AES-6000B

BOX PC

VIA Eden™ 400MHz CPU
With Ethernet, LVDS, Audio
TV-Out, CompactFlash™
In a light weight and small size

September 2003

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Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 1 AES-6000B BOX PC
- 1 100V/240V Power Adapter
- 1 1-to-3 Audio Extension Cable
- 1 PS/2 Keyboard and Mouse Cable
- 1 CD-ROM for manual (in PDF format), and drivers

If any of these items should be missing or damaged, please contact your distributor or sales representative immediately.

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Chapter

1

General Information

1.1 Introduction

New BOX PC, AES-6000B gives the ready and high-performance total solution. Designed as a fanless and no cable inside computer, it erases the traditional idea of computer structure. Its upper and side of chassis are made from aluminum and have fins that improves heat dissipation. An I/O board is especially designed to replace wires and cables for connections.

With this book-size computer, 7.52" x 1.99" x 4.15", AES-6000B performs at VIA Eden 400MHz level processor. Its system memory can be extended to sufficient 512MB bandwidth via one SDRAM SODIMM. Powered by VIA ProSavage™ PN133 chipset, rich 2D/3D graphic display is supported. Dual channel LVDS interface enhances the LCD presentation quality up to 1024 x 768 colors.

AES-6000B is a great solution for mobile device application. For example, consumer multimedia in-car computer, police vehicle computer, mobile medical machines and etc. Featured in mobile, reliability and high performance, this BOX PC plays as the outstanding medium for various industrial applications.

1.2 Features

- Fanless and non-cable design
- VIA Eden 400MHz processor
- 10/100Mbps Fast Ethernet
- Dual channel LVDS interface
- Supports NTSC/PAL TV Out
- Supports CompactFlash™ Memory
- 5V only operation
- External power adaptor

1.3 Specifications

System

• CPU	VIA Eden 400MHz mobile CPU
• System Memory	SDRAM SODIMM x 1, Max. 512MB
• Chipset	VIA VT8606 / VT82C686B
• BIOS	Award 256KB FLASH ROM
• Ethernet	10/100Base-T Ethernet RJ-45 connector x 1
• SSD	Type II CompactFlash slot
• Hard Disk Storage	2.5" HDD Bay x 1
• Watchdog Timer	Generate a system reset, IRQ or NMI.
• Battery	Lithium battery
• H/W Status Monitoring	Supports power supply voltages and temperature monitoring

• Construction	Rugged Aluminum Alloy
• Power Supply	Built-in 12V / 5A power adapter. Input voltage range 100V ~ 240V
• Dimensions	7.52" (W) x 1.99" (H) x 4.15" (D) (191mm x 50.8mm x 105.5mm)
• Gross Weight	2.3lbs (1.04kg)
• Operating temperature	32°F ~ 113°F (0°C ~ 45°C)
• Storage temperature	32°F ~ 167°F (0°C ~ 75°C)
• Operating humidity	5% ~ 95% @ 40C, non-condensing
• Storage humidity	5% ~ 95%

I/O

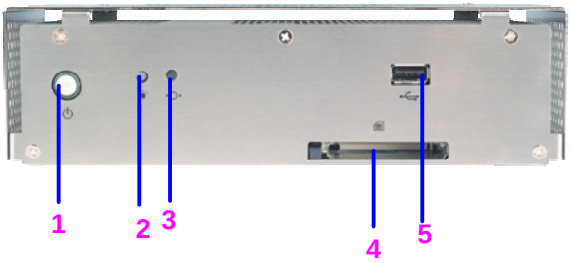
• MIO	Serial Port (RS-232) x 2, PS/2 Keyboard and Mouse x 1,
• Audio	Mic in / Line in/ Line out
• USB	USB 1.1 port x 2

Display

• Resolution	up to 1600 x 1200@ 16bpp colors for CRT up to 1024 x 768@ 18bpp colors for LCD
• LVDS interface	36-bit dual channel LVDS LCD panel
• TV-out	Supports S-Video and component outputs

1.4 General System Information

Front Panel:



