

**AOP-8120**

Ultra Low Voltage Intel® Processor  
Based Fanless Operator Panel PC  
with 12.1" TFT LCD

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## Packing List

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

- 1 AOP-8120 series Fanless Panel PC
- 1 Mount brackets and screws for panel mount
- 1 Power cord (Optional)
- 1 CD-ROM for manual (in PDF format) and drivers

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

**Warning**

1. Use a 3 V @ 200 mA lithium battery
2. Packing: please carry the unit with both hands, handle with care
3. Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with a dry applicator
4. Do not remove CompactFlash storage card while reading from or writing into the storage card.

## Safety & Warranty

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1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For plug-in equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over voltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the users manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.
15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.
16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

**DISCLAIMER:** This set of instructions is given according to IEC 704-1. AAEON disclaims all responsibility for the accuracy of any statements contained herein.

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Chapter

1

# General Information

## Introduction

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The AOP-8120 panel PC is a Ultra Low Voltage Low power Celeron processor computer that is designed to serve as a human machine interface (HMI) and as a multimedia computer. It is a PC-based system with 12.1" color TFT LCD display, on-board Ethernet controller, multi-COM port interfaces and an audio controller. With a built-in internal IDE connectors, the AOP-8120 is as compact and user friendly as a multi-function computer. In addition, its "fit anywhere" design makes it very flexible and able to be used in many different kinds of installations. It can be wall mounted, panel mounted or stood upright on a desktop.

For system integrators, this simple, complete, compact and highly integrated multimedia system let you easily build a panel PC into your applications. Common industrial applications include factory automation systems, precision machinery, and production process control. It is also suitable for many non-industrial applications, including interactive kiosk systems, entertainment management, and car park automation. Our panel PC is a reliable, cost-effective solution to your application's processing requirements.

## Specification

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### System

- CPU Onboard Ultra Low Voltage Intel® Celeron® processor 650MHz
- Memory Supports up to 1GB DDR SDRAM
- LCD / CRT Controller VIA CLE266, share up to 32MB
- Ethernet Realtek 8100BL 10/100Base-TX RJ-45 connector x 1;  
Realtek 8100C 10/100Base-TX RJ-45 connector x 1 or 8110S (Optional) 10/100/1000Base-TX RJ-45 connector x 1 (Optional)
- I/O Port 3 serial ports: 2 x RS-232, 1 x RS-232/422/485 (COM 4 is reserved for touch screen)  
1 parallel port (supports ECP/EPP)  
1 PS/2 mouse port  
1 PS/2 keyboard port  
1 VGA port  
4 USB 2.0 ports  
Mic in, Line in, Line out, S/P DIF out  
1 digital I/O (support up to 8 in or 8 out)

- Storage Disk Drive Anti-vibration 2.5" HDD
- Expansion Slot 1 x Mini PCI slot, 1 x CompactFlash Slot
- OS Support Windows 2000, Windows XP, Windows CE Net 4.2 (optional), Windows XP Embedded (optional)

### Mechanical

- Construction Plastic chassis (IP65 certified front panel)
- Front Panel Color PMS 2965C (Dark Blue)
- Mounting Panel Mount, VESA 100mm holes
- Dimension 12.5" (W) x 9.6" (H) x 2.5" (D)  
(317mm x 243mm x 64mm)
- Carton Dimension 13" (W) x 12.8" (H) x 8.3" (D)  
(330mm x 320mm x 210mm)
- Gross Weight 10 lb (4.5 Kg)

### Environmental

- Operating Temperature 32°F~104°F (0°C~40°C)
- Storage Temperature -4°F~140°F (-20°C~60°C)
- Operating Temperature 10 to 90%@35°C, non-condensing
- Vibration Random operation 1G, 5~500Hz

- Shock 15G peak acceleration (11 msec. duration)
- EMC CE/FCC Class A

### Power Supply

- AC Input 65W (standard offer)  
Input: 90V AC ~264V AC@47~63Hz  
Output: +5V@5.5A, +12V@2.8A,

