# PARDUS Series

## Fanless 19”/17” Industrial Panel PCs with Intel® Celeron® 847E / Intel® Core™ i3-2340UE

# User’s Manual

**Version 1.1**

P/N: 4012617400110P

2014.01

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## Revision History

| Version | Release Time | Description |
|---|---|---|
| 1.0 | June 2013 | Initial release |
| 1.1 | January 2014 | This revision is issued due to the following change in this manual:<br>► 4.3. Wire DC-Input Power Source<br>► Page 7 40GB SSD-->80GB SSD |

## Copyright Notice



The information in this document is subject to change without prior notice in order to improve the reliability, design and function. It does not represent a commitment on the part of the manufacturer.

Under no circumstances will the manufacturer be liable for any direct, indirect, special, incidental, or consequential damages arising from the use or inability to use the product or documentation, even if advised of the possibility of such damages.



## Declaration of Conformity

### CE

The CE symbol on your product indicates that it is in compliance with the directives of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from ARBOR. Please contact your local supplier for ordering information.

**Warning**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### FCC Class A

This device complies with Part 15 of the 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.

NOTE:

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.

**RoHS**

ARBOR Technology Corp. certifies that all components in its products are in compliance and conform to the European Union's Restriction of Use of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2002/95/EC.

The above mentioned directive was published on 2/13/2003. The main purpose of the directive is to prohibit the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE) in electrical and electronic products. Member states of the EU are to enforce by 7/1/2006.

ARBOR Technology Corp. hereby states that the listed products do not contain unintentional additions of lead, mercury, hex chrome, PBB or PBDB that exceed a maximum concentration value of 0.1% by weight or for cadmium exceed 0.01% by weight, per homogenous material. Homogenous material is defined as a substance or mixture of substances with uniform composition (such as solders, resins, plating, etc.). Lead-free solder is used for all terminations (Sn(96-96.5%), Ag(3.0-3.5%) and Cu(0.5%)).

**SVHC / REACH**

To minimize the environmental impact and take more responsibility to the earth we live, Arbor hereby confirms all products comply with the restriction of SVHC (Substances of Very High Concern) in (EC) 1907/2006 (REACH --Registration, Evaluation, Authorization, and Restriction of Chemicals) regulated by the European Union.

All substances listed in SVHC < 0.1 % by weight (1000 ppm)

## Important Safety Instructions

Read these safety instructions carefully

1. Read all cautions and warnings on the equipment.
2. Place this equipment on a reliable surface when installing. Dropping it or letting it fall may cause damage
3. Make sure the correct voltage is connected to the equipment.
4. For pluggable equipment, the socket outlet should be near the equipment and should be easily accessible.
5. Keep this equipment away from humidity.
6. The openings on the enclosure are for air convection and protect the equipment from overheating. DO NOT COVER THE OPENINGS.
7. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
8. Never pour any liquid into opening. This may cause fire or electrical shock.
9. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
10. 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 user's manual.
    e. The equipment has been dropped or damaged.
    f. The equipment has obvious signs of breakage.
11. Keep this User's Manual for later reference.

## Warning

The Box PC and its components contain very delicately Integrated Circuits (IC). To protect the Box PC and its components against damage caused by static electricity, you should always follow the precautions below when handling it:

1. Disconnect your Box PC from the power source when you want to work on the inside.
2. Use a grounded wrist strap when handling computer components.
3. Place components on a grounded antistatic pad or on the bag that came with the Box PC, whenever components are separated from the system.

## Lithium Battery Replacement

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer.

Do not throw lithium batteries into the trash can. It must be disposed of in accordance with local regulations concerning special waste.

## Technical Support

If you have any technical difficulties, please consult the user's manual first at: ftp://ftp.arbor.com.tw/pub/manual

Please do not hesitate to call or e-mail our customer service when you still cannot find out the answer.

http://www.arbor.com.tw

E-mail:info@arbor.com.tw

## Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

# Chapter 1

# Introduction

## 1.1. The Computer

The PARDUS Series is ARBOR's next-generation industrial panel PCs based on either Intel® Core™ i3 or Celeron® 847E. Each features 2 models with different panel sizes, the 17-inch PARDUS-6174 and 19-inch PARDUS-6194.

Based on the Intel® Core™ i3, the PARDUS computers are able to consume low power while delivering high performance. They also feature RAID levels 0 and 1 and supports redundant storage.

The computers are made fanless to deliver more reliable and stable industrial computing. One USB port is recessed in the front panel of the computer, covered with a hinged rubber, to make an outside-accessible USB port. Two combinations of storage are provided for user's option. It can be two outside-accessible CFast plus one 2.5" HDD/SSD or one outside-accessible CFast plus two 2.5" HDD/SSD. The computer also features rich I/O to expend the connectivity to peripherals.

For PCI and PCI Express, the computer reserves two mini PCIe slots plus one PCI slot (the default) or one PCIe x 1 slot (selectable). Users can freely supplement the computer with any function desired such as Wi-Fi and add-on cards.

**Product Highlights**

- Doubled Data Safety
- RAID Levels 0/1 support
- Few Cables & Fanless Design
- Flexible modular design
- 17" 1280 x 1024 SXGA LCD display w/ LED backlight
- Die-casting bezel, covered w/ membrane
- IP65-rated flushed front panel
- Brightness control button
- Anti-spark power circuit (UL Class 1 Div. 2 compliant)
- Outside-accessible push-pull CFast socket(s)
- Isolated (RS-232/485) serial ports w/ auto-flow feature
- Two Mini-card sockets plus one PCI or one PCIe x1
- One semi-pierced DB-9 hole reserved for field-bus card

- Two SMA antenna holes for optional WiFi function
- 9~36V wide-range DC input

## 1.2. About this Manual

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 ARBOR products.

## 1.3. Specifications

| | |
|---|---|
| **System** | |
| **Processor** | Soldered onboard Intel® Celeron® 847E 1.1GHz |
| | Soldered onboard Intel® Core™ i3-2340UE 1.3GHz |
| **BIOS** | AMI Flash BIOS |
| **Chipset** | Intel® HM65 for Celeron® 847E |
| | Intel® QM67 for Core™ i3-2340UE |
| **Memory** | Two DDR3 SO-DIMM sockets, supporting 1066/1333 MHz SDRAM up to 8GB |
| | One 2GB DDR3 SO-DIMM memory module installed |
| **Serial ATA** | Two serial ATA ports:<br>• One port with 600MB/s HDD transfer rate<br>• One port with 300MB/s HDD transfer rate |
| **Ethernet Controller** | One Intel® 82579LM PCIe GbE PHY |
| | One Intel® 82583V GbE controller |
| **Watchdog Timer** | 1~255 levels reset |
| **I/O Ports** | |
| **Serial Ports** | Four serial ports with DB-9 connectors:<br>• Two RS232 serial ports<br>• Two isolated RS232/RS485 ports with auto-flow feature |
| **USB Ports** | (Rear) Four Type-A USB 2.0 ports |
| | (Front) One Type-A USB 2.0 port recessed in the front panel, with rubber cover |
| **LAN Ports** | Two RJ-45 ports for Gigabit Ethernet |
| **Expansion Bus** | Two Mini-card sockets: One full-sized and one half-sized |
| | One 32-bit PCI slot (default) or one PCIe x1 slot (provided in the Standard Accessories) |
| **Video Port** | One DVI-I port for digital/analog video outputs |
| **Optional Port** | One semi-pierced DB-9 hole reserved for user's internal wiring |
| **WiFi** | Two SMA antenna holes for optional WiFi function |
| **Audio Ports** | One mic-in port / one line-out port |
| **KB/MS** | Two 6-pin Mini-DIN connectors |
| **Storage** | |
| **Setting 1 (default)** | Two outside-accessible primary CFast slots plus one 2.5" drive bay for HDD/SSD |
| **Setting 2** | One outside-accessible primary CFast slot plus two 2.5" drive bays for HDD/SSD (one drive bay is provided in the Standard Accessories) |
| **RAID Support (for QM67 only)** | Levels 0, 1 |

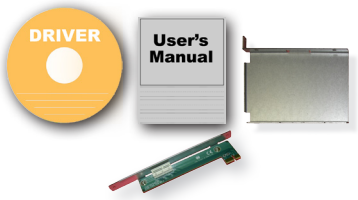
| | |
|---|---|
| **Qualification** | |
| **FCC** | Class A certified |
| **CE** | Certified |
| **Environmental** | |
| **Operating Temp.** | -20 ~ 55°C (-4 ~ 131°F) |
| **Storage Temp.** | -40 ~ 70°C (-40 ~ 158°F) |
| **Operating Humidity** | 10 ~ 95% @ 40°C (non-condensing) |
| **Vibration** | 5 ~ 500Hz, 2Grms Random (with CF/SSD) |
| **Shock** | Operating 15G, 11ms<br>Non-operating 40G, 11ms (with CF/SSD) |
| **Mechanical** | |
| **Construction** | Panel-mounting chassis, aluminum front bezel and SGCC chassis |
| **Mounting** | Panel-mount |
| **Weight** | 8.61 Kg (18.98 lb) for PARDUS-6174 |
| | 9.25 Kg (20.39 lb) for PARDUS-6194 |
| **Dimensions (W x D x H)** | 438.50 x 93.70 x 366.50 mm (17.26" x 3.68" x 14.43") for PARDUS-6174 |
| | 469.70 x 93.70 x 396.50 mm (18.49" x 3.68" x 15.61") for PARDUS-6194 |
| **LCD Display** | |
| **Size/Type** | 17" TFT LCD Panel for PARDUS-6174 |
| | 19" TFT LCD Panel for PARDUS-6194 |
| **Max. Resolution** | 1280 x 1024 (SXGA) |
| **Max. Colors** | 16.2M |
| **Luminance** | 350 cd/m² |
| **Touch Screen** | 5-wired Analog Resistive |
| **Power System** | |
| **Power Input** | DC 9~36V |
| **OS Support** | |
| **Windows** | Windows XP Embedded / Windows 7 Embedded |

## 1.4. Inside the Package

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:

PARDUS-6174 PARDUS-6194

One **PARDUS Series Industrial Panel PC** - the 17" PARDUS-6174 or the 19" PARDUS-6194




One **Accessory Box** that contains the following items:

- Driver CD
- User's Manual
- Screws/Cable
- 3-pin plug for terminal block
- 2.5" HDD/SSD bracket
- PCIe x1 riser card

## 1.5. Ordering Information

| | |
|---|---|
| **PARDUS-6174-847E** | 17" Intel® Celeron® 847E industrial panel PC w/ 2GB memory |
| **PARDUS-6174-2340UE** | 17" Intel® Core™ i3-2340UE industrial panel PC w/ 2GB memory |
| **PARDUS-6194-847E** | 19" Intel® Celeron® 847E industrial panel PC w/ 2GB memory |
| **PARDUS-6194-2340UE** | 19" Intel® Core™ i3-2340UE industrial panel PC w/ 2GB memory |

### 1.5.1. Optional Accessories

The following items are normally optional, but some vendors may include them in the standard package, or some vendors may not carry all the items.

| | |
|---|---|
| **PAC-P065W** | 19V/3.4A 65W AC/DC Power Adapter Kit |
| **PAC-P120W-FSP** | 19V/5.96A 120W AC/DC Power Adapter Kit |

### 1.5.2. Configure-to-Order Service

Make the computer more tailored to your needs by selecting one or more components from the list below to be fabricated to the computer.

| | |
|---|---|
| **80GB SSD** | Intel® 2.5" 80GB SATAIII SSD Kit |
| **MM-3C-2G** | 2GB DDR3-1333 SDRAM |
| **MM-3C-4G** | 4GB DDR3-1333 SDRAM |
| **WIFI-IN1350** | Intel® Centrino® Advanced-N 6205 WiFi Module w/ 20cm & 30cm internal wiring |
| **ANT-D11** | 2.4G/5G Dual-band WiFi Antenna |

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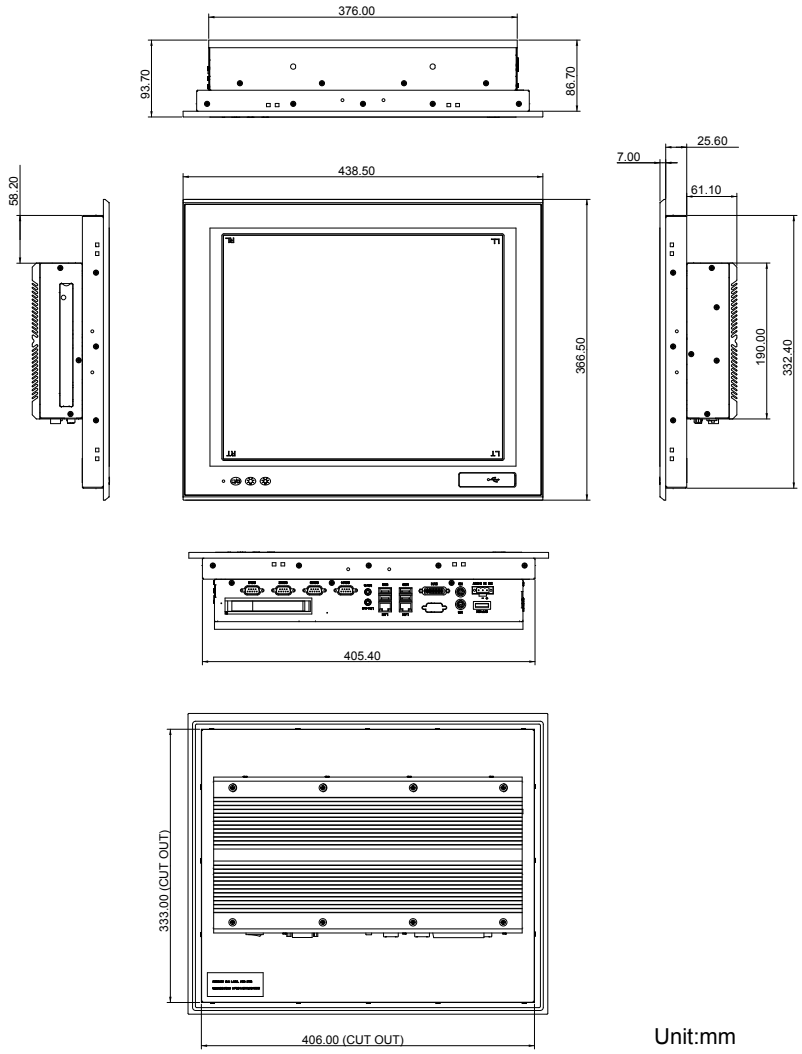
# Chapter 2

# Getting Started

## 2.1. Dimensions

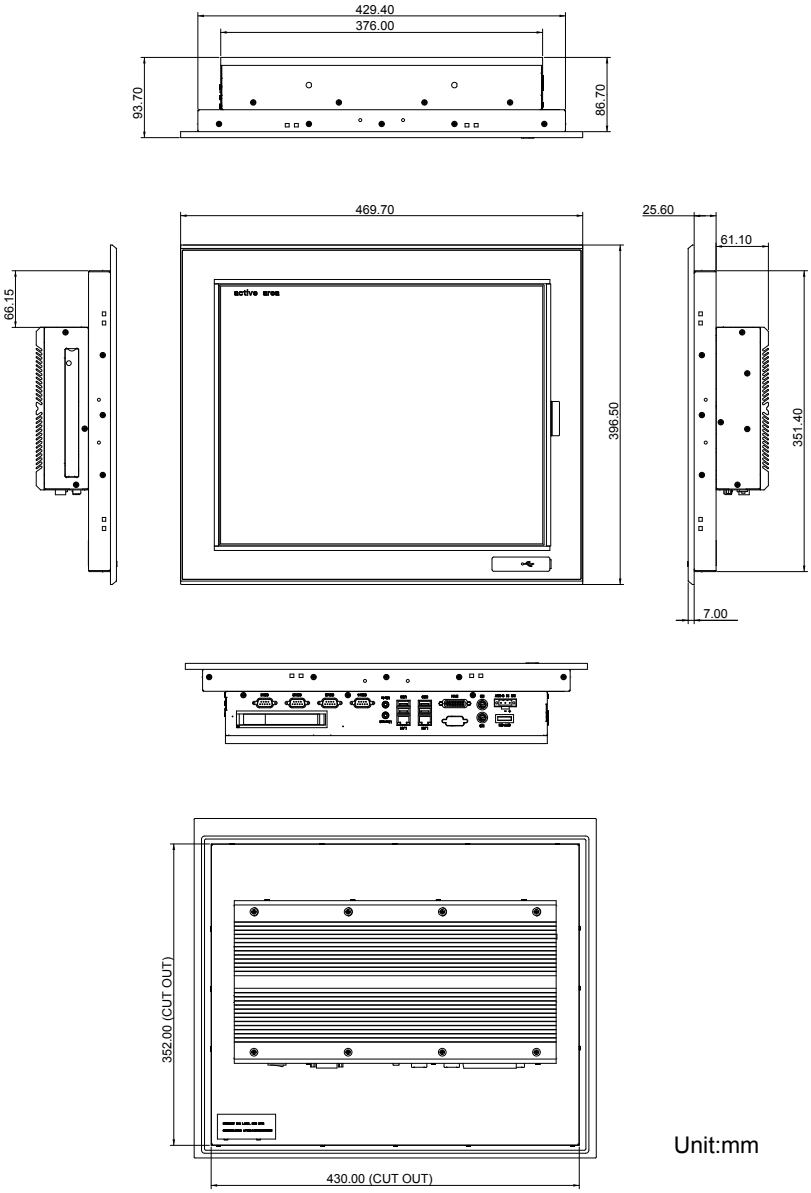
The following illustration shows the dimensions of the PARDUS Series computers, with the measurements in width, depth, and height called out.

