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2500 Series[®] Visualization Panels

**2500-VP12-N4-W7, 2500-VP12-N4-W7R,
2500-VP15A-N4-W7, and the 2500-VP15A-N4-W7R**
2500 SERIES[®] Visualization Panels

Hardware Manual

Version 1.1

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REVISION HISTORY		
V 1.0	24 March 2014	Initial Release
V1.1	11 June 2015	Added Appendix D for RS485 Configuration.

PREFACE

This manual is meant for the experienced users and integrators with hardware knowledge of personal computers. If you are not sure about the description in this manual, consult your vendor before further handling.

We recommend that you keep one copy of this manual for the quick reference for any necessary maintenance in the future. Thank you for choosing CTI products.



USAGE CONVENTIONS

NOTE

Notes alert the user to special features or procedures.

CAUTION

Cautions alert the user to procedures that could damage equipment.

WARNING

Warnings alert the user to procedures that could damage equipment and endanger the user.

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CHAPTER 1 OVERVIEW

1.1 Introduction

CTI's 2500-VP12-N4-W7 and 2500-VP15A-N4-W7 is a cost-effective industrial panel PC featuring light weight and a slim form factor. The computer comes with a rich selection of I/O ports to meet the demand of the automation and manufacturing process required in modern factories. The system includes four serial ports, five USB ports, one DVI-I port and two LAN ports for wired data connection. The computer also supports one CFast card and features one 2.5" drive bay for extensive data storage. One PCI Express Mini-card is also built on the main board of the computer to enhance the system with Wi-Fi networking as an option. When combined with CTI's Zenon HMI software the user has an excellent solution for simple HMI application to more sophisticated SCADA type applications.

Note: to simplify the model designation the models will be referred to as 2500-VP12 and 2500-VP15A. This applies to all versions of the 2500-VP12-N4-W7, 2500-VP12-N4-W7R, 2500-VP15A-N4-W7 and the 2500-VP15A-N4-W7R.

1.2 Product Highlights

- Fanless Design
- 12.1" (2500-VP-12) or 15" (2500-VP-15A) 1024 x 768 XGA LCD Display w/ LED Backlight
- Die-casting Bezel, Completely Covered w/ Membrane
- Flush Front Panel, IP65-Compliant
- Brightness Control Button
- Outside-accessible Push-pull CFast Socket
- Outside-accessible USB port with rubber cover on the front bezel
- 2 x Isolated Serial Ports (RS-485), w/ Auto-flow Control
- 1 x MiniCard socket for WiFi module
- 2 x SMA Antenna Holes for Optional WiFi Function
- 9~36V Wide-Range DC Input with reverse protection

1.3 Specifications

System	
CPU	Intel® Atom™ N2600 1.6GHz processor
BIOS	AMI Flash BIOS
Chipset	Intel® NM10
Memory	Soldered onboard 2GB DDR3 SDRAM
Ethernet Controller	2 x Intel® 82583V GbE controllers
Watchdog Timer	1~255 levels reset
External I/O	
Serial Ports	4 x DB-9 connectors for COM1~4 (COM1 and COM2 are RS-232; COM3 and COM4 are RS-232/485 configurable)
USB Ports	4 x Type-A USB 2.0 ports (rear) 1 x Type-A USB 2.0 port with rubber cover on front bezel
LAN Ports	2 x RJ-45 GbE ports
DVI	1 x DVI-I connector (DVI-D)
WiFi	2 x SMA antenna holes for optional WiFi function
Storage	

1st Device	1 x outside-accessible CFast socket(Standard Configuration includes a 32G CFast Card)
2nd Device	1 x 2.5" drive bay
Audio	
Speaker	2 x 1.5W speakers (optional)
Certification	
EMC / EMI	CE, FCC Class A
Environmental	
Operating Temp.	-20 ~ 55°C (-4 ~ 131°F)
Storage Temp.	-20 ~ 70°C (-40 ~ 158°F)
Operating Humidity	10 ~ 95% RH @ 55°C (non-condensing)
Vibration	5 ~ 500Hz, 2Grms X,Y, Z axis (with CF/SSD)
Shock	Operating 20G, 11ms X,Y, Z axis (with CF/SSD)
Expansion	
Expansion Bus	1 x Mini-card socket
Mechanical	
Chassis	Panel-mounting chassis, aluminum front bezel and AL steel chassis
Weight (Net)	2500-VP12: 2.2 Kg (without VESA bracket)
	2500-VP15A: 3.4 Kg (without VESA bracket)
Dimensions (W x D x H)	2500-VP12: 325.86 x 44 x 258.86 mm (12.8" x 2.26" x 10.2")
	2500-VP15A: 389.93 x 46.8 x 309.93 mm (15.4" x 2.37" x 12.2")
Mounting	Panel-mounting and VESA-75/100 mounting
LCD Display	
Size/Type	2500-VP12: 12.1" TFT LCD Panel
	2500-VP15A: 15" TFT LCD Panel
Max. Resolution	1024 x 768, XGA
Max. Colors	16.2M
Luminance	2500-VP-12: 500 cd/m ²
	2500-VP15A: 400 cd/m ²
Touch Screen	5-wire Analog Resistive
View Angle (U/D/R/L)	2500-VP-12: 80°/80°/70°/70°
	2500-VP15A: 80°/80°/80°/80°
Button & Indicator	
Function Key	Brightness up/down, Screen on/off
LED Indicator	Power on LED
Power System	
Power Input	DC 9~36V
OS Support	
Windows	Windows XP Embedded / Windows 7 Embedded

1.4 What is in the shipping box

Upon opening the package, carefully inspect the contents. If any of the items is missing or appears damaged, contact your local dealer or distributor. The package should contain the following items:



Qty 1 CTI 2500-VP12 or 2500-VP15A

2500-VP12 12.1" Intel® Atom™ N2600 industrial panel PC

2500-VP15A 15" Intel® Atom™ N2600 industrial panel PC



Accessory Box contains the following items:

- Drivers CD
- Screws/Cable
- 3 pin plug for Power Connection

1.5 Optional Accessories

The following items are optional and may be ordered from CTI separately:

PAC-P065W

65W AC/DC power adapter kit
Power input: 100 ~ 240 VAC
Power output: 19VDC, 3.4A



Figure 1 2500-VP Optional Accessories

1.6 Configure to order service

Your CTI Panel PC can be modified with more options and shipped to you with your selections installed. If there is something you need contact CTI for availability and pricing.

CHAPTER 2 Getting Started with your 2500 Visualization Panel

The installation of the 2500-VP-12 and the 2500-VP15A consists of the following steps:

- 1) Reading this Chapter
- 2) Installation planning
- 3) Unpacking and checking the unit,
- 4) Choosing and Connecting the 24VDC user power supply
- 5) Checking module operation.

