

## **AES-6100B**

Compact Size PC

VIA Eden™ 667MHz CPU

With Ethernet, Audio, USB

CompactFlash™, PCMCIA

In a light weight and small size



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## Packing List

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

- 1 AES-6100B Compact Size PC
- 2 Mounting Bracket
- 1 Accessory Kit
- 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**

---

Compact Size PC AES-6100B, the lunch-box sized computer, is a heavy-duty steel full-functioned solution. A special design of power connection is offered. One choice is to implement DC power from vehicle, CNC, PLC and etc. directly to the DC power connection on the side of the chassis. Another choice is to implement the power adapter that AC power is transformed to DC power. Above this, the wall mounts come with the chassis give the convenience of placing the computer.

Equipped with VIA Eden™ 667MHz microprocessor and VIA ProSavage™ PN133 chipset, AES-6100B performs as an efficient system with low power consumption. Apart from the powerful central processor unit, a variety of expansion I/O connectors are offered for unlimited function extension. On the rear side of the chassis, there are four serial D-Subs, a printer D-Sub, a CRT D-Sub, a RJ-45 LAN connector, four USB ports, PS/2 keyboard and mouse mini-dins and three audio connectors. Also, on the side of the chassis, there are CompactFlash™ slot and PCMCIA slots. All these provide the enjoyable plug and play for users. In addition to, there is a PC/104 expansion socket onboard inside the chassis, giving further function expansion freedom such as wireless LAN.

The sized 11.41" x 2.56" x 7.87" and weighted 6.3lb only system computer is excellent for quite running, mobile and high expansion applications with security required. AES-6100B makes the easy-to-carry and comprehensive computer system solution suitable for various industry applications.

## 1.2 Features

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- VIA Eden 667MHz processor
- VIA VT8606 chipset with integrated AGP 4X graphic accelerator
- 10/100Mbps Fast Ethernet
- Supports CompactFlash™ Memory and Type II PCMCIA Slots
- Supports PC/104 expansion interface

## 1.3 Specifications

---

### System

- |                         |                                                                      |
|-------------------------|----------------------------------------------------------------------|
| • CPU                   | VIA Eden 667MHz mobile CPU                                           |
| • System Memory         | SDRAM DIMM 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<br>Type II PCMCIA Slots                    |
| • Hard Disk Storage     | 2.5" HDD Bay x 1                                                     |
| • Watchdog Timer        | Generate a system reset.                                             |
| • Expansion Interface   | PC/104 socket                                                        |
| • Battery               | Lithium battery                                                      |
| • H/W Status Monitoring | Supports power supply voltages, fan speed and temperature monitoring |



- Construction Heavy-duty steel chassis
- Power Supply 100W ATX Power
- Dimensions With power supply --  
11.41" (W) x 2.56" (H) x 7.87" (D)  
(290mm x 65mm x 200mm)  
Without power supply --  
9.08" (W) x 2.56" (H) x 7.87" (D)  
(230mm x 65mm x 200mm)
- Gross Weight 8.15lb (3.7kg)
- Operating temperature 32°F ~ 113°F (0°C ~ 45°C)
- Storage temperature -4°F ~ 158°F (-20°C ~ 70°C)
- Operating humidity 5% ~ 90% @ 40C, non-condensing
- Storage humidity 5% ~ 95%

## I/O

- MIO Serial Port (RS-232) x 3, Serial Port (RS-232/422/485) x 1, PS/2 Keyboard x 1, PS/2 Mouse x 1, Parallel x 1
- Audio Mic in / Line in/ Line out
- USB USB 1.1 port x 4

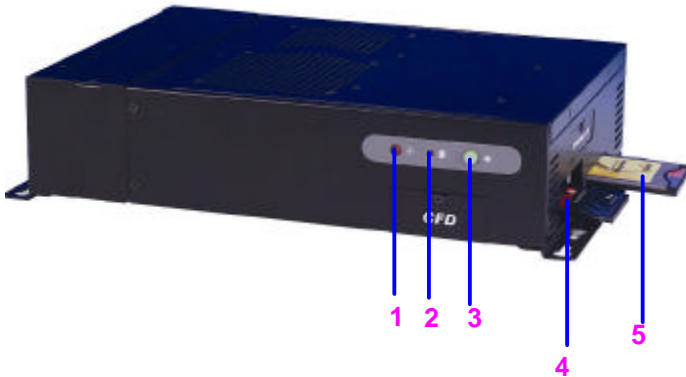
## Display

up to 1600 x 1200@ 16bpp colors for CRT

## 1.4 General System Information

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### Front Panel:



