

SA-series Panel PC

Intel Atom 3.5" SBC supports Low Power, High Performance. IA30 provides Dual COM, Dual USB and dual 10/100/1000 base-T Ethernet.

User Guide Version 1.0

FCC Statement



This device complies with part 15 FCC rules. Operation is subject to the following two conditions :

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Disclaimer

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Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping date differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W07Axxxxxxx means October of year 2007.

Check List

Before using this Panel PC, please make sure that all the items listed below are present in your package

- 1 x SA series Panel PC
- 1 x SA series Panel PC User Guide
- 1 x IA30 SBC User Manual
- 1 x Power adapter
- 1 x Power cord
- 1 x Keyboard
- 1 x Mouse
- 1 x Touch Driver CD (Optional)
- Mounting of screws (Option)

Make sure that all of the items listed above are present. Do not attempt to apply power to the system if there is damage to any of its components.

Customer Service

We provide service guide for any problem as follow steps . The first, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call :

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Notice

1. Do not touch the LCD panel surface with sharp or hard objects.
2. Do not use abrasive cleaners, waxes or solvents for cleaning, use only a dry or damp, soft cloth.
3. Use only with a high quality, safety-approved, AC/DC power adapter.

Safety Precautions

◆ **Warning!**



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

◆ **Caution!**



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

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please 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 reliable 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 uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

Revision History

Version	Date	Note	Author
1.0	2009.01.19	✓ First Version	Randy Chang

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Chapter 1 GENERAL INFORMATION

1-1 Introduction

The SA series Panel PC is high performance, low power PC with Intel 945GSE chipset combine with a TFT LCD Panel. The Intel Atom Platform with high performance which delivers the most performance per watt available in the market. The Panel PC is designed to satisfy most of the applications in the industrial market, such as **POS, KIOSK, Industrial Automation, HMI and Programmable Control System**. It's a PC-based system with DDR2 SDRAM, VGA/LCD controller, two COM ports, and on-board 10/100/1000 Mbps Base-T Ethernet. The Panel PC supports one Mini -PCI expansion slot for Wireless, Ethernet, COM port, VGA solutions. It is a compact design to meet the demanding performance requirements of today's business and industrial applications.



1-2 IA30 SBC and SA series Panel PC System Specifications

Form Factor	3.5 inch
CPU	Intel Atom N270 1.6GHz Processor (Fanless)
Memory	1 x DDR2 SO-DIMM socket, supports up to 2GB DDR2 533 SDRAM
BIOS	AMI 4Mbit
VGA Controller	Intel® GMA950 graphic engine
VGA Memory	Up to 224MB shared with system memory
LCD Support	Intel® GMA950 graphic engine built-in, single- or dual-channel panel support up to 1600 x 1200, 18bit
Ethernet	2 x Giga LAN (Dual Realtek RTL8111B Controller)
Audio	Realtek ALC655 5.1 channel (Line-out, Line-in & Mic in)
IDE	One channels; supports Ultra DMA 33/66/100
Serial	1 x RS-232, 1 x RS-232/422/485 (optional)
USB	4 x USB (2 x Rear I/O, 2 x pin-header)
Expansion Slots	1 x Mini PCI
Power Adapter	12Vdc Power input
HDD	2.5" 80GB
O/S(Optional)	Windows XP Embedded / Windows XP Professional /Linux

1-3 LCD Selection Guide

The SA series Panel PCs support from 8.4-inch to 12.1-inch TFT Panel w/ touchscreen function, please refer the below:

Item Size		Resolution (Recommended)	Display Color
8.4"	R08IA3S - XXT1	800x600	262,144 (6bit/colors)
8.4"	R08IA3S - XXU1	800x600	262,144 (6bit/colors)
10.4"	R10IA3S-XXM3	1024x768	16.2M (6bits/color)
10.4"	R10IA3S-XXP1	800 x 600	262,144 (6bit/colors)
10.4"	R10IA3S-XXU1	800 x 600	262,144 (6bit/colors)
12.1"	R12IA3S-XXL1	800x600	262,144 (6bit/colors)

Chapter 2 Getting Started

2-1 Input / Output Devices

The following figure shows the I/O arrangement of the Panel PC. The backside of the chassis contains most of the connectors (10.4" for example).