2.1 Installation Planning

2.1.1 2500-VP12 Dimensions

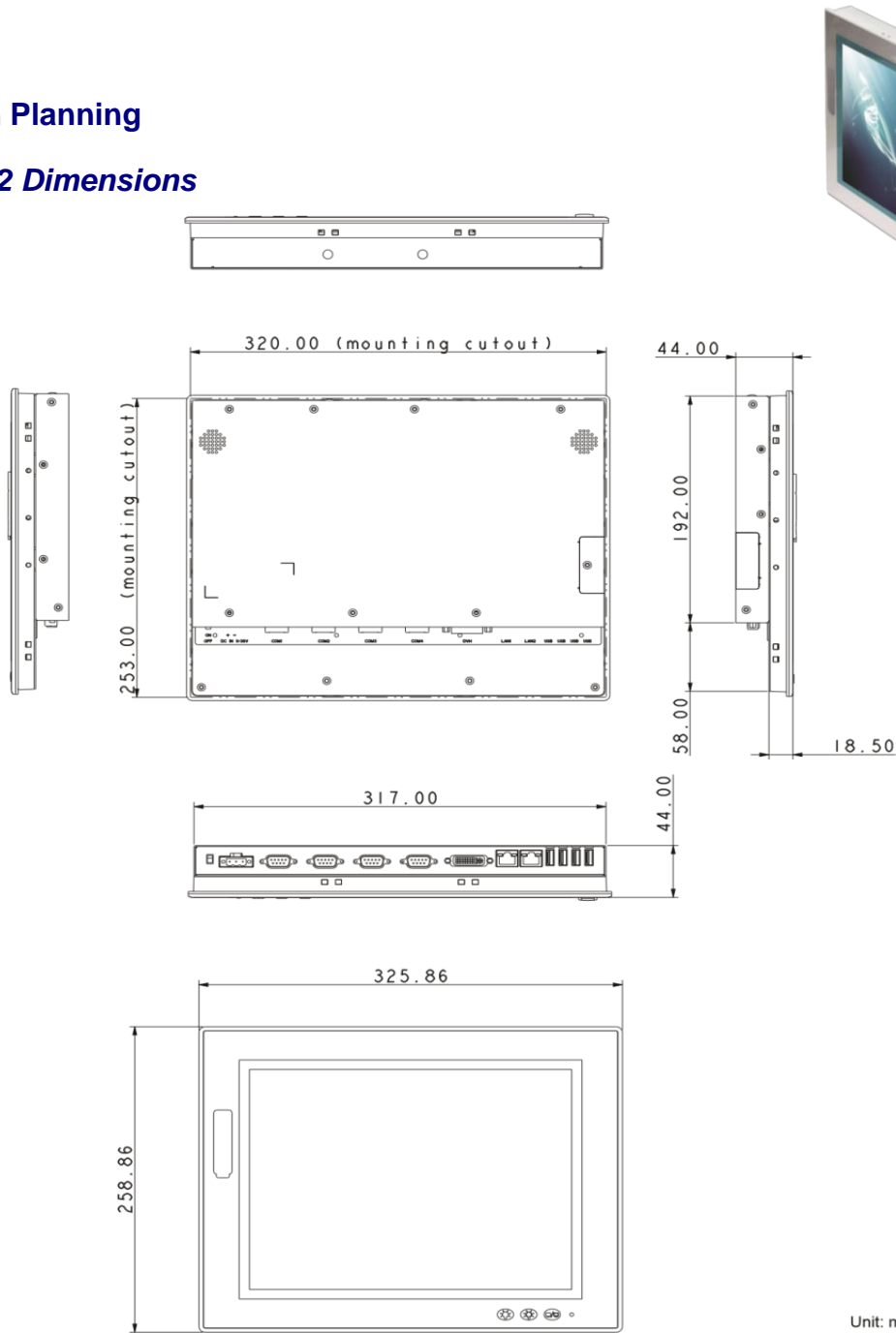


Figure 2 2500-VP12 Dimensions

2.1.2 2500-VP15A Dimensions

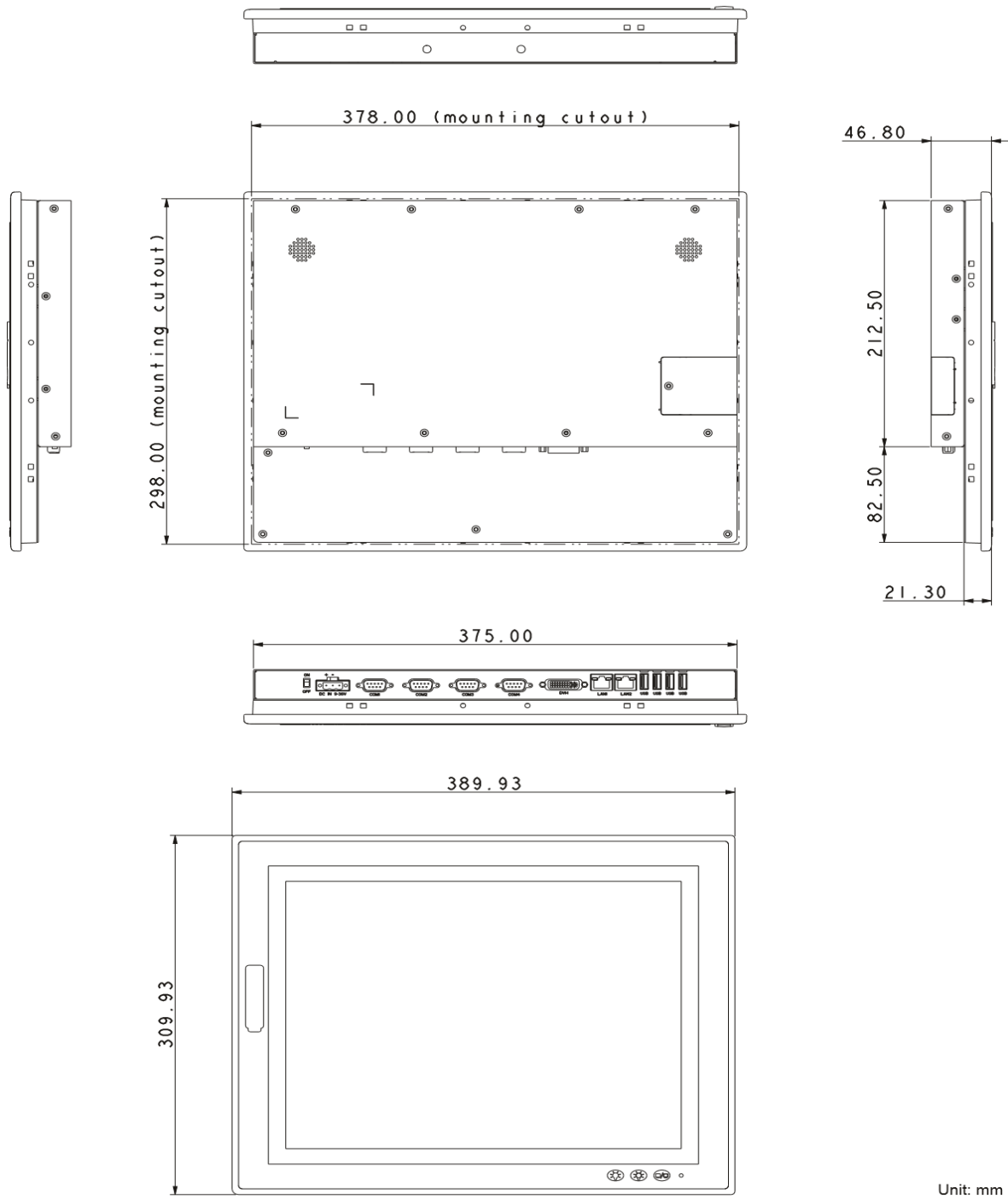


Figure 3 2500-VP15 Dimensions

2.1.3 Front View of both the 2500-VP12 and the 2500-VP15A

On the front side of the computer is a LCD display, a few function keys and one USB port recessed in the lower-right of the bezel.

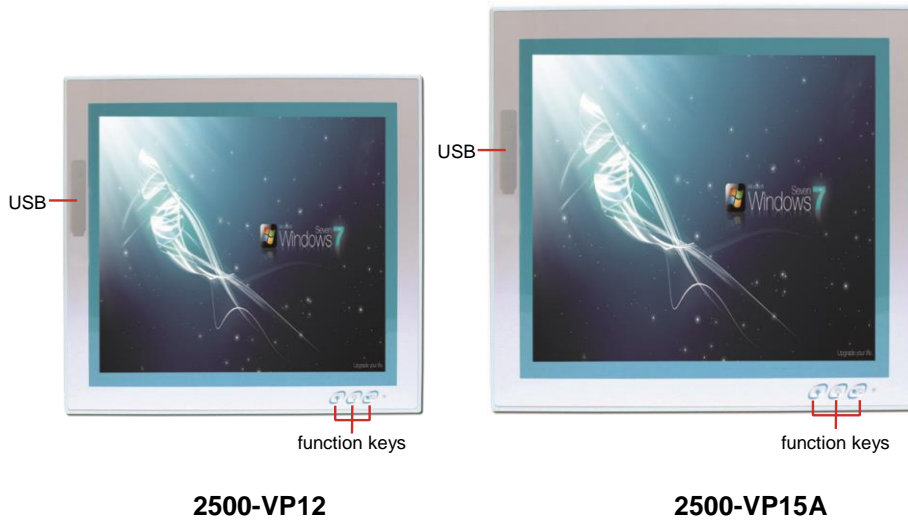





Figure 4 2500-VP12 & 2500-VP15A Front View

Use the function keys to launch the following actions from the computer:

Icon	Description
	Turns on/off the LCD display.
	Decreases LCD backlight.
	Increases LCD backlight.

2.1.4 Rear View of the 2500-VP12



Note the Optional Speaker locations and the VESA Mount option common to both models.

Figure 5 2500-VP12 Rear View

2.1.5 Rear View of the 2500-VP15A

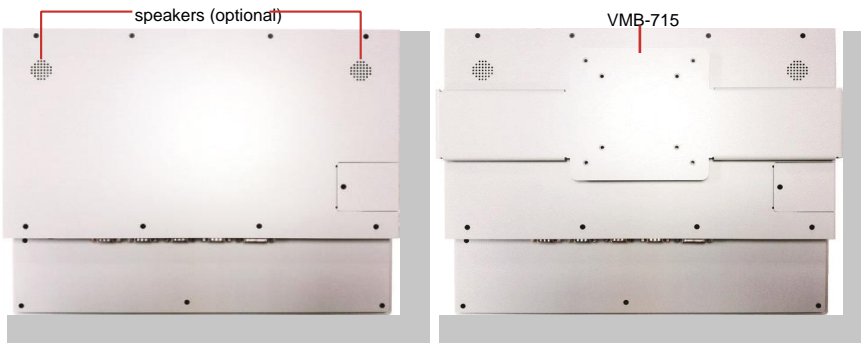


Figure 6 2500-VP15A Rear View

2.1.6 Bottom View IO port Access

2500-VP12

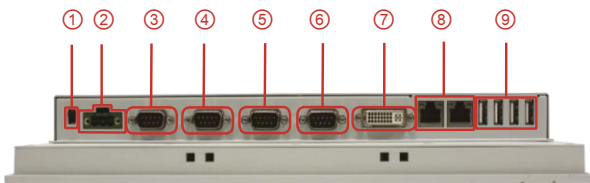


Figure 7 2500-VP12 Bottom View

2500-VP15A

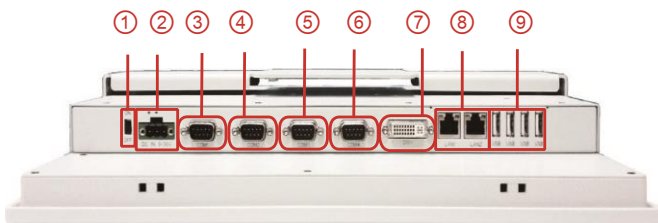


Figure 8 2500-VP15A Bottom View

No.	Description	
①	Power Switch	
②	DC - IN	
③	COM1	COM1 and COM2 are RS232
④	COM2	
⑤	COM3	COM3 and COM4 are RS232/485 Configurable(See Appendix D Setting COM 3 and COM 4 Serial Ports for RS232 or RS485)
⑥	COM4	
⑦	DVI Port	
⑧	2 x LAN ports	
⑨	4 x USB ports (note 1 USB port is located on the front panel under the rubber window cover)	

NOTE

When the panel is shipped COM1 through COM4 are preconfigured as RS232 Ports. To use the ports as RS485 please refer to Appendix D Setting COM 3 and COM 4 Serial Ports for RS232 or RS485.

2.1.7 Top View and Antenna Holes



Figure 9 2500-VP12 & 2500-VP15A Top View & Antenna Holes

2.1.8 Driver Installation Note

The 2500-VP12 and the 2500-VP15A are shipped to you with the OS and all drivers preinstalled. There are no additional OS drivers required.

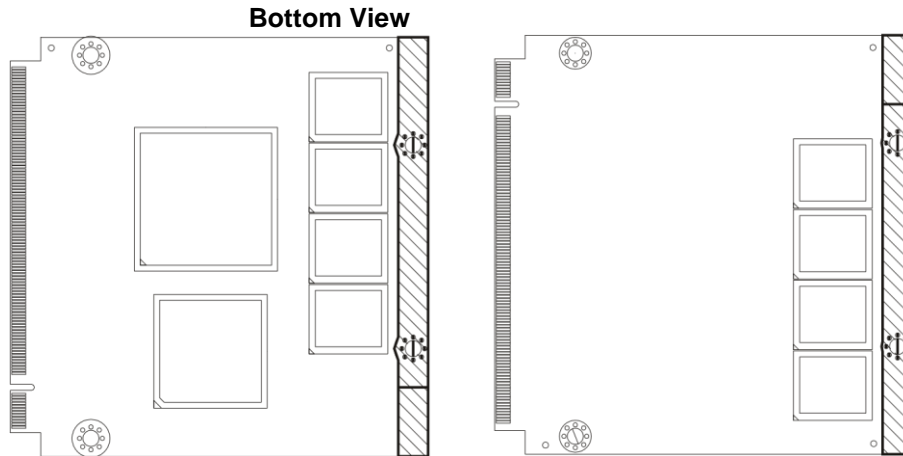
CHAPTER 3 Inside the 2500 Visualization Panels

3.1 Board Layout

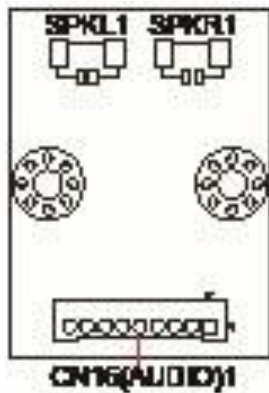
The engine of the computer is constructed by the CPU module EmQ-i2506, the carrier board PBQ-9012 and the optional daughterboard SCDB-141B.

CPU Module (EmQ-i2506)

Top View



Daughterboard (SCDB-141B)



3.2 Carrier Board Jumpers and Connectors

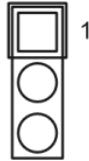
This chapter will explain each of the jumpers and connectors on the carrier board of the computer.