#### 1. Reset Button

#### 2. HDD LED

Light On: HDD is reading data

Light Off: HDD is idle

#### 3. Power Switch

Light On: Power On

Light Off: Power Off

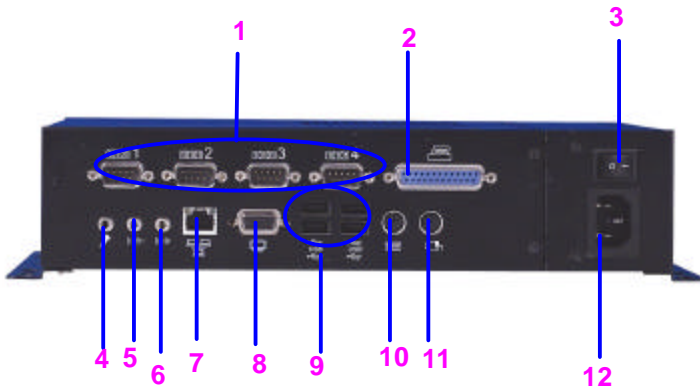
#### 4. Type II CompactFlash Slot

#### 5. Type II PCMCIA Slot

#### 6. DC Power Connector

#### 7. ATX Power Connector



**Rear Panel:**

- 1. COM Ports**
- 2. Printer Port D-Sub**
- 3. Power Switch**
- 4. Mic-In**
- 5. Line-In**
- 6. Line-Out**
- 7. RJ-45 Ethernet Connector**
- 8. CRT D-Sub**
- 9. USB Ports**
- 10. PS/2 Keyboard Mini-Din**
- 11. PS/2 Mouse Mini-Din**
- 12. Power Connector**

Compact Size PC

AES-6100B

Chapter

2

# Quick Installation Guide



## 2.1 Safety Precautions

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**Warning!**

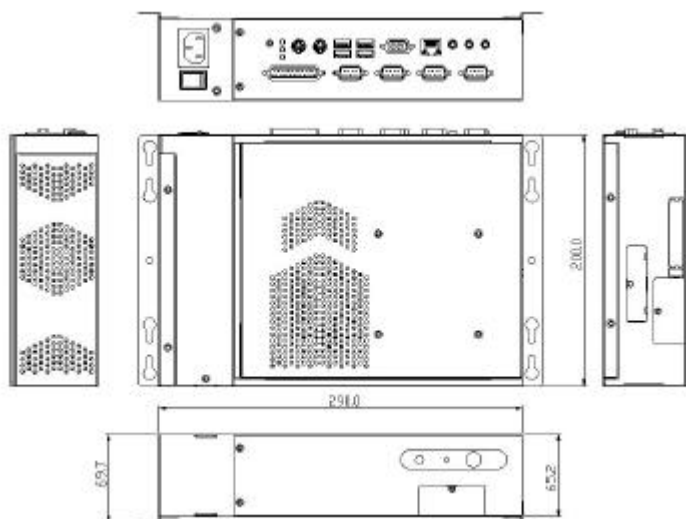
*Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

**Caution!**

*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 Open the Chassis

---

1. Unscrew two screws on the side of the chassis.



2. Slide the open lid to the right.



3. One hand holds the open lid and the other hand plug out the fan cable.



4. Remove the open lid and the chassis is now opened.





## 2.4 Install DRAM Module

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1. The DRAM DIMM locates on the left side of the chassis.



2. Carefully insert the DRAM module into the slot as demonstrated.



## 2.5 Install Mini Hard Disk

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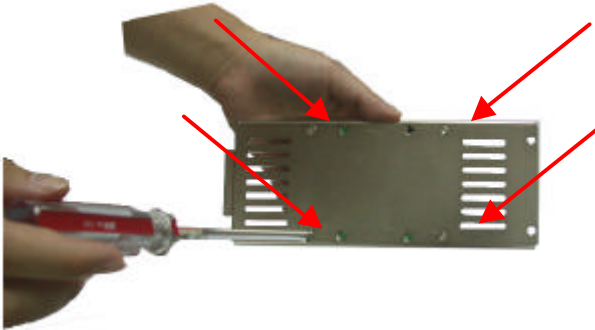
1. Lift up the hard disk holder as demonstrated.



2. Place the mini hard disk on the rear side of the hard disk holder.



3. To locate the mini hard disk firmly, screw in four screws as pointed below.



4. To connect the IDE cable with the single board computer, insert the 40-pin connector into the blue IDE socket as demonstrated.



5. Connect the hard disk power connector to the power module as demonstrated.



6. Connect the IDE cable with the mini hard disk via the 40-pin connector as demonstrated.



7. Finally, place the hard disk holder back its placement as demonstrated.



## 2.6 PC/104 Socket

---

- ❑ PC/104 socket is located on the single board computer, right behind the front panel of the chassis.