### LCD

- |                   | <b>AOP-8120HT series</b> | <b>AOP-8120WT series</b> |
|-------------------|--------------------------|--------------------------|
| • Model           |                          |                          |
| • Display Type    | 12.1" color TFT LCD      | 12.1" color TFT LCD      |
| • Max. Resolution | 800 x 600                | 800 x 600                |
| • Max. Colors     | 256K                     | 256K                     |
| • Dot Size        | 0.3075mm x 0.3075mm      | 0.3075mm x 0.3075mm      |
| • Luminance       | 200 cd/m <sup>2</sup>    | 350 cd/m <sup>2</sup>    |
| • Viewing Angle   | 90° (H) 40° (V)          | 140° (H) 120° (V)        |

**Note:** All AAEON's LCD products are manufactured with High precision technology. However, in all LCD panels there maybe a small number of defective pixels that do not change color. This is a normal occurrence for all LCD displays from all manufacturers and should not be noticeable or objectionable under normal operation. AAEON qualify the LCD panel following industry standard: total 7 dead pixels on a screen or if there are 3 within 1 inch square area of each other on the display.

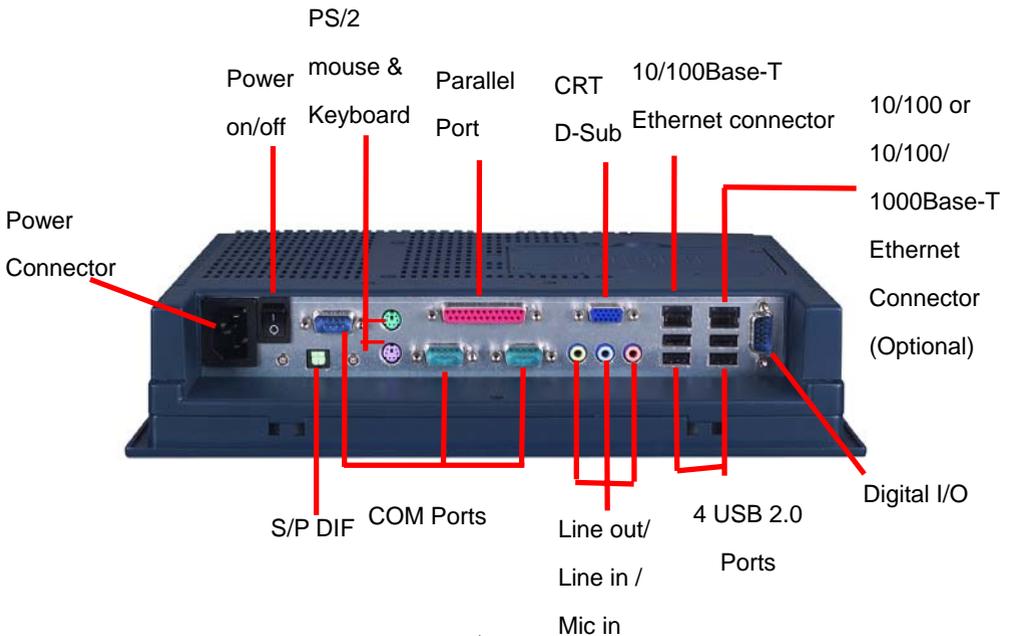
**Touch screen**

- Type 8-wire, analog resistive
- Resolution 2048 x 2048
- Light Transmission 78%
- Lifetime 1 million activations
- OS Support Windows 2000, Windows XP,  
Optional: Windows CE Net 4.2,  
Embedded Windows XP