3.2.1. Jumpers

JATX1

Function: power supply mode setting

Jumper Type: 2.00mm-pitch 1x3-pin header



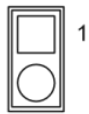
Setting:

Pin	Description	Setting
1-2	AT	
2-3	ATX (default)	

JBIOS1

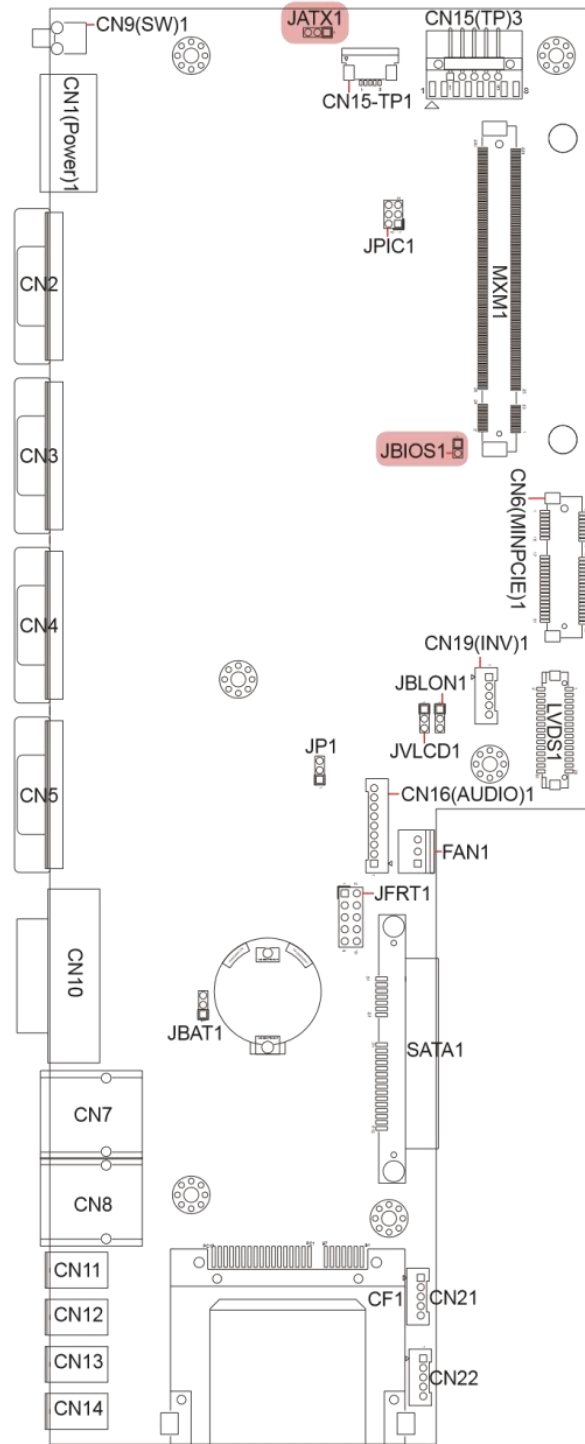
Function: BIOS selector

Jumper Type: 2.00mm-pitch 1x2-pin open type jumper



Setting:

Pin	Description	Setting
ON	Boot the computer from the carrier board's flash ROM BIOS. (default)	 The short-circuit-cap is used on both pins.
OFF	Boot the computer from the CPU board's flash ROM BIOS.	 The short-circuit-cap is removed.



JVLCD1

Function: |
 Jumper Ty
 1x3-pin hea

Setting:

Pin	Def
1-2	2-3 3.3V (default)
2-3	

Note: This is not a user configurable selection. This may not be altered.

JBLON1
 Function: |
 activeness
 Jumper Ty
 1x3-pin hea

Description			
1	PIC_TX	2	Clock
3	Data	4	GND
			Reset

Setting:

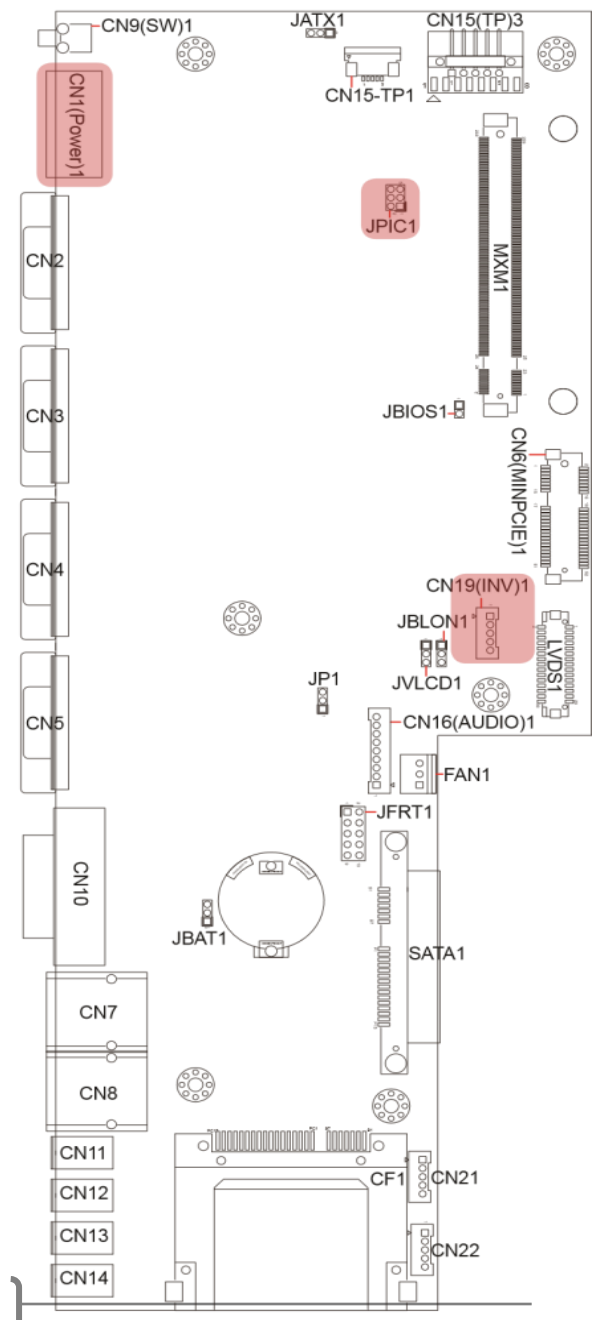
Function: inverter connector
 Connector Type: 2.00mm-pitch 1x5-pin 4-wall wafer connector

Pin	Def
1-2	2-3 positive active (default)
2-3	

Note: This is not a user configurable selection. This setting may not be altered.

Setting:

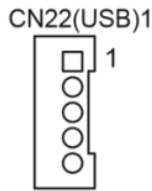
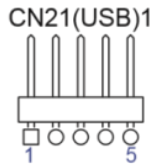
Panel Power Connector



CN21 & CN22

Function: USB connectors
Connector Type: 2.54mm-pitch 1x5-pin header
Setting:

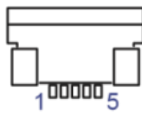
Pin	Description
1	5VCC
2	Data-
3	Data+
4	GND
5	GND



CN15-TP1

Function: membrane connector
Connector Type: 1.00mm-pitch 1x5-pin FPC downside connector
Setting:

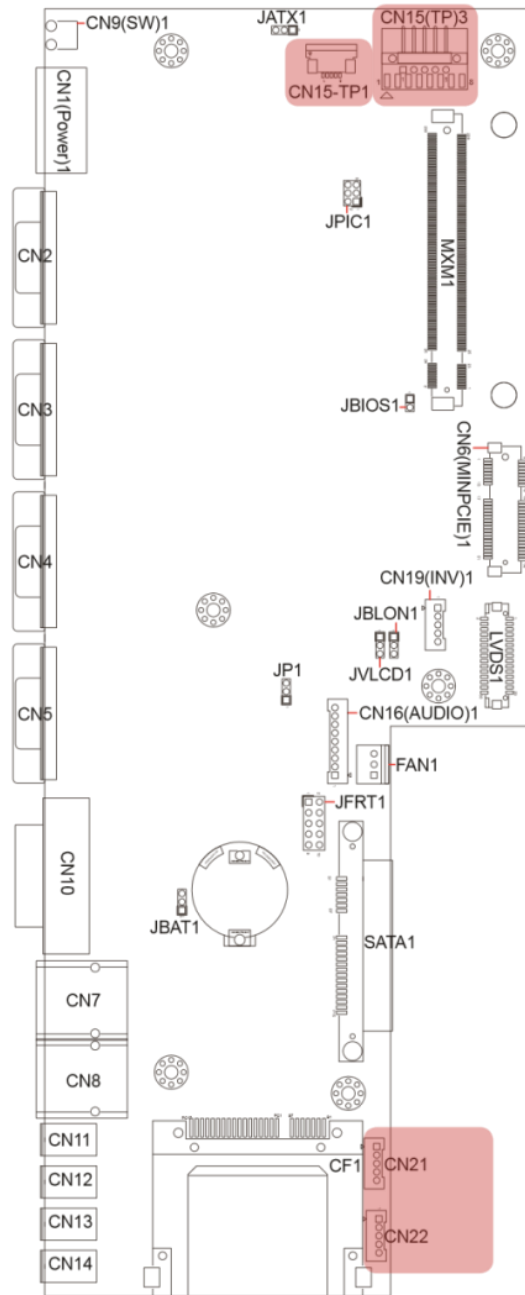
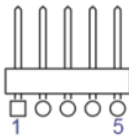
Pin	Description
1	Panel-PWM-
2	Panel-PWM+
3	Power SW
4	Power LED
5	GND



CN15(TP)3

Function: touch panel connector
Connector Type: 2.54mm-pitch 1x5-pin header
Setting:

Pin	Description
1	Y+
2	X+
3	Sense
4	
Y-	X-

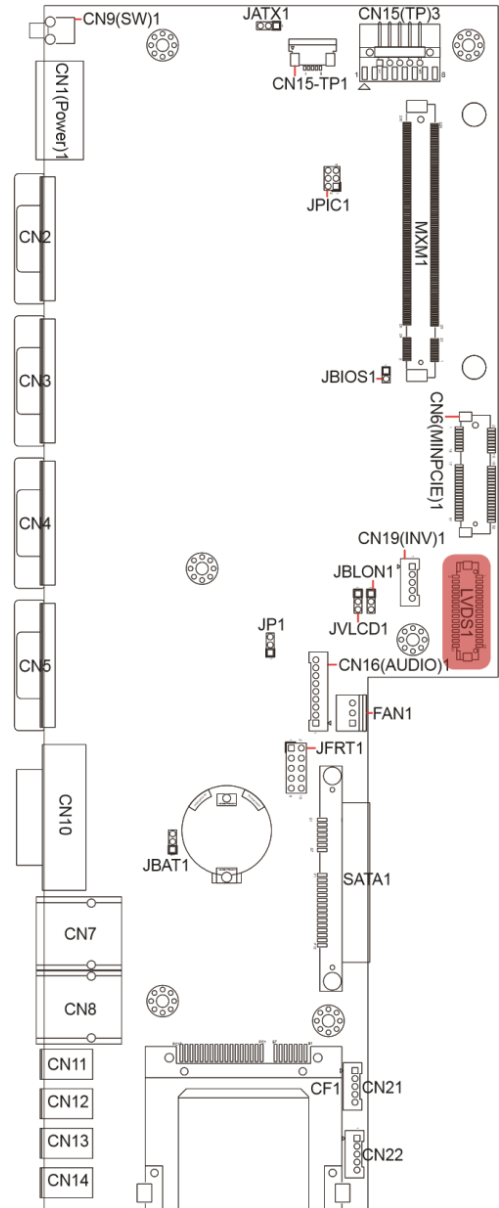


LVDS1

Function: LCD Connector

Connector Type: DF-13-30DP-1.25V connector

Setting			
Pin	Description	Pin	Description
2	VDD	1	VDD
4	TX2CLK+	3	TX1CLK+
6	TX2CLK-	5	TX1CLK-
8	GND	7	GND
10	TX2D0+	9	TX1D0+
12	TX2D0-	11	TX1D0-
14	GND	13	GND
16	TX2D1+	15	TX1D1+
18	TX2D1-	17	TX1D1-
20	GND	19	GND
22	TX2D2+	21	TX1D2+
24	TX2D2-	23	TX1D2-
26	GND	25	GND
28	TX2D3+	27	TX1D3+
30	TX2D3-	29	TX1D3-

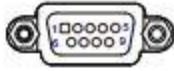


NOTE

When the panel is shipped CN2 through CN5 are preconfigured as RS232 Ports. The pin out diagram below is for the RS232 connections. To use the ports 3 and 4 as RS485 ports please refer to Appendix D Setting COM 3 and COM 4 Serial Ports for RS232 or RS485.

