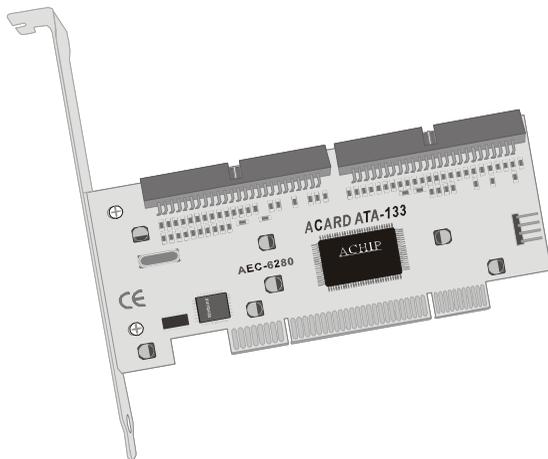


ACARD Ultra ATA-133 **AEC-6280**

PCI-to-IDE Ultra ATA-133 Controller

User's Manual



— Version:1.0 —

ACARD
TECHNOLOGY

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Chapter 1 Introduction

1.1 Introduction

ACARD AEC-6280 is a high performance PCI P&P bus master Ultra ATA-133 adapter and on board Flash BIOS that supports to boot from ATA device or Ultra ATA 100/66/33 and even ATA-133 hard drives.

ACARD AEC-6280 supports full featured PCI 32-bit bus master transfer capability including PCI enhanced data transfer commands (133MB/s) and Built-in Scatter/Gather function improves performance for multi-tasking OS.

1.2 Feature

- A standalone PCI-to-IDE controller
- Supports Ultra ATA 133/100/66/33 hard drive
- Supports ATAPI devices
- Data transfer rate up to 133MB/sec
- Cost effective and high performance

1.3 Packing List

When you open the *ACARD AEC-6280* cabinet, check the following packing list.

- One *ACARD AEC-6280*
- One ATA-133 Cables
- One Y-splitter Cable for Power
- One User's Manual

1.4 Specification

Power requirement - voltage : 3.3V+/- 2%
5V+/- 2%
current : 0.5A Max.

Environment - Temperature
Operating 0 °C to 70 °C
Storage -20 °C to 85 °C

Humidity - 15% to 90%

Dimensions - Models: AEC-6280
Width: 14 cm
Height: 4.7 cm

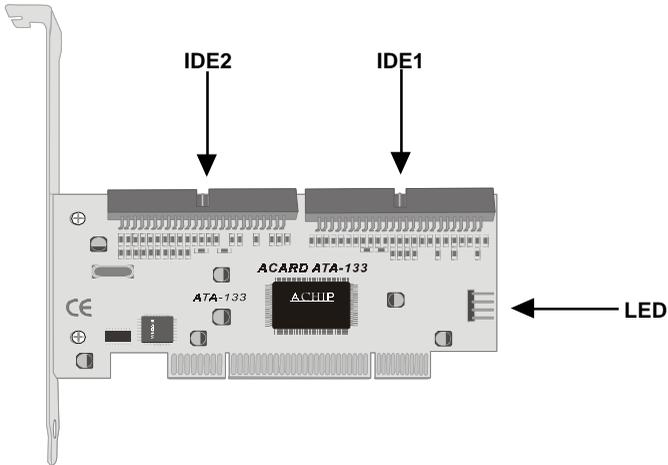
Connectors - Dual 40 pins IDE internal connectors

Chapter 2 Hardware Installation

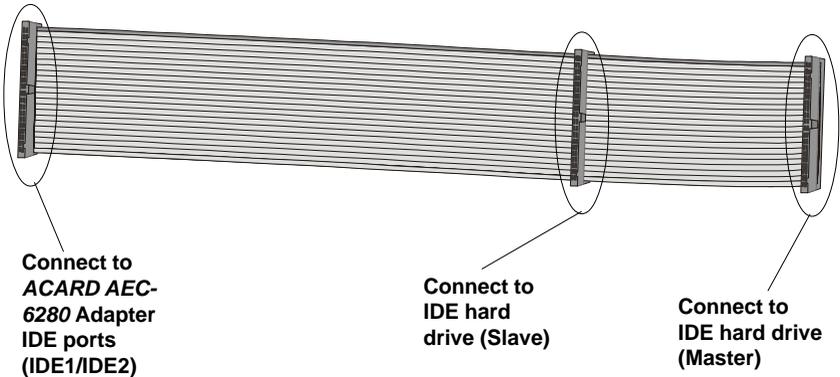
2.1 ACARD AEC-6280 Board Layout:

IDE1: The Primary IDE port

IDE2: The Secondary IDE port



ATA-133 Cable Layout:



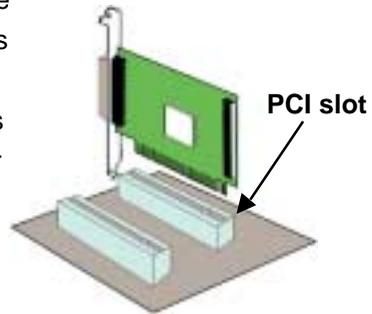
2.2 Installing the AEC-6280 IDE Adapter

Step 1. Turn off the computer.