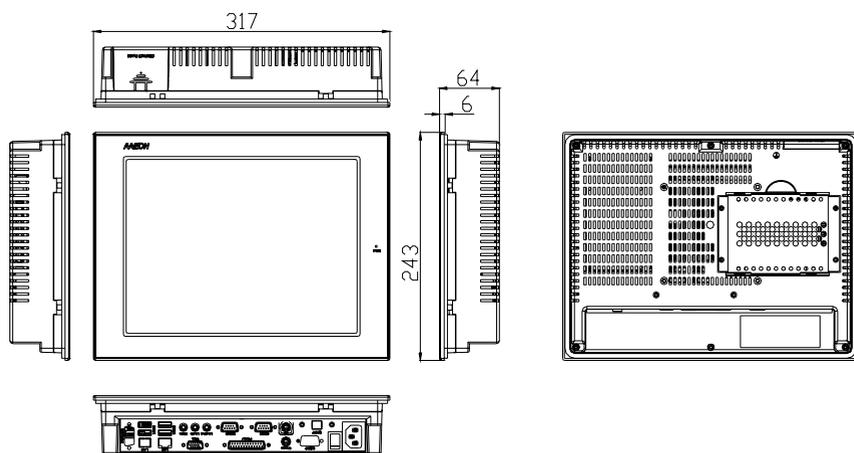
Front Side



Rear Side



## Dimension



Chapter

2

**Hardware  
Installation**

## 2.5" Hard Disk Drive Installation

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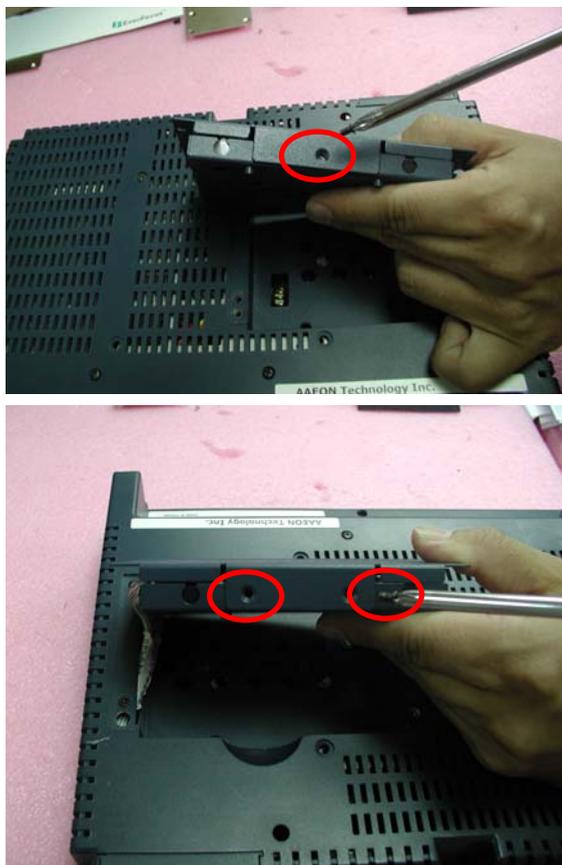
We'll show you how to install the Hard Disk Drive into the Panel PC. When you prepare the following items at hand, you can start to your installation.



Step 1: Plug the HDD with the cable and locate the two iron brackets over the HDD.



Step 2: Fix two iron brackets with the screws.



Step 3: Place the HDD with the iron bracket into the concave and fix the HDD with the screws.



## Panel Mount Installation

The display panel can be mounted into the wall. You will need the screws along with the mounting brackets, which be packed in the accessory box.

Follow the steps below:

Before you start to follow the instructions, please place the display panel into the wall. See the following illustration on the left.

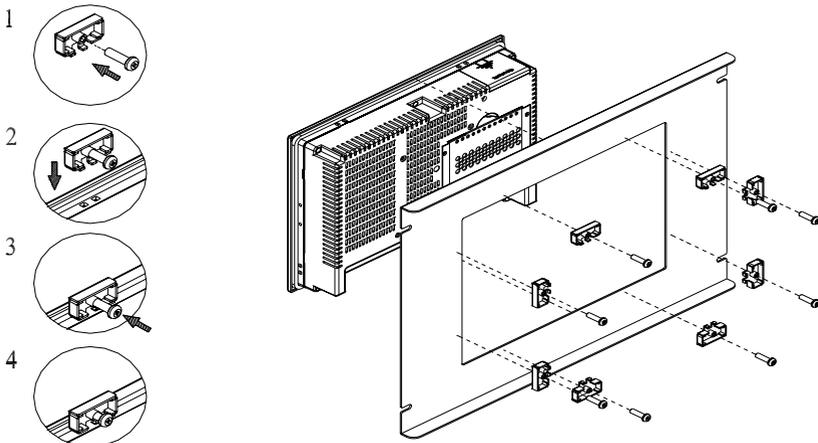
Step 1: Place the mounting brackets and plug the screw.

Step 2: Aim the mounting set at the hole on the monitor.

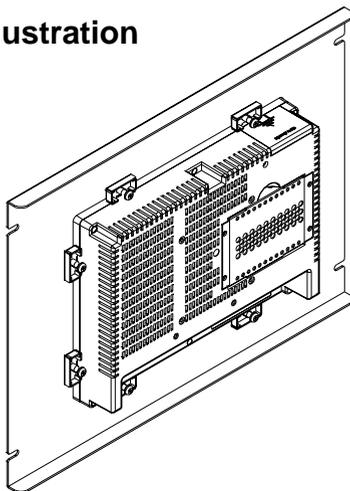
Step 3: Fix the monitor with the mounting set by screwing it.

