

AOP-8070

Marvell PXA270
520MHz Processor
Fanless Operator Panel PC
With 7" 16:9 WQVGA
TFT LCD

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Packing List

Before you begin operating your PC, please make sure that the following materials are enclosed:

- AOP-8070 Fanless Panel PC
- Mounting bracket, screws and sponge
- CD-ROM for manual (in PDF format) and Windows CE SDK

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

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 pluggable 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 firm surface during installation. Dropping it or letting it fall could 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 could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any 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 user's 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 ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 60°C (140°F). IT MAY DAMAGE THE EQUIPMENT.

FCC

Warning!



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

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	×	○	○	○	○	○

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。

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。

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。

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Chapter

1

**General
Information**

1.1 Introduction

The AOP-8070 operator panel is a Marvell Xscale processor computer that is designed to serve as a human machine interface (HMI). It is a PC-based system with 7" 16:9 WQVGA TFT LCD display, onboard Ethernet controller and multi-COM port interfaces. With a built-in CompactFlash socket, the AOP-8070 is as compact and user friendly as a multi-function computer. In addition, its "fit anywhere" design makes it very flexible and is able to be used in many different kinds of installations. It can be wallmount, panelmount or mounted on DIN Rail.

For system integrators, this simple, complete, compact and highly integrated system let you easily build an operator panel 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 vending machine, and car park automation. Our operator panel is a reliable, cost-effective solution to your application's processing requirements.

1.2 Specification

System

- CPU Marvell PXA270 520MHz Processor
- Memory Onboard 128MB SDRAM
- LCD/CRT Controller Marvell PXA270-shared system
- Ethernet Davicom DM9000AEP 10/100Base-TX RJ-45 connector x 1
- I/O Port 2 serial ports:
RS-232 x 1 (D-SUB 9 connector), RS-485 x 1 (D-SUB 9 female connector);
4 USB 1.1 ports; 1 digital I/O (supports up to 6 in and 6 out)
- Storage Disk Drive Type II CompactFlash slot
- OS Support Windows CE 6.0

Mechanical

- Construction Plastic chassis (IP65 certified front panel)
- Front Panel Color Black
- Mounting Panel Mount, VESA 75mm

- Dimension
holes, DIN Rail (Optional)
8.9" (W) x 6.1" (H) x 1.97" (D)
(225mm x 156mm x 52mm)
- Gross Weight
1.65 lb (0.75 kg)

Environmental

- Operating Temperature
32°F~113°F (0°C~50°C)
- Storage Temperature
-4°F ~140°F (-20°C ~60°C)
- Operating Humidity
10% to 90%@40 °C,
non-condensing
- Vibration
Random Operation 1G,
5-500Hz
- Shock
15G peak acceleration (11
msec. duration)
- EMC
CE/FCC Class A
- Safety
UL60950
- Power Supply
DC Input 25W
Input: +10V DC~24V DC

LCD

- Display Type
7" 16:9 WQVGA
- Max. Resolution
480 x 234
- Max. Colors
262K
- Dot Size
0.204mm x 0.204mm
- Luminance
350 cd/m² (TYP.)

- Viewing Angle 120° (H) x 100° (V)

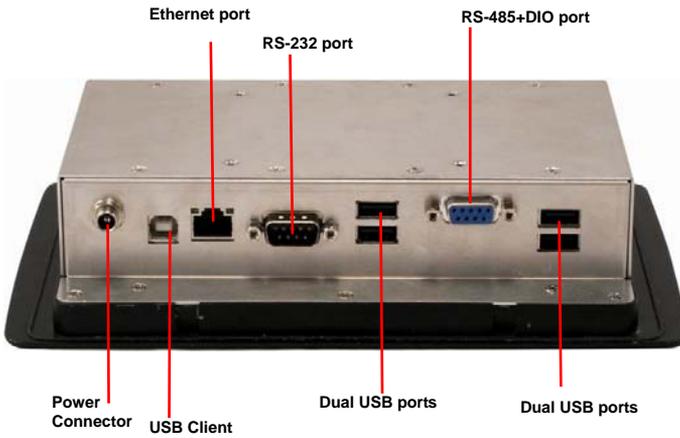
Touch screen

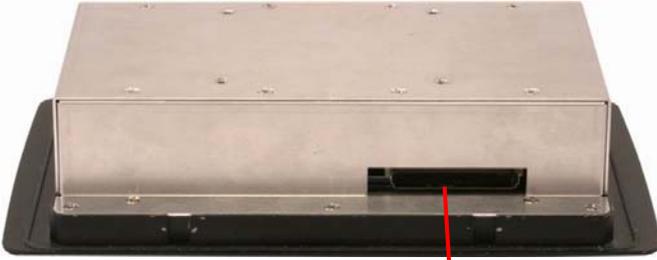
- Type 4-wire, analog resistive
- Light Transmission 80%
- Lifetime 1 million activations
- OS Support Windows CE. 6.0

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.