Step 2. Plug out the power core and all the connection of external devices from your system.

Step 3. Referring your original case user's manual to see how to open your case.

Step 4. Select one unused PCI expansion slot of your computer. Unscrew the slot cover and remove it.



Step 5. Remove the IDE host adapter from the anti-static bag and hold its metal bracket part.

Step 6. Plug the AEC-6280 IDE adapter card into the unused PCI slot with care on the bottom of edge. Then fit the adapter bracket on case frame just like a slot cover.



- When two hard drives connected with *ACARD AEC-6280* at the same IDE port (i.e. on same cable), the hard drives Jumper setting must be set as a respectively positioning "Master" and a "Slave" on the hard drives. The two hard drives could not be set on both "Master" nor both "Slave" on the same cable.
- For the hard drive or ATAPI device Jumper setting (Master / Slave), refer to hard drive or ATAPI device User Manual.
- In order to achieve best performance, use same hard drive model, ex. Ultra ATA 66, Ultra ATA 100 or Ultra ATA 133 hard drive.

2.3 ACARD AEC-6280 cable & power installation

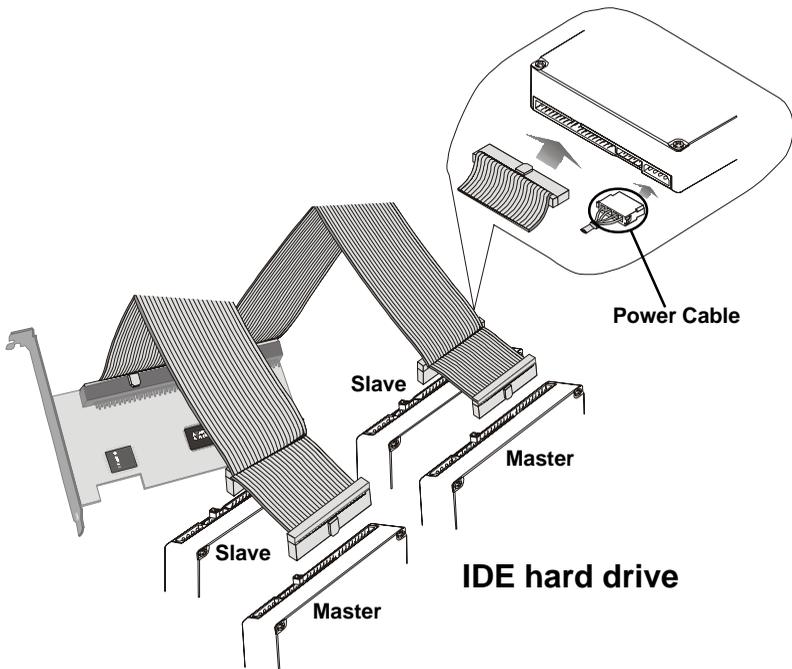
The cable connection methods:

Step 1. Find out pin 1 of IDE connector on IDE device.

Step 2. Find out a color line of the internal IDE ribbon cable which indicates pin 1 of the connector.

Step 3. Connect the internal IDE cable to the IDE device by aligns with pin-1 to pin-1.

Step 4. Connect 4-pin power cable to the IDE device.



2.4 Compatibility list

IDE Hard Drive

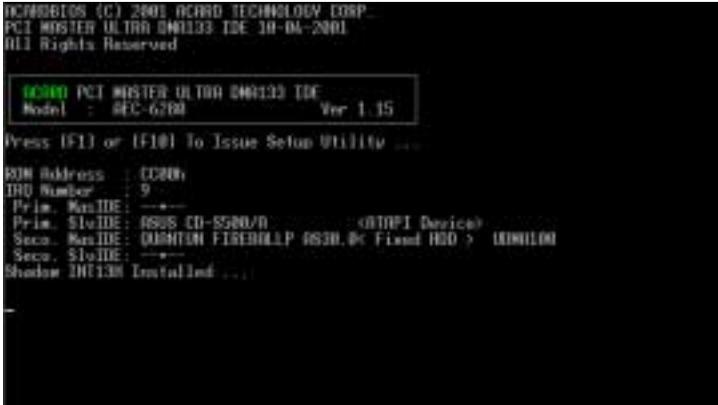
- Quantum
FireBall LM series, LC series, LB series, LD series
FireBall KX series, KA series
FireBall CX series, CR series, EX series
FireBall EL series, AS 20G,60G
- Seagate
Medalist IDE series
Barracuda ATA II/III/IV series
ST320430A, ST313620A, ST3240AT,
ST38422A, ST36531A
- IBM
DTLA series, DPTA series, DTTA series, DJNA series
GXP60/75 series
- Maxtor
54098U8, 52049U4, 91366U4, 94098U8, 91020U3, 98196H8
DiamondMax60 Plus series
- Fujitsu
MPF-3204AT, MPD series, MPG series
- Western Digital
Expert 13BA, Caviar AC14300, WD300BB
WD600AB, WD800BB

