

AOP-9120

Intel® Atom N270 Processor
12.1" XGA 200nits color TFT LCD
10/100/1000Base-TX Ethernet
4 COM/ 4 USB2.0
1 VGA/ 1 DVI
Mic-in, Line-out

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Packing List

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

- 1 AOP-9120 Operator Panel PC
- 10 Mount brackets and screws
- 1 Power cord (Optional)
- 1 Transfer Board for CD-ROM
- 1 CD-ROM for manual (in PDF format) and drivers

If any of these items are missing or damaged, you should 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

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.

Below Table for China RoHS Requirements
 产品中有毒有害物质或元素名称及含量
 AAEON Panel PC/ Workstation

| 部件名称 | 有毒有害物质或元素 | | | | | |
|--|-----------|-----------|-----------|-----------------|---------------|-----------------|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 印刷电路板 及其电子组件 | × | ○ | ○ | ○ | ○ | ○ |
| 外部信号 连接器及线材 | × | ○ | ○ | ○ | ○ | ○ |
| 外壳 | × | ○ | ○ | ○ | ○ | ○ |
| 中央处理器 与内存 | × | ○ | ○ | ○ | ○ | ○ |
| 硬盘 | × | ○ | ○ | ○ | ○ | ○ |
| 液晶模块 | × | ○ | ○ | ○ | ○ | ○ |
| 光驱 | × | ○ | ○ | ○ | ○ | ○ |
| 触控模块 | × | ○ | ○ | ○ | ○ | ○ |
| 电源 | × | ○ | ○ | ○ | ○ | ○ |
| <p>O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。</p> <p>备注： 一、此产品所标示之环保使用期限，系指在一般正常使用状况下。 二、上述部件物质中央处理器、内存、硬盘、光驱、触控模块为选购品。</p> | | | | | | |

Contents

Chapter 1 General Information

| | |
|-------------------------|-----|
| 1.1 Introduction..... | 1-2 |
| 1.2 Feature | 1-3 |
| 1.3 Specification | 1-4 |
| 1.4 Dimension | 1-7 |

Chapter 2 Hardware Installation

| | |
|---|-----|
| 2.1 2.5" Hard Disk Drive (HDD) Installation | 2-2 |
| 2.2 Panel Mounting | 2-5 |
| 2.3 RS-232 PORT: COM1/COM3/COM4/COM5; RS-232/422/485 PORT: COM2 (MALE) | 2-7 |
| 2.4 VGA PORT (FEMALE) | 2-7 |
| 2.5 LAN0 & LAN1 PORT (FEMALE) | 2-7 |
| 2.6 USB2.0 PORT-USB0/1/2 (FEMALE) | 2-8 |

Chapter 3 Award BIOS Setup

| | |
|--|-----|
| 3.1 System Test and Initialization | 3-2 |
| 3.2 Award BIOS Setup. | 3-3 |

Chapter 4 Driver Installation

| | |
|------------------------|-----|
| 4.1 Installation | 4-3 |
|------------------------|-----|

Appendix A FAQ

| | |
|--------------|-----|
| A.1 FAQ..... | A-2 |
|--------------|-----|

Chapter

1

**General
Information**

1.1 Introduction

AOP-9120 operator panel PC is a high performance solution features all-in-one SBC with Intel[®] Atom[™] N270 1.6 GHz processor. That is designed to serve as a human machine interface (HMI) and as a multimedia computer. It is a PC-based system with true-color and wide-view-angle TFT LCD display. Moreover, it equips one Mini-PCI slot for expansion. Onboard Ethernet controller, multi-COM port interfaces, and DVI. 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.

1.2 Feature

- 12.1" TFT XGA TFT-LCD
- Onboard Intel® Atom™ N270 Processor
- Anti-Vibration Disk Drive Bay
- COM x 4, USB2.0 x 4, 10/100/1000Base-TX Ethernet
- TouchScreen, Mini-PCI Expansion
- Windows® XP Embedded, Windows® XP Pro For Embedded, and Windows® 7 support
- Slim Type Panel PC With Fanless Solution