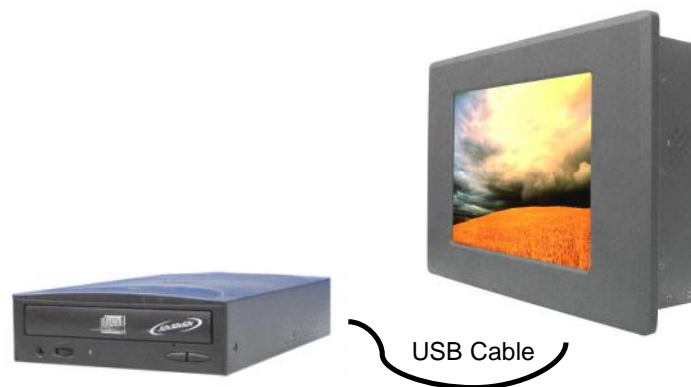
1	COM port	9-pin male Serial Port connector that can attach a serial mouse or other serial devices directly to the port. (Optional x2 male/female Serial Port for extension above 12" Panel PC)
2	RJ-45 port	Connect a network cable to the standard RJ -45 port and get connection to the Local Area Network (LAN).
3	USB port	USB-compatible devices can be plugged directly into the USB 2.0 port.
4	VGA port	Use VGA port to connect an external Display.
5	PS/2 Mini-DIN	Mini-DIN PS/2 Connector plus Y cable to connect Keyboard and Mouse.
6	DC-IN	DC-IN 12V power on your computer.
7	Brightness Adjustment Knod	Adjust brightness of Display

2-2 Starting the Panel PC & O/S Installation

1. Connect the power to AC/DC adapter, and connect the power cord to the AC outlet.
2. Press the power on switch to start the Panel PC .
3. Press “DEL” to enter the CMOS setting and check the BIOS setup.
4. You may install your own O/S if it is not installed.

When installing O/S for this Panel PC, please follow the steps and use external equipment as **Keyboard and Mouse.**

- (a) Please use external USB DVD-ROM to run the O/S and Driver setting (as picture showed below).



2-3 Driver Installation

The PPC comes with a User's Manual and Driver CD that contains most of the drivers and utilities of your needs.

1. Following the step by step to install Driver (Please refer IA30 SBC User's Manual Chapter 3, 4, 5, 6) include: Chipset, VGA, Audio, and Ethernet.
2. Following the step by step to install the Touch screen if necessary (Please refer SA series PPC User Guide Chapter 3).

Chapter 3 Touch Driver Installation

3-1 Introduction

The PPC supports three kinds of Touch Panel Solutions: ELO AccuTouch touchscreen, Premier Touch system. Both of the touchscreen system consists of a touchscreen and an electronic touchscreen controller.

The SA series Panel PC's touch device is used RS232 interface touch controller card via *the COM1 port* inside Panel PC. When the touch driver installed either for ELO or Premier Touch systems, it will detect COM4 port automatically.

The ELO AccuTouch and Premier touchscreen is based on patented resistive technology. The touchscreen may be a flat, spherical, or cylindrical. It is installed over the face of the display. Since its shape matches of the display face, the touchscreen has excellent clarity and minimal parallax.

3-2 The ELO AccuTouch Driver Installation

ELO AccuTouch driver software provides a consistent software interface among all ELO AccuTouch touch screens and controllers.

Go to <http://www.elotouch.com/Support/dnld.asp> for a complete list of available drivers.

For Driver Installation, please install the “ELO Touch System Touch Tools CD” for Windows XP, Windows 2000, Windows Me, Windows 98, Windows 95, Windows NT, Windows CE 2.x, 3.0, 4.x, Windows XP Embedded, Windows 3.1, DOS, OS/2 Warp, and Apple Macintosh. Just follow the step by step to install the driver.

Choose “Auto-detect Elo devices ” in the first step. If not, the following step will need users choose COM port for detecting the devices.



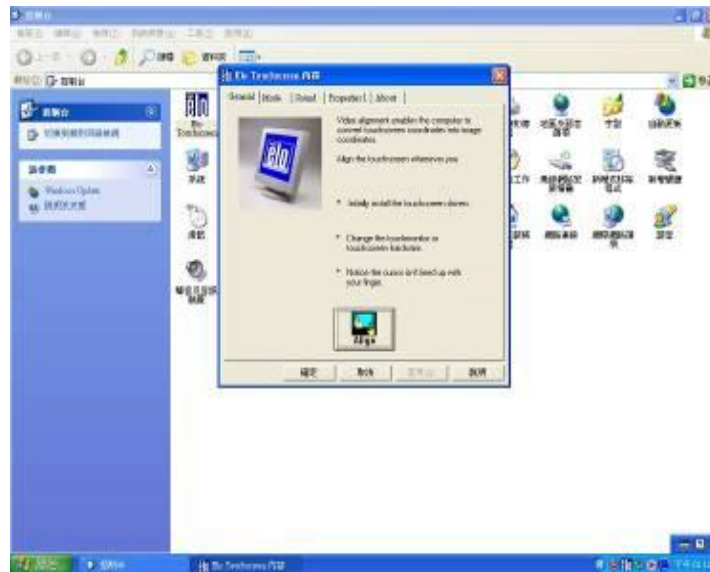
3-2-1 Configuration Utility

After finishing the installation, please follow the steps to test the configuration utility.