Removable disk

- IOMEGA
ZIP100, ZIP250
- Imation
LS120

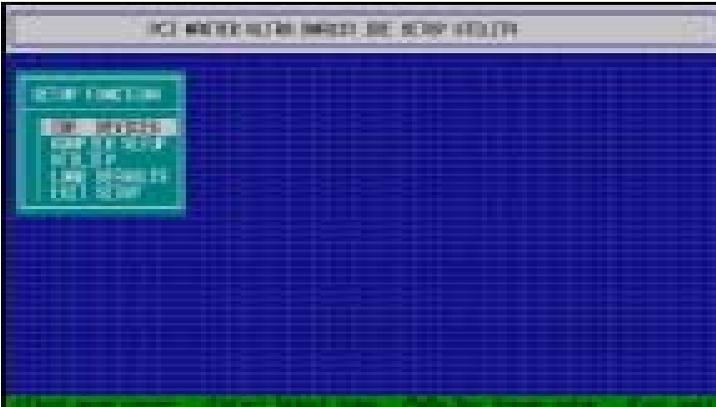
Chapter 3 BIOS Setup

Plug the ACARD AEC-6280 IDE card in the PCI slot, while the PC remains power on. When you see the following messages, press <F1> or <F10> to BIOS setup.



3.1 Functions description

Press <F1> or <F10>, the BIOS setup screen will be appeared :



ATAPI CD-ROM

■	AFREEY	50X, 52X
■	ASUS	40X, 50X, 52X
■	AOPEN/Acer	48X, 52X
■	BTC	48X, 50X, 52X, 56X
■	Philips	48X
■	Pioneer	32X
■	SONY	48X
■	TEAC	532E, 540E

ATAPI CD-R/RW

■	AFREEY	50X, 52X
■	ASUS	40X, 50X, 52X
■	HP	9100, 9300, 9500
■	LITE-ON	LTR-24102B
■	Philips	4X, 8X
■	PLEXTOR	8432, 1210TA, 1610TA, 2410TA
■	RICOH	7060A, 7120A, 7163A, 7200A, 9060A, 9120A
■	SONY	120E, 140E, 145E, 160E, 168E
■	TEAC	W54E, W512E, W516E
■	YAMAHA	8824E, 2100E, 2200E

ATAPI DVD-ROM

■	AFREEY	8X, 10X
■	ASUS	8X, 10X, 16X
■	AOPEN/Acer	16X
■	RICOH	9060A, 9120A
■	Pioneer	113, 114, 115, 16X
■	SONY	8X

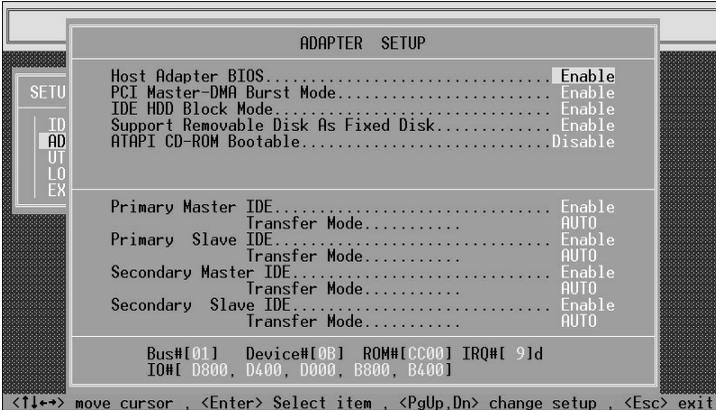
For the latest compatibility list, please refer to <http://www.acard.com>

3.1.1 IDE Devices

To get the IDE device information which connect with AEC-6280.