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-6100B 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.



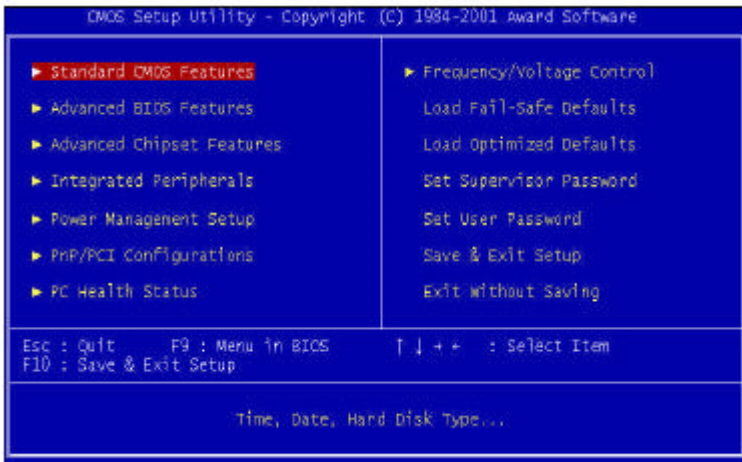
## 3.2 Award BIOS setup

---

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.

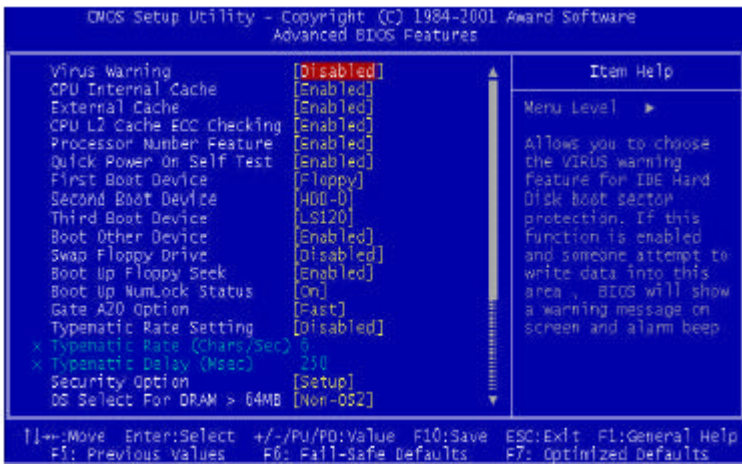
### 3.3 Standard CMOS Features

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.