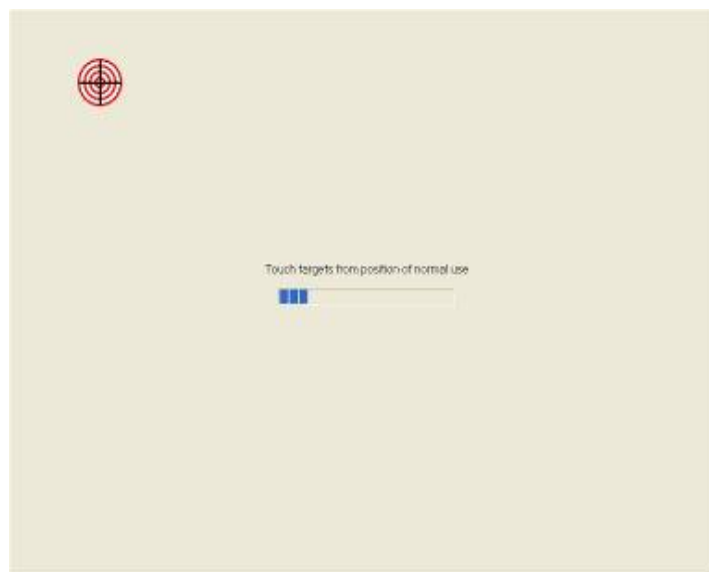
Step.1 Enter “My Computer”, click the “E lo touchscreen” shortcut function.



Step.2 Click “Align” function key to go to next step.



Step.3 Correct 4 point locations on screen with the Panel PC. Screen display as follows.



Step.4 Touch the “yes” function if the cursor follows your finger and finish the utility test.



3-3 The Premier Touch Driver Installation

TouchKit is the Premier Touch software, which contains drivers of the touch panel controllers for the specified communication connectors, RS232, PS/2 and USB, and the other two utilities.

The two utilities are as follows:

- Touch Tray support
This is utility for emulating the right and left button of mouse through controlling touch panel. Users can toggle between right or left mouse buttons by this utility.
- Configuration support
The calibration and draw test of touch panel are done by this utility. Besides, users can add or remove for new RS -232 or PS/2 touch panel devices.

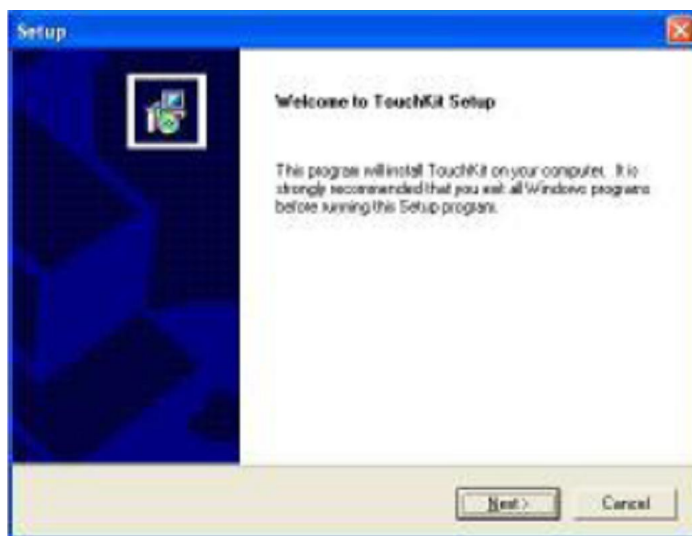
Follow these steps to install TouchKit.

Step.1 Put the TouchKit CD to CD-ROM.

Step.2 Open the Win2000_XP directory.

Step.3 Double click the Setup.exe, then windows starts to run the installation program. Notice that does not plug the USB controller on the system before the installation has been finished.

Step.4 Click Next to continue installation. And it will auto-detect touch devices in COM1 port at your Panel PC.