Step 4: You've completed the preliminary when the mounting set is tightened.

Next, repeat the steps and tighten all mounting set around the monitor until the monitor is firmly mounting on the wall.



## Complete Illustration



**Digital I/O 8 bit Connector (CN9)**

Pin	Signal	Pin	Signal
1	DIN1	2	DIN2
3	DIN3	4	DIN4
5	DOUT1	6	DOUT2
7	DOUT3	8	DOUT4
9	+5V	10	GND

**AOP-8120 (D-SUB 15P Male)**

Pin	Signal	Pin	Signal
1	DIN1	2	DIN2
3	DIN3	4	DIN4
6	DOUT1	7	DOUT2
8	DOUT3	9	DOUT4
11	+5V	12	GND

**COM2 RS-232/422/485 Selection (JP4 & JP5)**

JP4	JP5	Function
1-2, 4-5, 7-8, 10-11	1-2	RS-232 (Default)
2-3, 5-6, 8-9, 11-12	3-4	RS-422
2-3, 5-6, 8-9, 11-12	5-6	RS-485

Chapter

3

# BIOS Installation

## System Test and Initialization

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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 AOP-8120 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.

## 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**

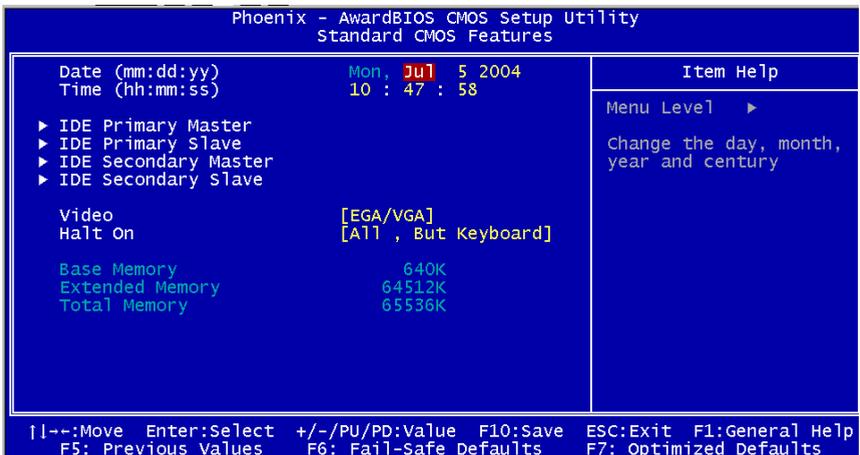
Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

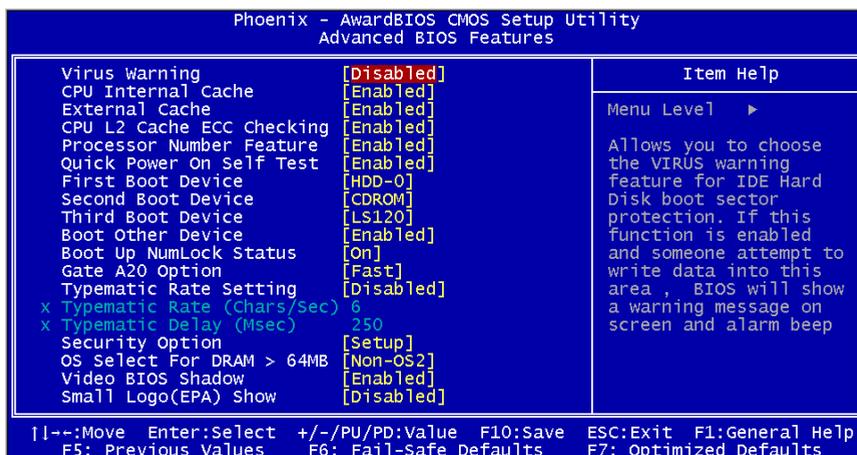
## Standard CMOS Features

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.