1. **Power Switch**

   Light On: Power On

   Light Off: Power Off

2. **HDD LED**

   Light On: HDD is reading data

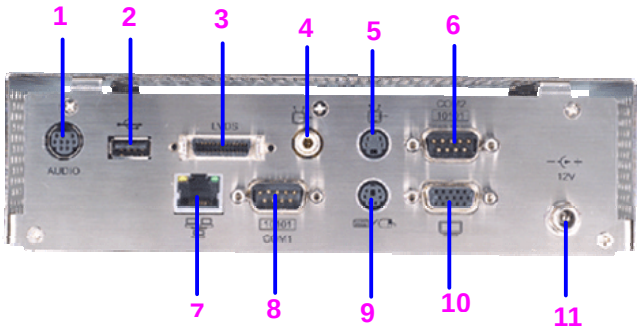
   Light Off: HDD is idle

3. **Reset Button**

4. **CompactFlash Slot**

5. **USB Connector**

Rear Panel:



1. **Audio Connector**
2. **USB Connector**
3. **LVDS LCD D-Sub**
4. **TV Out Connector (Component)**
5. **TV Out Connector (S-Video)**
6. **COM Port D-Sub**
7. **RJ-45 Ethernet Connector**
8. **COM Port D-Sub**
9. **PS/2 Keyboard and Mouse Mini Din**
10. **CRT D-Sub**
11. **Power Input Connector**

Chapter

2

Quick Installation Guide

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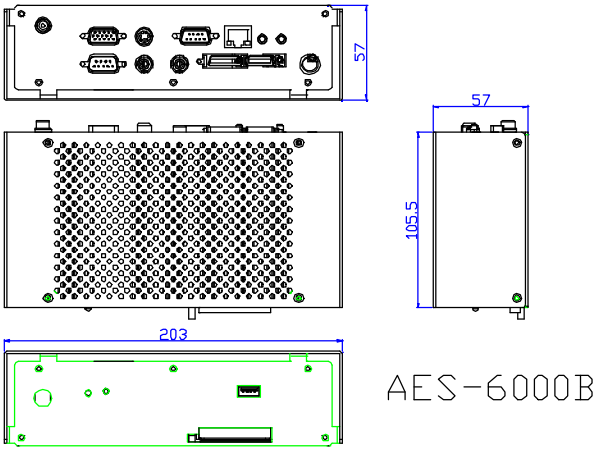
2.1 Safety Precautions