Step.5 Following the step by step to finish the driver installation.

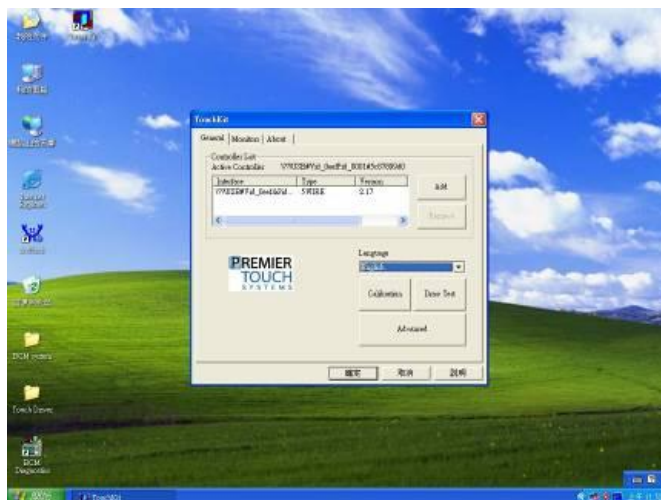
3-3-1 Configuration Utility

After finishing the installation, please follow the steps to test the configuration utility.

Step.1 Click the “TouchKit” shortcut function in the desktop.



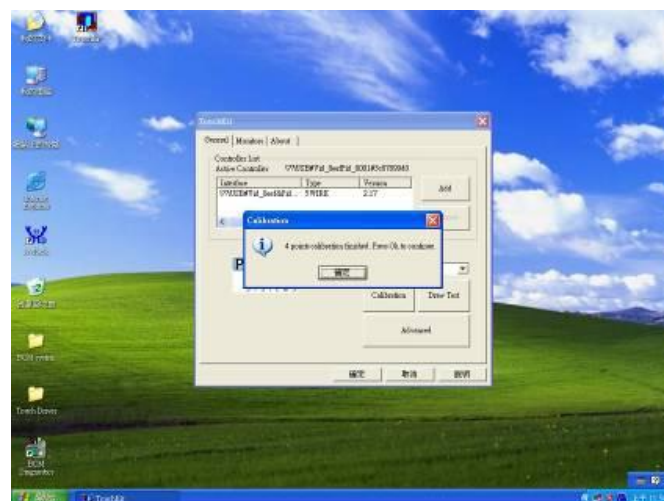
Step.2 Enter “General” function and choose the language you need.
Then go to next step.



Step.3 Correct 4 point locations on screen with the Panel. Screen display as follows



Step.4 Play “Yes” to continue if 4 points calibration test is fine and finish the test.

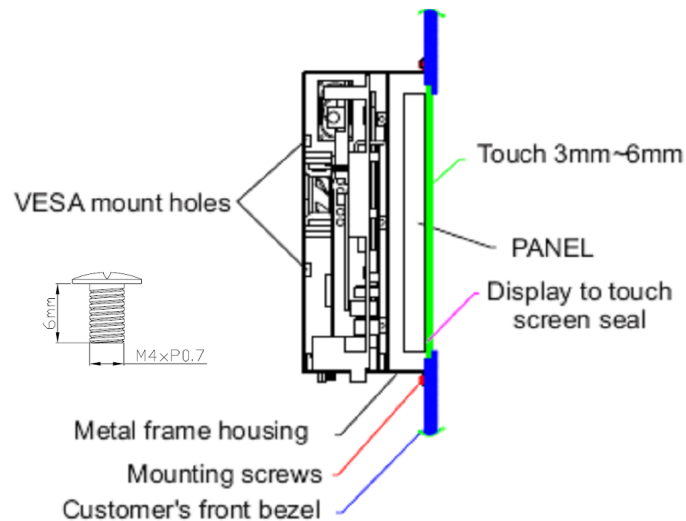


Chapter 4 SA series Panel PC Mounting Guide

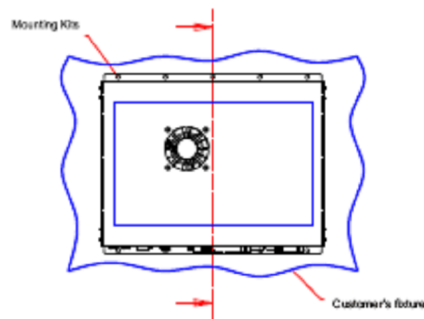
The Panel PC is suitable for most of the industrial/commercial application, by any kind of mounting approach. Three main mounting approaches, such as Panel Mount / Chassis / Open Frame, are very easy for user to install the Panel PC. As the pictures guided:

4-1 Open Frame Panel PC:

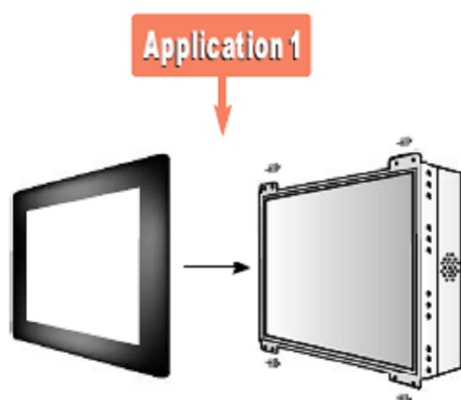
- Panel is aligned with the same height of the front of open frame metal housing
- Customers can fix our Panel PC with their own front bezel.
- VESA mount holes are also available for mounting from back side.



SIDE VIEW

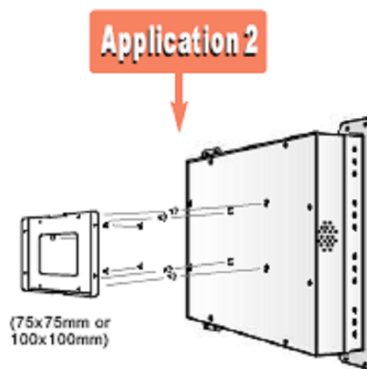


REAR VIEW



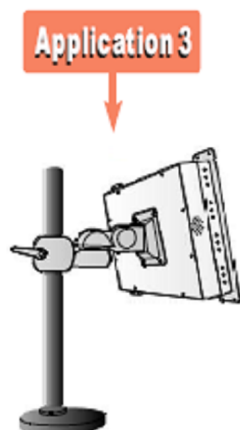
PANEL MOUNT

-mount with front bezel and then mounted into customer's panel.



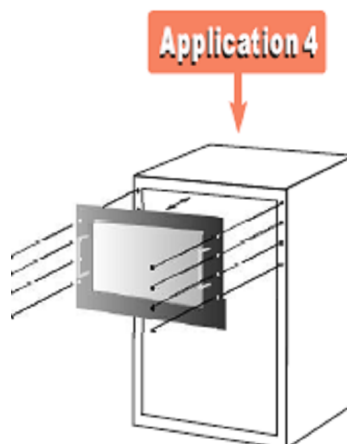
WALL MOUNTING

-mount with VESA mount kits and then mounted into wall.



ARM MOUNTING

-mount with VESA mount kit and then mounted with swimming arms.