CN2~CN5

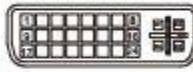
Function: COM1~4
Connector Type: 9-pin male-type DSUB connector
Setting:



Pin	Description	Pin	Description
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	5V
5	GND		

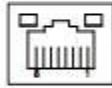
CN10

Function: DVI-I port (digital)
Connector Type: 29-pin DIP-type female connector



CN7~CN8

Function: RJ-45 Ethernet connectors
Connector Type: 10/100/1000Mbps Fast Ethernet
Setting:



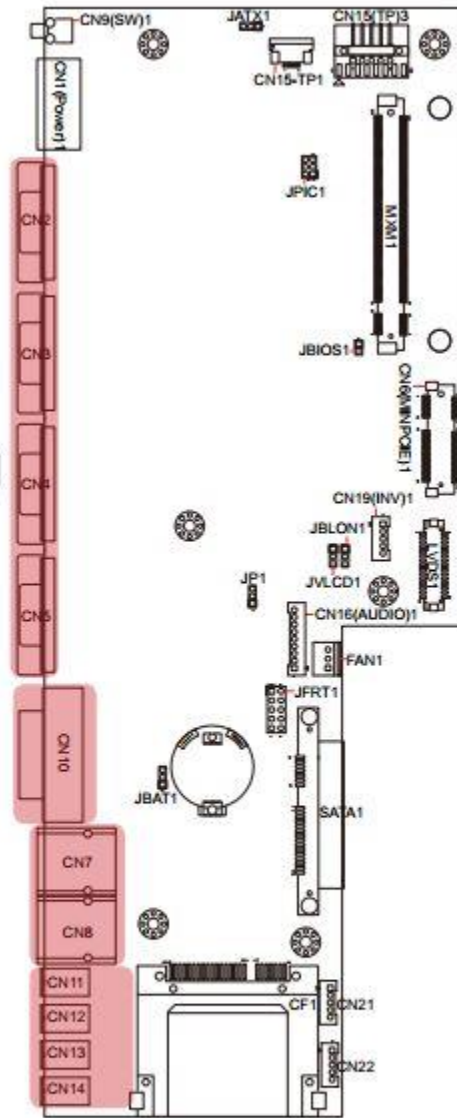
Pin	Description	Pin	Description
1	MDI0	5	MDI2
2	MDI0#	6	MDI2#
3	MDI1	7	MDI3
4	MDI1#	8	MDI3#

CN11~CN14

Function: USB2.0 ports
Connector Type: double stack USB2.0 type A connector
Setting:

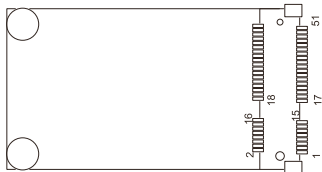


Pin	Description
1	5V
2	USB D-
3	USB D+
4	GND



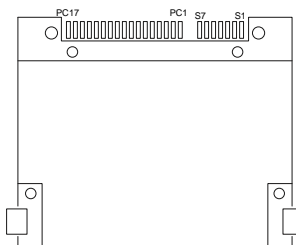
CN6(MINPCIE)1

Function: PCI Express MiniCard socket
Connector Type: onboard 0.8mm pitch 52pin edge card connector



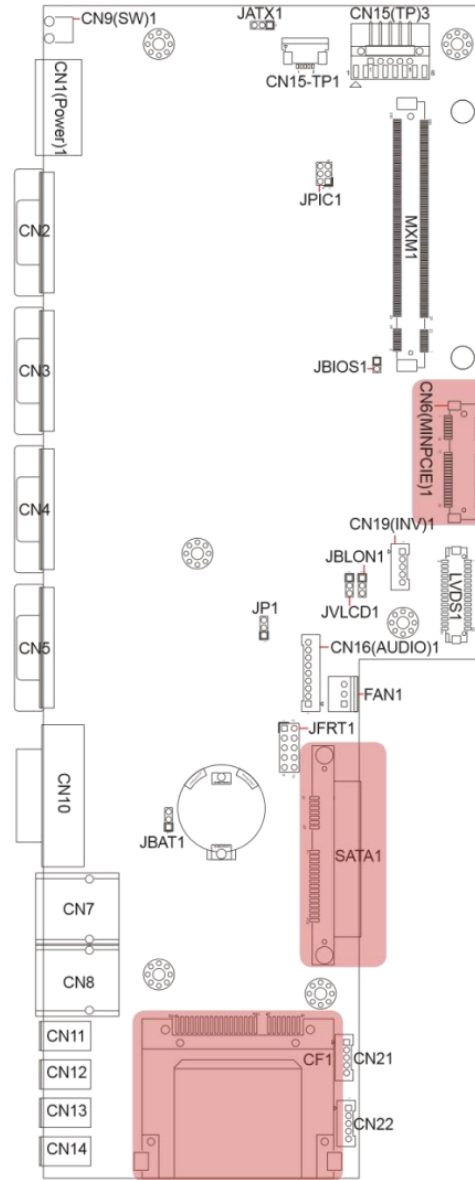
CF1

Function: CFast card Type I/II socket
Connector Type: 7+17-pin CFast card connector consisting of a SATA compatible 7-pin signal connector and a 17-pin power

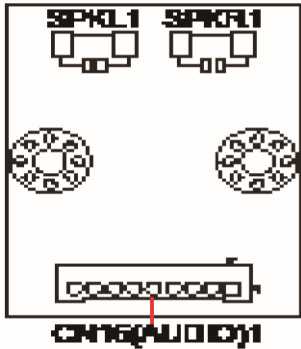
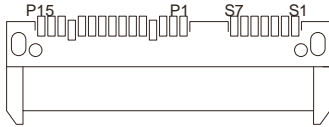


SATA1

Function: S-ATA1 connector
Connector Type: SATA port with data +



power vertical connector (7+15pin)

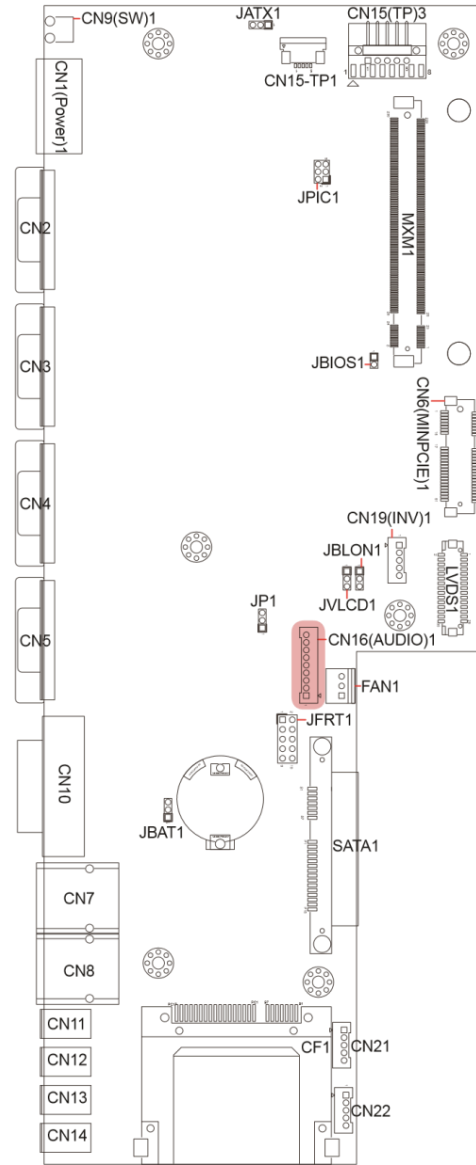
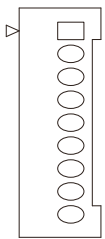


CN16(Audio)1

Function: audio connector

Connector Type: 2.00mm-pitch 1x9-pin 4-wall wafer connector **Setting:**

Pin	Description
1	12VCC
2	3VCC
3	HAD_SYNC
4	HAD_SDOUT
5	GND
6	HAD_CLK
7	GND
8	HAD_RST#
9	HAD_SDIN0



SPKL1 or SPKR1

Function: Left or Right Speaker Connector

CHAPTER 4 Installation and Maintenance

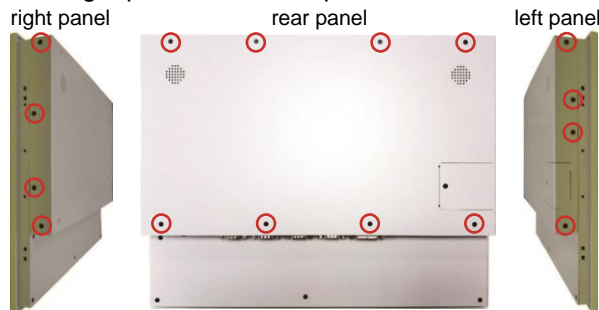
4.1 Use On-board Jumpers and Connectors

The computer's carrier board PBQ-9012 comes with some connectors to join some devices and also some jumpers to alter hardware configuration. Follow through the guide below to access these components inside the computer. Because 2500-VP12 & 715 merely differ in size, the subsequent illustrations take 2500-VP15A for instance.

Loosen and remove the 8 screws from the computer's rear panel. Then, loosen and remove the 4 screws from each of the left and right panel of the computer.

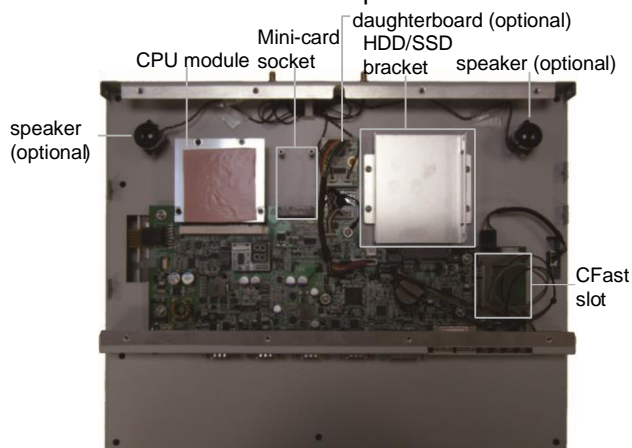
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1. Loosen and remove the 8 screws from the computer's rear panel. Then, loosen and remove the 4 screws from each of the left and right panel of the computer.



Remove the marked screws.

2. Dismount the rear cover from the computer. The inside of the computer comes to view.



3. Adjust the jumpers or use the connectors on the carrier board as described in [3.2.1. Jumpers](#) on page 18 and [3.2.2. Connectors](#) on page 22. Be noted that the speakers and daughterboard are parts of ADK-712 module. Refer to [1.5.2. Configure-to-Order Service](#) on page 6 for details.

4.2 4.2. Install Hardware

The following sections will guide you through the basic hardware installation for the computer. Remember to turn off the panel PC before installing/removing inner hardware.

4.2.1. Install SSD or HDD

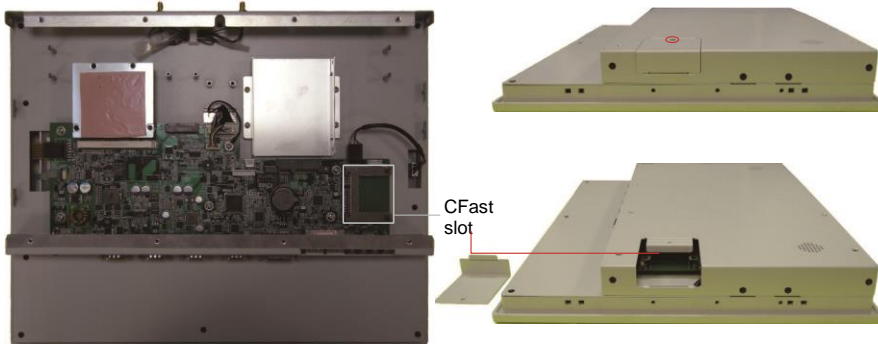
The computer supports a 2.5" HDD or SSD to work inside the computer. To install a 2.5" HDD or SSD to the computer, slide a 2.5" HDD or SSD storage device to the bracket. Fix them together by using four screws at the bracket's both sides. See the illustration below.



