3.1 manually. However it is necessary to inquire these PCI serial and parallel ports's 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

	Contro	l Panel		-
<u>S</u> ettings <u>H</u> e	*ip 💑 🍠	ń	3	
Color Color	Fonts Ports	Mouse	Desktop Ø9	Keyboard
Printers Inte	mational Date/Time	386 Enhanced	Drivers	<u>افری</u> Sound
Specifies con	nmunications setting	is for serial po	rts	
-	Р	orts		
		C	ancel	
R.	E Contraction of the second se	_		
COM <u>1</u> :	COM <u>2</u> :	<u>S</u> e	ttings	
a	2		<u>H</u> elp	
COM3:	« Com4:			
0	Settings	for COM	3:	
<u>B</u> aud Rate:	<b>19200</b>			0K
<u>D</u> ata Bits:	8 🛓		C.	ancel
<u>P</u> arity:	None 💻			
<u>S</u> top Bits:	1 🛓		Adva	anced
<u>F</u> low Control:	Hardware	<u>+</u>	ŀ	<u>i</u> elp
A	dvanced St	ettings f	or COI	<b>V</b> 3:

Advanced Settings for COM	3:
<u>B</u> ase I/O Port Address: b800	OK
Interrupt Request Line (IRQ):	Cancel
10 👤	<u>H</u> elp

Restart the system



Check the new setting

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

Advanced Settings for CON	43:
<u>B</u> ase I/O Port Address: Default 👤	OK
Interrupt Request Line (IRQ):	Cancel
10 👱	<u>H</u> elp

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.

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 The PCI serial card are drived 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.

Item	Actual Baud rate	BIOS/DOS setting	Remark
1	<mark>921600</mark>	115200	
2	<mark>460800</mark>	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

Clock= 14.7456 Mhz for all non-remapable port

#### ➢ 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 COM port

- > 5.1 How to configure COM port (Windows 95/98/98SE/ME)
- 1. Select the PCI Serial Port you want to configure for example **COM3**. Right check the mouse, and select the "**Properties**".



#### 2. Click the "Port Settings".

Configure the Bits per second, Data bits, Parity, Stop bits and Flow control if you want to change.

PCI Serial Po	ort (COM3	) Propertie	:\$		? ×
General Po	ort Settings	Driver	esources		
<u>B</u> its p	er second:	9600		•	
	<u>D</u> ata bits:	8		-	
	Paritur	- 		_	
	Landy.	None		<u> </u>	
	<u>S</u> top bits:	1		•	
Elo	w control:	Hardware		•	
Adv	vanced	1	<u>R</u> estore De	faults	1
			ПК	1	Cancel
			UK		Cancel

There are three kinds of flow control: Xon/Xoff, Hardware and None. The Xon/Xoff is using software protocol. The Hardware means the flow control is using RTS/CTS, but the RTS/CTS is controlled by software. The None means there is no flow control. Click the "Advanced" if you want to set more advanced features.

3. Configure the **"Enable Auto CTS/RTS Flow Control"**, **"16/32/64 bytes FIFO length"**, and Receive/Transmit Buffer trigger level if you want to change.



Enable Auto CTS/RTS Flow Control means the CTS/RTS flow control is controlled by hardware automatically. System will be more stable if the function is enabled.

If your card can support 32 bytes FIFO, you can use 16 or 32 bytes FIFO. The default value is Use 16 Byte FIFO buffers. If your card cannot support 32 bytes FIFO, the Enable 32 Byte FIFO buffers will be shadowed.

Set the Receive/Transmit Buffer to higher value will get faster performance because the interrupts will be reduced, but the time for interrupt service routine will become shorter. The receive buffer overflow will be easily happened if the CPU speed is not enough to handle. If the system is not stable, select the lower value to correct problems.

#### > 5.2 How to configure COM port (Windows 2000/XP)

1. Select the PCI Serial Port you want to configure for example **COM3**. Press the right button and select "**Properties**".