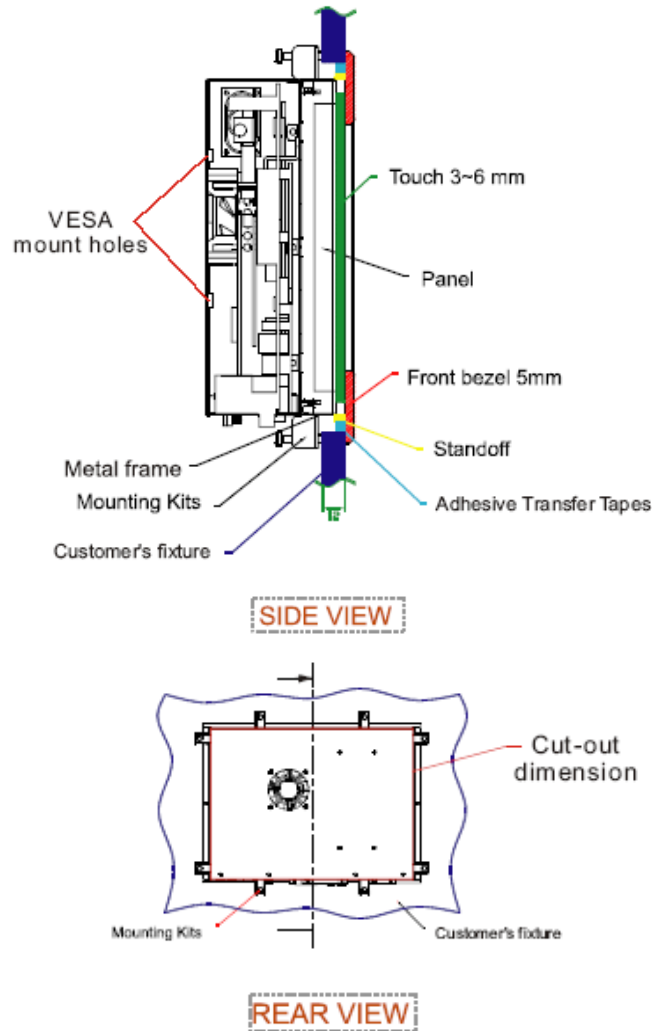
RACK MOUNTING

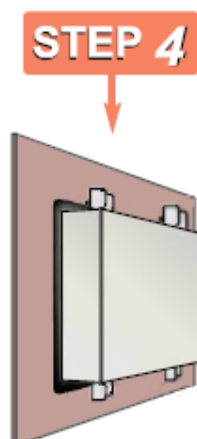
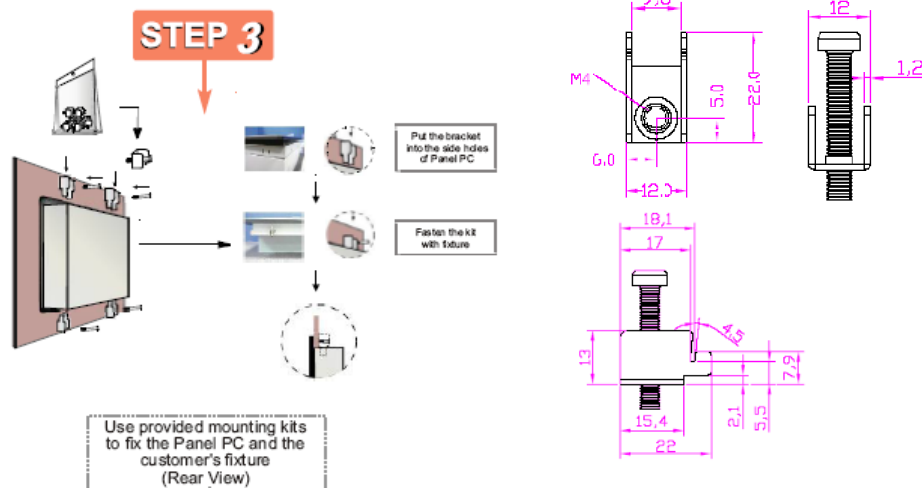
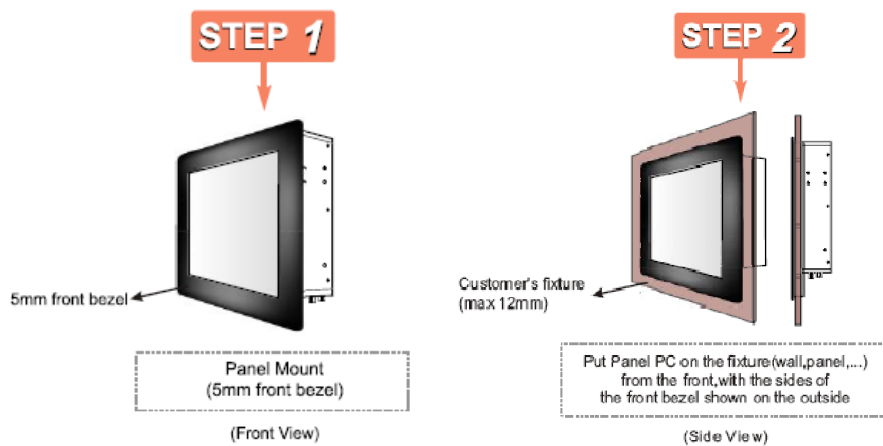
-mount with rack front bezel and then mounted into racks.

Panel PC size	VESA Mount Dimension	Panel PC size	VESA Mount Dimension
8.4"	75 x 75 mm	12.1	75 x 75 mm /
10.4"	75 x 75 mm		

4-2 5mm Panel Mount Panel PC:

- Panel is aligned with the same height of the front of open frame metal housing.
- Touch/Glass is higher than Open frame metal housing.
- Customers can fix our Panel PC with their fixture (max.12mm)
- VESA mount holes are also available for mounting from back side.