3.1.2 Adapter Setup

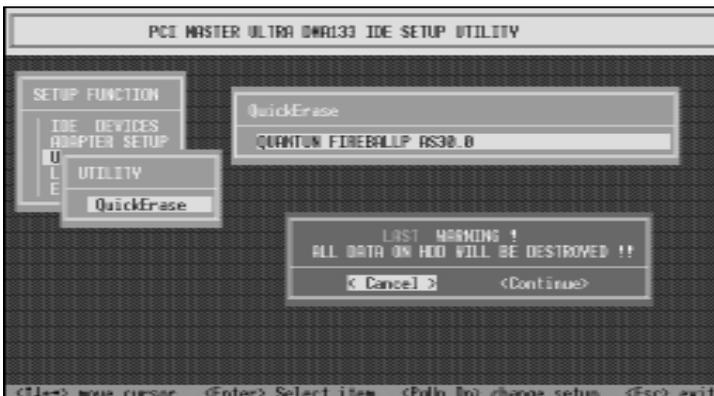


- **Host Adapter BIOS** : For setting AEC-6280 adapter's BIOS.
- **PCI Master-DMA Burst Mode** : For setting AEC-6280 adapter's DMA-Burst mode.
- **IDE HDD Block Mode** : For setting IDE HDD block mode, use the default value to achieve best performance.

- **Support Removable Disk As Fixed Disk** : For setting removable disk as fixed disk.
- **ATAPI CD-ROM Bootable** : For setting ATAPI CD-ROM to boot.
- **Primary Master IDE & Transfer Mode** : For setting primary Master ATAPI device, use default setting to achieve best performance.
- **Primary Slave IDE & Transfer Mode** : For setting primary Slave ATAPI device, use default setting to achieve best performance.
- **Secondary Master IDE & Transfer Mode** : For setting secondary Master ATAPI device, use default setting to achieve best performance.
- **Secondary Slave IDE & Transfer Mode** : For setting secondary Slave ATAPI device, use default setting to achieve best performance.

3.1.3 Utility

- **QuickErase** : Quick erase the hard drive content. Please beware, that data and partition will be completely erased.



3.1.4 Load Defaults

To restore the AEC-6280 BIOS defaults parameters setting.



3.1.5 Exit Setup

Press <Esc> to quit the RAID setup utility screen. Then choose the “Update Data” or “No Update” to Exit.



Chapter 4 System Installation

4.1 DOS Environment

For Boot Device

1. Complete *ACARD AEC-6280* hardware installation.
2. Boot-up the computer, press to enter the motherboard's BIOS setup. Then change "**Boot Sequence**" to A:.
3. Restart the computer by a DOS bootable floppy and run DOS FDISK. Then create a Primary partition onto the hard drive.
4. After re-booting to a DOS bootable floppy, run the DOS FORMAT command.

Non Boot Device

1. Complete *ACARD AEC-6280* hardware installation.
2. Boot-up the computer, press to enter the motherboard's BIOS setup. Then change "**Boot Sequence**" to C:.
3. Restart the computer, and run MS-DOS and DOS FDISK. Then create a Primary partition onto the hard drive.
4. After re-booting, run the DOS FORMAT command.

4.1.2 Windows 95/98/ME Environment

Non Boot Device

1. Complete *ACARD AEC-6280* hardware installation.
2. The system will detect any new device and ask for directory to access the device driver. Click **“Next”** to go on.



3. Select **“Search for the best driver for your device (Recommend)”**. Then click on **“Next”**.



- Windows will display the message when the system has found the driver for it and is going to install the driver.
- Select "Specify a location". Please insert the directory of AEC6280.inf for it (such as a:\WIN9X).



- Follow the procedures, the system will complete the action automatically.



- Restart the computer.

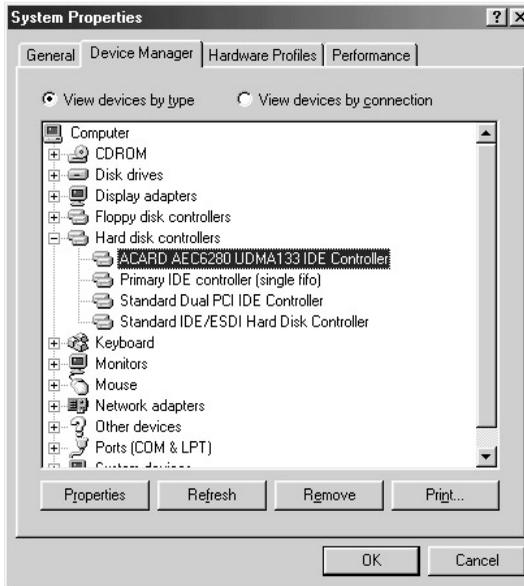
Verify ACARD AEC-6280

After boot-up the system, follow the direction below on the Device Manager find out whether the *ACARD AEC-6280* has installed OK.

Step 1. Enter **“My Computer”** and double click on **“Control Panel”**.

Step 2. Double click on **“System”** and enter **“Device Manager”**.

Step 3. Click the **“Hard disk controllers”** to check whether *ACARD AEC-6280* adapter has installed properly.



For Boot Device

For bootable drive from *ACARD AEC-6280*, complete Windows 95/98/ME operation system installation onto *ACARD AEC-6280* drive first. Restarting the computer, install the *ACARD AEC-6280* driver when system access.