2. Click the "**Port Settings**". Configure the Bits per second, Data bits, Parity, Stop bits and Flow control if you want to change.

CI Multi I/O General Por	Card Serial Pol	rt (COM3) Pro	opert	ies		?	2
	Ē	Bits per second	960	0		•	
		Data bits	8			•	
		Parity	Nor	ne		•	
		<u>S</u> top bits	1			•	
		Elow control	Nor	ne		•	
		A	dvanc	ed	<u>R</u> es	tore Defaults	
				ОК		Cancel	

There are three kinds of flow control: Xon/Xoff, Hardware and None. The Xon/Xoff is using software protocol. The Hardware means the flow control is using RTS/CTS, but the RTS/CTS is controlled by software. The None means there is no flow control.

3. Click the "Advanced" if you want to set more advanced features. FIFO (First-in-First-out) memory size decision Computer interrupter frequency, When FIFO memory size more big, they can process more data flow, so don't need anytime use interrupter, CPU resource save, and system performance going up. 4. At Market, The Biggest FIFO size only 128 byte, we provider 128K byte memory size to customer, it is market's 1024 times.

Advanced Settings for COM3	? 🗙
Enable CTS/RTS Auto Flow Control Note: This option has an effect only if Hardware flow control is selected on the Port Settings page. Use Auto Flow Control for high bit rates (230 kbps and above).	OK Cancel
✓ Use FIFO buffers control         ✓ Enable 32 Byte FIFO buffers         ✓ Enable 64 Byte FIFO buffers         Select lower settings to correct connection problems.         Select higher settings for faster performance.         Beceive Buffer: Low (1)         Iransmit Buffer: Low (1)         Iransmit Buffer: Low (1)         Isk         Software FIFO Size         8k         16k         32k         64k	<u>D</u> efaults

- ➤ 5.3 How to configure COM port (NT4.0)
- 1. Double click Multi-I/O Card Configuration icon.



🧱 Multi-170 Configu	aration Utility		×
PCI/ISA Serial Ports	PCI Parallel Ports	ISA Multi-I/O Setup	About
	Multi-I/O Card Cor Version: 3.2	nfiguration 2	
(C) La	) Copyright 1999. S ast Revision: 2000	Gunix Co., Ltd. 0/01/03	

2. Press "**PCI/ISA Serial Ports**" and select the serial port you want to configure. Press "**Setup**" to configure the serial port .

🧱 Multi-1/O Config	guration Utility	×
PCI/ISA Serial Ports	PCI Parallel Ports   ISA Multi-I/O Setup   A	.bout
s. [C	Gelect serial port	
	Setup Close	

3. Set the 32 byte FIFO or Auto Flow Control or Receive Trigger Level, click "Ok".



If your card can support 32 (64) bytes FIFO, you can use 16 or 32 (or 64) bytes FIFO. The default value is Use 16 Byte FIFO buffers. If your card cannot support 32 (64) bytes FIFO, the Use 32 (32 and 64) Bytes FIFO will be shadowed.

Auto Flow Control Enable means the CTS/RTS flow control is controlled by hardware automatically. System will be more stable if the function is enabled.

Set the Receive Trigger Level to higher value will get faster performance because the interrupts will be reduced, but the time for interrupt service routine will become shorter. The receive buffer overflow will be easily happened if the CPU speed is not enough to handle. If the system is not stable, select the lower value to correct problems.

#### Note:

If you stall the modem that is using auto detect by windows NT, the Auto Flow Control Enable shall be disabled.

## ◆ 6.0 Configure LPT port

#### ▶ 6.1 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. Pleas ckick "Next" when Add Printer Wizard show up.



 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.

#### ➢ 6.2Remap 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

PCI 4018	a Multi- 170	) Adap	ter Prop	erties	? ×
General	Configure	Driver	Resour	ces	
- Pa	rallel nort rer	nap —			
		lan an C			
	<ul> <li>Hemap to</li> </ul>	legacy (	JX37817U	port	
	Remap to	legacy (	)x2781/O	port	
			[	OK	Cancel
			[	0K	Cancel

- 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.