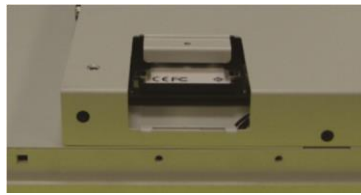
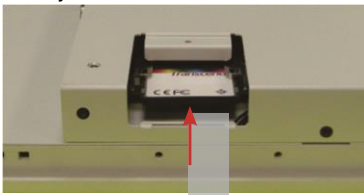
4.2.2. Install CFast Card

The computer comes with a CFast slot to power the computer with a CFast card. To install a CFast card to the computer:

1. Continued from the preceding section, locate the CFast slot on carrier board, or unscrew and take off the CFast slot door without the need to dismount rear panel.



2. Have a CFast card. Push the CFast card into the slot so the card can be clicked in place. Push again to have the card ejected.



3. Restore the CFast slot door to the computer.

4.2.3. Install Wi-Fi Module

The computer comes with one Mini-card socket to load the computer with a wireless module of PCI Express Mini-card form factor. The configure-to-order Wi-Fi module available with the computer is WIFI-IN1350:



WIFI-IN1350

Intel® Centrino® Advanced-N 6205 WiFi Module w/ 20cm & 30cm internal wiring

- If you have ordered the Wi-Fi module WIFI-IN1350, see [Appendix A: WIFIIN1350 Hardware/Software Installation](#) to know how to install the hardware and software for the module.

4.3 Mount the Computer

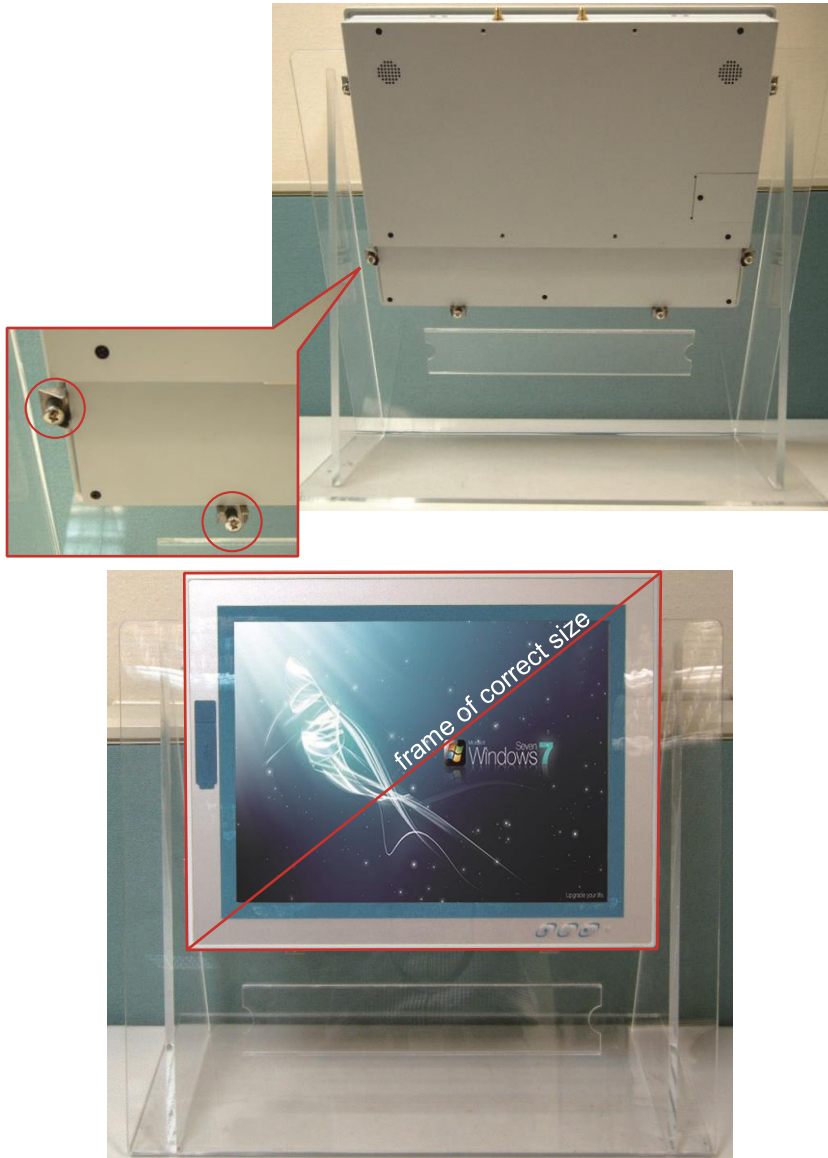
Integrate the computer to where it works by mounting it to a wall in the surroundings or to the rear of a display monitor. Similarly, the subsequent illustrations only take 2500-VP15A for instance.

4.3.1. Panel Mounting

1. Have the panel-mounting clamps included in accessory pack. Put the clamps into holes around edges of the panel PC as below.



2. Put the panel PC into correct-sized frame on a wall or other devices, in this example — a transparent stand, and tightly screw panel-mounting clamps around edges.



4.3.2. VESA Mounting

To support VESA-mounting, the computer needs a VESA bracket, which is available in [1.5.2. Configure-to-Order Service](#) on page [6](#), to enable 75 x 75mm and 100 x 100mm VESA applications.

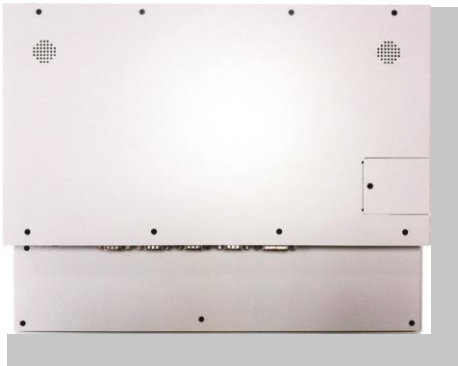
4.3.2.1. Install VESA Bracket

Follow the guide below to install the VESA bracket to the computer:

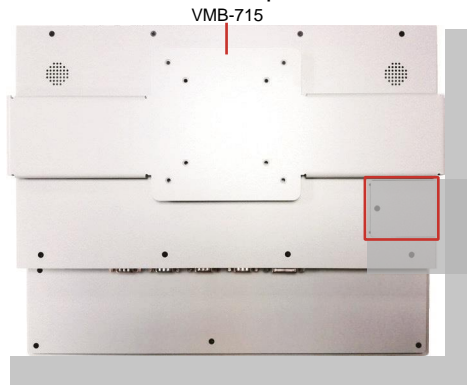
1. Have the VESA-mount bracket, VMB-715 in this case, and the four mounting screws that come with it.



2. Place the computer on a flat surface, with the rear facing up.



3. Place the VESA bracket onto the computer. Note that its installation direction should not block CFAST card door.



4. Fix the VESA bracket to the computer by two screws at each the left and right side of the computer.



Use another two screws on the left side.

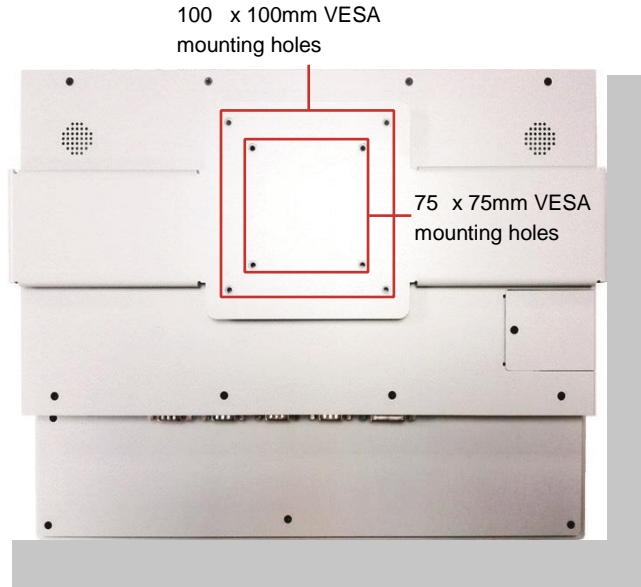


Use two screws on the right side.

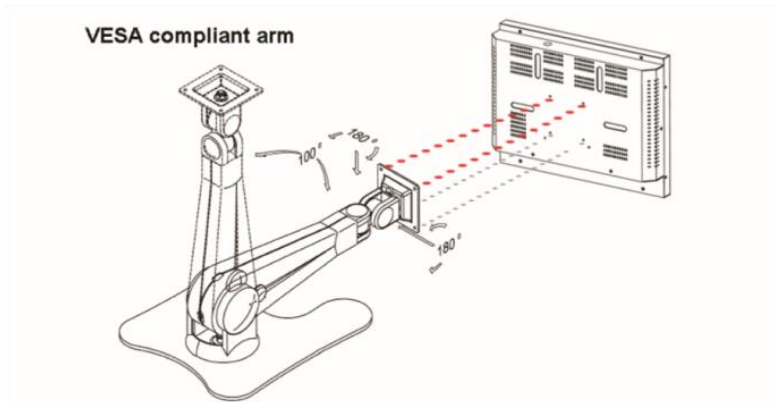
4.3.2.2. Use VESA Arm

To integrate the computer to a VESA arm:

1. Install the VESA-mount bracket to the computer as described in previous section.
2. Find the VESA mounting holes on the bracket.



3. Attach the VESA arm to the rear of the computer by meeting the mounting holes on the VESA arm and VESA bracket.
4. Fix the assemblage with four screws.



4.4 Wire DC-Input Power Source

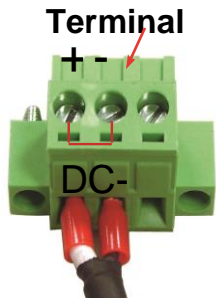
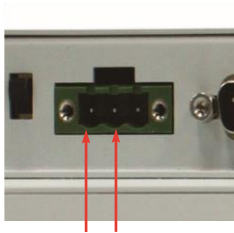


Warning Only trained and qualified personnel are allowed to install or replace this equipment.

Follow the instructions below to connect the computer to a DC-input power source:

1. Before wiring, make sure the power source is disconnected.
2. Find the terminal block in the accessory box.
3. Use the wire-stripping tool to strip a short insulation segment from the output wires of the DC power source.
4. Identify the positive and negative feed positions for the terminal block connection.
5. Insert the exposed wires into the terminal block plugs. Only wires with insulation should extend from the terminal block plugs. Note that the polarities between the wires and the terminal block plugs must be positive to positive and negative to negative.
6. Use a slotted screwdriver to tighten the captive screws. Plug the terminal block firmly, which wired, into the receptacle on the rear panel.

+ -



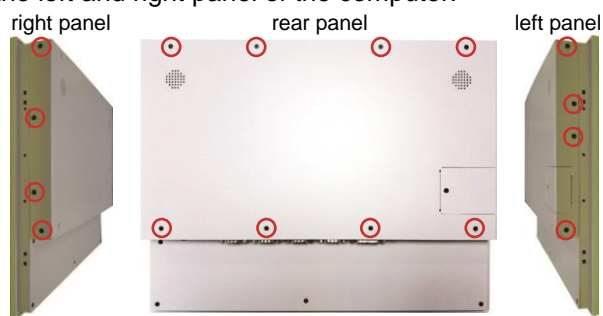
Appendix A Hardware Installation

A.1 WIFI-IN1350 Hardware/Software Installation

To use Wi-Fi, hardware-wise the computer needs a Wi-Fi module installed, and software-wise the computer needs the device driver and an application program. This appendix will guide you to install the Wi-Fi module WIFI-IN1350 and the device driver. (To have a copy of the device driver, please contact ARBOR customer service by the contact info described in [Technical Support](#) on page [vi](#).)