### PARDUS-6174




Unit:mm

## PARDUS-6194



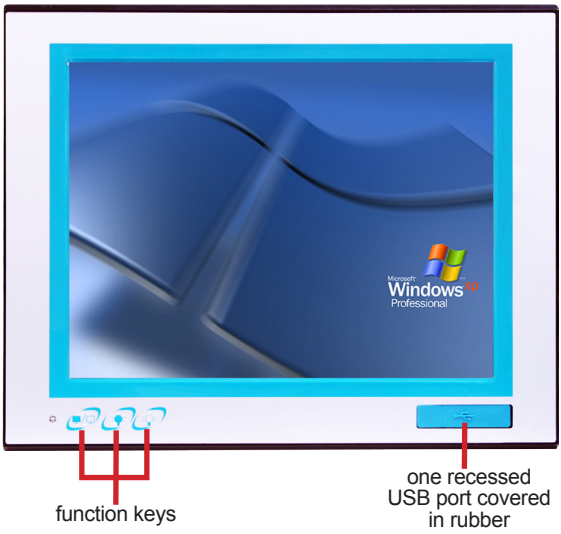

Unit:mm

## 2.2. Tour the Computer

Take a look around the computer and find the external controls and connectors.

### 2.2.1. Front View

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.



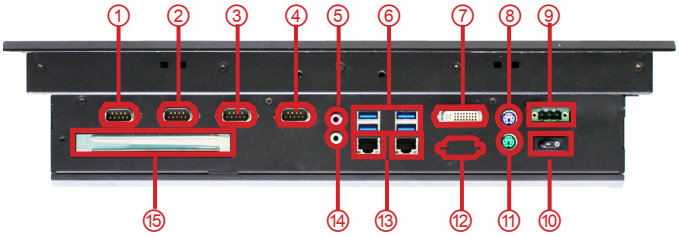

Use the function keys to launch the following actions from the computer:

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

### 2.2.2. Rear View

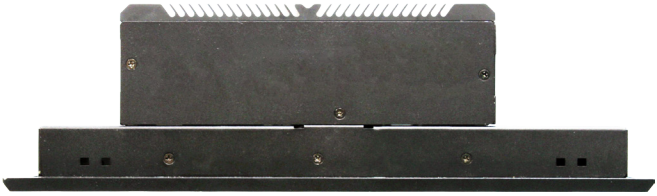
### 2.2.3. Bottom View

The bottom side of the computer is where the computer's I/O ports are.




| No. | Description | No. | Description | No. | Description |
|---|---|---|---|---|---|
| ① | COM1 & COM2 (isolated, RS232/485 configurable with auto-flow feature) | ⑥ | USB 2.0 ports | ⑪ | PS/2 port for mice |
| ② | | ⑦ | DVI-I port | ⑫ | Semi-pierced hole |
| ③ | COM3 & COM4 (RS232) | ⑧ | PS/2 port for keyboards | ⑬ | LAN ports |
| ④ | | ⑨ | DC-in power connector | ⑭ | Line-out |
| ⑤ | Mic-in | ⑩ | Power switch | ⑮ | PCI or PCIe x1 slot |

### 2.2.4. Right View



### 2.2.5. Top View

## 2.3. Driver Installation Note

The computer supports the operating systems Windows 7 and Windows XP. Find the necessary device drivers on the CD that comes with your purchase. Always follow the sequence below to install all drivers to prevent errors:

**Chipset→.NET Framework→Graphics→Audio→LAN→ME→Wi-Fi→touch**

The computer supports Intel® Management Engine, a microcontroller embedded in the PCH chipset, which joins the associated firmware to form the architecture of Intel® AMT (Active Management Technology) for a remote management console to connect to a client through the network. Intel® Management Engine is able to work even in the absence of the O.S. (the "out-of-band" capability) To make Intel® ME work correctly on the computer, install the driver included on the CD.

The path to find the device drivers on CD:

**Windows XP**

| Device | Driver Path |
|---|---|
| **Chipset** | CHIPSET\infinst_autol |
| **.NET Framework** | NET Framework 3.5\NET Framework 3.5 |
| **VGA** | GRAPHIC\WIN XP\X86\winxp_14517 |
| | GRAPHIC\WIN XP\X64\winxp64_14517 |
| **Audio** | AUDIO\Windows 2000,XP,2003(32,64 bits)\WDM_R270 |
| **LAN** | LAN\WIN XP\PROWin32 |
| | LAN\WIN XP\PROWinx64 |
| **ME** | ME\MEI_allOS_7.1.40.1161_PV |
| **Wi-Fi** | Wireless\XP\Wireless_15.1.1_x32 |
| | Wireless\XP\Wireless_15.1.1_x64 |
| **touch** | Touch Panel\Universal Driver V2.2.0.283.(Win7_32_64bit_WHQL)\Setup |

### Windows 7

| Device | Driver Path |
|---|---|
| **Chipset** | CHIPSET\infinst_autol |
| **VGA** | GRAPHIC\WIN7\X86\win32_15288 |
| | GRAPHIC\WIN7\X64\win64_15288 |
| **Audio** | AUDIO\Windows 2000,XP,2003(32,64 bits)\WDM_R270 |
| **LAN** | LAN\WIN7\PROWin32 |
| | LAN\WIN7\PROWinx64 |
| **ME** | ME\MEI_allOS_7.1.40.1161_PV |
| **Wi-Fi** | Wireless\WIN7\Wireless_15.1.1_s32 |
| | Wireless\WIN7\Wireless_15.1.1_s64 |
| **touch** | Touch Panel\Universal Driver V2.2.0.283.(Win7_32_64bit_WHQL)\Setup |

# Chapter 3

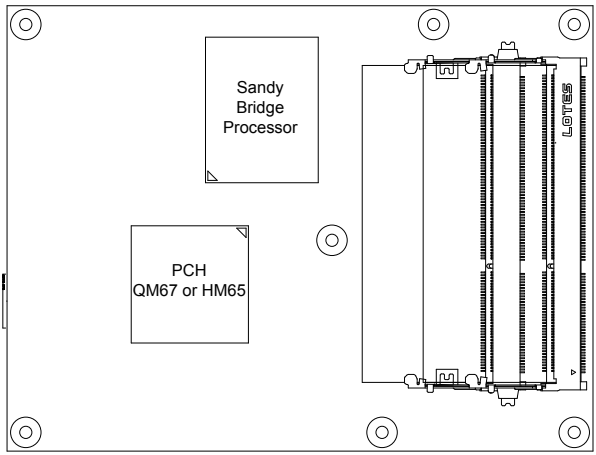
# Engine of the Computer

## 3.1. Board Layout

The engine of the computer is constructed by the CPU board EmETXe-i67M2 (with Intel® Core™ i3-2340UE) or EmETXe-i65M2, with the carrier board PBC-9006P.

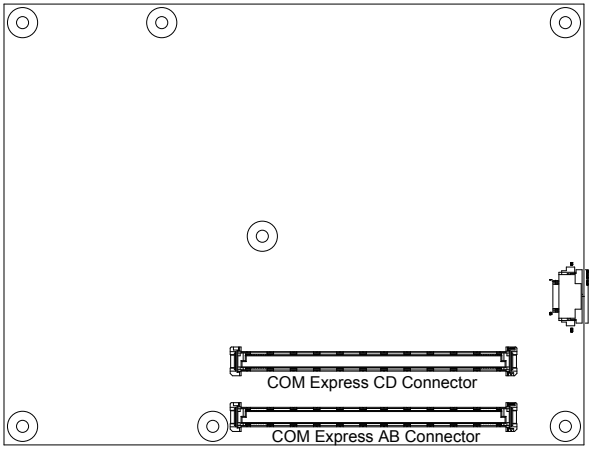
### 3.1.1. CPU Board

**Top View**



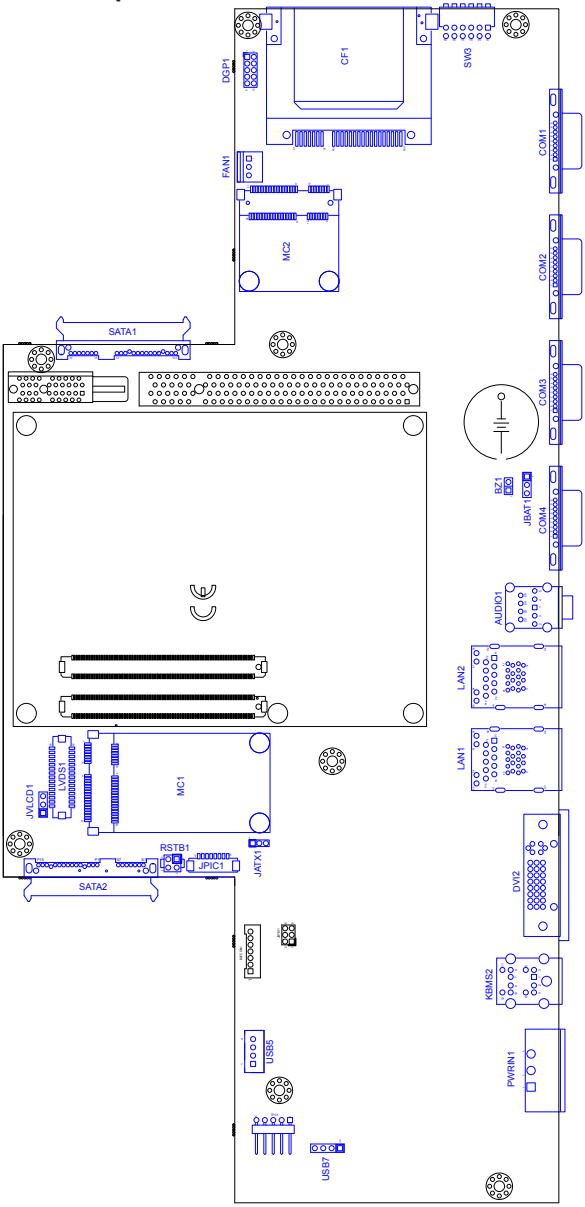

**Bottom View**

COM Express® AB Connector
COM Express® CD Connector

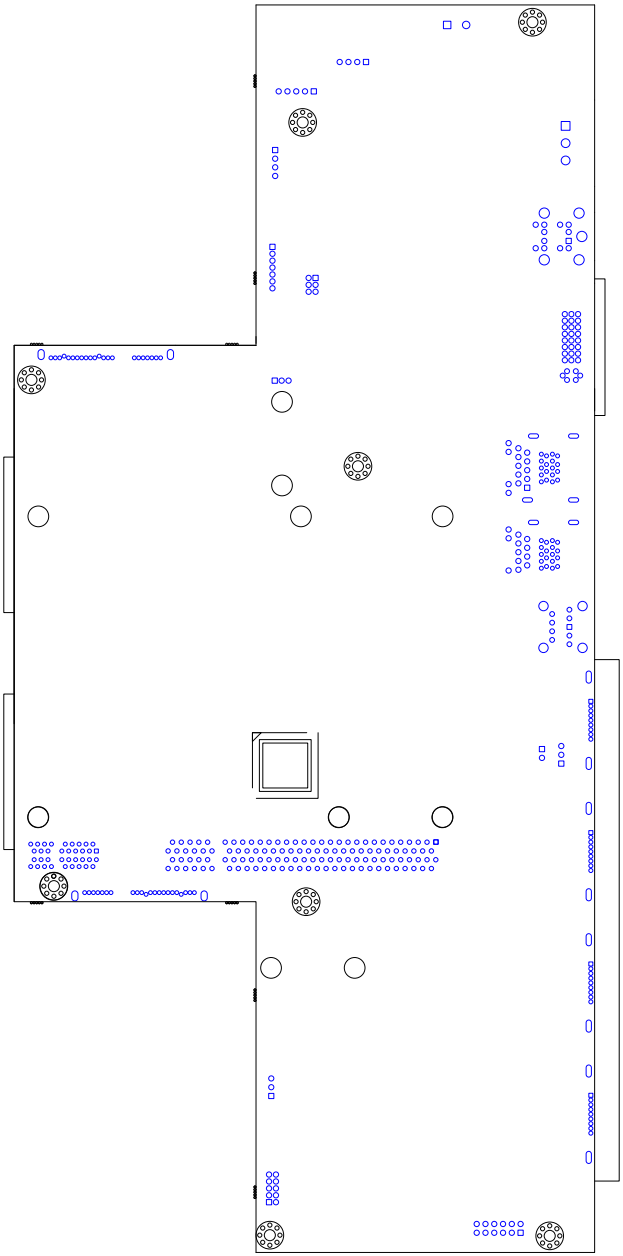


### 3.1.2. Carrier Board

**PBC-9006P: Board Top**



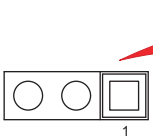
## PBC-9006P: Board Bottom

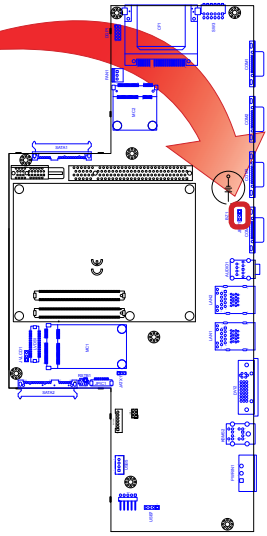


## 3.3. Jumpers, DIP Switch and Connectors

### 3.2.1. Jumpers

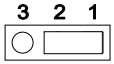
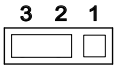
#### JBAT1



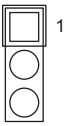
**Function**: COMS Setting
**Connector Type:** Pitch 2.54mm 1x3-pin header, 180-degree DIP

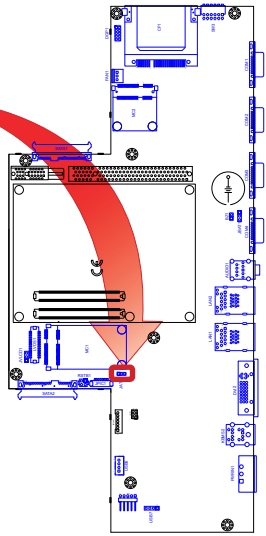
**Setting**:

| Pin | Function | Setting |
|---|---|---|
| 1 & 2 | Keeps CMOS (default) |  |
| 2 & 3 | Clears CMOS |  |



#### JATX1



**Function:** Power supply mode setting
**Connector Type:** Pitch 2.00mm 1x3-pin header

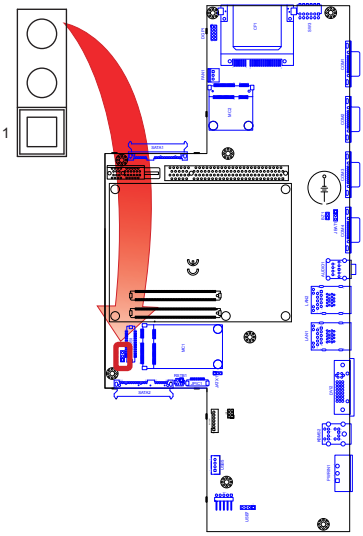
**Setting:**

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

## JVLCD1

**Function:** LVDS VCC selection
**Connector Type:** Pitch 2.54mm 1x3-pin header, 180-degree DIP

| Pin | Function | Setting |
|---|---|---|
| 1 & 2 | VCC3 |   |
| 2 & 3 | VCC5 (default) |   |



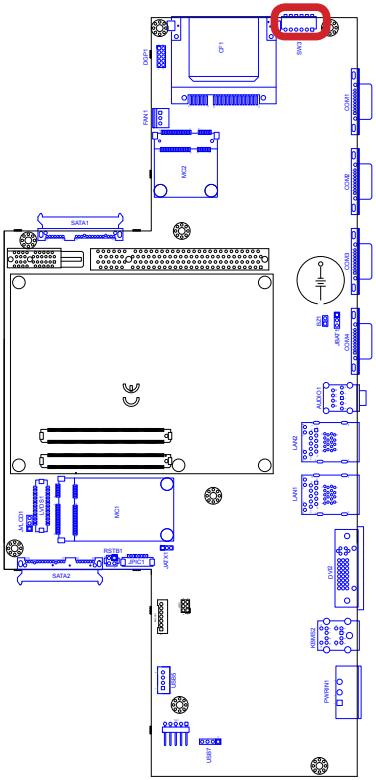
### 3.2.2. DIP Switch

The computer comes with four DB-9 male connectors for serial ports 1 to 4. COM1 and COM2 are configurable between RS232, RS485 and RS485 with terminator while COM3 and COM4 are fixed to RS232. The carrier board comes with a 6-toggle (12-pin) DIP switch to switch COM1 and COM2 between RS232, RS485 and RS485 with terminator. This DIP switch is only accessible after the right panel of the computer is removed, see 4.1.5. Adjust DIP Switch on page 52 for more details.

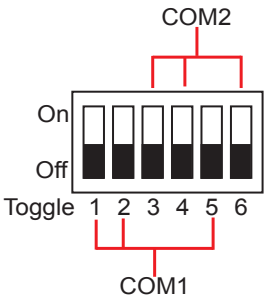
#### SW3

**Description:** Switches COM1 and COM2 between RS232, RS485, and RS485 with terminator.
**Connector Type:** Onboard 6-toggle DIP switch

#### Board Top



Among the toggles: Toggles 1, 2 and 5 control COM1 while toggles 3, 4 and 6 control COM2.

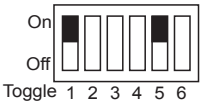



By default, all toggles are slid to **off** positions, which means both COM1 and COM2 are set to RS232 in default state. See the following guide for more details.

Follow the guide below to switch COM1 and COM2 between RS232, RS485 and RS485 with terminator.