#### ▶ 6.3 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**"

🔚 Multi-1/O Configuration Utility	х
PCI/ISA Serial Ports PCI Parallel Ports ISA Multi-I/O Setup About	
<ul> <li>Remap to legacy 0x278 1/0 ports</li> <li>Remap to legacy 0x378 1/0 ports</li> <li>(When remap, the M/B LPT will be the last)</li> </ul>	
Ok Cancel	

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.

#### ▶ 6.4 How to configure LPT port (Windows3.1)

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	2£8H
PCI Serial COM3	b800H,IRQ 10
PCI Serial COM4	b808H,IRQ 10
On-Board/ISA Parallel LPT1	ЗЬсн

#### Install the Printer in Control Panel

		Contro	ol Panel		•
<u>S</u> ettings	<u>H</u> elp				
Color	AC Fonts	Ports	House House	<b>Vie</b> sktop	Keyboard
Printers	() International	Date/Time	ي 386 Enhanced	Drivers	<b>ا<u>ا</u>ور</b> Sound
Installs an	id removes p	printers, and	d sets printing	options	

- Printers	
☐ Default Printer HP LaserJet 5P/5MP (HP) on LPT1:	Close
Installed <u>Printers:</u> HP LaserJet 5P/5MP (HP) on LPT1:	<u>Setup</u> <u>Remove</u> <u>A</u> dd >> <u>H</u> elp

Select Parallel Port for Printer Connection

😑 Connect	
HP LaserJet 5P/5MP (HP)	OK
Ports:	Cancel
LPT1: Local Port + LPT2: Local Port	Settings
LPT3: Local Port COM1: Local Port Not Present COM2: Local Port +	Network
Timeouts (seconds) <u>D</u> evice Not Selected: 15	<u>H</u> elp
Transmission Retry: 45	
East Printing Direct to Port	

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.

# ♦ 7.0 Trouble Shooting

1. Why does the PCI serial port not behind the on board Communication Port? Ans: Sometimes you may find the PCI serial port does not locate just behind the on board Communication Port. It may happen as following. The COM3 and COM4 are not used.



This problem is caused from the following reasons.

- 1. When you plug the installed PCI card to another PCI slot without uninstalling and reinstalling the driver.
- 2. When you remove the installed PCI card and installed a different PCI card without uninstalling and re-installing the driver.

There are three methods to solve this problem.

- 1. When you want to remove or change the PCI card, please uninstall the driver first.
- 2. Change the individual COM port number in Advanced Setting for COM port. For example, change the COM5 to the actually unused COM3 port.

Device Manager     PET Serial Part (CDMS) Properties	×	
Advanced Settings for COMS	? ×	
C Enable Auto CTS/RTS Flow Control	OK Cancel	
Use FIFO buffers control	Defaults	
Enable 32 Byte FIFO buffers		
Enable 64 Byte FIFO buffers		
Select lower settings to correct connection problems. Select higher settings for faster performance.		
Receive Buffer: Low (1)		
Transmit Buffer: Low (1)		
COM Port Number: COM5		
COM6 (in use) 🗾 OK Cancel		J
Performance Analyzer		
🛱 Start 🛛 🍊 🗊 💾 🔍 Device Manager 🗐 Document - Wor	dPad	4:3

3. Delete the hidden and unused COM port from uninstalling a device.



Click the "**Show hidden devices**", You will find all COM ports. Please remove the driver and all COM ports and reinstall the driver. You will find the continuous COM port index for the COM ports.

Select the device y	ou want to uninstall.		
Devices			<b></b>
🖉 PCI Parallel Po	rt (LPT3)		
🖉 PCI Parallel Po	rt (LPT2)		
PCI Parallel Po	rt (LPT2)		
PCI Serial Port	(COM3)		
PCI Serial Port	(COM4)		
PLI Serial Port	(COM5)		
PLI Serial Port	(сомь)		<u> </u>
🔽 Show hidden d	evices		

- 2. 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.