PCI I/O User's Manual

1. Introducing the PCI I/O Card

The series products of PCI I/O Card are high speed Plug -and-Play PCI add on cards which provide many combination functions of UART serial port and ECP/EPP parallel port.

1-1 PCI I/O Card Product list

Standard Slot Series

Model No.	Product Name	Function
P001	1 Serial	1 16550 UART Serial
P002	1 Serial(16650)	1 16650 UART Serial
P018	1 Serial(16850)	1 16850 UART Serial
P003	Dual Serial	2 16550 UART Serial
P004	Dual Serial(16650)	2 16650 UART Serial
P019	Dual Serial(16850)	2 16850 UART Serial
P005	1 Parallel	1 ECP/EPP Parallel
P006	Dual Parallel	2 ECP/EPP Parallel
P007	1P1S	1 16550 UART Serial and 1 ECP/EPP Parallel
P008	1P1S(16650)	1 16650 UART Serial and 1 ECP/EPP Parallel
P020	1P1S(16850)	1 16850 UART Serial and 1 ECP/EPP Parallel
P009	1P2S	2 16550 UART Serial and 1 ECP/EPP Parallel

P010	1P2S(16650)	2 16650 UART Serial and 1 ECP/EPP Parallel
P021	1P2S(16850)	2 16850 UART Serial and 1 ECP/EPP Parallel

Single Slot Series

Model No.	Product Name	Function
P011	AV-4 Serial	4 16550 UART Serial
P012	AV-4 Serial(16650)	4 16650 UART Serial
P013	AV-4 Serial(16850)	4 16850 UART Serial
P028	AV-8 Serial	8 16550 UART Serial
P029	AV-8 Serial(16650)	8 16650 UART Serial
P030	AV-8 Serial(16850)	8 16850 UART Serial
P014	AV-2 Parallel	2 ECP/EPP Parallel
P015	AV-1P2S	2 16550 UART Serial and 1 ECP/EPP Parallel
P016	AV-1P2S(16650)	2 16650 UART Serial and 1 ECP/EPP Parallel
P017	AV-1P2S(16850)	2 16850 UART Serial and 1 ECP/EPP Parallel
P025	AV-2P1S	1 16550 UART Serial and 2 ECP/EPP Parallel
P026	AV-2P1S(16650)	1 16650 UART Serial and 2 ECP/EPP Parallel
P027	AV-2P1S(16850)	1 16850 UART Serial and 2 ECP/EPP Parallel
P022	AV-2P2S	2 16550 UART Serial and 2 ECP/EPP Parallel
P023	AV-2P2S(16650)	2 16650 UART Serial and 2 ECP/EPP Parallel
P024	AV-2P2S(16850)	2 16850 UART Serial and 2 ECP/EPP Parallel

1-2 Key Features and Benefits

- Conforms to PCI v2.1 Plug and Play
- Full support for DOS, Windows-based, and Linux-based software
- Fast I/O access speed reduces CPU load and improves system performance dramatically
- IRQ sharing feature eliminates IRQ conflicts

1-3 Special Features and Benefits

According to the Model No. you purchase, PCI I/O card providesome advanced special features to your PC system.

1-3.1 16850 UART Serial

- High-speed 16850 UART serial port (9-pin) supports baud rates up to 920Kbps. Works with 56K external modems, ISDN terminal adapters and other serial port devices.
- Built-in 128-byte FIFO buffers dramatically increase data transmit /receive speed, especially under Windows multitasking environment

1-3.2 16650 UART Serial

- High-speed 16650 UART serial port (9-pin) supports baud rates up to 920Kbps. Works with 56K external modems, ISDN terminal adapters and other serial port devices.
- Built-in 32-byte FIFO buffers dramatically increase data transmit /receive speed, especially under Windows multitasking environment

1-3.3 16550 UART Serial

- High-speed 16550 UART serial port (9-pin) supports baud rates up to 920Kbps. Works with 56K external modems, ISDN terminal adapters and other serial port devices.
- Built-in 16-byte FIFO buffers dramatically increase data transmit /receive speed, especially under Windows multitasking environment

1-3.4 ECP/EPP Parallel

- High-speed parallel port support all types of parallel port devices including removable cartridge drives, CDR/RWs, printers ,SuperDisk™ LS-120 drives, scanners and more
- Supports EPP, ECP (PIO mode), Bi-directional Parallel Port (BPP) and Standard Parallel Port (SPP) modes
- Data Transfer rates up to 2MB/sec

2. Installation Guide

2-1 Hardware Installation

1. Turn ***OFF*** the power to your computer and any other connected Peripheral devices.
2. Unplug the power cord from the back of the computer.

3. Remove the computer's cover, select an available 32-bit PCI slot and remove the bracket. Save the screw for securing the board after it's installed.
4. To install the PCI I/O card. Align the board's connector to the expansion slot on the motherboard. Push the board down gently until it is well seated.
5. Replace the slot bracket holding screw to secure the board to the rear slot panel.
6. Replace the computer cover and reconnect the power cord. Restart the system and refer to the next section for Software Installation.