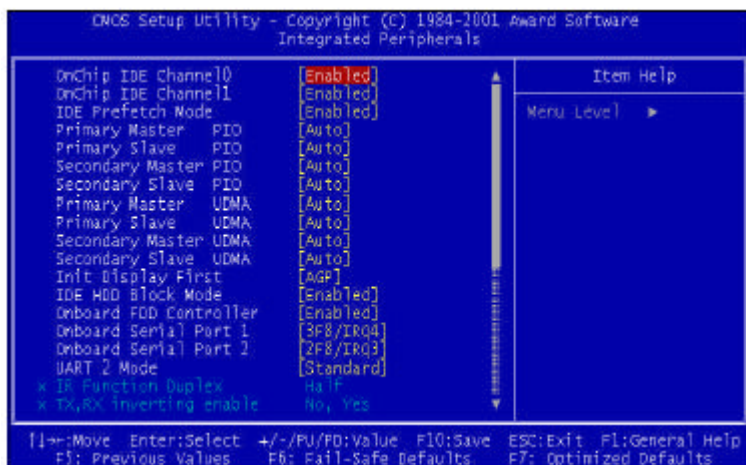
### 3.5 Advanced Chipset Features

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



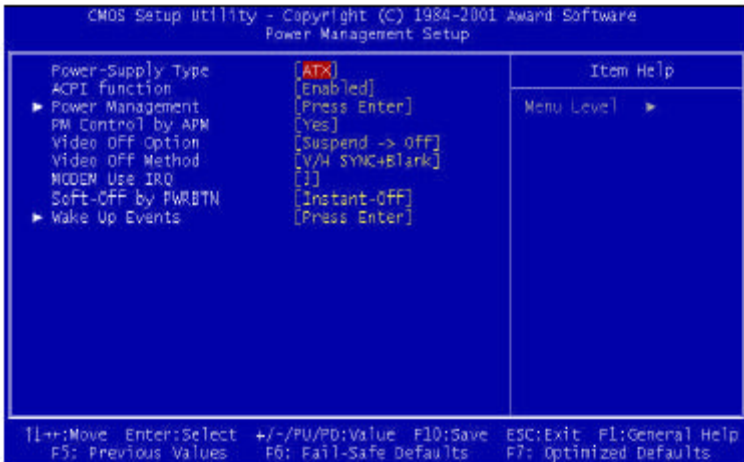
### 3.6 Integrated Peripherals

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



### 3.7 Power management setup

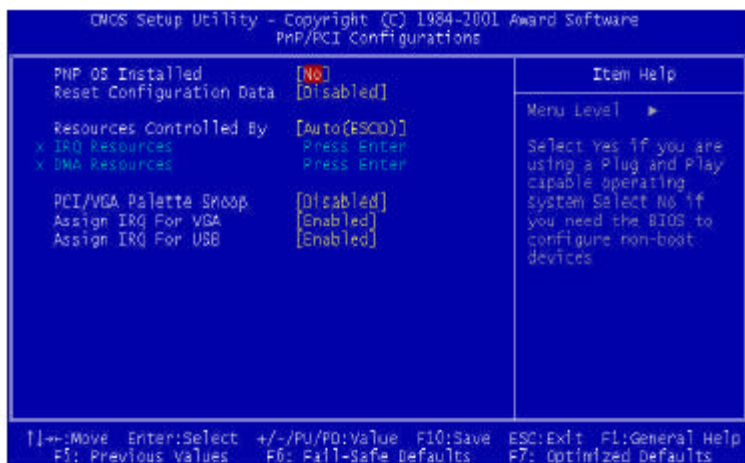
By choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, the screen below is displayed.





### 3.8 PnP/PCI configuration

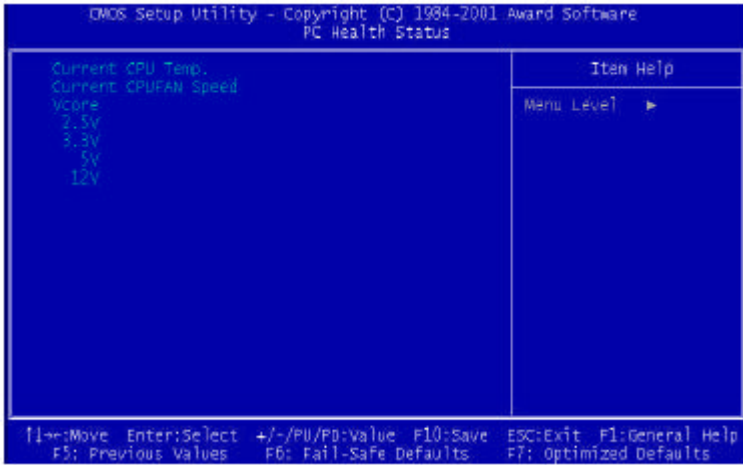
By choosing the PnP/PCI configurations from the Initial Setup Screen menu, the screen below is displayed.



### 3.9 PC Health Status

---

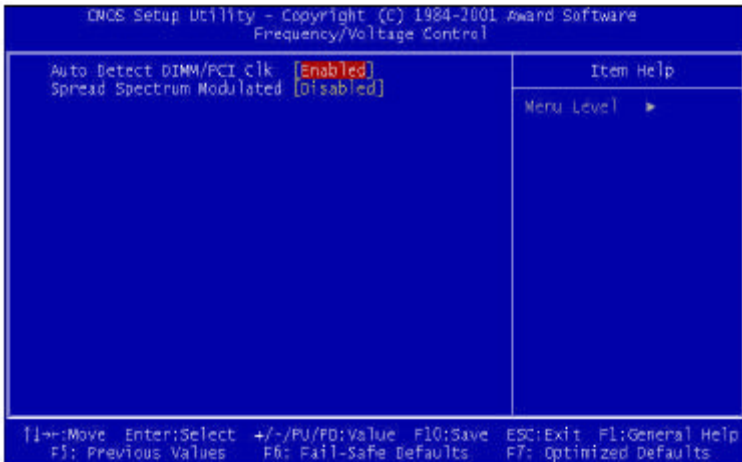
By choosing the PC Health Status from the Initial Setup Screen menu, the screen below is displayed.