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Mechanical Drawing

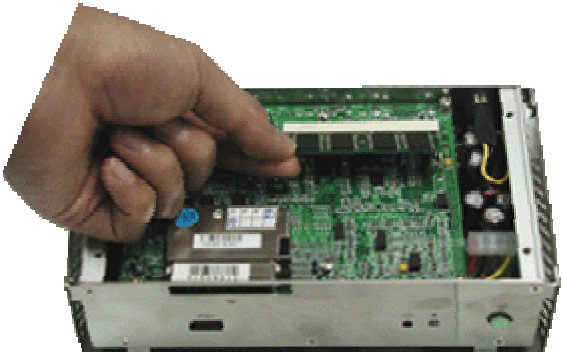


2.3 RAM Module Installation

1. Unscrew four screws on the bottom of the chassis.

2. Open the chassis lid as demonstrated.

3. Insert a SDRAM SODIMM module into the SODIMM slot as demonstrated.



Chapter

3

Award BIOS Setup

3.1 System test and initialization

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

System configuration verification

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

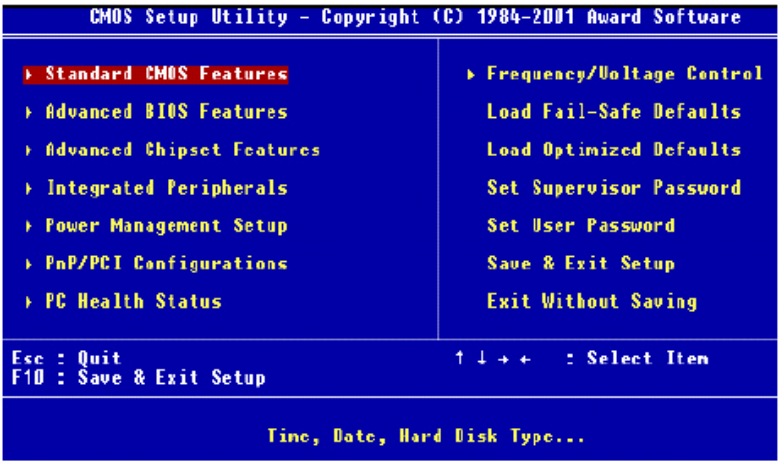
The AES-6000B CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 Award BIOS setup

Awards BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

Entering setup

Power on the computer and press <Del> immediately. This will allow you to enter Setup.



Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring, KB wake up, etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu allows you to set the shutdown temperature for your system.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/ voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor / User Password

Use this menu to set Supervisor / User Passwords.

Save and Exit Setup

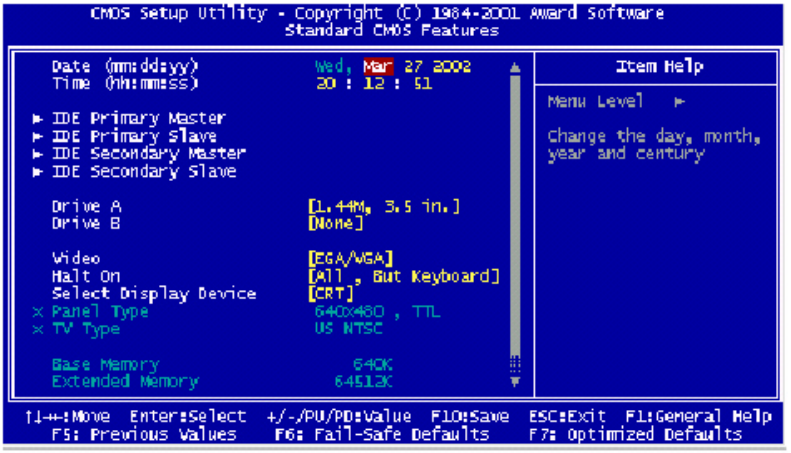
Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

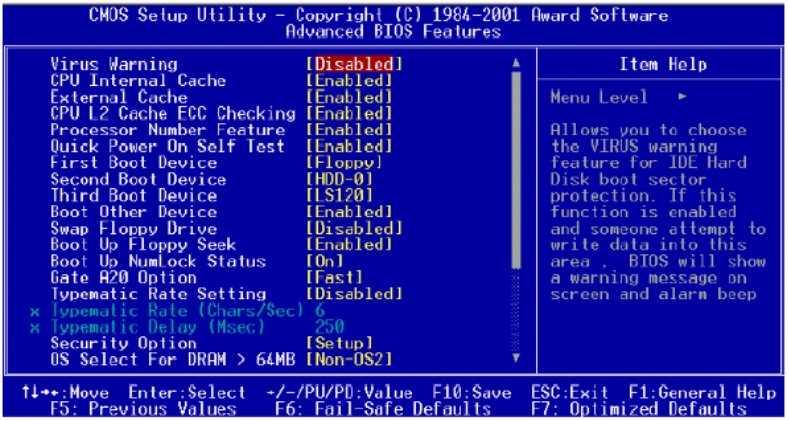
3.3 Standard CMOS Features

When you choose the Standard CMOS Features option from the INITIAL SETUP SCREEN menu**,** the screen shown below is displayed. This standard Setup Menu allows users to configure system components such as date, time, hard disk drive, floppy drive and display. Once a field is highlighted, on-line help information is displayed in the right box of the Menu screen.