- **COM1 Settings**

**COM1 RS485**

| Toggle | Position | Setting |
|---|---|---|
| 1 | on |  |
| 2 | not applicable | |
| 3 | not applicable | |
| 4 | not applicable | |
| 5 | on | |
| 6 | not applicable | |



**COM1 RS232 (default)**

| Toggle | Position | Setting |
|---|---|---|
| 1 | off |  |
| 2 | off | |
| 3 | not applicable | |
| 4 | not applicable | |
| 5 | off | |
| 6 | not applicable | |

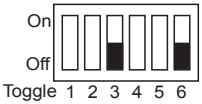


**COM1 RS485 with terminator**

| Toggle | Position | Setting |
|---|---|---|
| 1 | on |  |
| 2 | on | |
| 3 | not applicable | |
| 4 | not applicable | |
| 5 | on | |
| 6 | not applicable | |

- **COM2 Settings**

**COM2 RS485**

| Toggle | Position | Setting |
|---|---|---|
| 1 | not applicable |  |
| 2 | not applicable | |
| 3 | on | |
| 4 | not applicable | |
| 5 | not applicable | |
| 6 | on | |



**COM2 RS232 (default)**

| Toggle | Position | Setting |
|---|---|---|
| 1 | not applicable |  |
| 2 | not applicable | |
| 3 | off | |
| 4 | off | |
| 5 | not applicable | |
| 6 | off | |



**COM2 RS485 with terminator**

| Toggle | Position | Setting |
|---|---|---|
| 1 | not applicable |  |
| 2 | not applicable | |
| 3 | on | |
| 4 | on | |
| 5 | not applicable | |
| 6 | on | |

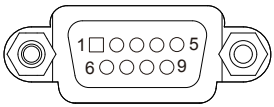
### 3.2.3. Connectors

## COM1 & COM2

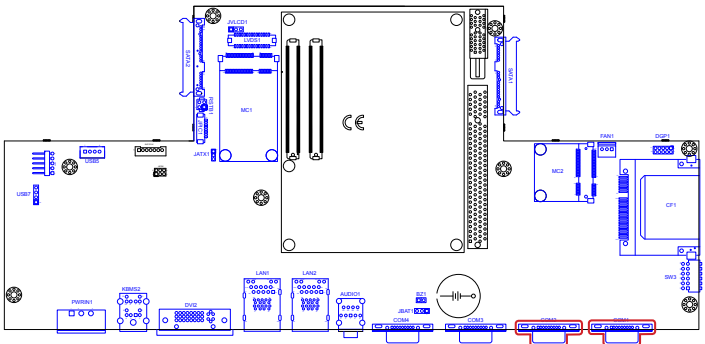
**Description:** Serial ports COM1 & COM2, which are RS232/RS485 configurable, with auto-flow feature.

**Connector Type:** External 9-pin D-sub male connector

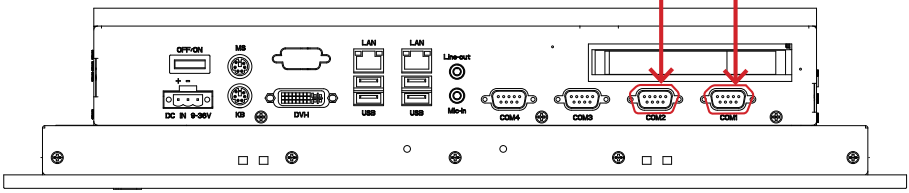
| Pin | Description | Pin | Description |
|---|---|---|---|
| 1 | DCD / 485- | 2 | RXD / 485+ |
| 3 | TXD | 4 | DTR |
| 5 | GND | 6 | DSR |
| 7 | RTS | 8 | CTS |
| 9 | RI | | |




**Board Top**



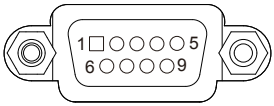
**Bottom Panel**



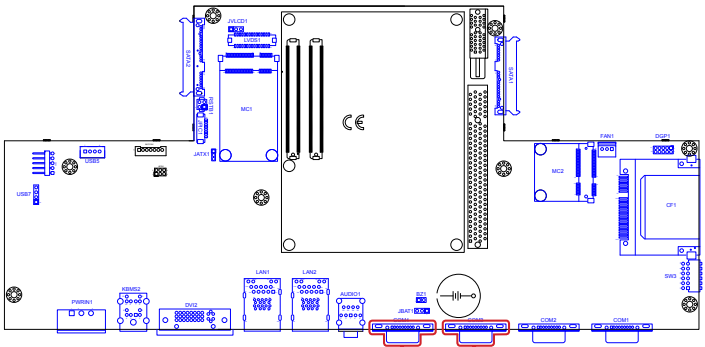
## COM3 & COM4

**Description:** Serial ports COM3 and COM4, which are fixed to RS232 interface.
**Connector Type:** External 9-pin D-sub male connector

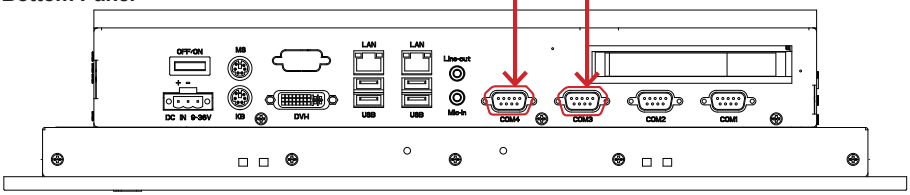
| Pin | Description | Pin | Description |
|---|---|---|---|
| 1 | DCD | 2 | RXD |
| 3 | TXD | 4 | DTR |
| 5 | GND | 6 | DSR |
| 7 | RTS | 8 | CTS |
| 9 | RI | | |




**Board Top**

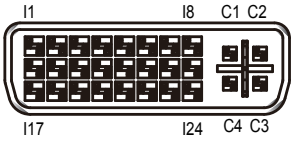


**Bottom Panel**



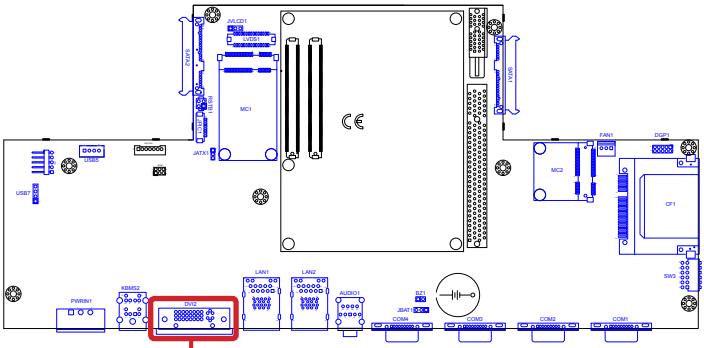
## DVI2

**Description:** DVI-I Connector
**Connector Type:** DVI-I female connector

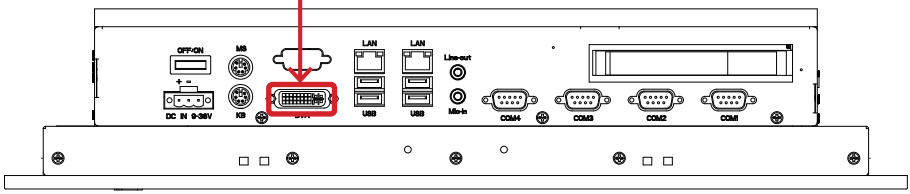



| Pin | Description | Pin | Description | Pin | Description |
|---|---|---|---|---|---|
| I1 | TX2- | I2 | TX2+ | | |
| I3 | GND | I4 | NC | | |
| I5 | NC | I6 | DVI DDC CLK | | |
| I7 | DVI DDC DATA | I8 | CRT VSYNC | | |
| I9 | TX1- | I10 | TX1+ | | |
| I11 | GND | I12 | NC | | |
| **Pin** | **Description** | **Pin** | **Description** | **Pin** | **Description** |
| I13 | NC | I14 | +5V | I15 | CRT HPD |
| I16 | HTPLG | I17 | TX0- | I18 | TX0+ |
| I19 | GND | I20 | CRT DDC CLK | I21 | CRT DDC DATA |
| I22 | GND | I23 | TXC+ | I24 | TXC- |
| C1 | CRT RED | C2 | CRT RED | C3 | CRT BLUE |
| C4 | CRT HSYNC | C5 | GND | C6 | GND |

**Board Top**



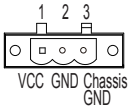
**Bottom Panel**



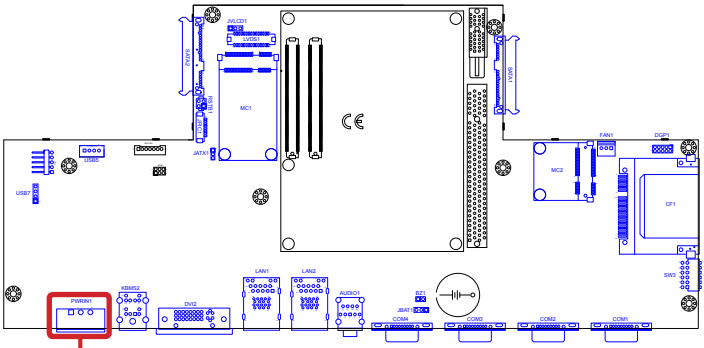
## PWRIN1

**Description:** Power input receptacle
**Connector Type:** 3-pin terminal block

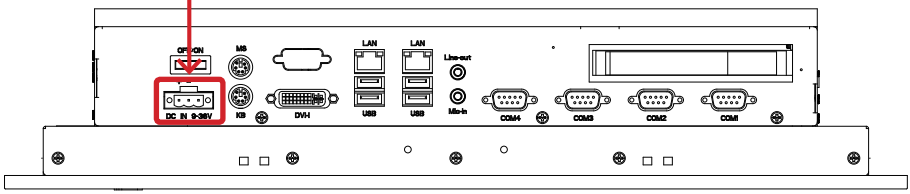
| Pin | Description |
|---|---|
| 1 | VCC |
| 2 | GND |
| 3 | Chassis GND |




**Board Top**



**Bottom Panel**

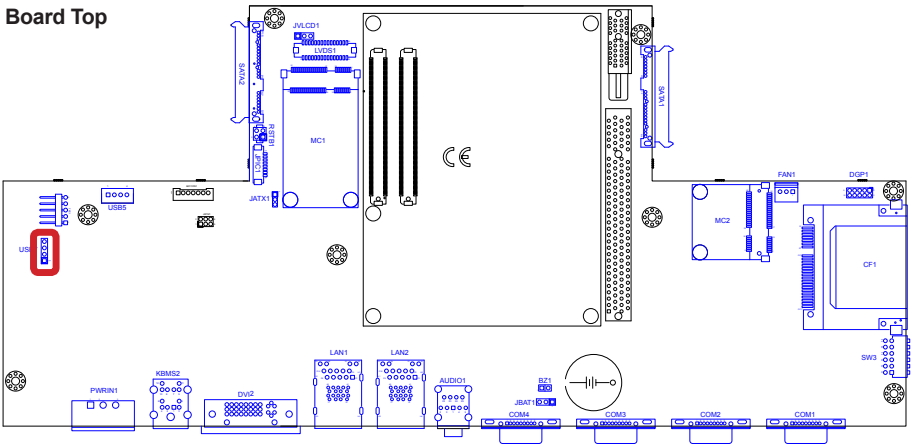


## USB7

**Description:** USB KEY PRO pin header
**Connector Type:** Onboard 2.54mm-pitch 4-pin wafer header

| Pin | Description |
|---|---|
| 1 | VCC5 |
| 2 | D- |
| 3 | D+ |
| 4 | GND |

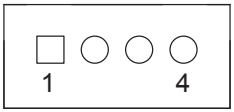

**Board Top**



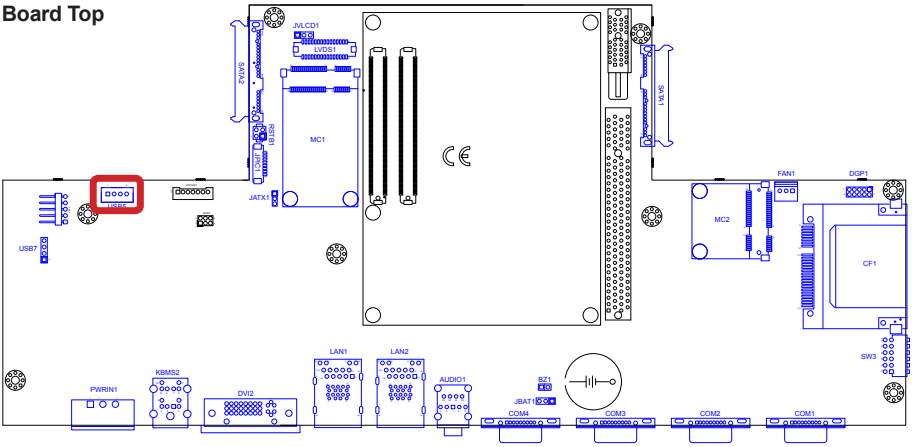
## USB5

**Description:** USB pin header
**Connector Type:** Onboard 2.54mm-pitch 4-pin wafer header

| Pin | Description |
|---|---|
| 1 | VCC5 |
| 2 | D- |
| 3 | D+ |
| 4 | GND |



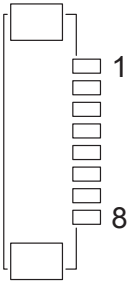

**Board Top**



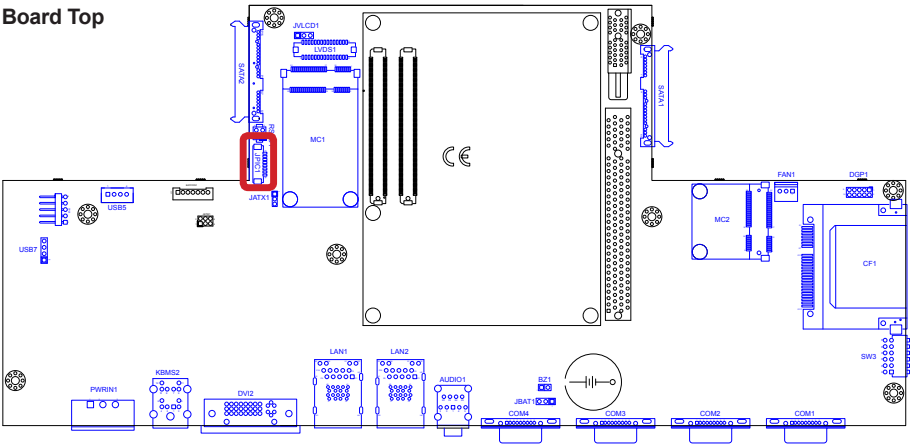
## JPIC1

**Description:** External PIC programming pin header
**Connector Type:** Onboard 1.25mm-pitch 8-pin wafer header

| Pin | Description |
|---|---|
| 1 | VCC3_MCU |
| 2 | GND |
| 3 | C2D |
| 4 | RESET# |
| 5 | F380_RXD |
| 6 | RESET#/C2CK |
| 7 | F380_TXD |
| 8 | F380_TXD |



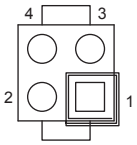

**Board Top**



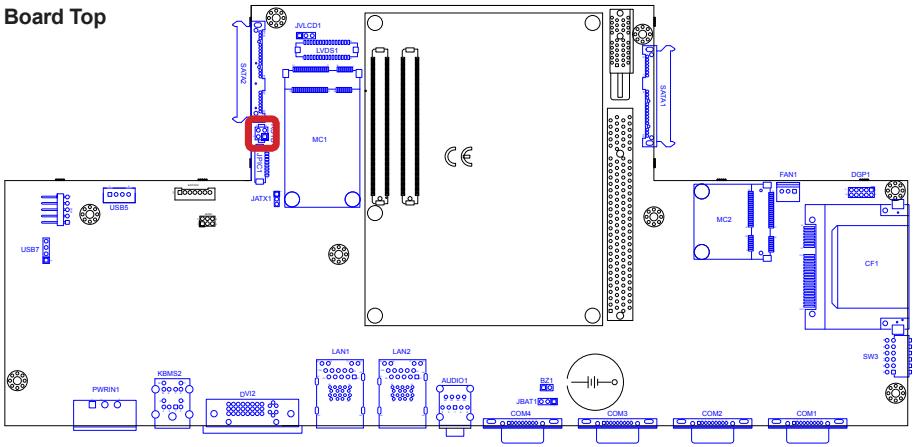
## RSTB1

**Description:** Reset button pin header
**Connector Type:** Onboard 2.54mm-pitch 4-pin wafer header

| Pin | Description |
|---|---|
| 1 | SYS_RESET# |
| 2 | GND |
| 3 | PWR_IN_SW# |
| 4 | GND |



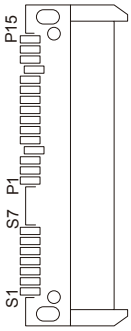

**Board Top**



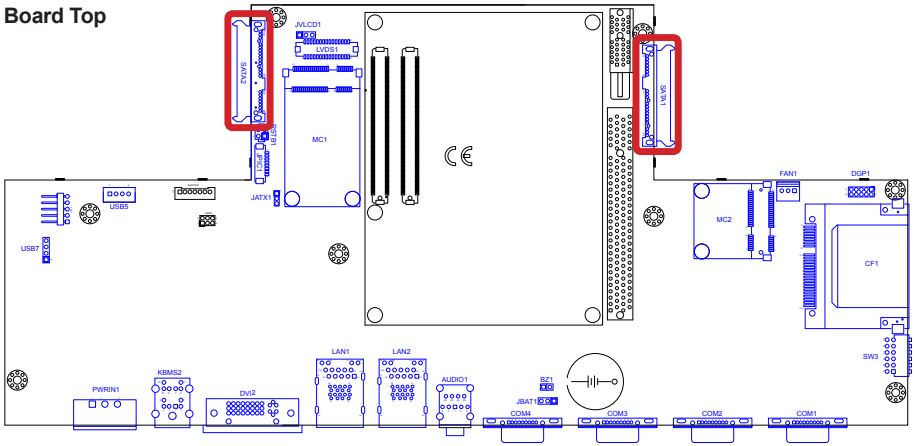
## SATA1 & SATA2

**Description:** Serial ATA Connector
**Connector Type:** 7-pin + 15-pin receptacle

| Pin | Description | Pin | Description |
|---|---|---|---|
| S1 | GND | P1 | +V3.3S |
| S2 | TX+ | P2 | +V3.3S |
| S3 | TX- | P3 | +V3.3S |
| S4 | GND | P4 | GND |
| S5 | RX+ | P5 | GND |
| S6 | RX- | P6 | GND |
| S7 | GND | P7 | +V5S |
| | | P8 | +V5S |
| | | P9 | +V5S |
| | | P10 | GND |
| | | P11 | NC |
| | | P12 | GND |
| | | P13 | NC |
| | | P14 | NC |
| | | P15 | NC |