## Advanced BIOS Features

By choosing the Advanced BIOS Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120

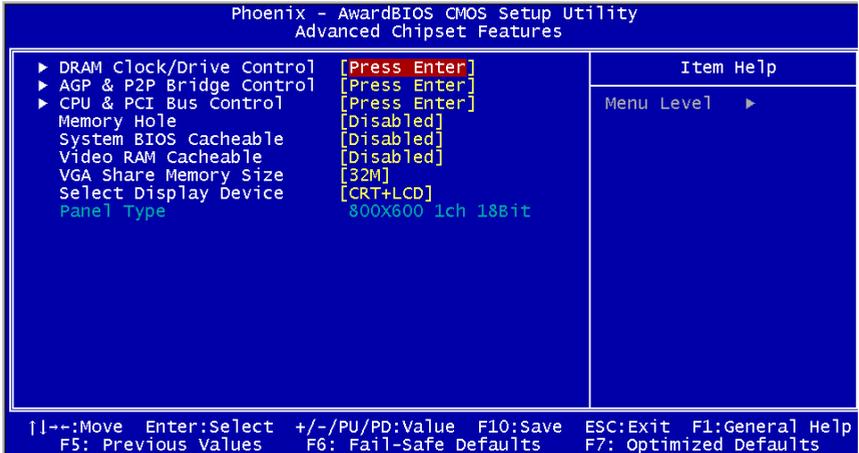


### Note:

If you have a CFD plug in the CFD slot, you cannot boot OS from USB-HDD.

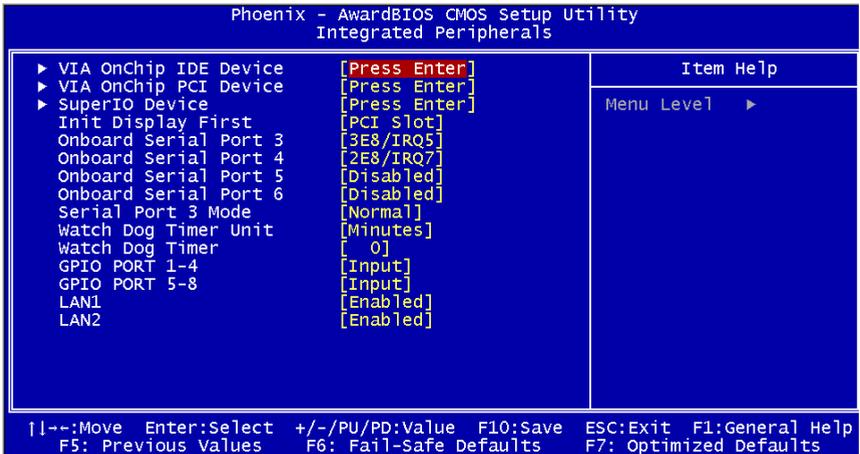
## Advanced Chipset Features

By choosing the Advanced Chipset Features option from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.



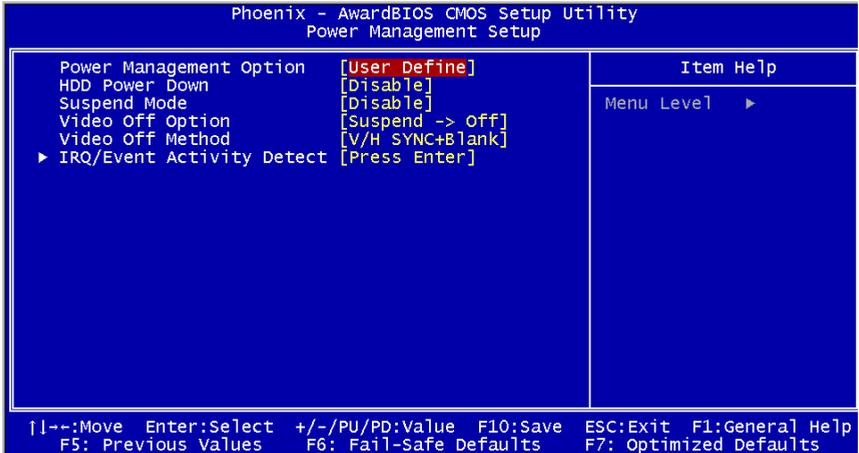
## Integrated Peripherals

By choosing the Integrated Peripherals from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.