1.3 Specification

System

- Processor 12.1" XGA (1024 x 768) color TFT LCD
- CPU Board Intel® Atom™ N270 1.6 GHz processor
- Memory DDR II DIMM x 1, Max. 2 GB (DDR II 400/533)
- LCD/CRT Controller Intel® 945GSE integrated
- Ethernet Realtek® 8111C for 10/100/1000Base-TX, RJ-45 x 2
- I/O Port RS-232 x 3, RS-232/422/485 x 1
USB2.0 x 4
VGA x 1
DVI x 1
PS/2 keyboard x 1, PS/2 mouse x 1
MIC-in, Line-out
- Storage Disk Drive Anti-vibration 2.5" Hard Disk Drive Bay
- Expansion Mini-PCI slot x 1
- OS Support Windows® XP Embedded, Windows® XP Pro for Embedded, Windows® 7

Mechanical

- Construction IP-65 plastic panel with metal back cover
- Color Black
- Mounting Panel mount/ VESA 75/100mm
- Dimension 12.5" (W) x 9.6" (H) x 2.5" (D) (317mm x 243mm x 63.4mm)
- Carton Dimension 20.67" (W) x 18.31" (H) x 9.1" (D) (525mm x 465mm x 230mm)
- Gross Weight 14.3 lb (6.5 kg)
- Net Weight 12.1 lb (5.5 kg)

Environmental

- Operating Temperature 32°F~104°F (0°C~40°C)
- Storage Temperature -4°F~122°F (-20°C~50°C)
- Operating Humidity 10% to 90% @ 35°C, non-condensing
- Vibration Random operation 1G, 5~500 Hz
- Shock 15G peak acceleration (11 msec. duration)
- EMC CE/FCC Class A

Power Supply

- AC-DC Input AC 100~230V
- DC-DC Input DC 12/24V

LCD

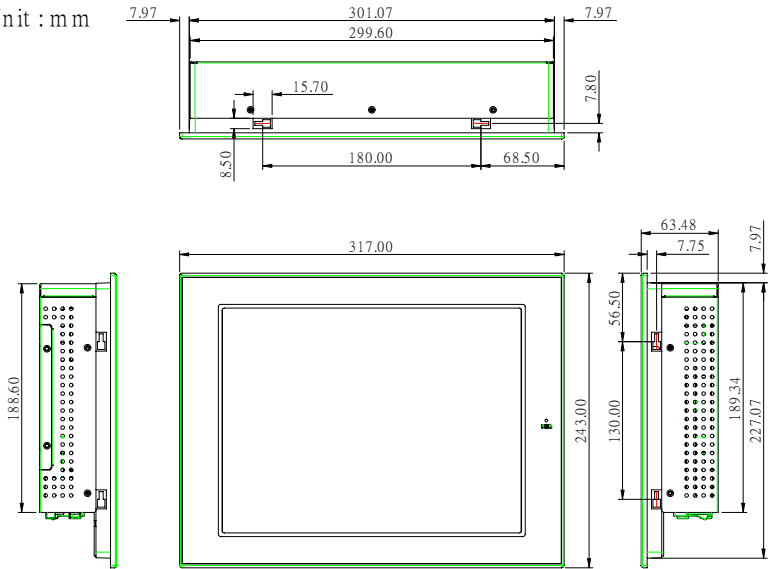
- Display Type 12.1"
- Max. Resolution 1024 x 768
- Max. Color 262K
- Dot Size 0.3075 x 0.3075
- Luminance (Typical) 200 nits
- View Angle 90° (H) x 70° (V)

Touch Screen

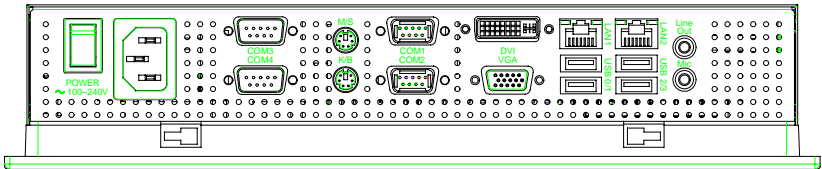
- Type 5-wire, analog resistive
- Resolution 2048 x 2048
- Light Transmission 80%
- Lifetime 35 million activations