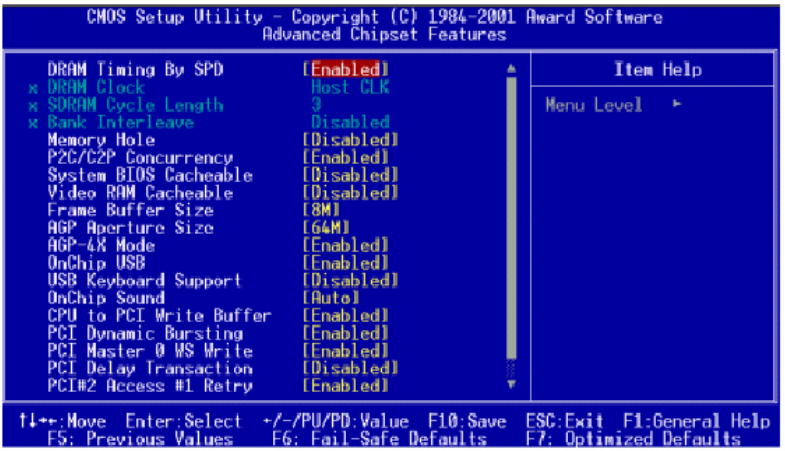
3.4 Advanced BIOS Features

By choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed.



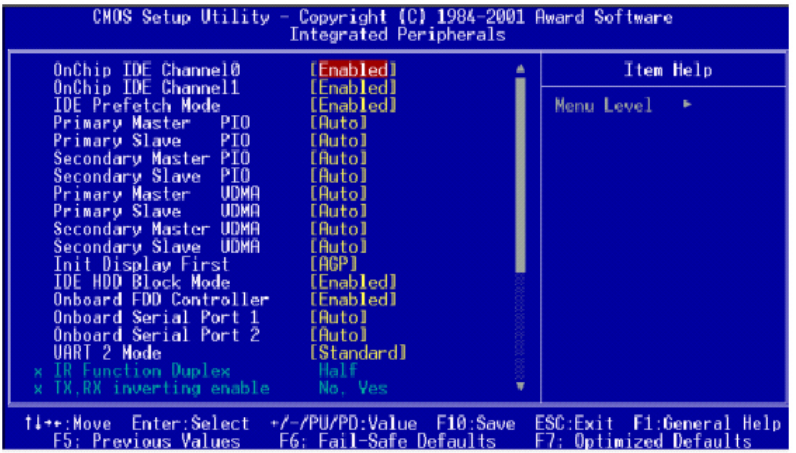
3.5 Advanced Chipset Features

By choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed.



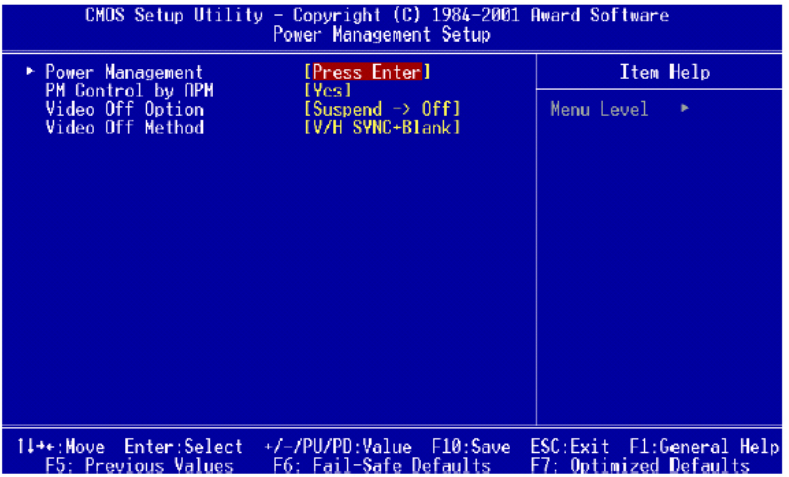
3.6 Integrated Peripherals

By choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, the screen below is displayed.