4.1.3 Windows NT Environment

Driver installation is required when it is the first time to setup Windows NT into the System

For Boot Device

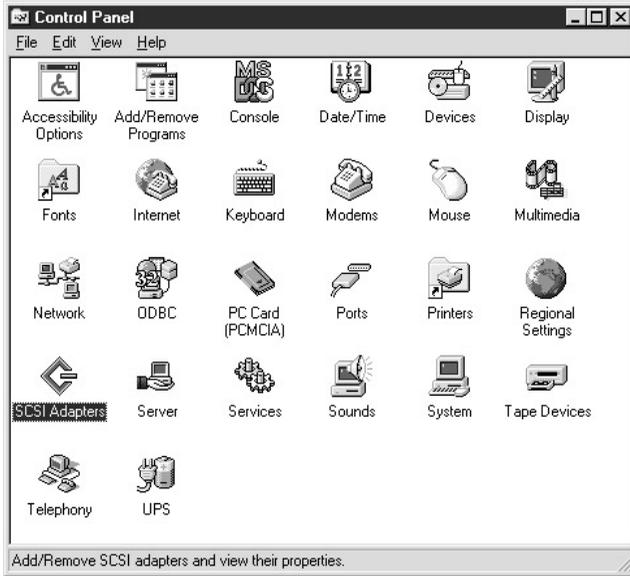
AEC6280.SYS is designed for Microsoft Windows NT miniport drivers. It allows driver connects to IDE devices (which support by Microsoft)

1. Insert Windows NT boot disk and boot from floppy disk.
(If boot from CD-ROM or install from hard disk, please press "F6" for the first booting screen)
2. Follow the Windows NT setup procedures.
3. Press "S" to specify additional SCSI adapter.
4. Move the highlight bar to "**the other**" and press "Enter".
5. Before the installation, copy the AEC-6280's driver into a floppy diskette first. Then insert the *ACARD AEC-6280* driver disk into the floppy.
6. The ACARD Miniport driver should be highlighted at this stage. Press "Enter" to proceed.
7. NT should now recognize the ACARD Miniport driver and the IDE hardware. Please follow the Microsoft Windows NT installation.

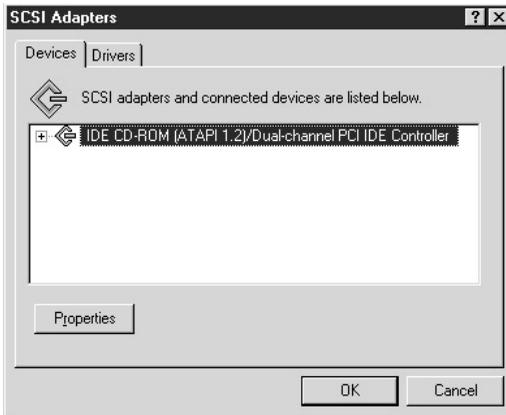
Install Driver for Windows NT

After Windows NT has been installed, you may wish to plug the *ACARD AEC-6280* device on the Windows NT system. Follow the procedures below, Windows NT would install the newest *ACARD AEC-6280* driver to the system.

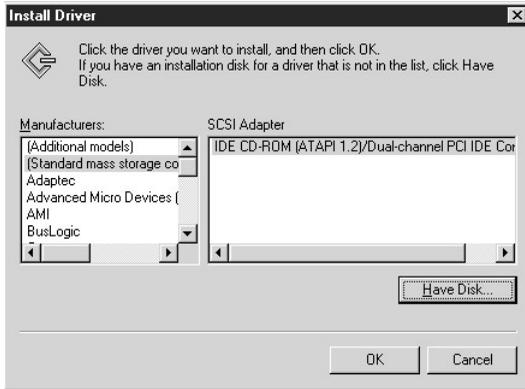
1. Double click on “**My Computer**”, enter “**Controller Panel**” .
2. Double click on “**SCSI Adapter**”.



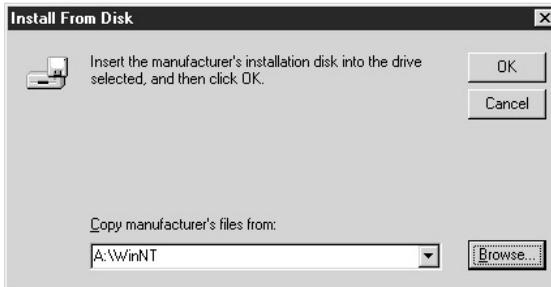
3. Choose “**Drivers**” and click on “**Add**”.