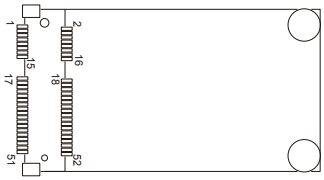



**Board Top**



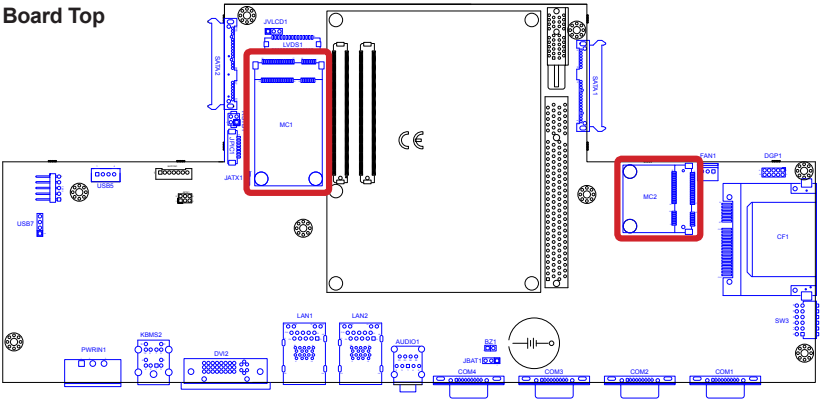
## MC1 & MC2

**Description:** Sockets for Mini PCI Express Cards
**Connector Type:** 0.8mm-pitch 52-pin connector
MC2 for 3x3 Mini-card only




| Pin | Description | Pin | Description | Pin | Description |
|---|---|---|---|---|---|
| 1 | Wake | 19 | UIM_C4/Reserved | 37 | GND |
| 2 | +3.3V | 20 | W_Disable# | 38 | USB_D+ |
| 3 | COEX1 | 21 | GND | 39 | +3.3V |
| 4 | GND | 22 | PERST# | 40 | GND |
| 5 | COEX2 | 23 | PERn0 | 41 | +3.3V |
| 6 | +1.5V | 24 | +3.3V | 42 | LED_WWAN# |
| 7 | CLKREQ# | 25 | PERp0 | 43 | GND |
| 8 | UIM_PWR | 26 | GND | 44 | LED_WLAN# |
| 9 | GND | 27 | GND | 45 | Reserved |
| 10 | UIM_DATA | 28 | +1.5V | 46 | LED_WPAN# |
| 11 | REFCLK- | 29 | GND | 47 | Reserved |
| 12 | UIM_CLK | 30 | SMB_CLK | 48 | +1.5V |
| 13 | REFCLK+ | 31 | PETn0 | 49 | Reserved |
| 14 | UIM_RESET | 32 | SMB_DATA | 50 | GND |
| 15 | GND | 33 | PETp0 | 51 | Reserved |
| 16 | UIM_VPP | 34 | GND | 52 | +3.3V |
| 17 | UIM_C8/Reserved | 35 | GND | | |
| 18 | GND | 36 | USB_D- | | |

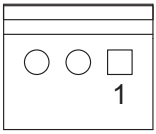
**Board Top**



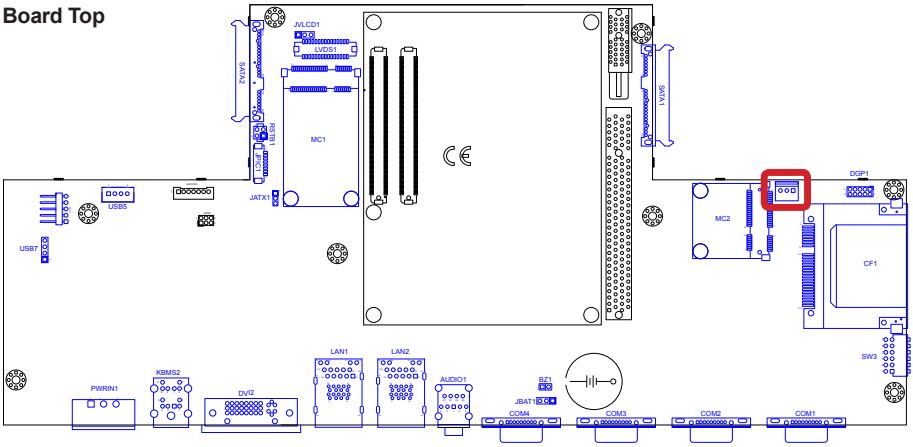
## FAN1

**Description:** CPU Fan Connector
**Connector Type:** Onboard 3-pin wafer connector or CPU fan

| Pin | Description |
|---|---|
| 1 | GND |
| 2 | +12V |
| 3 | NC |



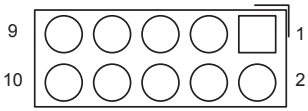

**Board Top**



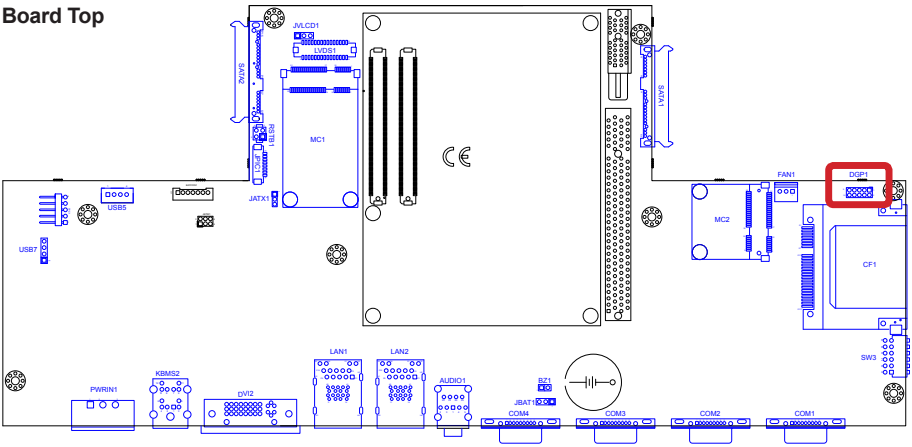
## DGP1

**Description:** For board debugging
**Connector Type:** Pitch 2.00mm 2x5-pin female header

| Pin | Description | Pin | Description |
|---|---|---|---|
| 1 | CLK | 6 | NC |
| 2 | GND | 7 | LAD0 |
| 3 | FRAME# | 8 | NC |
| 4 | LAD0 | 9 | LAD2 |
| 5 | PLTRST# | 10 | LAD1 |



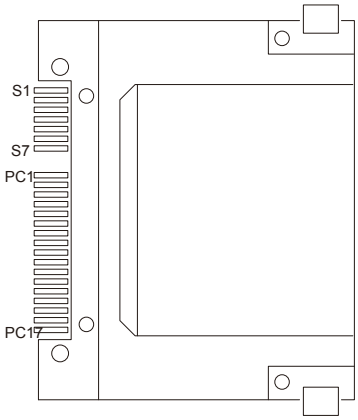

**Board Top**



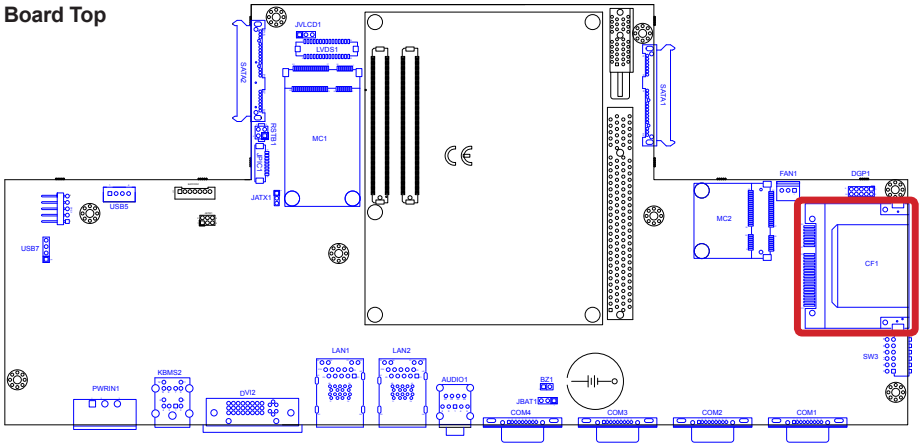
## CF1

**Description:** CFast card connector
**Connector Type:** 8.35mm-high 24-pin push-insert CFast connector

| Pin | Description | Pin | Description |
|---|---|---|---|
| S1 | GND | PC1 | CDI |
| S2 | TX+ | PC2 | GND |
| S3 | TX- | PC3 | NC |
| S4 | GND | PC4 | NC |
| S5 | RX+ | PC5 | NC |
| S6 | RX- | PC6 | NC |
| S7 | GND | PC7 | GND |
| | | PC8 | NC |
| | | PC9 | NC |
| | | PC10 | NC |
| | | PC11 | NC |
| | | PC12 | NC |
| | | PC13 | CFast VCC |
| | | PC14 | CFast VCC |
| | | PC15 | GND |
| | | PC16 | GND |
| | | PC17 | CDO |



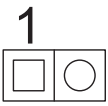

**Board Top**



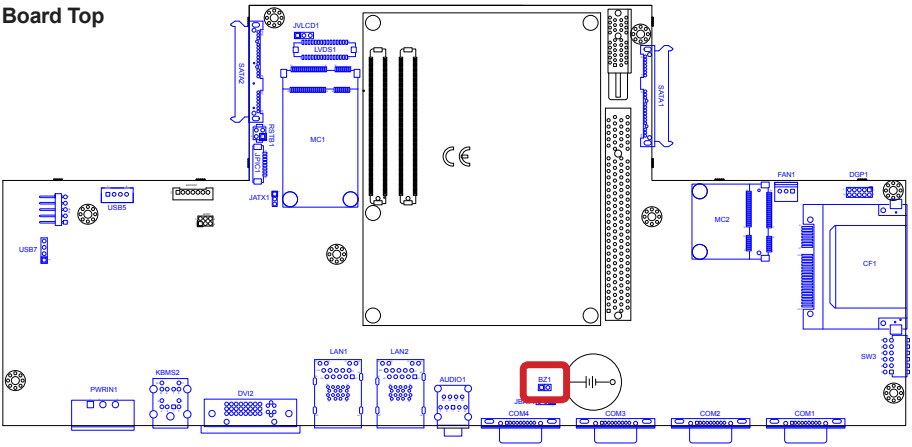
## BZ1

**Description:** Buzzer pin header
**Connector Type:** Onboard 2.54mm-pitch 1x2-pin single-row header, 180-degree DIP

| Pin | Description |
|---|---|
| 1 | Buzzer+ |
| 2 | Buzzer- |




**Board Top**



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# Chapter 4

# Installation & Maintenance

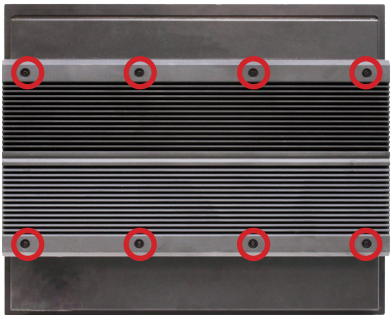
## 4.1. Install Hardware

The computer is based on modular design to make it easy for users to add hardware or to maintain the computer. The following sections will guide you to the simple hardware installations.

### 4.1.1. Remove Rear Cover

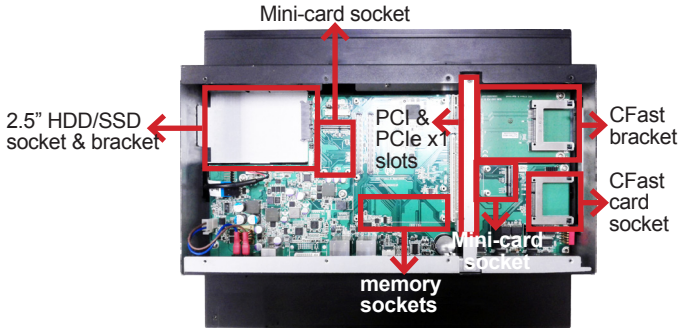
For the computer, to remove the rear cover is essential to open the computer and to access its inside. Follow through the steps below to remove the rear cover from the computer.

1. Place the computer on a flat surface, with the rear facing up. Loosen and remove the 8 screws as marked in the picture below.



Remove 8 screws from the rear.

The inside of the computer comes to view.



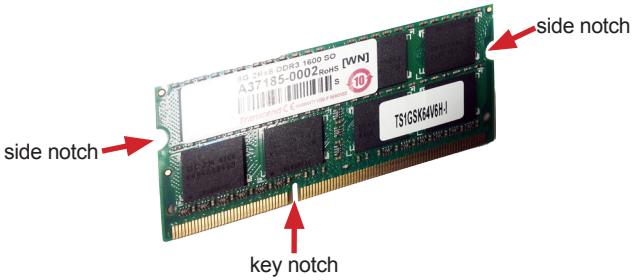

The inside of the computer

- To adjust the jumpers on the carrier board, see 3.2.1. Jumpers on page 21.
- To adjust the DIP switch on the carrier board, see 3.2.2. DIP Switch on page 23.
- To connect/disconnect devices to/from the carrier board, see 3.2.3. Connectors on page 26.
- To install a memory module to the computer, see 4.1.2. Install/Uninstall DDR3 Memory Module on page 44.
- To install the wireless modules based on **PCI Express Mini-card** form factor, see Appendix A: WIFI-IN1350 Hardware/Software Installation on page 88.

### 4.1.2. Install/Uninstall DDR3 Memory Module

To make programs run faster on the system, increase memory capacity. The computer has two SO-DIMM sockets to support up to 8GB of 204-pin DDR3 SDRAM.

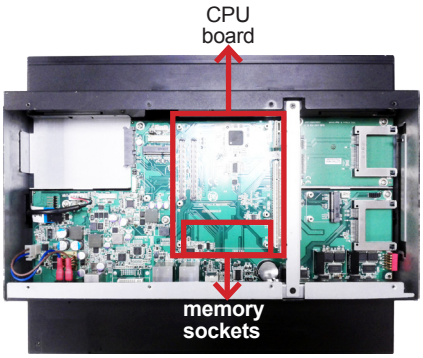
The DDR3 SDRAM has a “key notch” off the centre among the pins to enable particular applications. There are another two notches at each left and right side of the memory module to click the module in the socket.




To install a memory module:

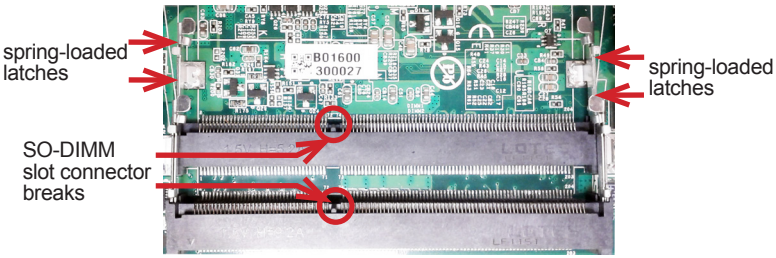
1. Remove the rear cover as described in 4.1.1. Remove Rear Cover on page 42.

2. Find the SO-DIMM sockets on the CPU board. (See also 3.1.1. CPU Board on page 18.)



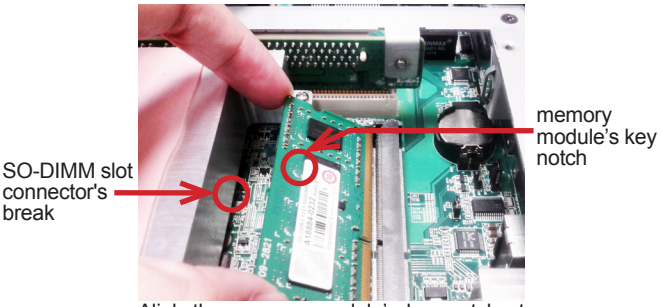

The inside of the computer

Each SO-DIMM socket has a slot connector with a off-center break and two spring-loaded latches on both sides to fix a DDR3 memory module in place.



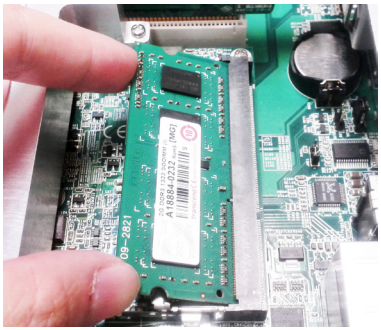

SO-DIMM sockets

3. Confront the memory module's edge connector with the SO-DIMM slot connector. Align the memory module's key notch at the break on the SO-DIMM slot connector.

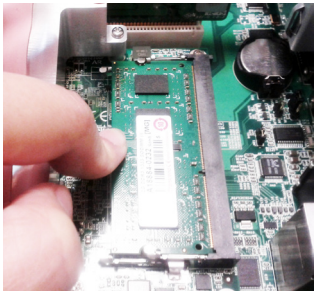



Aligh the memory module's key notch at the SO-DIMM slot connector's break.

4. Fully plug the memory module until it cannot be plugged any more.



5. Press down the memory module until it gets auto-locked in place.



6. Restore the rear cover to the computer.

**To uninstall the DDR3 memory module:**

1. Pull back both locks from the memory module.

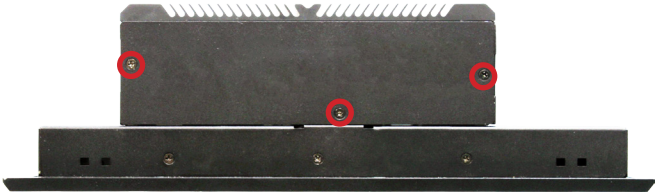
   The DDR3 memory module will be auto-released from the socket.