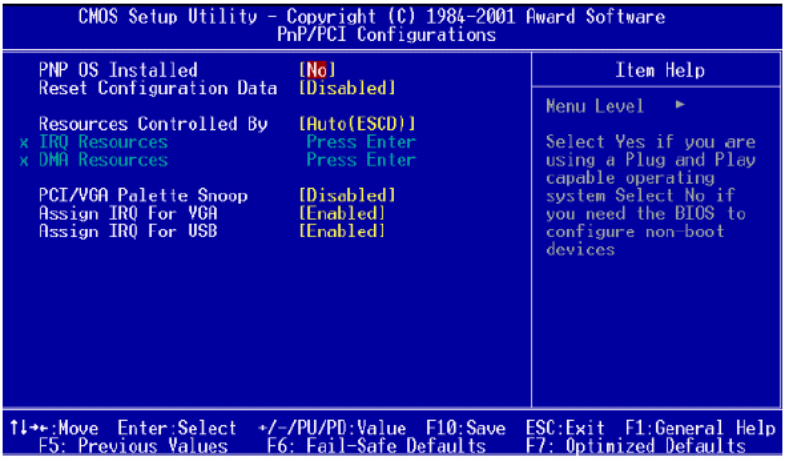
3.7 Power management setup

By choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, the screen below is displayed.



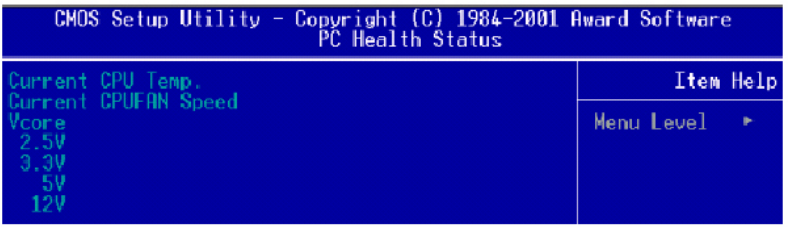
3.8 PnP/PCI configuration

By choosing the PnP/PCI configurations from the Initial Setup Screen menu, the screen below is displayed.



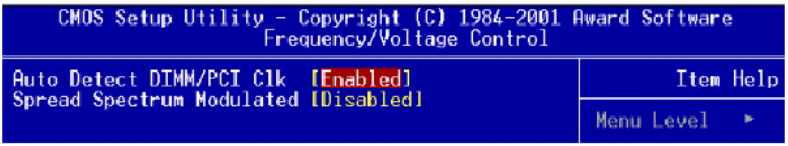
3.9 PC Health Status

By choosing the PC Health Status from the Initial Setup Screen menu, the screen below is displayed.



3.10 Frequency/Voltage control

By choosing the Frequency/Voltage Control from the Initial Setup Screen menu, the screen below is displayed.



3.11 Load Fail-Safe Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Default (Y/N)?

Pressing "Y" loads the BIOS default values for the most stable, minimal performance system operations.

3.12 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N)?

Pressing "Y" loads the default values that are manufacturer's settings for optimal performance system operations.

3.13 Set Supervisor/User Password

You can set either SUPERVISOR or USER PASSWORD, or both of them. The difference between the two is that the supervisor password allows unrestricted access to enter and change the options of the setup menus, while the user password only allows entry to the program, but not modify options.

To abort the process at any time, press Esc.

In the Security Option item in the BIOS Features Setup screen, select System or Setup:

System Enter a password each time the system boots and whenever you enter Setup.

Setup Enter a password whenever you enter Setup.

NOTE: To clear the password, simply press Enter when asked to enter a password. Then the password function is disabled.

3.14 Save & Exit setup

If you select this option and press <Enter>, the values entered in the setup utilities will be recorded in the chipset's CMOS memory. The microprocessor will check this every time you turn on your system and compare this to what it finds as it checks the system. This record is required for the system to operate.

3.15 Exit without saving

Selecting this option and pressing <Enter> allows you to exit the Setup program without recording any new value or changing old one.

Chapter

4

Driver Installation

The AES-6000B comes with a CD-ROM which contains most of drivers and utilities of your needs.

There are several installation ways depending on the driver package under different Operating System application.

If you utilize Windows NT series OS, you are strongly recommended to download the latest version Windows NT Service Pack from Microsoft website and install it before installing any driver.

Please follow the sequence below to install the drivers:

Step 1 – Install VIA 4-in-1 System Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

For installation procedures of each driver, you may refer to section 4.1-4.3.