## Power management Setup

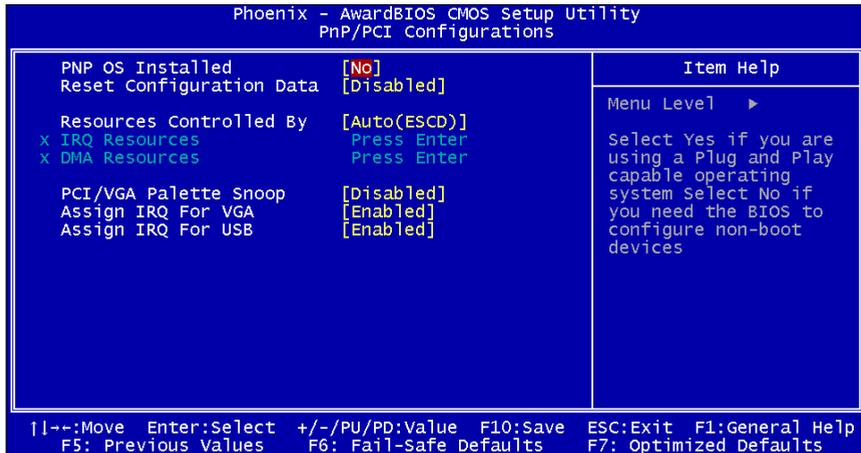
By choosing the Power Management Setup from the INITIAL SETUP SCREEN menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.



This board cannot support hibernate mode in the operation system.

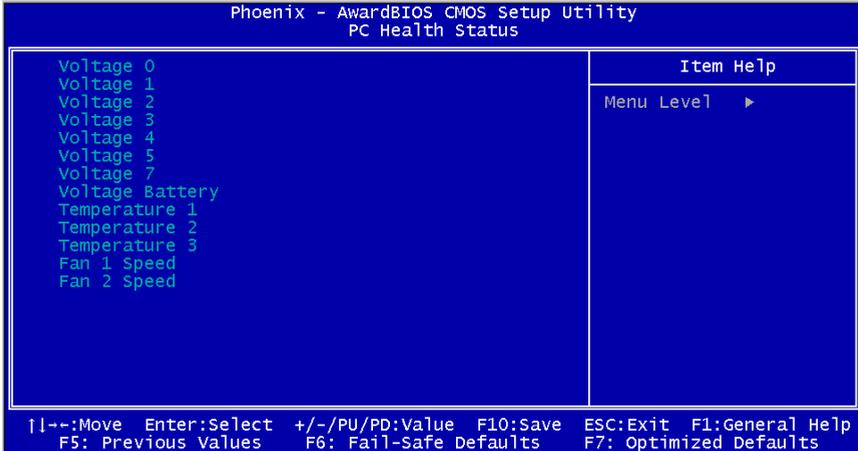
## PnP/PCI configuration

By choosing the PnP/PCI configurations from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.



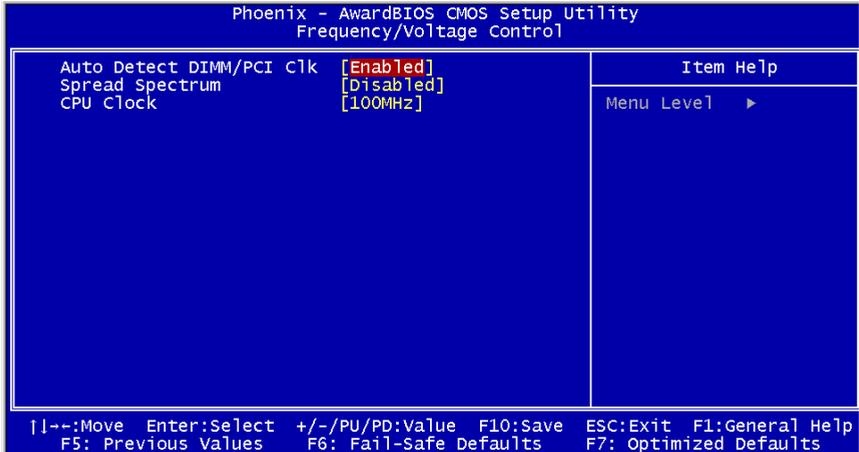
## PC Health Status

By choosing the PC Health Status from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.



## Frequency/Voltage control

By choosing the Frequency/Voltage Control from the Initial Setup Screen menu, the screen below is displayed. This sample screen contains the manufacturer's default values for the AOP-8120.