2. Remove the memory module.

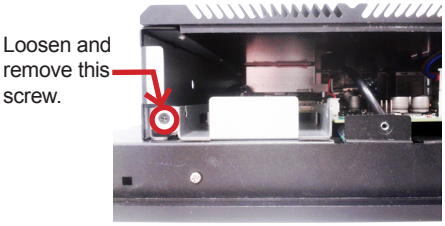
3. Restore the rear cover to the computer.

### 4.1.3. Install SSD or HDD

1. Remove the computer's right panel by loosening and removing the three screws as illustrated below.

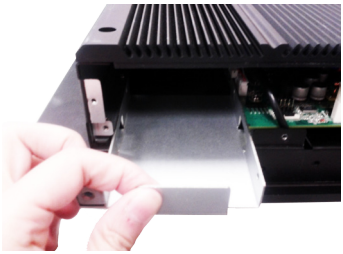


The inside of the computer comes to view.




2. Loosen and remove the screw that fixes the storage bracket as marked in the picture above.

3. Slide the storage bracket out of the computer.



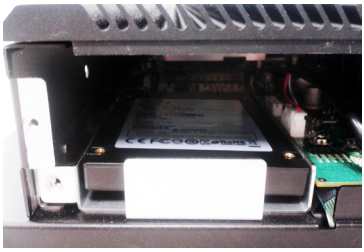
Slide the storage bracket out of the computer.

4. Prepare a 2.5” HDD or SSD. Assemble the storage device to the storage bracket.


Assemble the storage device to the storage bracket.

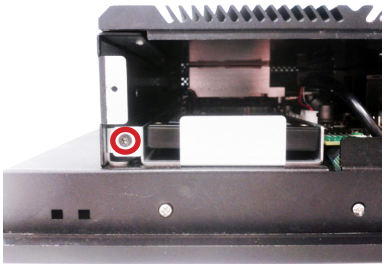
5. Slide the storage and the bracket back into the computer. Fully slide them until they cannot be slid any more so as to fully connect the storage device to the SATA connector inside.

Slide the storage and the bracket back into the computer.

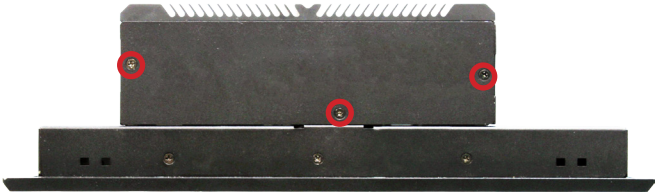


Fully slide the storage bracket and the storage device until they cannot be slid any more.

6. Refasten the screw to fix the storage bracket in place.



7. Restore the right panel to the computer.

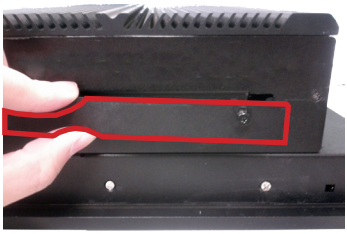


### 4.1.4. Install CFast Card

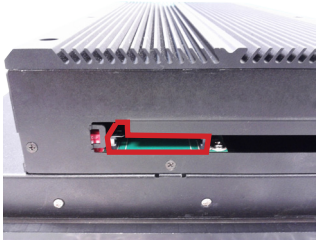
The computer comes with a CFast card slot to power the computer with a CFast storage. To install a CFast card to the computer:

1. See the illustration below. Remove the screw from the left panel of the computer.

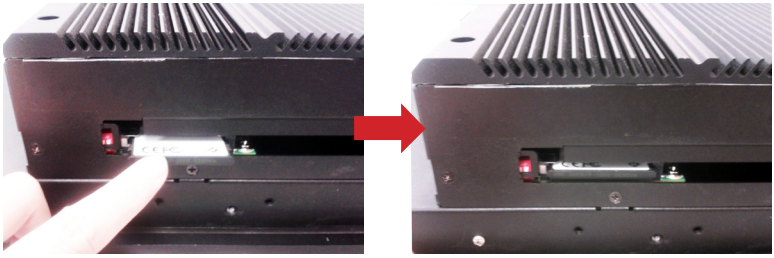
2. Dismantle the card door.



The CFast card slot comes to view.



3. Insert a CFast card to the slot. Fully insert the CFast and push-lock the card in place.



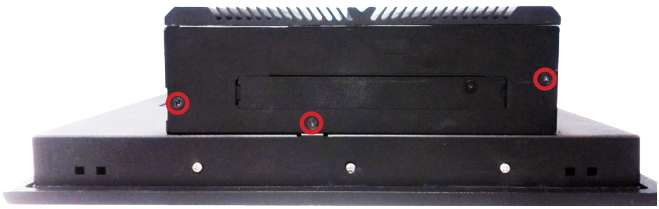
4. Reinstall the CFast card door.

### 4.1.5. Adjust DIP Switch

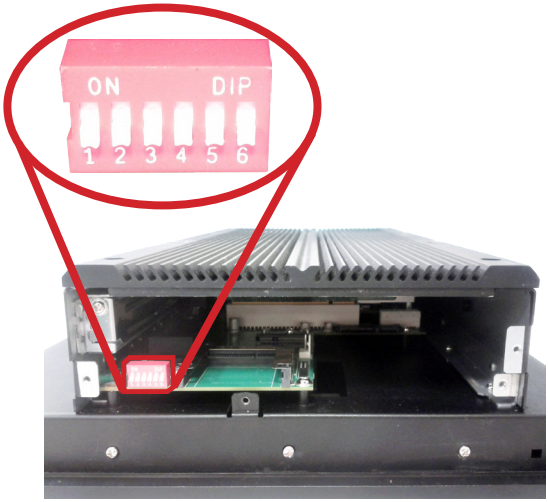
The computer features a DIP switch on the carrier board to modulate the data transmission protocols of the computer's COM1 and COM2, which are configurable between RS-232, RS-422 and RS-485.

Follow the guide below to access the DIP switch that locates inside the computer:

1. See the illustration below. Remove the three screws from the left panel of the computer.



The inside of the computer comes to view.




2. Find the DIP switch as the illustration above shows. Adjust the DIP switch to the desired data transmission protocol as described in 3.2.2. DIP Switch on page 23 for the serial port 1 (COM1) or the serial port 2 (COM2).

### 4.1.6. Install PCI or PCI Express Card

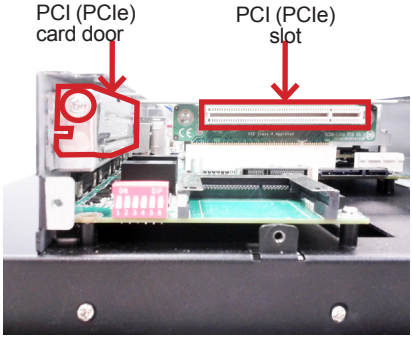
For computer bus, the computer supports one PCI slot or one PCIe x1 slot (, with the riser card included in the standard accessories). Follow the guide below to install an PCI Express or PCI card to the computer.

1. Remove the rear cover as described in 4.1.1. Remove Rear Cover on page 42.

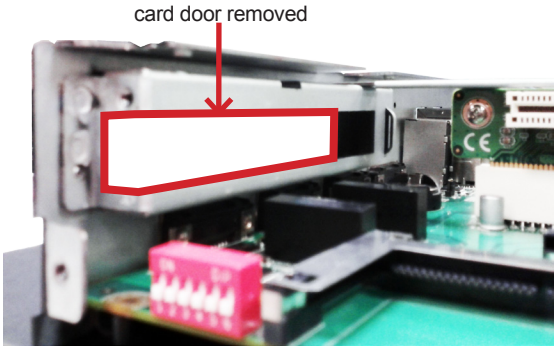
   The rear cover of the computer is gone.

2. Remove the three screws from the left panel of the computer as the illustration above shows.

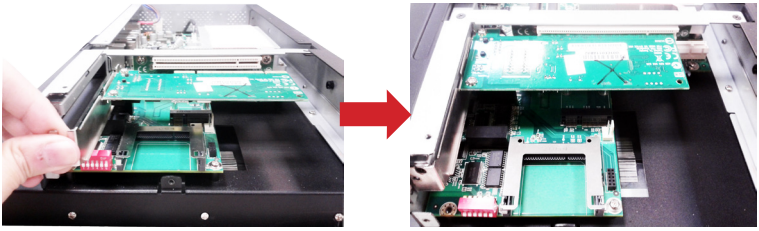
   The left panel of the computer is gone. The PCI (or PCIe) slot and the card door come to view.



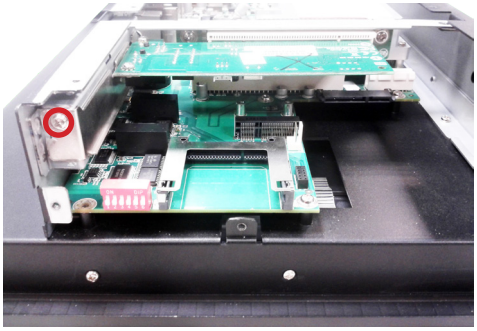
3. Remove the screw that fixes the card door as the illustration in **step 2** shows, and remove the card door.




4. Plug a PCI (or PCIe) card to the PCI (or PCIe) slot. Fully plug the card.



5. Refasten the screw to fix the card door.



6. Restore the rear cover and the left cover to the computer.

### 4.1.7. Install Wi-Fi Module

The computer comes with two **Mini-card** sockets to load the computer with the wireless modules 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

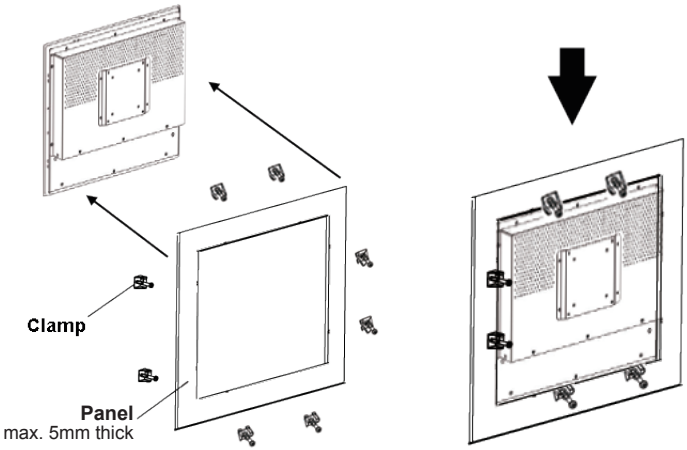
(See also 1.5.2. Configure-to-Order Service on page 7.)

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

## 4.2. Mount the Computer

The computer supports panel mounting so it can be integrated to where it works. The approach to mount the computer to a panel is to make use of some clamps. The following will walk your through the approach.

1. Have the panel-mounting clamps included in the accessory pack.
2. Attach the clamps to the slots around the edges of the panel to mount.
3. Fix the computer to the panel by using screws on the said clamps.

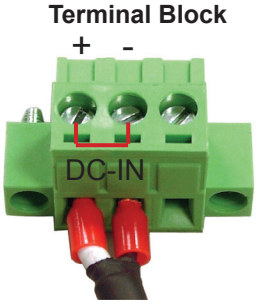


## 4.3. Wire DC-Input Power Source

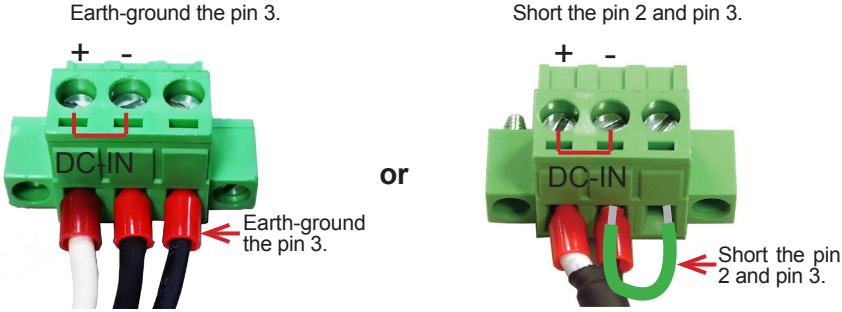
> **Warning** Only trained and qualified personnel are allowed to install or replace this equipment.

Follow the instructions below for connecting 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. See the symbols printed on the rear panel indicating the polarities and DC-input power range in voltages.
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.

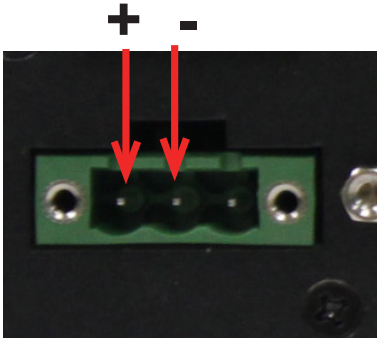



6. Either earth-ground the pin 3 on the terminal block or short the pin 2 and pin 3 on the terminal block.

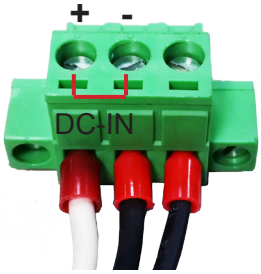


7. Use a slotted screwdriver to tighten the captive screws. Plug the terminal block firmly, which wired, into the power receptacle at the bottom of the computer.

**Power Receptacle**

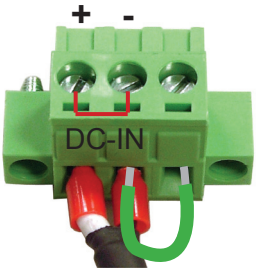



Plug the terminal block to the power receptacle.




Terminal block with pin 3 earth-grounded.

or



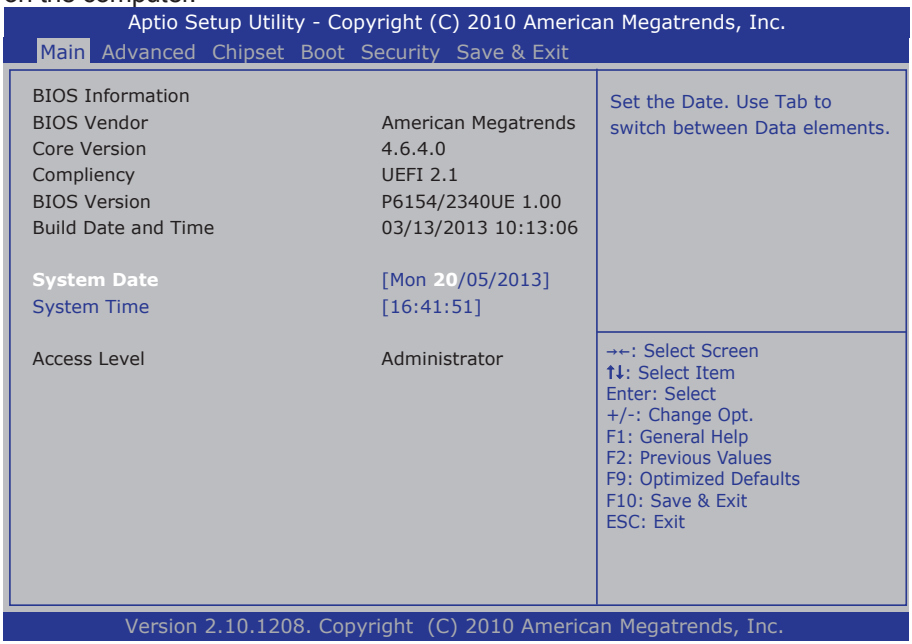

Terminal block with pin 2 and pin 3 shorted.

# Chapter 5

# BIOS

The BIOS Setup utility for the computer is featured by American Megatrends Inc to configure the system settings stored in the system's BIOS ROM. The BIOS is activated once the computer powers on. When the computer is off, the battery on the main board supplies power to BIOS RAM.

To enter the BIOS Setup utility, continuously hit the "Delete" key upon powering on the computer.




The featured menus are:

| Menu | Description |
|---|---|
| **Main** | See 5.1. Main on page 62. |
| **Advanced** | See 5.2. Advanced on page 63. |
| **Chipset** | See 5.3. Chipset on page 76. |
| **Boot** | See 5.4. Boot on page 84. |
| **Security** | See 5.5. Security on page 85. |
| **Save & Exit** | See 5.6. Save & Exit on page 86. |

## Key Commands

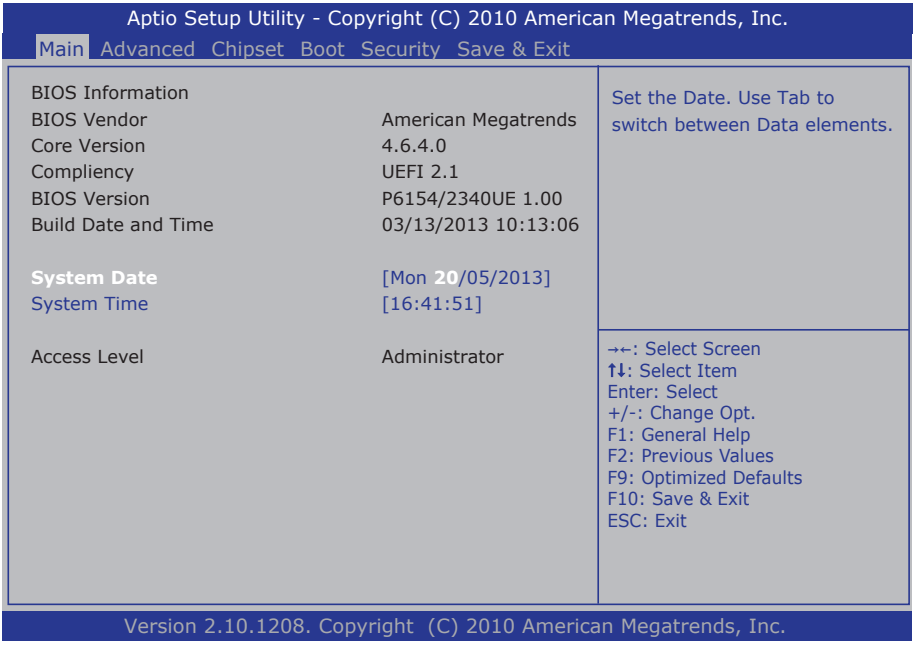
The BIOS Setup utility relies on a keyboard to receive user's instructions. Hit the following keys to navigate within the utility and use the utility.

| Keystroke | Function |
|---|---|
| ← → | Moves left/right between the top menus. |
| ↓ ↑ | Moves up/down between highlight items. |
| **Enter** | Selects an highlighted item/field. |
| **Esc** | ► On the top menus<br>Hit **ESc** to quit the utility without saving changes to CMOS. (The screen will prompt a message asking you to select **OK** or **Cancel** to return to the BIOS settings.<br>► On the submenus<br>Hit **ESC** to quit current screen and return to the top menu. |
| **Page Up / +** | Increases current value to the next higher value or switches between available options. |
| **Page Down / -** | Decreases current value to the next lower value or switches between available options. |
| **F1** | Opens the **Help** of the BIOS Setup utility. |
| **F10** | Exits the utility saving the changes that have been made. (The screen then prompts a message asking you to select **OK** or **Cancel** to exit saving changes.) |

Note: Pay attention to the "WARNING" that shows at the left pane onscreen when making any change to the BIOS settings.