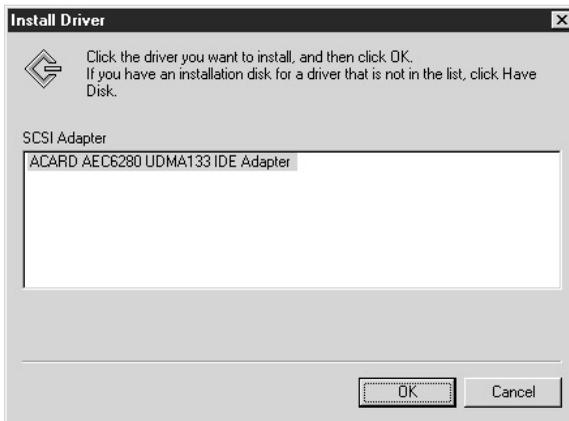
4. Click on “Hard Disk” to select the right driver for the IDE adapter.



5. Insert the directory of driver for Windows NT, for example “A:\Winnt”



6. Then follow the direction to complete the installation.



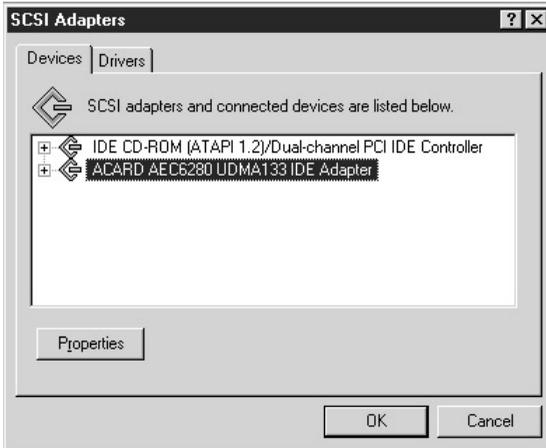
Verify ACARD AEC-6280

After system booted, follow the directions below to check the “**Device Manager**” and see whether the *ACARD AEC-6280* has installed.

Step 1. Enter “**My Computer**” and double click on “**Control Panel**”.

Step 2. Find “**SCSI Adapters**”, double click it.

Step 3. In “**SCSI Adapters**”, get the “**ACARD AEC6280 UDMA133 IDE Adapter**” to check whether the device has connected to AEC-6280.



4.1.4 Windows 2000 Environment

Driver installation is required when it is the first time to setup Windows 2000 into the System

For Boot Device

AEC6280.SYS is designed for Microsoft Windows 2000 miniport drivers. It allows driver connected to IDE devices (which support by Microsoft)

1. Insert Windows 2000 boot disk and boot from floppy disk.
(If boot from CD-ROM or install from hard disk, please press "F6" for the first booting screen)
2. Follow the Windows 2000 setup procedures.
3. Press "S" to specify additional SCSI adapter.
4. Move the highlight bar to "**the other**" and press "Enter".
5. Before the installation, copy the AEC-6280's driver into a floppy diskette first. Then insert the *ACARD AEC-6280* driver disk into the floppy.
6. The ACARD Miniport driver should be highlighted at this stage. Press "Enter" to proceed.
7. Windows 2000 should now recognize the ACARD Miniport driver and the IDE hardware. Please follow the Microsoft Windows 2000 installation.

Install Driver for Windows 2000

After Windows 2000 has been installed, you may wish to plug the *ACARD AEC-6280* device on the Windows 2000 system. Before plug in *AEC-6280*, follow the procedures to install driver manually.

1. Complete *ACARD AEC-6280* hardware installation. The system will find “New Hardware”.
2. The system will detect a new device and ask for directory to access the driver. Select “**Search for a suitable driver for my device (Recommended)**”. Then click “**Next**”.



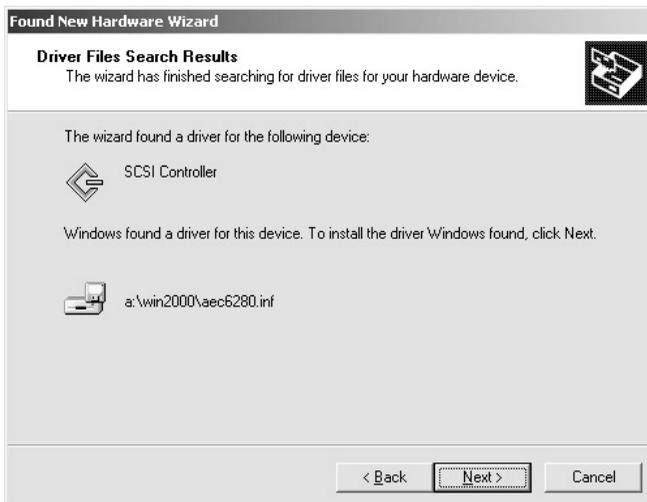
3. Follow the wizard, Windows will ask for the driver files' location. Select “**Specify a location**”.