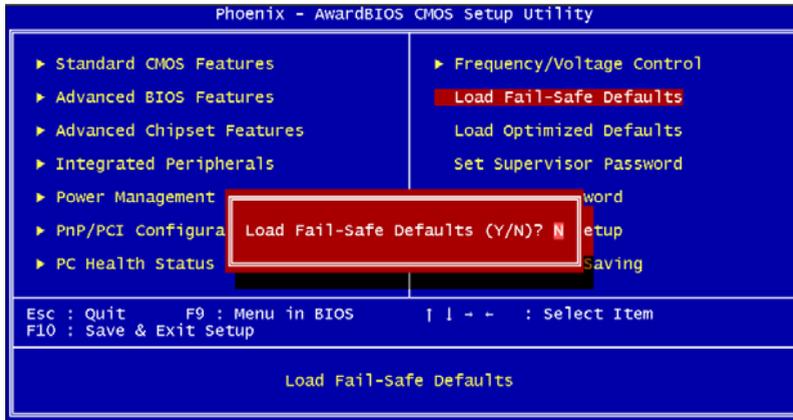


## Load Fail-Safe Defaults

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.

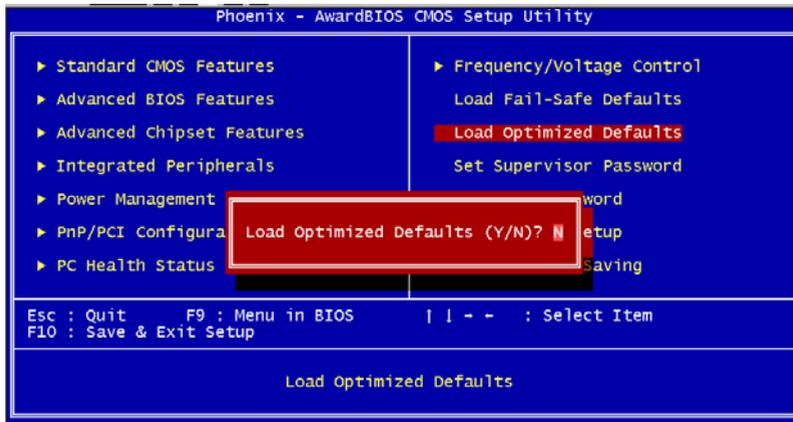


## Load Optimized Defaults

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.



## 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.

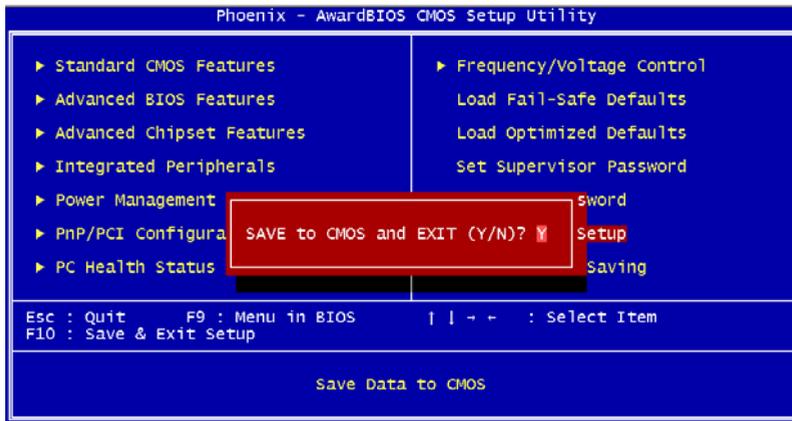
### NOTE:

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



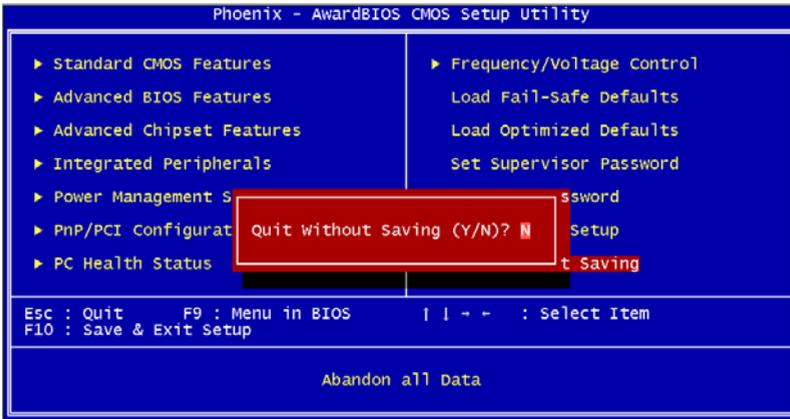
## Save & Exit Setup

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.