## 5.1. Main

The **Main** menu features the settings of **System Date** and **System Time** and displays some BIOS info.




The BIOS info displayed is:

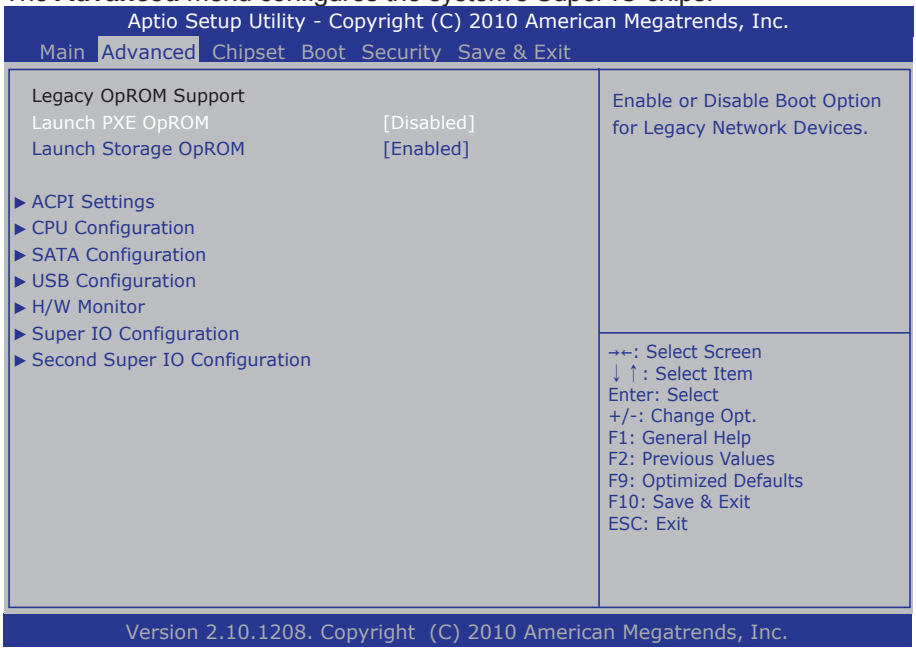
| Info Item | Description |
|---|---|
| **BIOS Vendor** | Delivers the provider of the BIOS Setup utility. |
| **Core Version** | Delivers the version of the core. |
| **Compliency** | Delivers the UEFI support. |
| **BIOS Version** | Delivers the computer's BIOS version. |
| **Build Date and Time** | Delivers the date and time the BIOS Setup utility was made/updated. |
| **Access Level** | Delivers the level by which the BIOS Setup utility is being accessed at the moment.<br>► Only **Administrator** level is available on the computer. |

The featured settings are:

| Setting | Description |
|---|---|
| **System Time** | Sets system time. |
| **System Date** | Sets system date. |

## 5.2. Advanced

The **Advanced** menu configures the system's Super IO chips.




The featured settings and submenus are:

| Group / Setting | | Description |
|---|---|---|
| **Legacy OpROM Support** | **Launch PXE OpROM** | Enables/disables the boot option for legacy network devices.<br>► **Disabled** is the default<br>► "PXE" means "Preboot Execution Environment", a series of methods to get a typical Windows-based computer to boot up without a hard drive or boot diskette. |
| | **Launch Storage OpROM** | Enables/disables the boot option for the legacy mass storage devices with Option ROM.<br>► **Enabled** is the default. |
| **ACPI Settings** | | See 5.2.1. ACPI Settings on page 64. |
| **CPU Configuration** | | See 5.2.2. CPU Configuration on page 65. |
| **SATA Configuration** | | See 5.2.3. SATA Configuration on page 67. |
| **USB Configuration** | | See 5.2.4. USB Configuration on page 68. |
| **H/W Monitor** | | See 5.2.5. H/W Monitor on page 69. |
| **Super IO Configuration** | | See 5.2.6. Super IO Configuration on page 70. |
| **2nd Super IO Configuration** | | See 5.2.7. Second Super IO Configuration on page 71. |

### 5.2.1. ACPI Settings

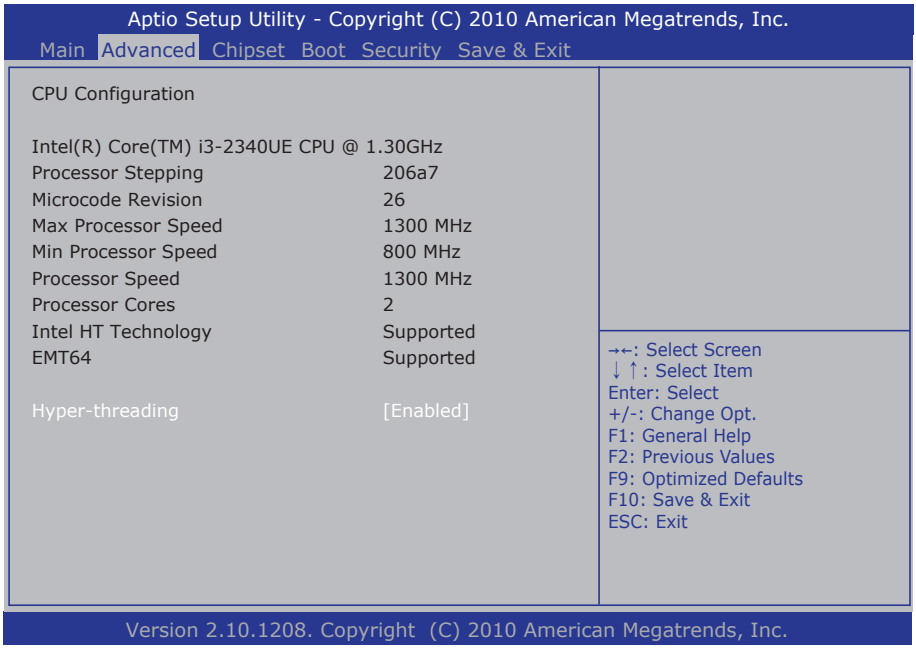
**ACPI Settings** configure the system's ACPI (Advanced Configuration and Power Interface). The featured settings are:

| Setting | Description |
|---|---|
| **Enable Hibernation** | Enables/disables the system to/from hibernation (OS/S4 Sleep State).<br>► This option may not be effective with some OS.<br>► **Enabled** is the default. |
| **ACPI Sleep State** | Sets the highest ACPI sleep state that system enters when the suspend button is hit.<br>► Options available are **Suspend Disabled** and **S1 (CPU Stop Clock)**.<br>► **S1 (CPU Stop Clock)** is the default. |

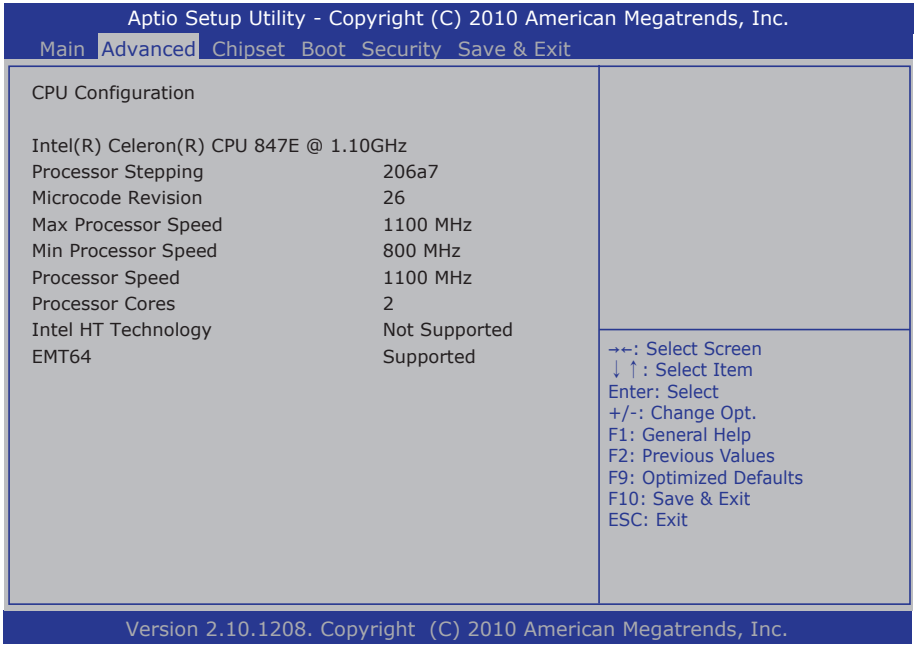
### 5.2.2. CPU Configuration

This submenu configures Intel® Hyper-Threading support and delivers the info about the CPU, including the CPU's model name, processor stepping, max./min. processor speed, microcode revision, the amount of processor cores, EMT64 support and so on.

For Intel® Core™ i3-2340UE:



For Intel® Celeron® 847E:

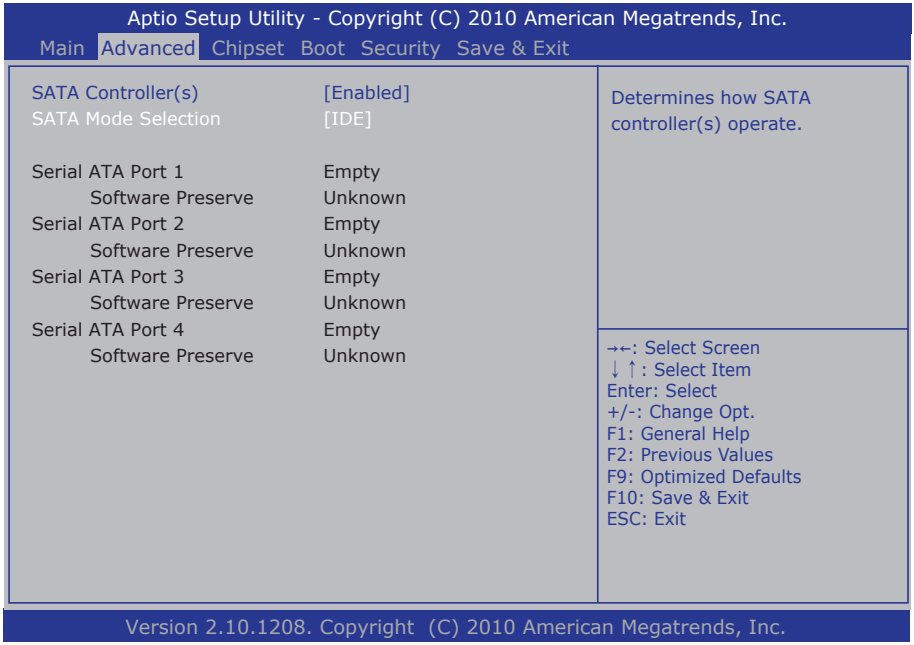



The featured settings are:

| Setting | Description |
|---|---|
| **Hyper Threading Technology** (for Intel® Core™ i3-2340UE only) | Enables/disables the processor's Hyper-threading feature.<br>► Select **Enabled** for Windows XP and Linux, which are optimized for Hyper-threading technology.<br>► Select **Disabled** for other OS that are not optimized for Hyper-threading.<br>► **Enabled** is the default.<br>► When disabled, only one thread per en abled core is enabled. |

### 5.2.3. SATA Configuration

**SATA Configuration** delivers SATA device(s) information and configures SATA device(s).

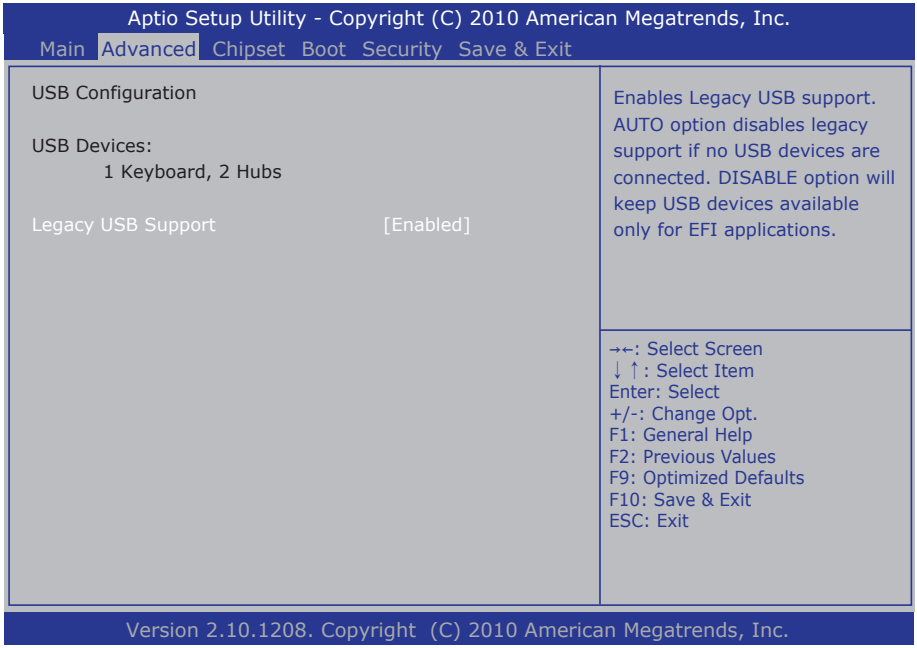



Featured settings are:

| Setting | Description |
|---|---|
| **SATA Controller(s)** | Enables/disables the SATA device(s).<br>► **Enabled** is the default. |
| **SATA Mode Selection** | Configures how SATA controller(s) operate.<br>► Options available are **IDE** (default), **AHCI** and **RAID**. |

### 5.2.4. USB Configuration

**USB Configuration** displays the status of USB connection and configures USB parameters.

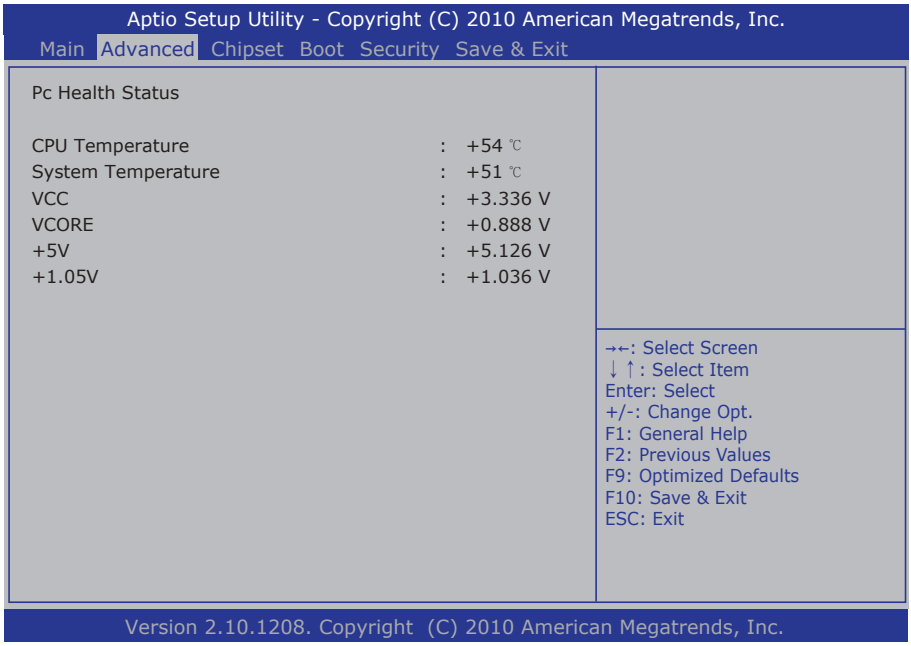



The featured setting is:

| Setting | Description |
|---|---|
| **Legacy USB Support** | Enables/disables legacy USB support or leaves it on BIOS auto-detection.<br>► Options available are **Enabled** (default), **Disabled** and **Auto**.<br>► Select **Auto** to disable legacy support if no USB device are connected.<br>► Select **Disabled** to keep USB devices available only for EFI applications. |

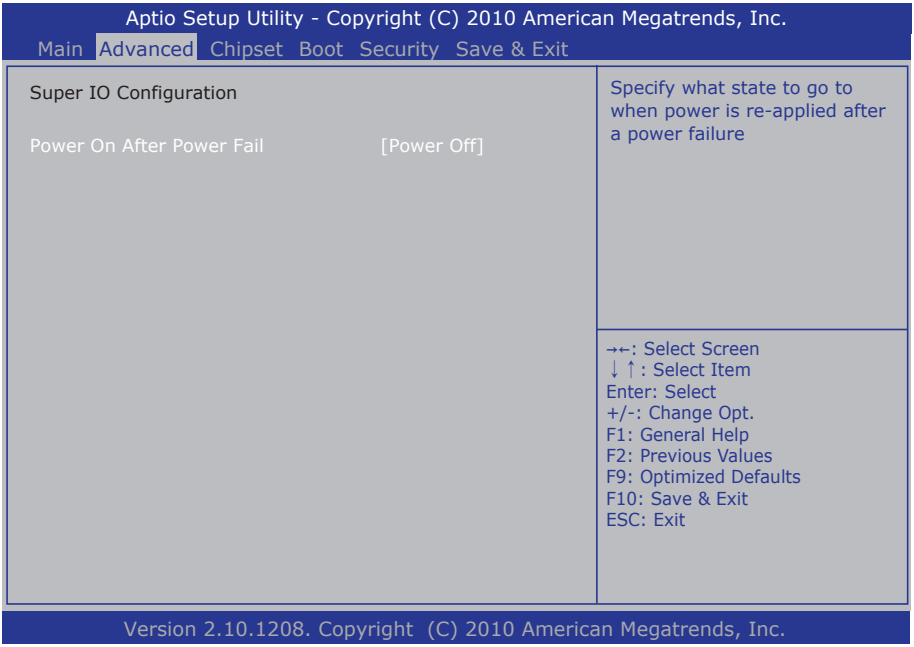
### 5.2.5. H/W Monitor

**H/W Monitor** monitors the CPU board's hardware status. Select **H/W Monitor** to run a report of the info including CPU/system temperatures and other voltage info.