### 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-6100B 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 System Driver

Step 2 – Install VGA Driver

Step 3 – Install LAN Driver

Step 4 – Install Audio Driver

## 4.1 Installation:

---

### **Applicable for Windows 2000/98/ME**

1. Insert the AES-6100B 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.



Appendix

A

# Programming the Watchdog Timer

## Programming

---

```
=====**
** Title   : WatchDog Timer Setup Utility (for W83977 GP16)  **
** Company : AAeon Technology Inc.                          **
** Compiler : Borland C ++ Version 3.0                      **
**=====*/

#include <dos.h>
#include <io.h>
#include <bios.h>
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>

/* Set I/O Address : 370/371 or 3F0/3F1 */
#define IO_INDEX_PORT    0x370
#define IO_DATA_PORT     0x371

/* Set Watchdog reset pin : 12/13/16 */
#define watch_dog_output_GP 16

#define UNLOCK_DATA      0x87
#define LOCK_DATA        0xAA
#define DEVICE_REGISTER  0x07
```

```
void EnterConfigMode()
{
    outportb(IO_INDEX_PORT, UNLOCK_DATA);
    outportb(IO_INDEX_PORT, UNLOCK_DATA);
}

void ExitConfigMode()
{
    outportb(IO_INDEX_PORT, LOCK_DATA);
}

void SelectDevice(unsigned char device)
{
    outportb(IO_INDEX_PORT, DEVICE_REGISTER);
    outportb(IO_DATA_PORT, device);
}

unsigned char ReadAData(short int reg)
{
    outportb(IO_INDEX_PORT, reg);
    return (inportb(IO_DATA_PORT));
}
```

```
void WriteAData(unsigned char reg, unsigned char data)
```

```
{  
    outportb(IO_INDEX_PORT, reg);  
    outportb(IO_DATA_PORT, data);  
}
```

```
void SetWatchDogTime(unsigned char time_val)
```

```
{  
    EnterConfigMode();  
    SelectDevice(8);  
    //Set Register F2  
    //Set Watch-Dog Timer 1~ 256  
    WriteAData(0xF2, time_val);  
    // set counter counts in second (or minute)  
    // Register F4 Bit 6 = 0/1 (minutes/seconds)  
    // For w83977EF only  
    WriteAData(0xF4, 0x40);  
    ExitConfigMode();  
}
```

```
void init_w83977tf_aw_watchdog()
```

```
{  
    short int value;  
  
    //Enter W83977 Configure Mode  
    EnterConfigMode();  
}
```

```
//Select Device 7
SelectDevice(7);
//Set Device Active
WriteAData(0x30, 0x01);

//caution:skip this step will be a mistake!!
if (watch_dog_output_GP==12)
{
    //Set Register E2 to define GP12
    WriteAData(0xE2, 0x0A);
}
else if(watch_dog_output_GP==13)
{
    //Set Register E3 to define GP13
    WriteAData(0xE3, 0x0A);
}
else if(watch_dog_output_GP==16)
{
    //Set Register E6 to define GP16
    WriteAData(0xE6, 0x0A);
}
```

```
//Select Device 8
SelectDevice(8);
//Set Register F3
//keyboard and mouse interrupt reset Enable
//When Watch-Dog Time-out occurs,Enable POWER LED output
WriteAData(0xF3, 0x0E);

//caution:skip this step will be a mistake!!
if (watch_dog_output_GP==12)
{
//Set Register 2A (PIN 57) Bit 7 = 0/1 (KBLOCK/GP12)
//set to GP12 for WD Rst
WriteAData(0x2A,ReadAData(0x2A)|0x80);
}
else if(watch_dog_output_GP==13)
{
//Set Register 2B (PIN 58) Bit 0 = 0/1 (KBLOCK/GP13)
//set to GP13 for WD Rst
WriteAData(0x2B,ReadAData(0x2B)|0x01);
}
else if(watch_dog_output_GP==16)
{
//Set Register 2C (PIN 119) Bit 5-4 = 01 (GP16)
//set to GP16 for WD Rst
WriteAData(0x2C,ReadAData(0x2C)|0x10);
```

```
    }

    //Exit W83977 Configure mode
    ExitConfigMode();

}

void main(int argc, char* argv[])
{
    int time_value=0;
    char *ptr;
    printf("winBond 83977 WatchDog Timer Setup Utility Version
1.0 \n");
    printf("Copyright (c) 2000 AAEON Technology Inc.\n");
    printf("This version only for W83977 that using GP%d to Reset
System.\n",watch_dog_output_GP);

    if(argc == 1)
    {
        printf("\n Syntax: WATCHDOG [time] \n");
        printf(" time range : 1 ~ 256 \n\n");
        return ;
    }
    if (argc > 1)
    {
        ptr = argv[1];
```

```
        time_value = atoi(ptr);
    }
    if (time_value > 0 && time_value < 256)
    {
        SetWatchDogTime((unsigned char) time_value);
        init_w83977f_aw_watchdog();
        printf("Watch Dog Timer set up : %d \n",time_value);
    }
}
```