1.4 Dimension

Unit : mm



I/O



Chapter

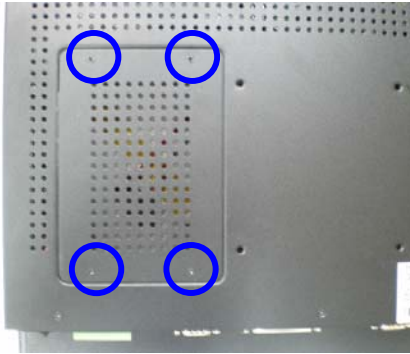
2

**Hardware
Installation**

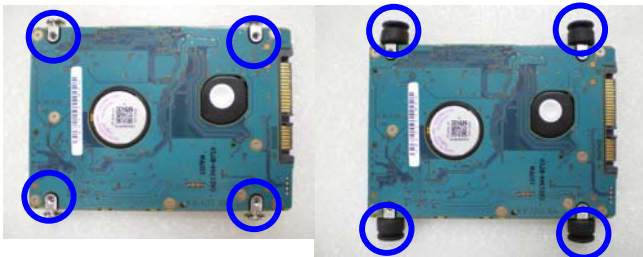
2.1 2.5" Hard Disk Drive (HDD) Installation

Pls follow instruction below to install the Hard Disk Drive into the Panel PC after preparing all required materials and components.

1. Remove four screws on the back cover as below and disassemble HDD cover (that is HDD drive bay of the unit).



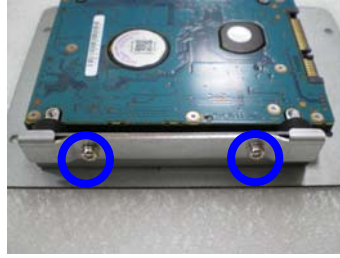
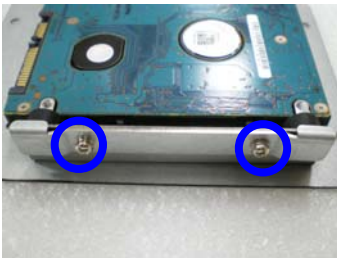
2. Get the 2.5" HDD ready and fasten the four screws on HDD and put the rubbers on screws



3. Place HDD with rubber into HDD Cover



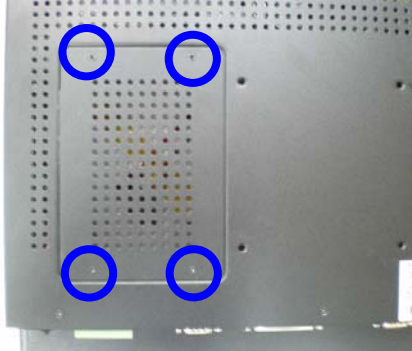
4. Fasten the two HDD brackets on the HDD cover with four screws



5. Connect the HDD cable



6. Fasten the four screws on back cover of the AOP-9120 to lock the HDD Cover with brackets



2.2 Panel Mounting

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:

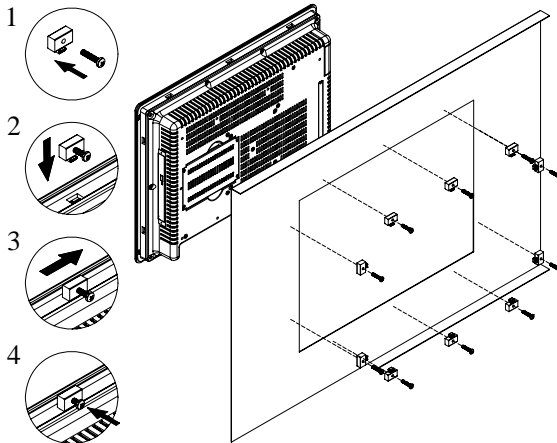
Before you start to follow the instructions, please place the display panel into the wall. See the following illustration on the left.

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

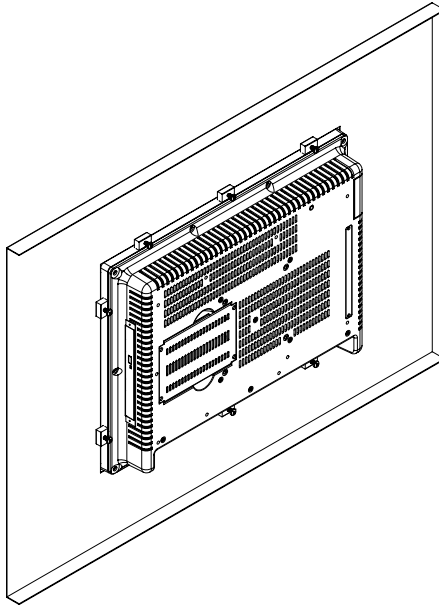
Step 2: Aim the mounting set at the hole on the monitor.