### 5.2.6. Super IO Configuration

**Super IO Configuration** is a submenu to control the system's Super IO chip.

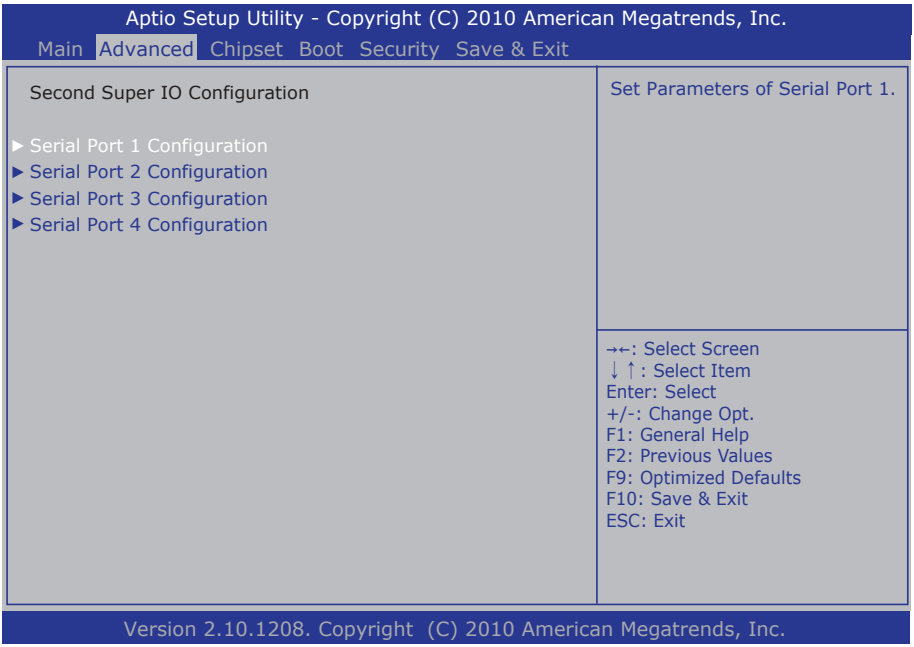



The featured submenu and setting is:

| Submenu/Setting | Description |
|---|---|
| **Power On After Power Fail** | Defines the state for the computer to go to when power is resumed after a power failure.<br>► Options available are **Power Off** (default) and **Power On**. |

### 5.2.7. Second Super IO Configuration

**Second Super IO Configuration** is a submenu to configure the system's serial ports 1, 2, 3 and 4.



### 5.2.7.1. Second Super IO Configuration for Intel® Core™ i3-2340UE

The settings featured for Intel® Core™ i3-2340UE are:

<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port 1 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=3E8h; IRQ=4; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
<tr><td>Serial Port 2 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=2E8h; IRQ=3; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
<tr><td>Serial Port 3 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=3E8h; IRQ=10; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
</table>

**Serial Port 4 Configuration**

The featured settings are:

| Setting | Description |
|---|---|
| **Serial Port** | Enables/disables the serial port.<br>► **Enabled** is the default. |
| **Change Settings** | Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>**IO=2e8h; IRQ=11;** (default)<br>**IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;** |

### 5.2.7.2. Second Super IO Configuration for Intel® Celeron® 847E

The settings featured for Intel® Celeron® 847E are:

<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port 1 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=3F8h; IRQ=4; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
<tr><td>Serial Port 2 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=2F8h; IRQ=3; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
<tr><td>Serial Port 3 Configuration</td><td>The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>Serial Port</td><td>Enables/disables the serial port.<br>► Enabled is the default.</td></tr>
<tr><td>Change Settings</td><td>Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>IO=3E8h; IRQ=10; (default)<br>IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;<br>IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;</td></tr>
</table></td></tr>
</table>

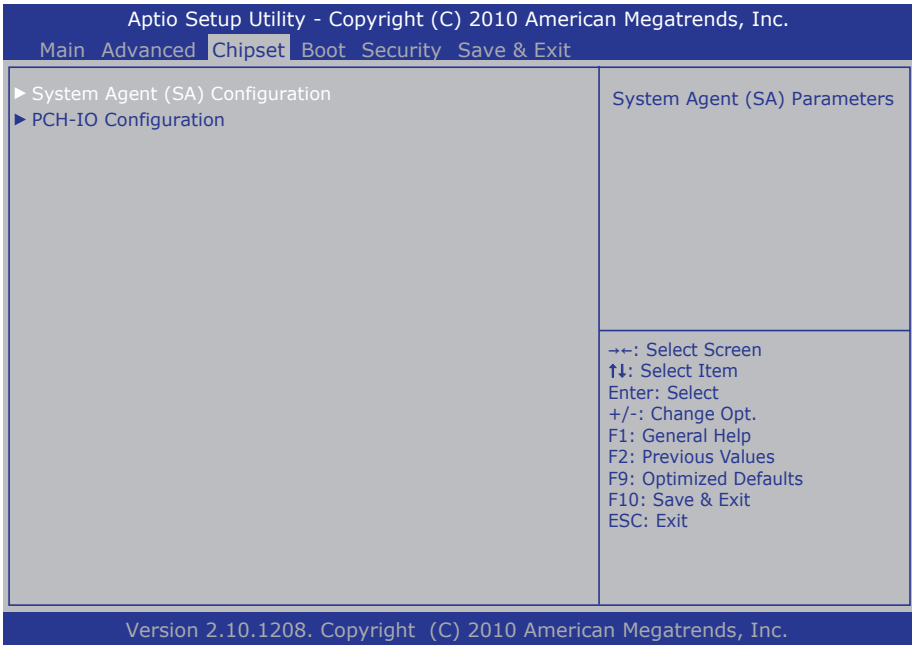
**Serial Port 4 Configuration**

The featured settings are:

| Setting | Description |
|---|---|
| **Serial Port** | Enables/disables the serial port.<br>► **Enabled** is the default. |
| **Change Settings** | Sets the optimal IO address and IRQ info for the serial port.<br>► Options available are:<br>**IO=2e8h; IRQ=11;** (default)<br>**IO=3F8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=2F8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=3E8h; IRQ=3,4,5,6,7,9,10,11,12;**<br>**IO=2E8h; IRQ=3,4,5,6,7,9,10,11,12;** |

## 5.3. Chipset

The **Chipset** menu controls the system's chipset.



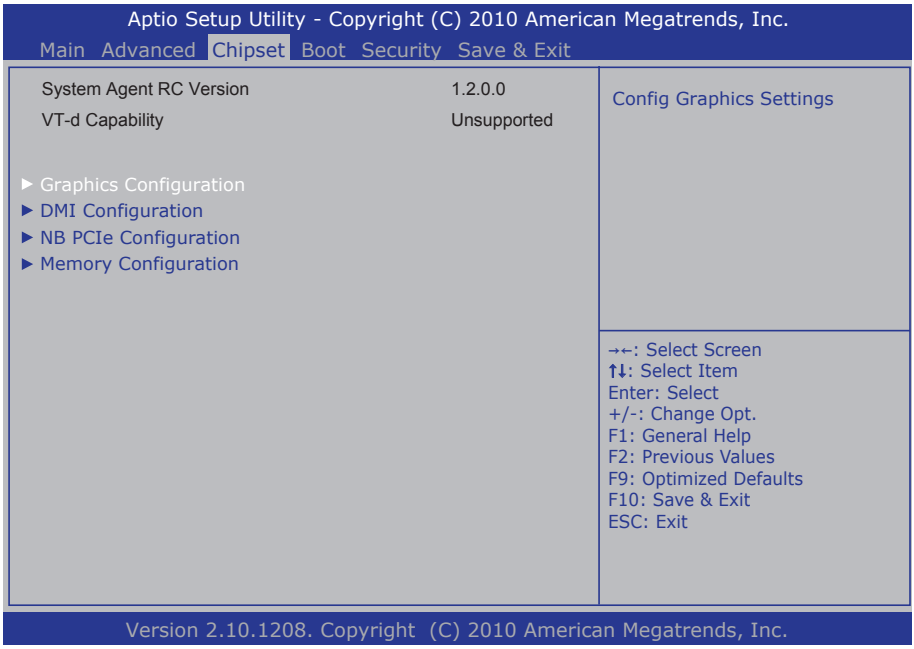

The featured submenu are **System Agent (SA) Configuration** and **PCH-IO Configuration**, which are covered in the following sections.

Submenu overview:

| Submenu | Description |
|---|---|
| **System Agent (SA) Configuration** | Configures System Agent, i.e. the north bridge.<br>▶ See 5.3.1. System Agent (SA) Configuration on page 77 for more details. |
| **PCH-IO Configuration** | Configures the PCH.<br>▶ See 5.3.2. PCH-IO Configuration on page 83 for more details. |

### 5.3.1. System Agent (SA) Configuration

This submenu delivers the information about the **System Agent (SA)**, i.e. the north bridge, including the version info and Intel's VT-d support. This submenu also configures the **System Agent**.




The featured submenus are:

| Submenu | Description |
|---|---|
| **Graphics Configuration** | See 5.3.1.1. Graphics Configuration on page 78. |
| **DMI Configuration** | Delivers the system's DMI (Direct Media Interface) configuration. |
| **NB PCIe Configuration** | See 5.3.1.2. NB PCIe Configuration on page 82. |
| **Memory Configuration** | Delivers the system's memory information including memory RC version, memory frequency, total memory, DIMM presence, CAS latency and minimum delay time. |

### 5.3.1.1. Graphics Configuration

Select **Graphics Configuration** to view graphics info and accesses graphics settings. The featured submenu and settings are:

<table>
<tr><th>Submenu / Setting</th><th>Description</th></tr>
<tr><td>Graphics Turbo IMON Current</td><td>Sets the graphics turbo IMON current values.<br>► Options available are 14 to 31.<br>► 31 is the default.</td></tr>
<tr><td>Primary Display</td><td>Sets the primary display or leaves it on BIOS auto-detection.<br>► Options available are: Auto (default), IGFX (the internal graphics), PEG (PCI Express graphics), PCI and SG (switchable graphics).<br>► When set to SG, the following setting becomes available:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>iGPU Port Configuration</td><td>Enables/disables the integrated GPU ports.<br>► This setting is only available when Primary Display is set to SG.<br>► Enabled is the default. When enabled, the following settings become available:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>iGPU Digital Port B Mode<br><br>iGPU Digital Port C Mode<br><br>iGPU Digital Port D Mode</td><td>Sets the signal transmitting mode for the integrated GPU port.<br>► Options available are:<br>Port is fully muxed with dGPU (default)<br>Port is not muxed with dGPU<br>Port supports HPD only<br>► A “dGPU” is a discrete GPU that is a separate graphics processing unit with separate graphics memory to deliver the images on the monitor screen.<br>► This setting is available only when iGPU Port Configuration is enabled.<br>► This setting is only available when Primary Display is set to SG.</td></tr>
</table></td></tr>
</table></td></tr>
<tr><td>Internal Graphics</td><td>Enables/disables the internal graphics device based on the setup options, or leaves it on BIOS auto-detection.<br>► Options available are: Auto (default), Disabled and Enabled.</td></tr>
</table>

| | | |
|---|---|---|
| **LCD Control** | Configures the computer's LCD by the following settings: | |
| | **Setting** | **Description** |
| | **Primary IGFX Boot Display** | See Primary IGF Boot Display on page 79. |
| | **LCD Panel Type** | See LCD Panel Type on page 79. |
| | **Panel Scaling** | See Panel Scaling on page 80. |
| | **Backlight Control** | See Backlight Control on page 80. |
| | **BIA** | See BIA on page 80. |
| | **Spread Spectrum clock Chip** | See Spread Spectrum clock Chip on page 80. |
| | **ALS Support** | See ALS Support on page 80. |
| | **Active LFP** | See Active LFP on page 80. |
| | **Panel Color Depth** | See Panel Color Depth on page 81. |

### Primary IGF Boot Display

Sets the video device to activate during POST.

- Options available are **CRT**, **LVDS** and **CRT + LVDS** (default).
- This setting has no effect if an external graphics card is present.
- Secondary boot display selection will appear based on your selection.
- VGA modes are supported only on primary display.

### LCD Panel Type

Sets the LCD panel types. Options available are:

**VBIOS Default**
**800x600 LVDS**
**1024x768 LVDS** (default)
**1280x1024 LVDS**
**1400x1050 LVDS1**
**1400x1050 LVDS2**
**1600x1200 LVDS**
**1280x768 LVDS**
**1680x1050 LVDS**
**1920x1200 LVDS**
**1600x900 LVDS**
**1280x800 LVDS**
**1280x600 LVDS**
**2048x1536 LVDS**

**1366x768 LVDS**

**Panel Scaling**

Sets the LCD panel scaling for the internal graphics. The options available are **Auto** (default), **Off** and **Force Scaling**.

**Backlight Control**

Configures LCD backlight. The options available are **PWM Inverted** (default), **PWM Normal**, **GMBus Inverted**, and **GMBus Normal**.

**BIA**

Enables/disables the **Backlight Image Adaptation** control.

- Options available are **Auto** (default), **Disabled** and **Level 1** through **5**.
- Select **Auto** to have **GMCH** backlight control use VBT default.
- Select **Level 1** to **5** to enable BIA control with different aggressiveness.

**Spread Spectrum clock Chip**

Sets which hardware or software to control the spread spectrum.

- Options available are **Off** (default), **Hardware** and **Software**.
- Select **Hardware** to control the spread spectrum by the chip.
- Select **Software** to control the spread spectrum by the BIOS.

**ALS Support**

Enables/disables ALS support.

- This setting is only efficacious for ACPI.
- For legacy, ALS is supprted through the internal graphic device INT10 function.
- For ACPI, ALS is supported through an ACPI ALS driver.

### Active LFP

Configures the LFP (local flat panel).

- Select **No LVDS** to have VBIOS disable LVDS.
- Select **Int-LVDS** to have BIOS enable LVDS driver by the integrated encoder. (Default.)
- Select **SDVO LVDS** to have VBIOS enable LVDS driver by SDVO encoder.
- Select **eDP Port-A** to drive LFP by the **Int-DisplayPort** encoder from Port-A.

### Panel Color Depth

Sets the color depth for the LFP (local flat panel).

- Options available are **18 Bit** and **24 Bit** (default).

### 5.3.1.2. NB PCIe Configuration

Configures NB PCI Express. The featured settings are:

| Setting | Description |
|---|---|
| **PEG0 - Gen X** | Configures PEG0 B0:D1:F0 Gen1-Gen2.<br>► Options available are **Gen1** (default) and **Gen2**. |
| **PEG1 - Gen X** | Configures PEG1 B0:D1:F1 Gen1-Gen2.<br>► Options available are **Gen1** (default) and **Gen2**. |
| **PEG2 - Gen X** | Configures PEG2 B0:D1:F2 Gen1-Gen2.<br>► Options available are **Gen1** (default) and **Gen2**. |
| **PEG3 - Gen X** | Configures PEG3 B0:D6:F0 Gen1-Gen2.<br>► Options available are **Gen1** (default) and **Gen2**. |
| **Always Enable PEG** (for Intel® Core™ i3-2340UE only) | Enables/disables the PEG slot.<br>► **Enabled** is the default. |
| **PEG ASPM** | Sets ASPM support for the PEG device.<br>► This setting is inefficacious if PEG isn't active at the moment.<br>► Options available are: **Disabled**, **Auto** (default), **ASPM L0s**, **ASPM L1** and **ASPM L0sL1**. |
| **De-emphasis Control** | Configures the De-emphasis control on PEG.<br>► Options available are: **-6 dB** and **-3.5 dB** (default). |

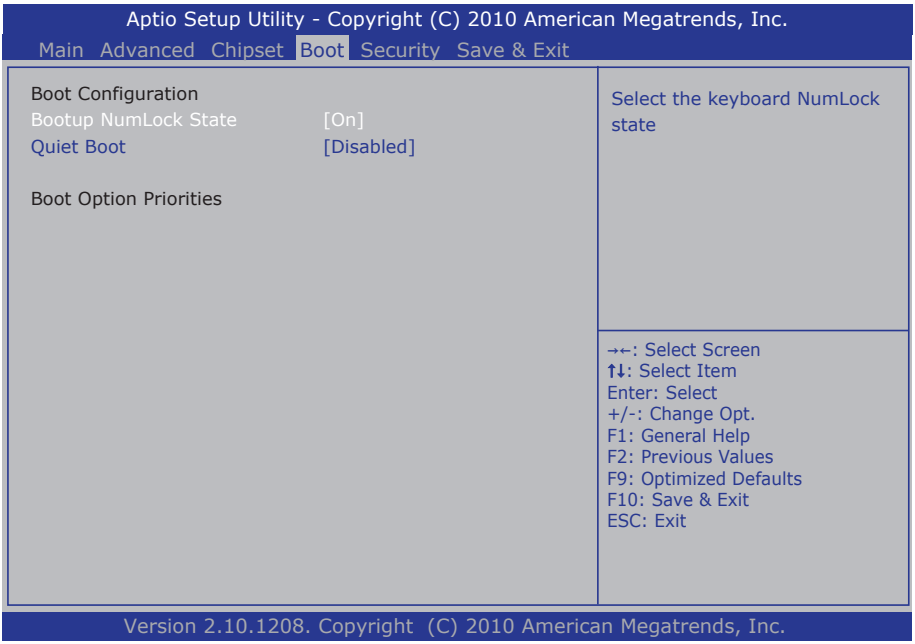
### 5.3.2. PCH-IO Configuration

**PCH-IO Configuration** shows the system's PCH configuration and sets PCH parameters. The featured settings are:

<table>
<tr><th>Setting / Submenu</th><th>Description</th></tr>
<tr><td>PCH LAN Controller</td><td>Enables/disables the onboard NIC (network interface controller).<br>► Enabled is the default.</td></tr>
<tr><td>Wake on LAN</td><td>Enables/disables the integrated LAN to wake the system.<br>► Enabled is the default.</td></tr>
<tr><td>PCIE Wake Up</td><td>Enables/disables the "PCIE Wake#" to wake the system.<br>► Disabled is the default.</td></tr>
<tr><td>Azalia</td><td>Enables/disables Intel® High Definition Audio.<br>► "Azalia" is the codename for Intel's High Definition Audio during development stage.<br>► Select Disabled to unconditionally disable Azalia<br>► Select Enabled to unconditionally enable Azalia.<br>► Select Auto to enable Azalia if it is present and to disable it if otherwise.</td></tr>
<tr><td>USB Configuration</td><td>Controls USB devices. The featured settings are:
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>EHCI1</td><td>Enables/disables the USB EHCI (USB2.0) functions.<br>► Enabled is the default.<br>► One EHCI controller must always be enabled.</td></tr>
<tr><td>EHCI2</td><td>Enables/disables the USB EHCI (USB2.0) functions.<br>► Enabled is the default.<br>► One EHCI controller must always be enabled.</td></tr>
</table>
</td></tr>
</table>

## 5.4. Boot

The **Boot** menu configures how to boot up the system by defining boot device priority.