4. Select **“Browse”** to find out the driver directory of AEC6280.inf for it (such as A:\Win2000).



5. The wizard will find a driver for IDE adapter. Click on **“Next”** to install the driver.



6. Click on “Yes” to continue the installation.



7. Follow the directions, the system will complete the setup automatically.



Verify ACARD AEC-6280

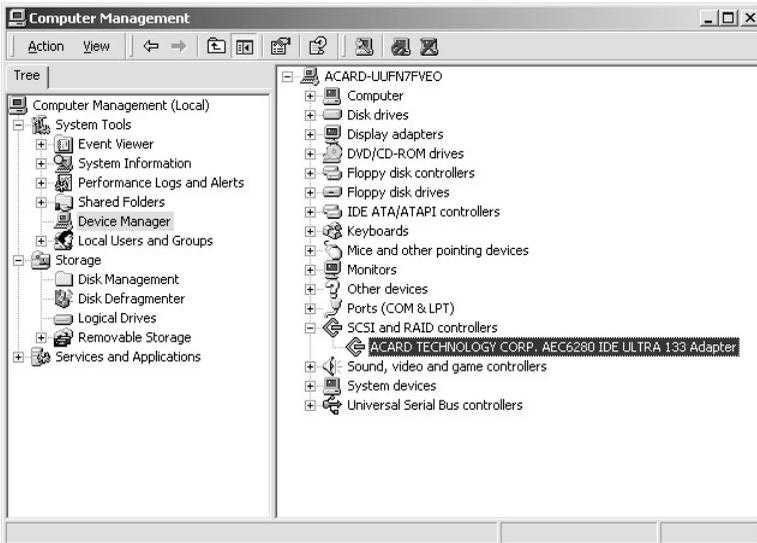
After system booted, follow the directions below to check the “**Device Manager**” and see whether the ACARD AEC-6280 has installed.

Step 1. Enter “**My Computer**” and double click on “**Control Panel**”.

Step 2. Find “**System**”, double click it.

Step 3. In “**System Properties**”, choose “**Hardware**” and click on “**Device Manager**”.

Step 4. In “**SCSI and RAID controllers**” to double click on “**ACARD TECHNOLOGY CORP. AEC6280 IDE Ultra ATA133 Adapter**” to check whether the device has connected to AEC-6280.



4.1.5 Windows XP (Beta Version) Environment

Driver installation is required when it is the first time to setup Windows XP (Beta Version) into the System

For Boot Device

AEC6280.SYS is designed for Microsoft Windows XP (Beta Version) miniport drivers. It allows driver connected to IDE devices (which support by Microsoft)

1. Insert Windows XP (Beta Version) boot disk and boot from floppy disk. (If boot from CD-ROM or install from hard disk, please press “F6” for the first booting screen)
2. Follow the Windows XP (Beta Version) setup procedures.
3. Press “S” to specify additional SCSI adapter.
4. Move the highlight bar to “**the other**” and press “Enter”.
5. Before the installation, copy the AEC-6280’s driver into a floppy diskette first. Then insert the *ACARD AEC-6280* driver disk into the floppy.
6. The ACARD Miniport driver should be highlighted at this stage. Press “Enter” to proceed.
7. Windows XP (Beta Version) should now recognize the ACARD Miniport driver and the IDE hardware. Please follow the Microsoft Windows XP (Beta Version) installation.

Install Driver for Windows XP (Beta Version)

After Windows XP (Beta Version) has been installed, you may wish to plug the *ACARD AEC-6280* device on the Windows XP system (Beta Version). Before plug in *AEC-6280*, follow the procedures to install driver manually.

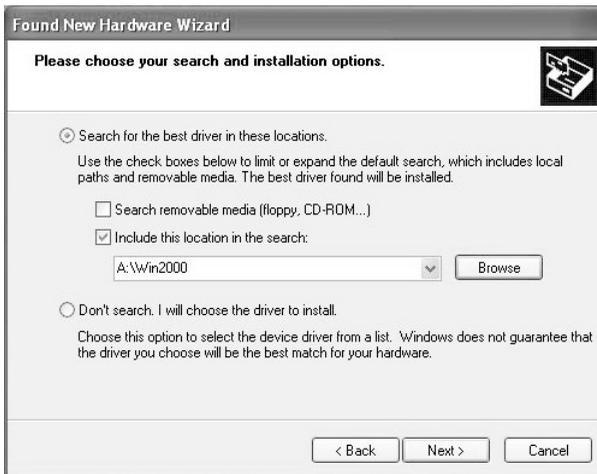
1. Complete *ACARD AEC-6280* hardware installation. The system will find **“New Hardware”**.
2. The system will detect a new device and ask for directory to access the driver. Select **“Install from a list or specific location (Advanced)”**. Then click **“Next”**.



3. Follow the wizard, Windows will ask for the driver files' location. Select **"Include this location in the search"**.
4. Then select **"Browse"** to find out the driver directory of AEC6280.inf for it (such as A:\Win2000).