Step 3: Move the mounting set to the narrow gauge and fix it with screws.

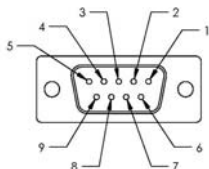
Step 4: You've completed the preliminary when the mounting set is tightened. Next, repeat the steps and tighten all mounting set around the monitor until the monitor is firmly mounting on the wall.



Complete Illustration



2.3 RS-232 PORT: COM1/ COM3/ COM4/ COM5; RS-232/422/485 PORT: COM2 (MALE)



| Pin | Signal | Pin | Signal |
|-----|------------------------------|-----|---------------------|
| 1 | RS-232DCD(422TXD-/ 485DATA-) | 2 | RS-232RXD(422RXD+) |
| 3 | RS-232TXD(422TXD+/485DATA+) | 4 | RS-232DTR (422RXD-) |
| 5 | RS-232 GND | 6 | RS-232 DSR |
| 7 | RS-232 RTS | 8 | RS-232 CTS |
| 9 | RS-232 RI / +5V / +12V | | |

2.4 VGA PORT (FEMALE)

| Pin | Signal | Pin | Signal |
|-----|-----------|-----|----------|
| 1 | RED | 2 | GREEN |
| 3 | BLUE | 4 | N.C. |
| 5 | GND | 6 | GND |
| 7 | GND | 8 | GND |
| 9 | +5V | 10 | GND |
| 11 | N.C. | 12 | DDC DATA |
| 13 | HSYNC | 14 | VSYNC |
| 15 | DDC CLOCK | | |

2.5 LAN 0 & LAN 1 PORT (FEMALE)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1 | TX+ | 2 | TX- |

Operator Panel**AOP-9120**

| | | | |
|---|--------------|---|--------------|
| 3 | RX+ | 4 | BI_D3+{GIGA} |
| 5 | BI_D3-{GIGA} | 6 | RX- |
| 7 | BI_D4+{GIGA} | 8 | BI_D4-{GIGA} |

2.6 USB2.0 PORT - USB 0/1/2 (FEMALE)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1 | +5 VDC | 2 | D- |
| 3 | D+ | 4 | GND |

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 AOP-9120 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 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 auto detect DIMM/PCI clock and spread spectrum.

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.

You can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

**Driver
Installation**

The AOP-9120 comes with a AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically. Insert the driver CD, the driver CD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

Follow the sequence below to install the drivers:

- Step 1 – Install INF Driver
- Step 2 – Install VGA Driver
- Step 3 – Install Audio Driver
- Step 4 – Install LAN Driver
- Step 5 – Install Touch 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/.

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the AOP-9120 CD-ROM into the CD-ROM drive. And install the drivers from Step 1 to Step 5 in order.

Step 1 - Install Intel INF Update for Windows 2000/XP

1. Click on the **Step 1 - INF** folder and then double click on the **Setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 2 - Install VGA Driver

1. Click on the **Step 2 - VGA** folder and select the OS folder your system is
2. Double click on the **Setup.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 3 - Install Audio Driver

1. Click on the **Step 3 - Audio** folder and double click on **SETUP.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 - Install LAN Driver

1. Click on the **Step 4 - LAN** folder and select the OS folder your system is

2. Double click on the **setup.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

Step 5 - Install Touch Driver

1. Click on the **Step 5 - Touch** folder and then double click on the **Setup.exe**
2. Follow the instructions that the window shows you
3. The system will help you install the driver automatically

Appendix

A

FAQ

A.1 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 or upgraded 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

2. Error Message of CD-ROM

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.

SOLUTION

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.

3. Hard Disk Drive No. Assignment

SYMPTOMS

If you are using a brand new Hard Disk Drive on AOP-8150WT, the Hard Disk Drive may be assigned to “H” drive while installing Windows XP.

Troubleshooting

- a. Delete and create new partitions for Hard Disk Drive in Windows XP installing process.
- b. Disable all USB ports before installing.

4. COM Port Identity Error

SYMPTOMS

After installing Windows XP, please check if the COM port address & IRQ are the same as the BIOS setting.

Troubleshooting

- a. If the COM port address & IRQ are wrong, it is recommended to delete all address & IRQ of COM ports in device manager.
- b. Reboot the system and the device manager of Windows XP will detect it automatically with a right address.