## 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 AOP-8120 comes with a CD-ROM that contains all drivers and utilities that meet your needs.

***Follow the sequence below to install the drivers:***

Step 1 – Install VIA 4in1 Update for Windows 9x-XP

Step 2 – Install VIA CLE266 Graphics Driver

Step 3 – Install Realtek 8100BL/8110S Driver.

Step 4 – Install Realtek ALC655 codec Driver

Step 5 – Install USB Driver

Step 6 – Install Touch screen Driver

USB 2.0 Drivers are available for download using Windows Update for both Windows XP and Windows 2000. For additional information regarding USB 2.0 support in Windows XP and Windows 2000, please visit [www.microsoft.com/hwdev/usb/](http://www.microsoft.com/hwdev/usb/).

Please read instructions below for further detailed installations.

## Installation

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Insert the AOP-8120 CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 6 in order.

Step 1 – Install VIA 4 in 1 for Windows 9x-XP

1. Click on the **4 in 1** folder and then double click on the **VIAHyperion4in1451v.exe**.
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.

Step 2 – Install VIA CLE266 Graphics Driver

1. Click on the VGA folder and select the system ,VGA Functions (Rotation/Simult/Wishld ) then double click Setup.exe.
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.

Step 3 – Install Realtek 8100BL/8110S LAN Driver.

1. Click on the **LAN** folder and select chip , system then double click on the **Setup.exe**.
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.

Step 4 – Install Realtek ALC655 codec Driver

1. Click on the **Audio** folder and then double click on the

***Wdm\_a361.exe.***

2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.

**Note:**

Under the Window OS environment, if the CRT connector is connected to display monitor by the data switch device, the user need to set the color and resolution from Intel Graphic utility (VGA driver) instead of setting from the control panel in case of the wrong display appearance.

**Step 5 – Install USB Driver.**

1. Click on the **USB** folder and select chip, system then double click on the **Setup.exe**.
2. Follow the instructions that the window will show you.
3. The system will help you install the driver automatically.

**Step 6 – Install Touch screen Driver.**

1. Click on the **Touch screen** folder and select chip, system then double click on the **Setup.exe**.
  2. Follow the instructions that the window will show you.
  3. The system will help you install the driver automatically.
- Please see the following route for Touch screen driver Installation Manual:  
**CD-ROM:// Driver // System // AOP-8120 // Touch screen**

## FAQ

---

### 1. Installing Windows 2000 from a USB CD-ROM Drive May Cause a "Stop 0x7B" Error

#### Answer:

Only if you install Windows 2000 SP3 version, the error will be automatically corrected.

Categorized List of Fixes in Windows 2000 Service Pack 3 (SP3)  
<http://support.microsoft.com/default.aspx?scid=%2fsupport%2fservicepacks%2fwindows%2f2000%2fsp3fixlist.asp>

Q294820 - Installing Windows 2000 from a USB CD-ROM Drive May Cause a "Stop 0x7B" Error  
<http://support.microsoft.com/default.aspx?scid=kb;en-us;294820>

PSS ID Number: 294820

Article Last Modified on 5/28/2003

The information in this article applies to:

Microsoft Windows 2000 Server SP1

Microsoft Windows 2000 Server SP2

Microsoft Windows 2000 Advanced Server SP1

Microsoft Windows 2000 Advanced Server SP2

Microsoft Windows 2000 Professional SP1

Microsoft Windows 2000 Professional SP2

This article was previously published under Q294820

### **SYMPTOMS**

If you are using a Universal Serial Bus (USB) CD-ROM drive to install Windows 2000 on certain legacy-free computers, you may receive a "Stop 0x0000007B" Inaccessible\_boot\_device error message while booting from the installation CD. Because many legacy-free computers do not have a standard CD-ROM drive or floppy disk drive, the USB CD-ROM drive may be the only method for installing or recovering Windows.

### **CAUSE**

Windows 2000 Setup does not support certain USB CD-ROM drives as bootable devices. This causes error message during the Text-mode portion of Setup.

### **RESOLUTION**

Please contact your computer manufacturer for information about obtaining updated Windows 2000 Setup disks that you can use to boot your computer with a USB CD-ROM device.

### **STATUS**

Microsoft has confirmed that this is a problem in the Microsoft products that are listed at the beginning of this article.