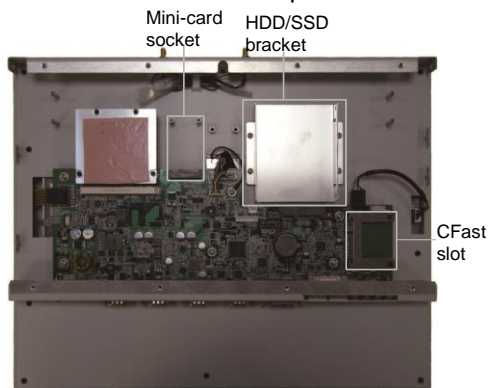
A.2. Install WIFI-IN1350

1. Loosen and remove the 8 screws from the computer's rear panel. Then, loosen and remove the 4 screws from each of the left and right panel of the computer.

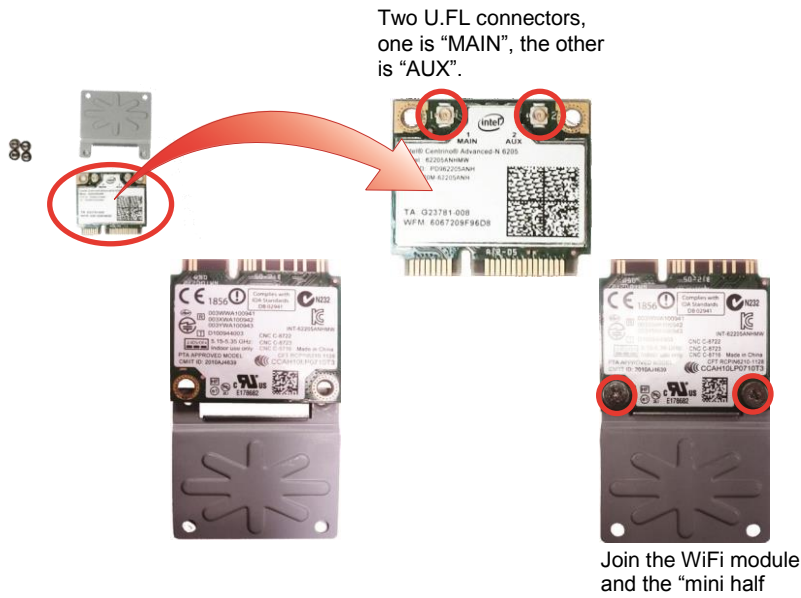


Remove the marked screws.

2. Dismount the rear cover from the computer. The inside of the computer comes to view.



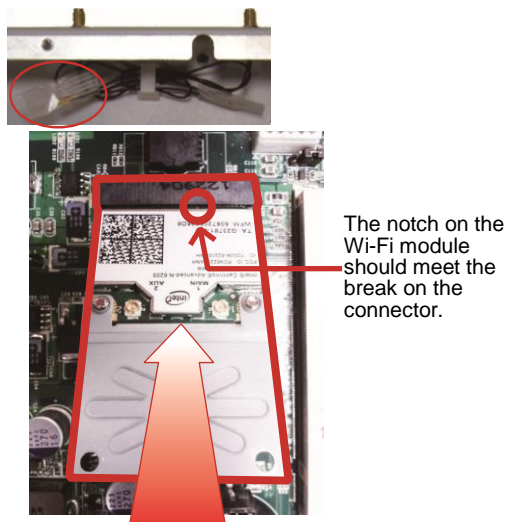
3. Prepare the WIFI-IN1350 Wi-Fi module kit. The module is a half-size module of PCI Express Mini-card form factor, with two U.FL connectors, one is "MAIN", and the other is "AUX".



4. In order to make the half-size Wi-Fi module compatible with the Mini-card socket, extend the WiFi module with a "mini half bracket". Join them together by using two screws.

Position the WiFi module and the "mini half bracket" exactly as shown. Join them together by using two screws.

5. Plug the WIFI-IN1350 into the Mini-card socket by a slanted angle. Fully plug the module, and note the notch on the Wi-Fi module should meet the break on the connector.



6. Press down the module and fix the module in place using two screws.



7. Tear off the tape from one of the RF cables.
8. Connect the RF antenna's MHF connector to the Wi-Fi module's "MAIN" connector

Connect the RF antenna's MHF connector to the Wi-Fi module's "MAIN" connector



9. Restore the rear panel to the computer. Have an external antenna. Screw and tightly fasten the antenna to the SMA connector. Swivel the antenna to an angle of best signals.

Appendix B Installing Device Drivers and Application

After all drivers are installed (as described in [2.3. Driver Installation Note on page 14](#)), you can proceed to install the driver for the Wi-Fi module.

The device driver of WIFI-IN1350 will install the application program (the utility) as well. Follow the guide below to install WIFI-IN1350 driver:

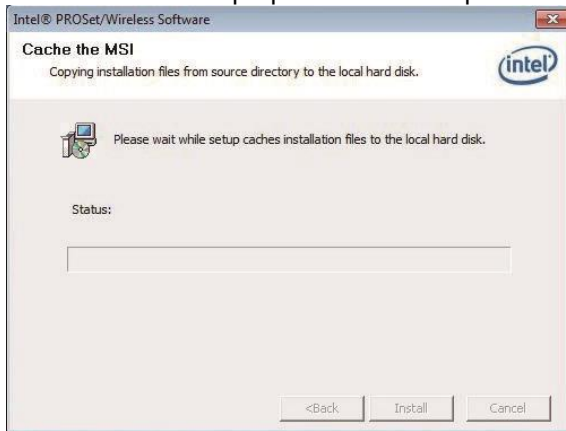
1. Request a copy of the device driver from ARBOR customer service by the contact info as described in [Technical Support](#) on page [vi](#).
2. Run the executable file of the device driver, for example **Advanced-N 6205 WinXP_14.2.0.10_x32.exe**.

The installer then opens.



3. **Next>** button to proceed.

The installer then starts to prepare for the setup.



4. When the preparation finishes, the installer prompts to install **Intel(R) PROSet/Wireless WiFi Software** on the computer.



5. **Next>** button to proceed.



The installer then prompts the license agreement.

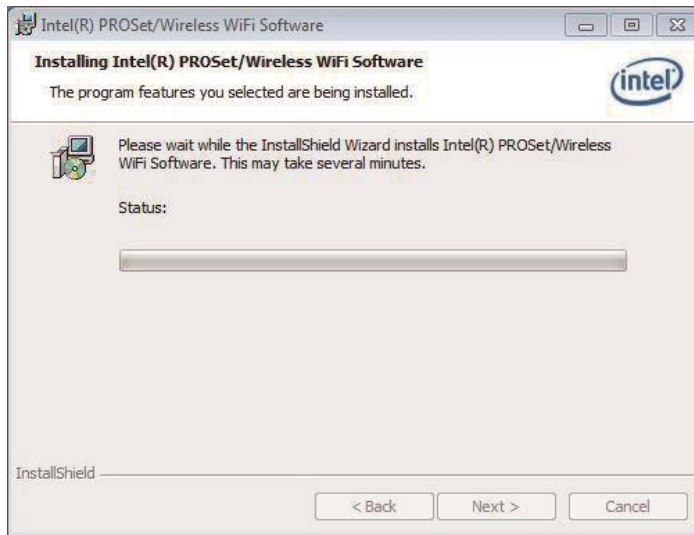
6. Select **I accept the terms in the license agreement** and click **Next>** button to proceed. The installer then asks where to install the software.
7. **Change...** button to browse for an alternate folder to install the software to, or simply click **Next>** button to install the software to the suggested folder.



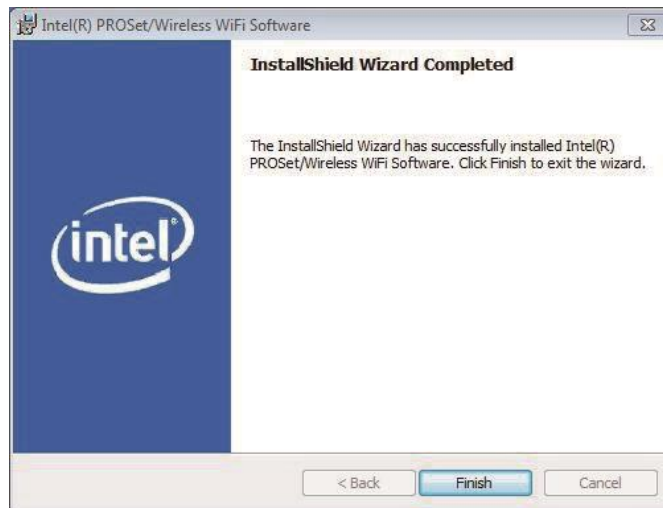
The installer then opens a **Setup Type** selection



8. Select **Typical** to install both the driver and the application program (recommended) or select **Custom** to choose the features to install. Then click **Next>** button to proceed. The software installation then starts, progresses and finishes.



9. **Finish** button to quit the software installation.

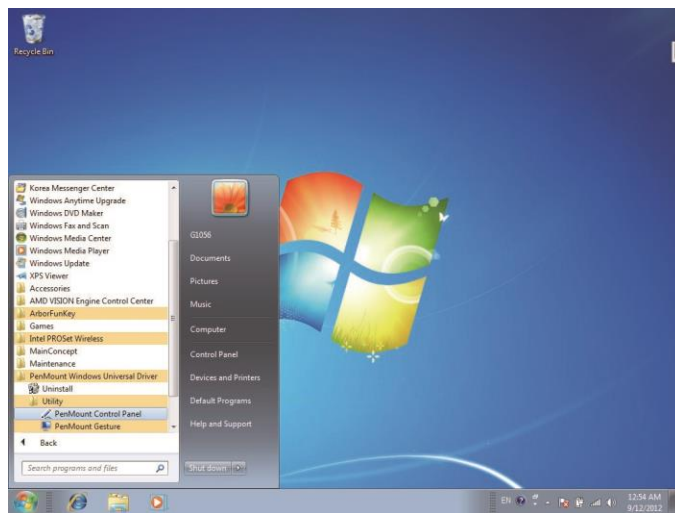


10. The computer's Wi-Fi feature is ready-to-use, see the document of the application program to know how to connect the computer to a Wi-Fi hotspot.

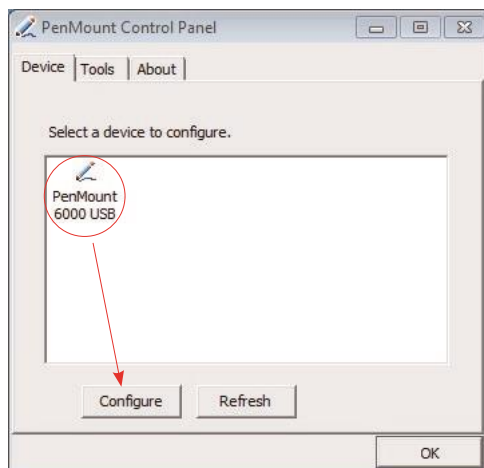
Appendix C Pen Mount Utilities

C.1 PenMount Control Panel

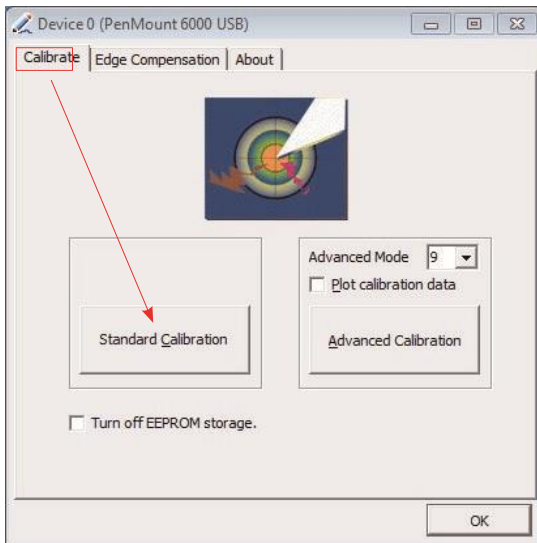
After everything is installed properly, there will be a touch screen application named **PenMount Control Panel** in **All Programs**. Execute this application.