5. The wizard will find a driver for IDE adapter. Click on **"Next"** to install the driver.



6. Click on “**Continue Anyway**” to continue the installation.



7. Follow the directions, the system will complete the setup automatically.



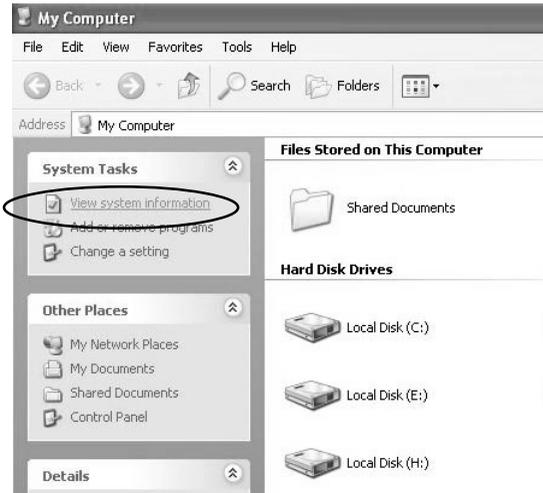
Verify ACARD AEC-6280

After the system booted, follow the directions below to check “**Device Manager**” and see whether the ACARD AEC-6280 has installed.

Step 1. Press “**Start**” and select “**My Computer**”



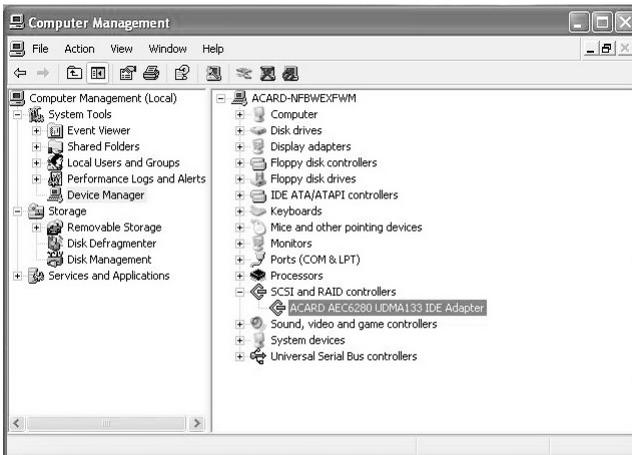
Step 2. Find “**View system information**”, double click it.



Step 3. In “**System Properties**”, choose “**Hardware**” and click on “**Device Manager**”.



Step 4. In “**SCSI and RAID controllers**” to double click on “**ACARD AEC-6880 PCI Ultra ATA133 RAID Controller**” to check whether the device has success connected to *ACARDAEC-6880*.



Chapter 5 Troubleshooting

Installing the *ACARD AEC-6280* while it does not function properly, follow the troubleshooting guide below.

1. Check power supply

Check the malfunction devices and the power status (ON / OFF) at all times.

2. Verify IDE device

Before installing the *ACARD AEC-6280*, ensure your IDE device functions are set in proper mode.

3. Check host adapter

Verify the adapter card is seated well in its slot on the motherboard.

4. Check all connectors and cables

Ensure all internal IDE connector, device power connector, and cables are well connected. Beware that cables are easily damaged because of unproper fold. Make sure no connector pins are bent. Last, verify pin 1 on the interface cable is aligned with pin 1 on the drive and the host adapter.

Appendix 1 Application Utility

ASPITool32 Manager

The **ASPITool32 Manager** program has many functions which are aiming to manage the hard drives working properly under the Windows OS while connect with ACARD SCSI adapter or IDE adapter. The **ASPITool32 Manager** program has proudly and solely developed by ACARD. You may get the installation executive program from the ACARD Driver CD.

ASPITool32 Manager Functions

1. FDisik: Create the hard drive partition.
2. Disk QEraser: Quick erase the hard drive content. Please beware, that data and partition will be complete erased.
3. Disk Fromat: Format the partition.
4. Disk Diagnose: Detect the hard drive and check whether it works properly.
5. Diak information: Provide the information of BPB and partition.
6. Disk Verfiy: Verfiy the hard drive and check, if there is any bad sector.
7. On Now: Re-scran the SCSI bus and check, if there is any new device added.
8. About: Provide ASPITool32's information.
9. Hide: Zoom out the function windows to tray icon.
10. Disk Express Setup: Instruction of how to create and format the partition.



Appendix 2 Technical Support Form

Email: support@acard.com

<http://www.acard.com>

Model	AEC-6280	F/W Version	
System Configuration			
Main Board vendor			
BIOS version			
SCSI adapter			
Chipset			
Memory			
Display card			
Other I/O card			
OS version			
Hard Disk Configuration			
Hard Disk Model/type			
Capacity			
Firmware version			
Others			
Problem Description			

MALAE6280XE10-0