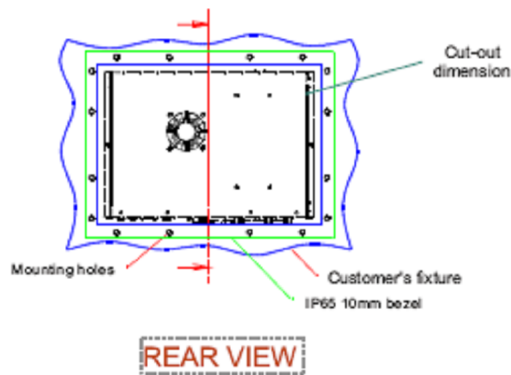
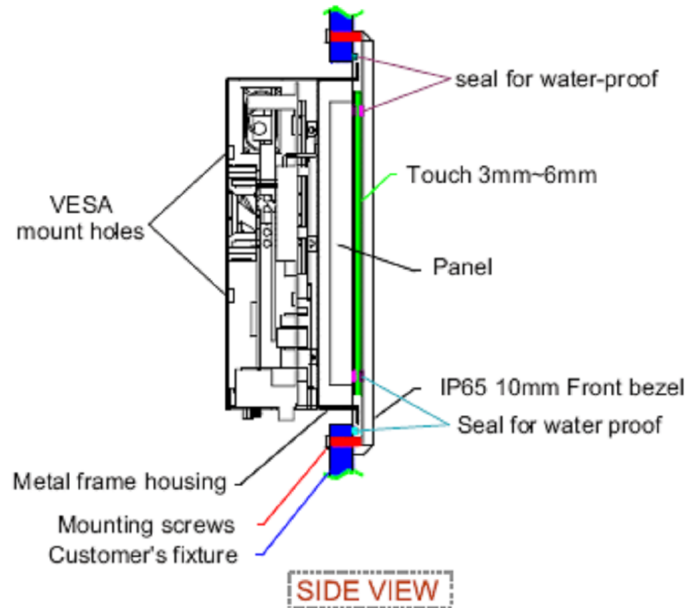


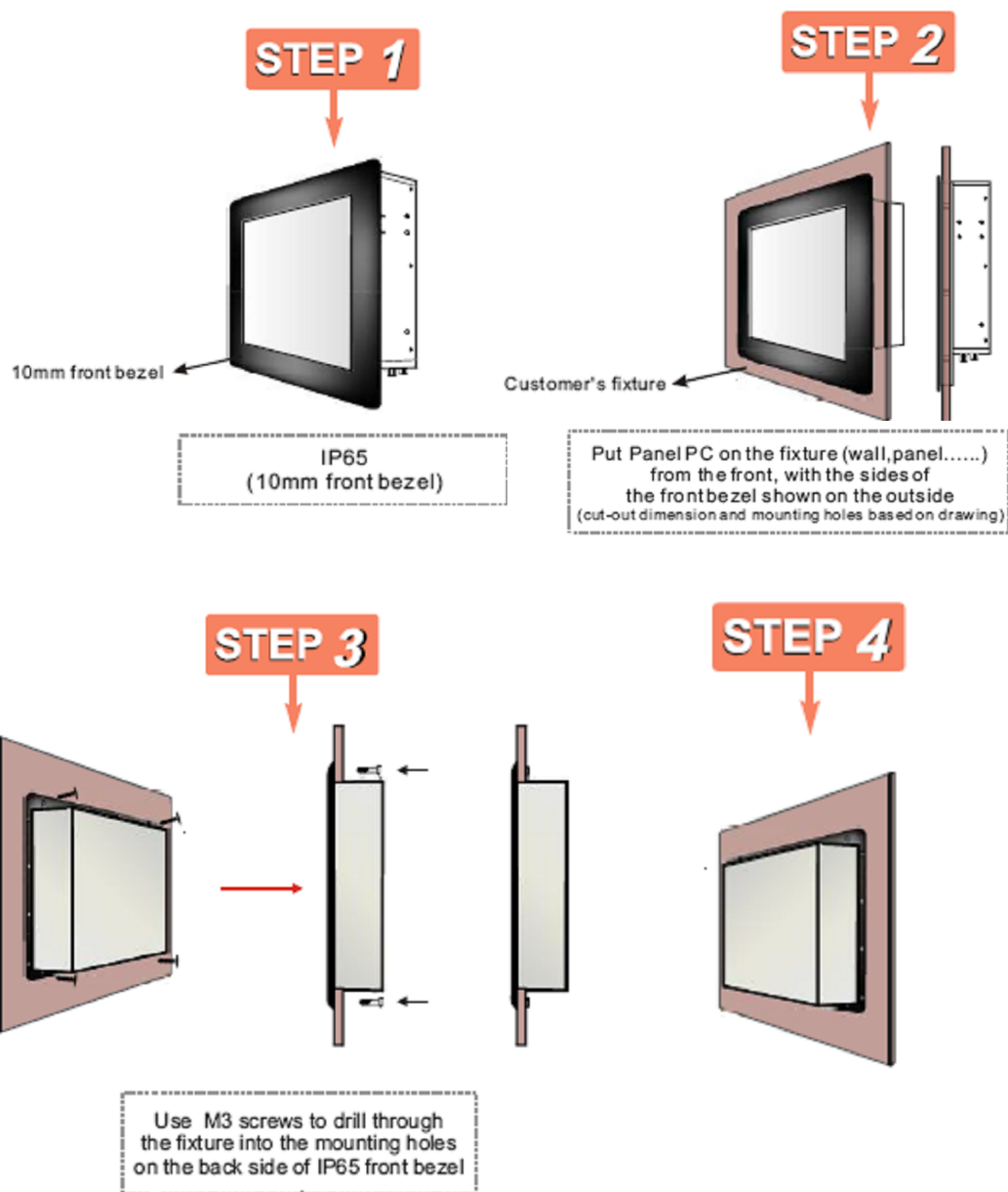
PANEL PC PM 5mm	
PANEL PC size	Mounting Kits(pcs)
6.4"	4
6.5"	4
8.4"	8
10.4"	8
12.1"	10
15"	12
17"	12
19"	14