1. The program consists of 3 tabs. The left one is **Device**, in it, you can find how many devices are detected in your system. Select one device icon and tap **Configure**, or double tap the device icon for touch screen calibration.



2. And then another window with **Calibrate** tab will jump out.



C.2 Device Calibration Dialog

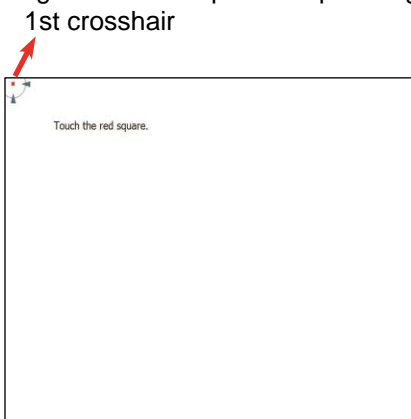
1.The Calibrate Tab

This function offers two ways to calibrate your touch screen. ‘**Standard Calibration**’ adjusts most touch screens while ‘**Advanced Calibration**’ adjusts aging touch screens.

2. Standard Calibration

The Standard Calibration function lets you match the touch screen to your display so that the point you touch is accurately tracked on screen. Standard Calibration only requires four points for calibration and one point for confirmation. Under normal circumstance, Standard Calibration is all you need to perform an accurate calibration.

- i. Please tap the Standard Calibration button to start calibration procedures.
- ii. After that, the 1st crosshair will appear on white screen. Use your finger or stylus to touch the red center and hold down until the screen shows the message - “Lift off to proceed”.
- iii. The 2nd crosshair follows immediately. Do the process again. After the fifth red point calibration is complete, the program will jump out automatically, or you may press ESC key to quit it during calibration process. Alternatively, doing nothing for a while equates to pressing ESC.



3 Advanced Calibration

The Advanced Calibration function improves the accuracy of calibration by using more involved engineering calculations. Use this function only if you have tried the Standard Calibration and there is still a discrepancy in the way the touch screen maps to the display. You can choose 9, 16 or 25 points to calibrate, though we suggest that you first try 9 points, if it is still not tracking well then try 16 or 25 points. The more points you use for calibration, the greater the accuracy is. Errors in calibration may occur due to viewing angle, or individual skill, and there may be little difference in using 16 or 25 points. Note that a stylus is recommended for most accurate results.

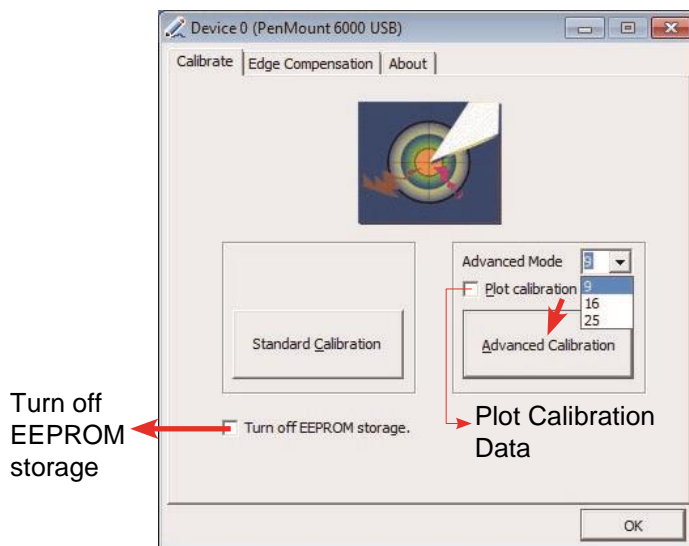
3.1 Plot Calibration Data

Check this function to have touch panel linearity comparison graph appear when you finish Advanced Calibration. The black lines reflect the ideal linearity assumed by PenMount's application program while the blue lines show the approximate linearity calculated by PenMount's application program as the result of user's execution of Advance Calibration.

3.2 Turn off EEPROM storage

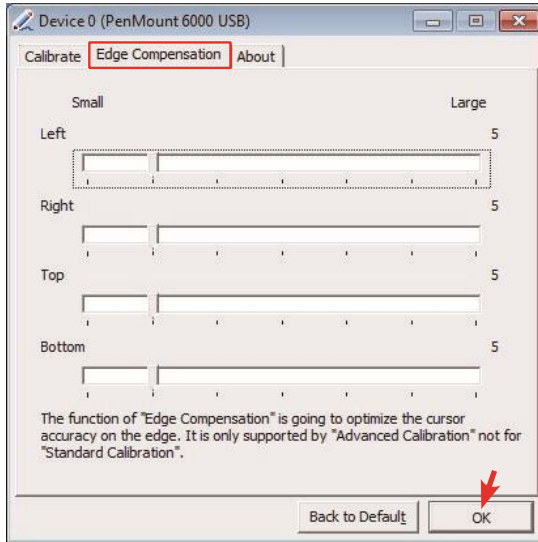
Tick this function to disable the write-in of calibration data in Controller.

Please tap the Advanced Calibration button to start calibration procedures and do the rest as explained in Standard Calibration.

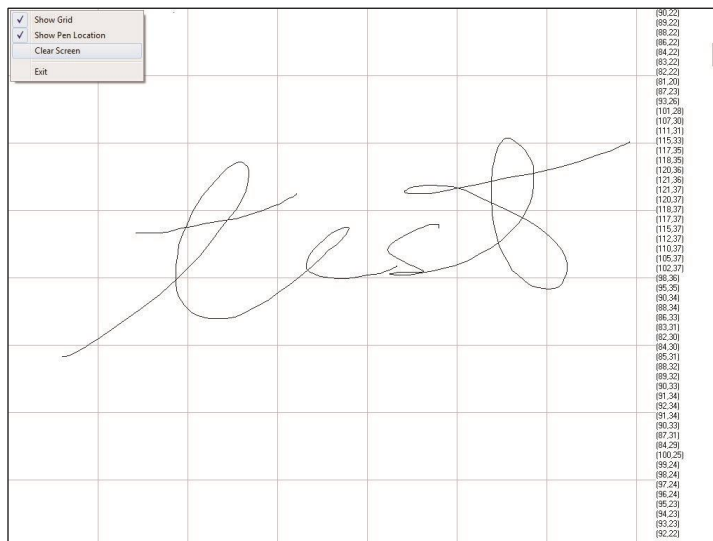
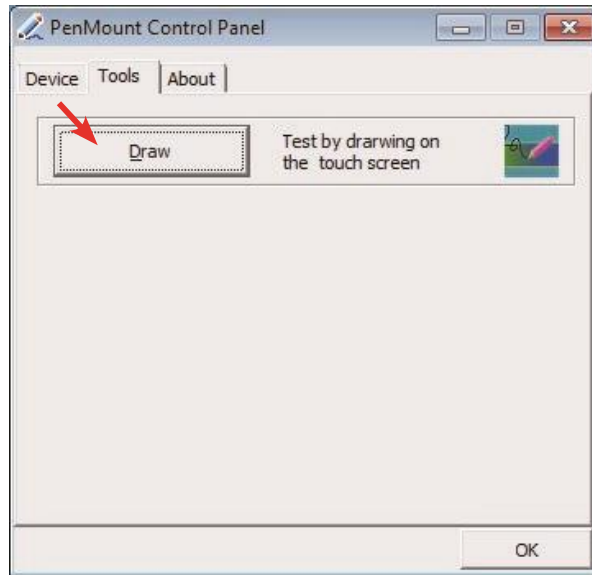


3.3 The Edge Compensation Tab

Under the same level where you calibrate your screen, you may find the tab. This tab is the edge compensation settings for the advanced calibration. You can adjust the settings from 0 to 30 for accommodating the difference of each touch panel.

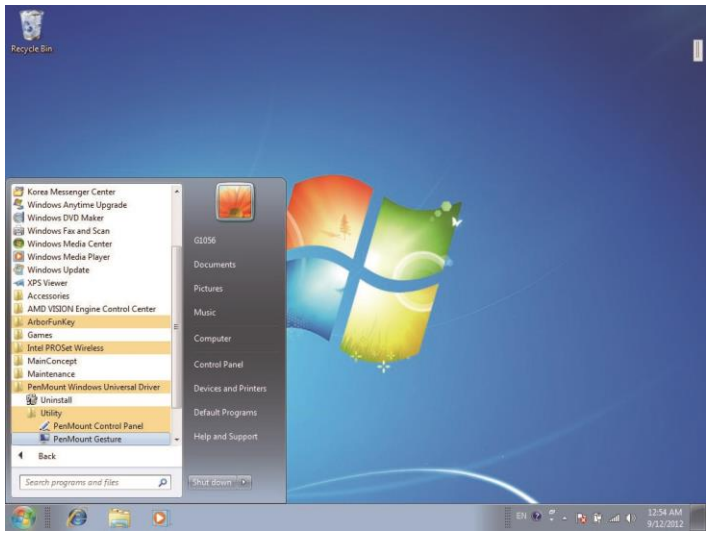


Press **OK** to close former window and back to upper level. As mentioned before, the program consists of 3 tabs, and the central one is **Tool**, switch to it, and click **Draw** to test PenMount touch screen operation.

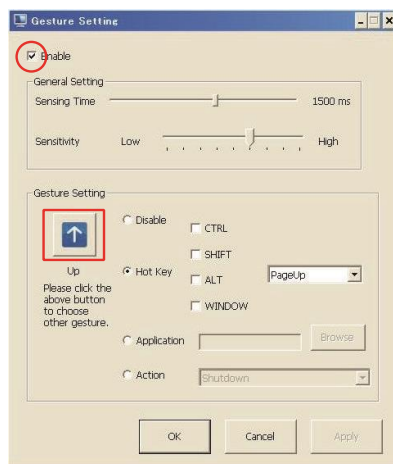


3.4 PenMount Gesture

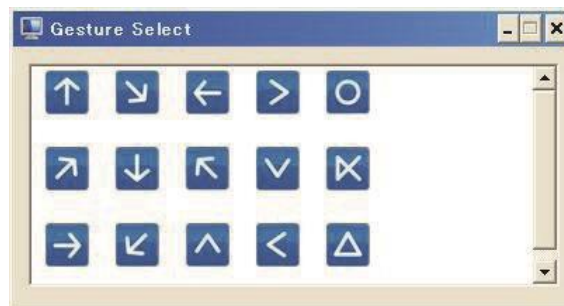
Now that this tablet PC supports touchscreen function, you may take advantage of that to set hotkey or do other settings. Single-click a small icon like a monitor in system tray. If it's absent, you can recall it from **All Programs**. The default setting is inactive, so you need to click "Gesture Setting" to start the program.