4.1 Installation 1:

Applicable for Windows 2000/98/ME/NT 4.0

1. Insert the AES-6000B CD-ROM into the CD-ROM Drive.
2. From the CD-ROM, select the desired component Driver folder, and then select the desired Operation System folder to double click on the Setup.exe icon. A driver installation screen will appear.
   (Notice: take VGA driver installation under Windows 98 for example, choose the corresponding folder depending on your OS)
3. A driver installation screen will appear, please follow the onscreen instructions to install the driver in sequence and click on the Next button.
   (Notice: In some cases the system will ask you to insert Windows 98 CD ROM and key in its path. Then click on the OK button to key in path.)
4. Click on the **Finish** button to finish installation process. And allow the system to reboot.

4.2 Installation 2:

Applicable for Windows 2000/ 98/ME

1. Insert the **AES-6000B CD-ROM** into the CD-ROM Drive.
2. Click on **Start** button, select the **Settings**, and then click on the **Control Panel** icon.
3. Double click on the **Add/Remove Hardware** icon and **Add New Hardware Wizard** will appear. Click on the **Next** button.
4. Select **Search for the best driver for your device (Recommended)** and click on the **Next** button.
5. Select **Specify a location,** click on **Have Disk** button then key in the CD-ROM path and specify component drivers and OS folders. Then click on the **Next** button.
6. The Wizard shows that Windows driver file search for the device. Click on the **Next** button.
7. The system will ask you to insert Windows 98 CD ROM. Click on the **OK** button to insert CD-ROM and key in path.
8. Click on the **OK** button.
9. Click on the **Finish** button to finish installation process. And allow the system to reboot.

4.3 Installation 3:

Applicable for Windows NT 4.0

1. Insert the **AES-6000B CD ROM** into the CD-ROM Drive.
2. Start system with Windows NT 4.0 installed.
   IMPORTANT: When the "Please select the operating system to start..." message is displayed, select "Windows NT Workstation Version 4.00 [VGA mode]".
3. From **Start**, select the **Settings group** and then click on the

   Control Panel icon.
4. In the **Control Panel**, select the desired device and click on the icon.
5. Follow the step-by-step instruction and click on **OK** button.
6. Click on the **Have Disk...** button.
7. Key in CD-ROM path and specify component drivers, then click on the **OK** button.
8. From the list of displayed devices, select your desired device.
9. If a message appears stating the driver is already installed on the system, and asks if you want to use the current or new drivers, be sure to select the **New** button.
10. If prompted for the driver diskette a second time, click on the **Continue** button.
    (Notice: In some cases the system will ask you to insert Windows NT CD ROM. Follow its instructions to complete the setup procedures.)
11. When the message **"The drivers were successfully installed"** is displayed, click on the **OK** button.
12. Reboot the system.

Appendix

A

Programming the Watchdog Timer

Programming

An onboard watchdog timer reduces the chance of disruptions which CPLD (Compact Programmable Logical Device) interface can cause. This is an invaluable protective device for standalone or unmanned applications. When the watchdog timer activates (CPU processing has come to a halt), it can reset the system, or generate an interrupt on IRQ10, IRQ11, IRQ15, and NM1. This can be set via I/O Port 444, the function as following:

0: RESET
1: NM1
2: IRQ10
3: IRQ11
4: IRQ15

If you decide to program the watchdog timer, you must write data to I/O port 443 (hex). The output data is a value timer. You can write form 01 (hex) to FF (hex) while simultaneously setting it. When you want to disable the watchdog timer, your program should read a Hex value from I/O port 80 (hex).

The following procesude is a sample program for the watchdog timer:

- Type C:\DOS\Debug <ENTER>
- To start watchdog timer and set function "Reset" type;

  o 444 0<Enter>; out 444h data 0
- To input Watchdog timers time-out interval of 5 seconds type;
  o 443 05<Enter>; out 443h data 05
- To disable the watchdog timer type;

  i 80 <Enter>

The time interval data of the watchdog timer is shown in binary code (8 bits).

Sample 2: 5 seconds

0	0	0	0	0	1	0	1