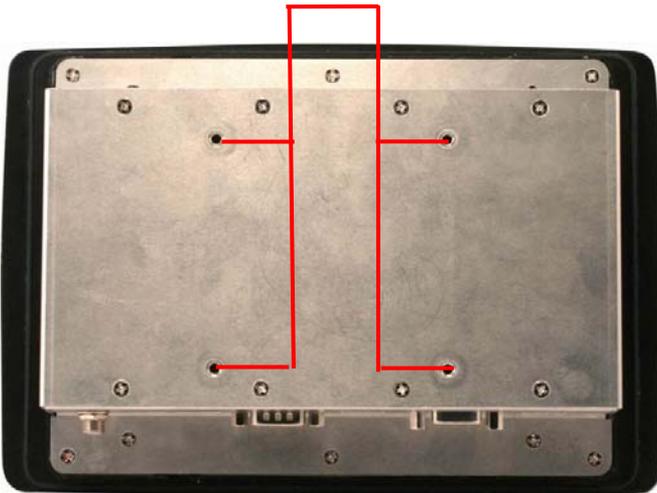
IP65 Certified front panel with touchscreen



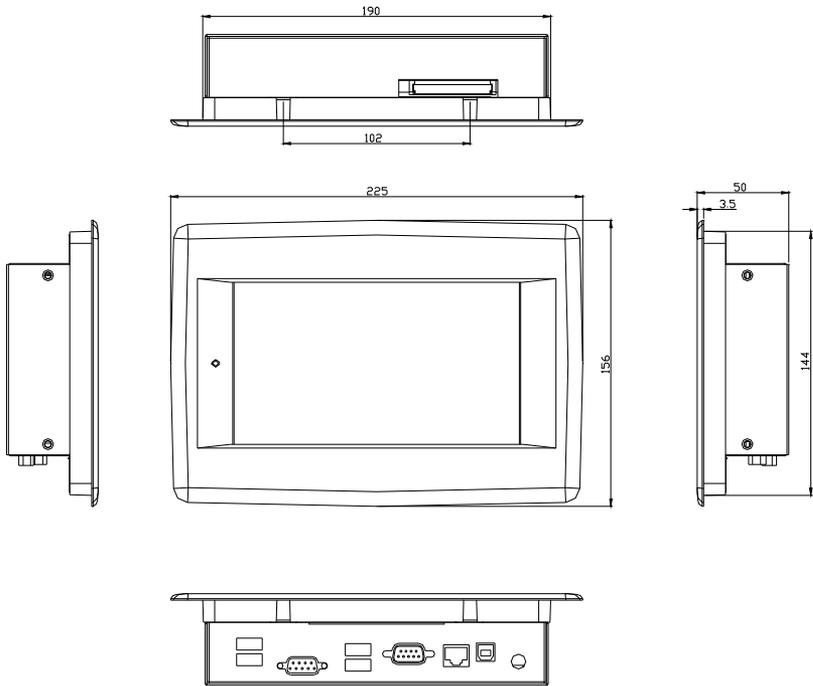


**CompactFlash
Card Slot**

**VESA 75mm
Screws**



1.3 Dimension



Chapter

2

**Hardware
Installation**

2.1 Panelmount 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:

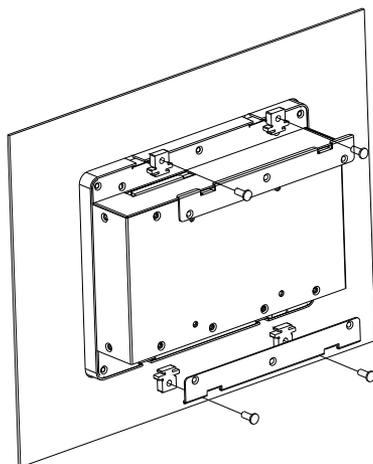
Before you start to follow the instructions, please place the display panel into the wall. See the following illustration on the left.

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.



2.2 COM Connector

Pin	Signal	Pin	Signal
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

2.3 DIO & RS-485 (D-Sub 9 Female Connector)

Pin	Signal	Pin	Signal
1	RS-485 Data -	2	DIO Input/Output 1
3	RS-485 Data +	4	DIO Input/Output 2
5	GND	6	DIO Input/Output 3
7	DIO Input/Output 4	8	DIO Input/Output 5
9	DIO Input/Output 6		

Chapter

3

**Software
Installation
Guide**

3.1 Introduction

AOP-8070 is preloaded with Windows® CE 6.0. After applying with power, the system will boot directly to Windows® CE.

3.2 Permanent Storage

The system comes with an on board NAND Flash for permanent storage. It is mounted under “/DiskOnChip” folder. The storage space is around 70MB. User requires to put all permanent data in “/DiskOnChip” folder.

All other places in the file system are ram image. Any modification on the files of this image will be lost after any power fail.

3.3 Boot Up Execution File

The system will look for a boot script file under “\DiskOnChip\autoexec.exe” during boot up process.

If this file exists, the system will launch this application at boot.

3.4 Hive Based Registry

The Windows® 6.0 Image in AOP-8070 uses hive-based registry, which stores registry data in files. These files are stored in permanent storage under “\DiskOnChip”.

Any modifications to the system registry require manually saving the registry file. This can be done through RFLUSH.exe under “\Windows”. A program link is also available on the Desktop. If

this procedure is not done, the modifications done to registry will be lost.

3.5 Demo Applications

AOP-8070 CD-ROM includes sample applications to controls the GPIO and Watchdog.

GPIO:

To control GPIO pins on CN8, a sample application with source code guides user to develop custom applications using GPIO pins. A readme file is provided with the source code.

Watchdog:

To utilize watchdog timer function on AOP-8070, a sample application with source code guides user to develop custom applications using GPIO pins. A readme file is provided with the source code.

3.6 SDK installation

AOP-8070 CD-ROM includes SDK for user to build custom applications. This enables the support for eMbedded Visual C++ 4.0 or .NET Compact Framework. Users building their own applications on AOP-8070 require installing this SDK. Follow the installation guide in the "SDK" folder in CDROM.