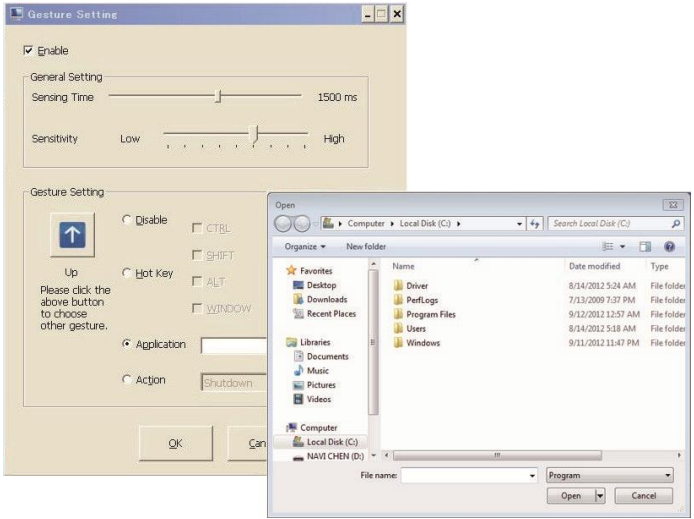
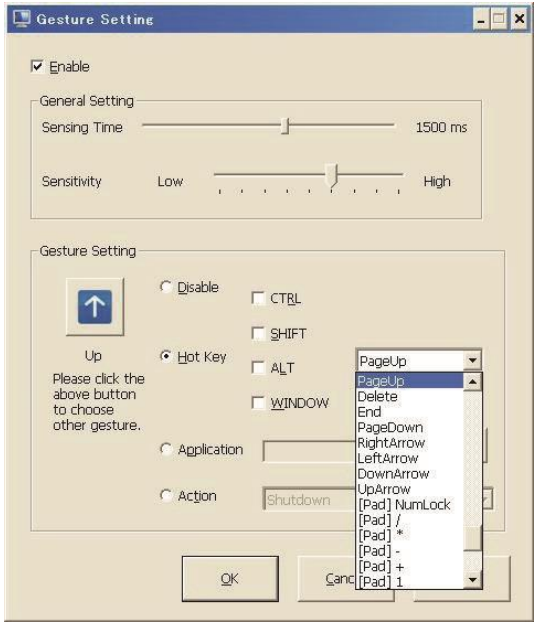
1. Check "Enable" and click the upward arrow in red square. You may also disable gesture function by canceling "Enable" box.

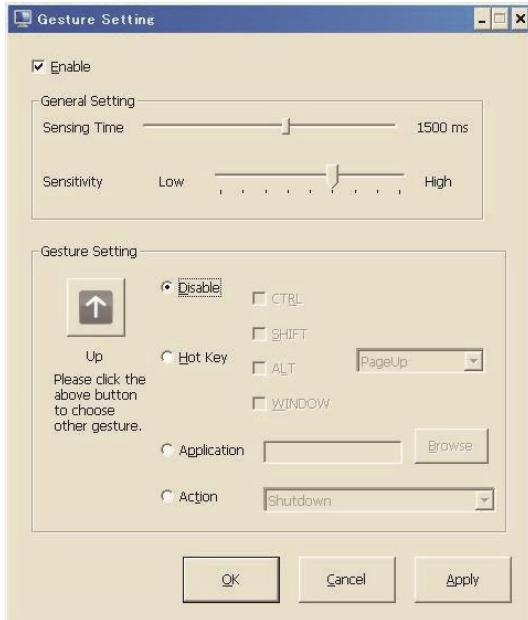
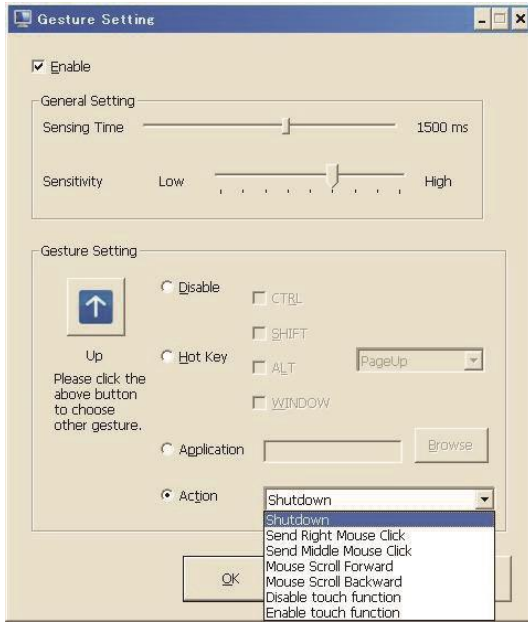


2. And then another **Gesture Select** window will pop up. Each mark in this menu represents your gesture on screen. For example, the upward arrow indicates that you move your finger across the touch screen from bottom to top. The rest are similar. You may use your gesture applied on the touchscreen to do further configuration. Select a gesture you would like to define.



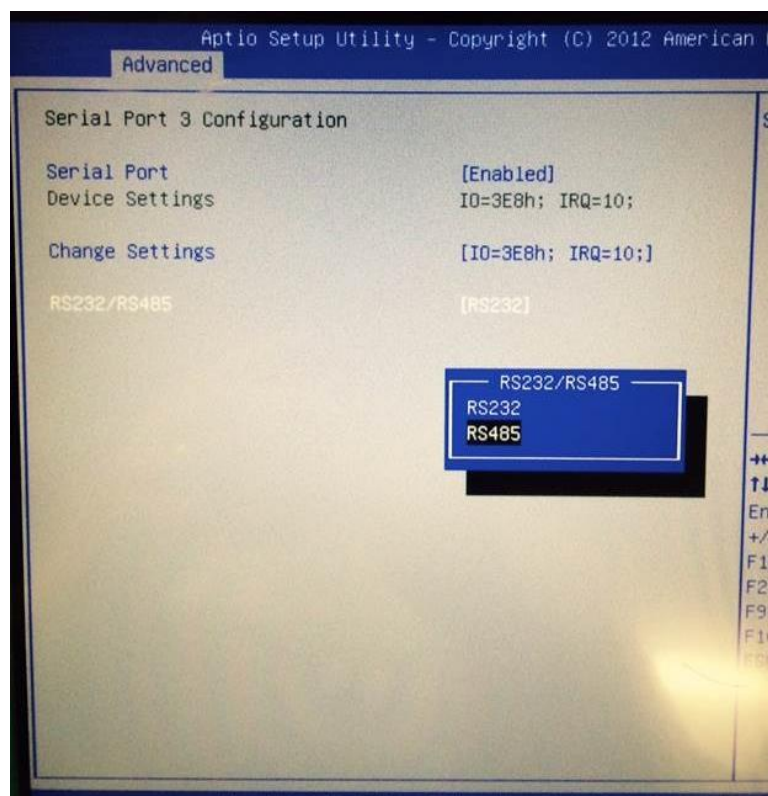
3. Then again, choose **Hot Key**, **Action** or **Application** to set each gesture's corresponding function. You may disable respective gesture, too. And remember to press **Apply** after all.





Appendix D Setting COM 3 and COM 4 Serial Ports for RS232 or RS485

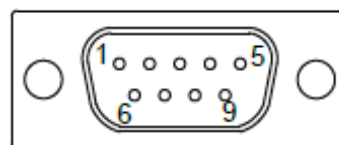
In order to use Serial Communications Port 3 and/or Port 4 as an RS485 you must change the port settings in the panel's BIOS. When you first power-up the panel you will be given the opportunity to enter the BIOS Settings Screen. Once you are in the BIOS Setup Screen under Advanced/F81866 Super IO.../Serial Port 3 and 4. You will see the screen as shown in the screen shot below. Change the port from RS232 to RS485. **There are no jumpers or switches on the panel that needs to be set.**



Once you have configured the port in the BIOS Settings for RS485 you will be using the following pins on the 9 pin DSUB Serial Port Connector for connecting the RS485 cable.

Com 3 and Com 4 Serial Port connector RS485

Pin	Description
1	D-
2	D+



CTI WARRANTY

Warranty. Control Technology Inc. ("CTI") warrants that this CTI Industrial Product (the "Product") shall be free from defects in material and workmanship for a period of one (1) year from the date of purchase from CTI or from an authorized CTI Industrial Distributor, as the case may be. Repaired or replacement CTI products provided under this warranty are similarly warranted for a period of 6 months from the date of shipment to the customer or the remainder of the original warranty term, whichever is longer. This Product and any repaired or replacement products will be manufactured from new and/or serviceable used parts which are equal to new in the Product. This warranty is limited to the initial purchaser of the Product from CTI or from an authorized CTI Industrial Distributor and may not be transferred or assigned.

2. Remedies. Remedies under this warranty shall be limited, at CTI's option, to the replacement or repair of this Product, or the parts thereof, only after shipment by the customer at the customer's expense to a designated CTI service location along with proof of purchase date and an associated serial number. Repair parts and replacement products furnished under this warranty will be on an exchange basis and all exchanged parts or products become the property of CTI. Should any product or part returned to CTI hereunder be found by CTI to be without defect, CTI will return such product or part to the customer. The foregoing will be the exclusive remedies for any breach of warranty or breach of contract arising therefrom.

3. General. This warranty is only available if (a) the customer provides CTI with written notice of a warranty claim within the warranty period set forth above in Section 1 and (b) CTI's examination of the Product or the parts thereof discloses that any alleged defect has not been caused by a failure to provide a suitable environment as specified in the CTI Standard Environmental Specification and applicable Product specifications, or damage caused by accident, disaster, acts of God, neglect, abuse, misuse, transportation, alterations, attachments, accessories, supplies, non-CTI parts, non-CTI repairs or activities, or to any damage whose proximate cause was utilities or utility-like services, or faulty installation or maintenance done by someone other than CTI.

4. Product Improvement. CTI reserves the right to make changes to the Product in order to improve reliability, function or design in the pursuit of providing the best possible products.

5. Exclusive Warranty. THE WARRANTIES SET FORTH HEREIN ARE CUSTOMER'S EXCLUSIVE WARRANTIES. CTI HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. WITHOUT LIMITING THE FOREGOING, CTI SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, COURSE OF DEALING AND USAGE OF TRADE.

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ANY OTHER CONTRARY PROVISION HEREOF AND REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHERWISE, AND FURTHER WILL EXTEND TO THE BENEFIT OF CTI'S VENDORS, APPOINTED DISTRIBUTORS AND OTHER AUTHORIZED RESELLERS AS THIRD-PARTY BENEFICIARIES. EACH PROVISION HEREOF WHICH PROVIDES FOR A LIMITATION OF LIABILITY, DISCLAIMER OF WARRANTY OR CONDITION OR EXCLUSION OF DAMAGES IS SEVERABLE AND INDEPENDENT OF ANY OTHER PROVISION AND IS TO BE ENFORCED AS SUCH.

7. Adequate Remedy. The customer is limited to the remedies specified herein and shall have no others for a nonconformity in the Product. The customer agrees that these remedies provide the customer with a minimum adequate remedy and are its exclusive remedies, whether based on contract, warranty, tort (including negligence), strict liability, indemnity, or any other legal theory, and whether arising out of warranties, representations, instructions, installations, or non-conformities from any cause. The customer further acknowledges that the purchase price of the Product reflects these warranty terms and remedies.

8. Force Majeure. CTI will not be liable for any loss, damage or delay arising out of its failure (or that of its subcontractors) to perform hereunder due to causes beyond its reasonable control, including without limitation, acts of God, acts or omissions of the customer, acts of civil or military authority, fires, strikes, floods, epidemics, quarantine restrictions, war, riots, acts of terrorism, delays in transportation, or transportation embargoes. In the event of such delay, CTI's performance date(s) will be extended for such length of time as may be reasonably necessary to compensate for the delay.

9. Governing Law. The laws of the State of Tennessee shall govern the validity, interpretation and enforcement of this warranty, without regard to its conflicts of law principles. The application of the United Nations Convention on Contracts for the International Sales of Goods shall be excluded.

REPAIR POLICY

In the event that the Product should fail during or after the warranty period, a Return Material Authorization (RMA) number can be requested orally or in writing from CTI main offices. Whether this equipment is in or out of warranty, a Purchase Order number provided to CTI when requesting the RMA number will aid in expediting the repair process. The RMA number that is issued and your Purchase Order number should be referenced on the returning equipment's shipping documentation. Additionally, if the product is under warranty, proof of purchase date and serial number must accompany the returned equipment. The current repair and/or exchange rates can be obtained by contacting CTI's main office at 1-800-537-8398 or go to www.controltechnology.com/support/repairs/.

When returning any module to CTI, follow proper static control precautions. Keep the module away from polyethylene products, polystyrene products and all other static producing materials. Packing the module in its original conductive bag is the preferred way to control static problems during shipment. Failure to observe static control precautions may void the warranty.