2-2 Software Installation

2-2.1 Windows 2000 Driver Installation

1. At the Add New Hardware Wizard windows, click on "***Next***".
2. Select the option "***Search for the best driver for your devices (Recommend)***, and click on "***Next***".
3. Select the option "***Specify the location***", insert the Driver Installation diskette in the floppy drive and type in ***a:\win2000*** and click on "***Next***".
4. Click on "***Next***" and then "***Finish***" respectively.
5. Remove the diskette and restart the computer.

2-2.2 Windows 98 Driver Installation

1. At the Add New Hard ware Wizard windows, click on "***Next***".
2. Select the option "***Search for the best driver for your devices (Recommend)***, and click on "***Next***".
3. Select the option "***Specify the location***", insert the Driver Installation diskette in the floppy drive and type in ***a:\win98*** and click on "***Next***".
4. Click on "***Next***" and then "***Finish***" respectively.
5. Remove the diskette and restart the computer.

2-2.3 Windows 95 Driver Installation

For proper installation in your system, verify the version of Windows 95 in your system by going to My Computer/Control Panel/System/General. Then follow the steps below to install the Windows 95 drivers:

1. When you first turn on your computer after installing the PCI I/O Card, Windows will notify you of "***New Hardware Found***" .
2. Select "***Driver from disk provided by hardware manufacturer***" and click "***OK***"..
3. Insert the Driver Installation diskette in the floppy drive and type in ***a:\win95*** and click on "***OK***."
4. Remove the diskette and restart the computer.

2-2.4 Windows NT 4.0 Driver Installation

1. Go to Start and Run.
2. Insert the Driver Installation diskette in the floppy drive and type in ***a:\nt4\setup*** , then click on "***OK***".
3. The "***Intek 21 PCI IO Welcome***" windows will appear. Click on "***Next***" , and "***Next***" again.
4. From the next "***Setup Complete***" window, select "***Yes, I want to restart my computer now***" and click on "***Finish***".

5. Remove the diskette and restart the computer for the setup to take effect.

Note: If you plan to connect a parallel device other than a printer such as zip drive, scanner etc to the port, please follow the next section to change the I/O address for the port to support the device.

To change the I/O address:

1. Go to ***Start/Setting/Control Panel***, double - click on Itk PCI IO device icon.
2. Hightlight the LPT address and click on setting.
3. Select or type in an I/O address supported by the device and click on ***OK***. Make sure the selected I/O address does not conflict with other in your system.
4. Select ***Restart Now*** for the new setup to take effect.

2-2.5 DOS/Windows 3.x Driver Installation

1. Insert ***Driver Installation*** diskette in the floppy drive and from the C:\> prompt, type in: ***copy a:\dos*.*** and press ***<enter>***.
2. Type in: ***edit autoexec.bat*** and press ***<Enter>***
3. Add ***C:\ITK21adr.exe*** at the bottom of the autoexec.bat file.
4. Go to file, save the changes and exit.
5. Remove the floppy diskette and restart the system for the new setup to take effect.

2-2.6 Linux setup for PCI Serial Port

1. Boot with a DOS or Windows Startup Disk.
2. Run the utility ITK21MOD.EXE in the DOS folder on the Installation Disk to set the baud rate to 921.6Kb. The default baud rate setting is 115200 on the card. If no high speed is required, you don't need to run this utility.
3. Boot to Linux.
4. Go to the proc directory.
5. Use vi to open the pci file.

6. Search for vendor ID 14db.
7. Write down the port address and IRQ number (for example: 0xd400 and IRQ 12).
8. Go to the dev directory.
9. Use the setserial command to set up the serial port:
   setserial ttyS3 port 0xd400 uart 16550A irq 12 baud_base 921600 spd_cust divisor 4
   ttyS3: port number, could be ttyS4 if the system already have three serial ports installed
   uart: UART type, use 16550A if the UART is 16550
   spd_cust: set custom speed
   divisor: baud rate divide by the divisor number equals to modem data transfer speed. If the baud_base is set to 921600, then the divisor has to be 4 to get a transfer speed of 230Kb.
10. Run Minicom configuration utility by typing:
    minicom -s
11. In Minicom, go to Serial Port Setup, then Serial Device.
12. Change the modem to use port /dev/ttyS3.
13. Set the baud rate to 38400.
14. Save the changes as a dfl file.

Note: We tested the serial port with RedHat Linux 6.0 with a Motorola Bitsurfr Pro EZ to run at 230Kb. The procedure should work with earlier versions of RedHat Linux or other Linux-like operating systems.

2-2.7 Linux setup for PCI Parallel Port

1. Load addresses in kernel. Define them as LPT0,1,and 2(use default addresses)
   Default addresses:
   LPT0 - 03BC-03BE

LPT1 - 0378-037A
LPT2 - 0278-027A

2. RedHat 6.0 use version 2.2 kernel or higher
   a. Load PCIUTILS using the SETUPPCI command
   b. ADD lines:
      SETPCI -V –D 14db:2120 0X10.L=0x278
      SETPCI -V –D 14db:2120 0X14.L=0x678

      2120: device ID, it could be another ID number as following table, according to the Model No. you purchase:

Model No	Device ID	Model No	Device ID
P005	2120	P017	2162
P006	2121	P020	2112
P007	2110	P021	2162
P008	2111	P022	2144
P009	2160	P023	2145
P010	2161	P024	2146
P014	2121	P025	2140
P015	2160	P026	2141
P016	2161	P027	2142