(note : 6.4", 6.5", 15, 17" and 19" by request)

4-3 10mm IP65 Panel PC

- Touch/Glass is aligned with the same height of the front of open frame metal housing
- Customers can fix our Panel PC with their fixture by M3 screws.
- VESA mount holes are also available for mounting from back side.

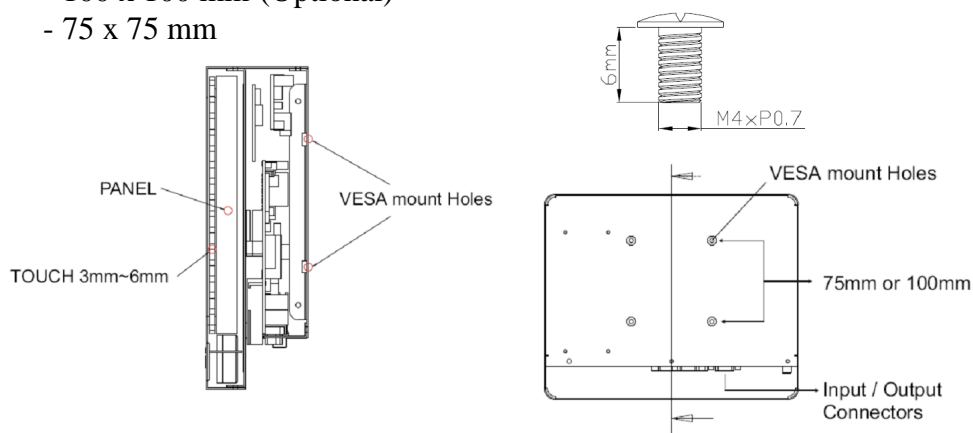




4-4 Chassis Panel PC

Fix the Panel PC with four screws (standard VESA), and fasten to the wall with other four screws.

- 100 x 100 mm (Optional)
- 75 x 75 mm

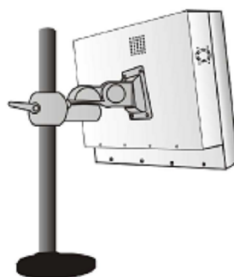
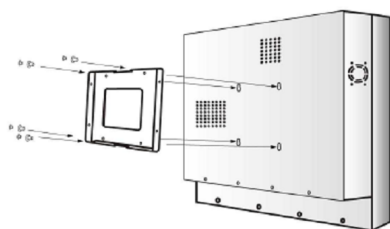


SIDE VIEW

REAR VIEW

Application 1

Application 2



WALL MOUNTING

ARM MOUNTING

-mount with VESA mount kits and then mounted into wall.

-mount with VESA mount kit and then mounted with swimming arms.

(Note::6.4", 6.5",15, 17" and 19"" by request)

Panel PC size	VESA Mount Dimension	Panel PC size	VESA Mount Dimension
6.4"	75 x 75 mm	12.1"	75 x 75 mm
6.5"	75 x 75 mm	15"	75 x 75 mm / 100 x 100 mm
8.4"	75 x 75 mm	17"	75 x 75 mm / 100 x 100 mm
10.4"	75 x 75 mm	19"	75 x 75 mm / 100 x 100 mm