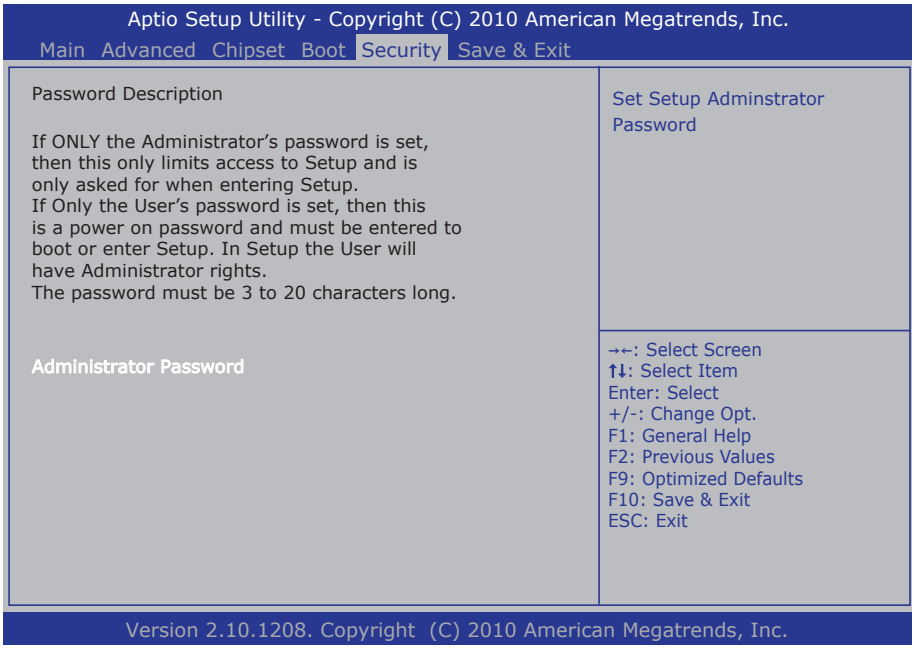



The featured settings are:

| Setting | Description |
|---|---|
| **Bootup NumLock State** | Sets keyboard's NumLock state when the system boots up.<br>► Options available are **On** (default) and **Off**. |
| **Quiet Boot** | Sets whether to display the POST (power on self tests) messages or the system manufacturer's full screen logo during booting.<br>► Leave it as **Disabled** (default) to display the normal POST message. |
| **Boot Option Priorities** | Sets the very 1st boot device among the available device types.<br>► Option(s) available are the available device type(s). |

## 5.5. Security

The **Security** menu sets up an administrator password to limit the access to the BIOS Setup utility. Users will be asked for such password each time he/she tries to access the BIOS Setup utility.

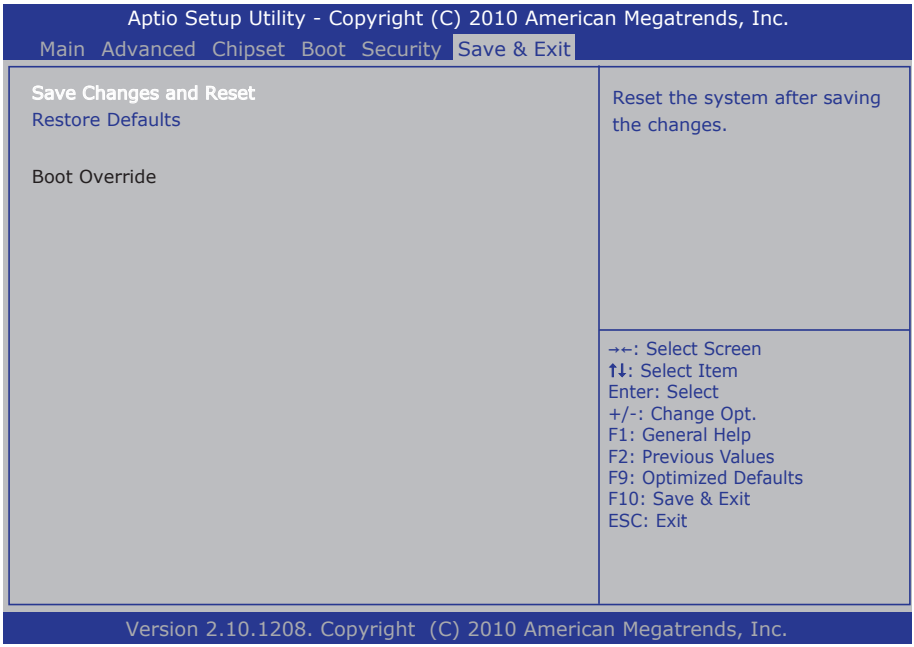



The featured setting is:

| Setting | Description |
|---|---|
| **Administrator Password** | To set up an administrator password:<br>1. Select **Administrator Password**. An **Create New Password** dialog then pops up onscreen.<br>2. Enter your desired password that is no less than 3 characters and no more than 20 characters.<br>3. Hit [Enter] key to submit. |

## 5.6. Save & Exit

The **Save & Exit** menu features a handful of commands to launch actions from the BIOS Setup utility regarding saving changes, quitting the utility and recovering defaults.




The featured settings are:

| Setting | Description |
|---|---|
| **Save Changes and Reset** | Saves the changes and resets the system.<br>► This is a command to launch action from the BIOS Setup utility rather than a setting. |
| **Restore Defaults** | Restores all settings to factory defaults.<br>► This is a command to launch action from the BIOS Setup utility rather than a setting. |
| **Boot Override** | Shows a list of the available boot devices in the system so users can boot up the system by any of the listed devices regardless of the currently configured boot priority.<br>► This is a command to launch action from the BIOS Setup utility rather than a setting. |

# Appendices

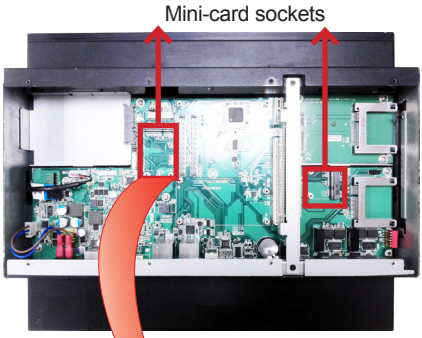
## Appendix A: WIFI-IN1350 Hardware/Software Installation

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 vii.)

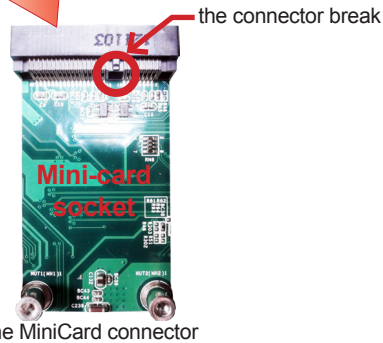
### A.1. Install WIFI-IN1350

1. Remove the computer's rear cover as described in 4.1.1. Remove Rear Cover on page 42.

   The Mini-card socket can be found onboard.

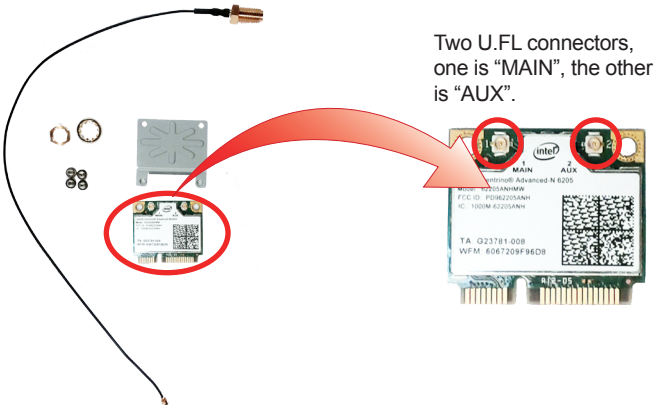



The inside of the computer




The MiniCard connector has a break among the contact pins.

2. Prepare the **WIFI-IN1300** 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“.

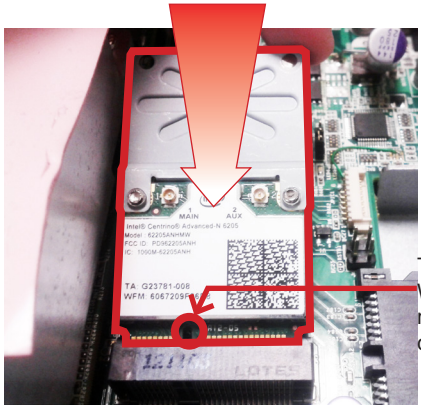



3. In order to make the half-size Wi-Fi module compatible with the **Mini-card** socket, extend the WiFi module with a “mini half bracket”. Join them together by using two screws.

Position the WiFi module and the “mini half bracket” exactly as shown.

Join the WiFi module and the “mini half bracket” by using two screws.

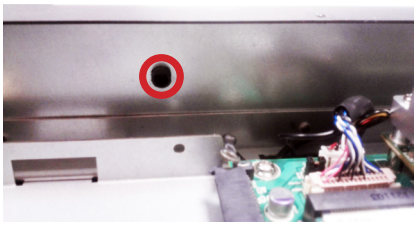
4. Plug the **WIFI-IN1350** to the connector by a slanted angle. Fully plug the module, and note the notch on the **Wi-Fi module** should meet the break on the connector.



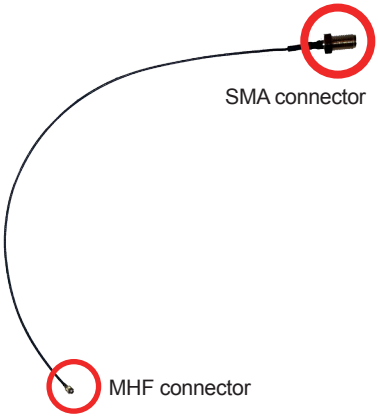
The notch on the Wi-Fi module should meet the break on the connector.

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

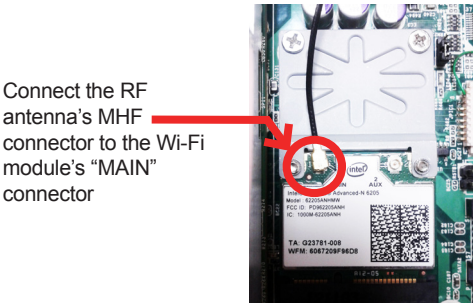
6. Remove the plastic plug from the computer's top panel to make an antenna hole. Keep the plastic plug for any possible restoration in the future.



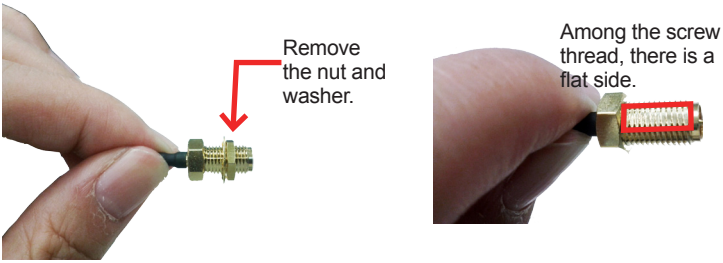
7. Have the RF antenna. The antenna has an SMA connector on one end and an MHF connector on the other.



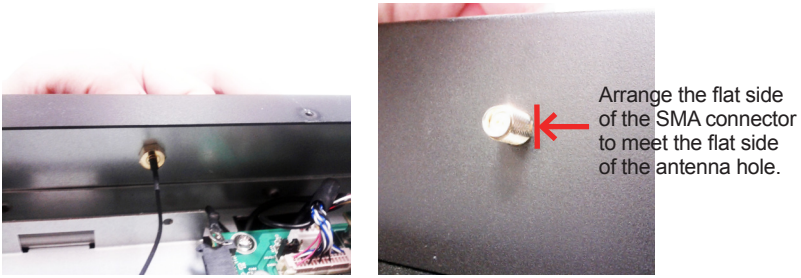

8. Connect the RF antenna's MHF connector to the Wi-Fi module's "MAIN" connector.



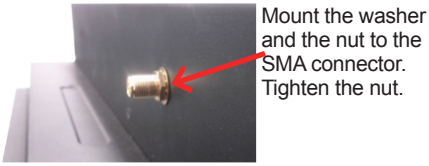

9. From the other end of the RF antenna, which is an SMA connector, remove the washer and the nut. Save the washer and nut for later use. Note the SMA connector has the form of a threaded bolt, with one flat side.



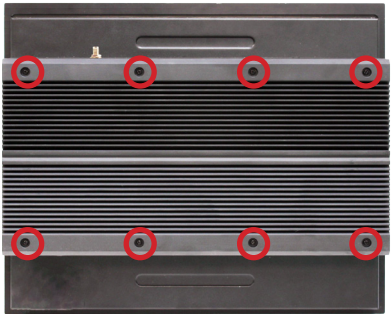
10. Pull the SMA connector through the above mentioned antenna hole. Note to meet the aforesaid flat side with the antenna hole's flat side.




11. Mount the washer first and then the nut to the SMA connector. Make sure the nut is tightened.




12. Restore the rear panel to the computer by refastening the eight screws to the rear.



Refasten the 8 screws to the rear.

13. Have an external antenna. Screw and tightly fasten the antenna to the SMA connector.

14. Swivel the antenna to an angle of best signals.

## A.2. Install Device Driver & Application Program

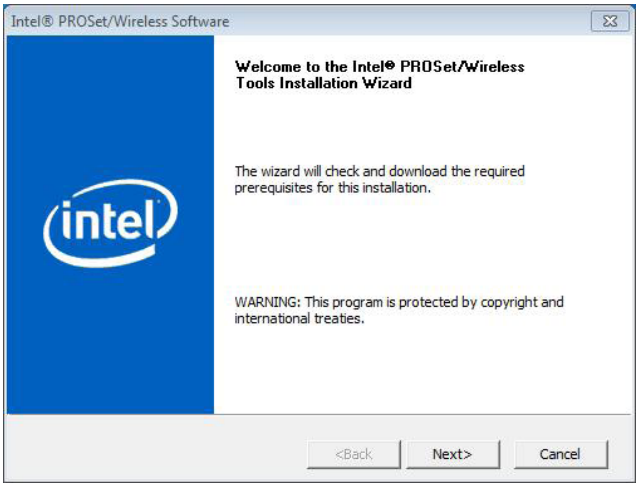
As described in 2.3. Driver Installation Note on page 15, after the drivers for the chipset, .NET Framwork, graphics, audio and Ethernet are installed, you can proceed to install the driver for the Wi-Fi module.

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

1. Request a copy of the device driver from ARBOR customer service by the contact info as described in Technical Support on page vii.

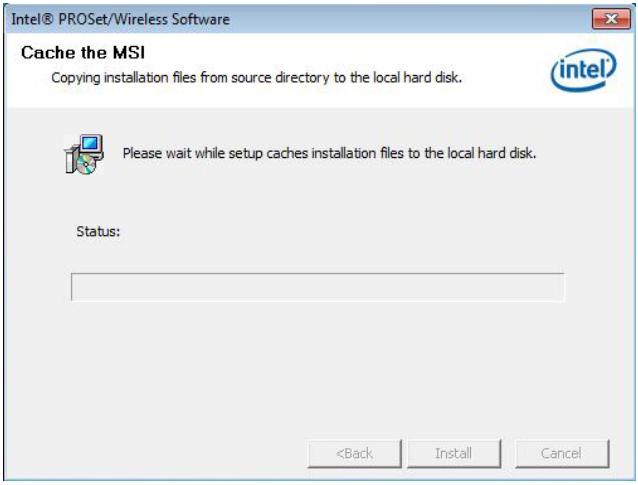
2. Run the executable file of the device driver, for example **Advanced-N 6205 WinXP_14.2.0.10_x32.exe**.

   The installer then opens.



3. Click the **Next** butoon to proceed.

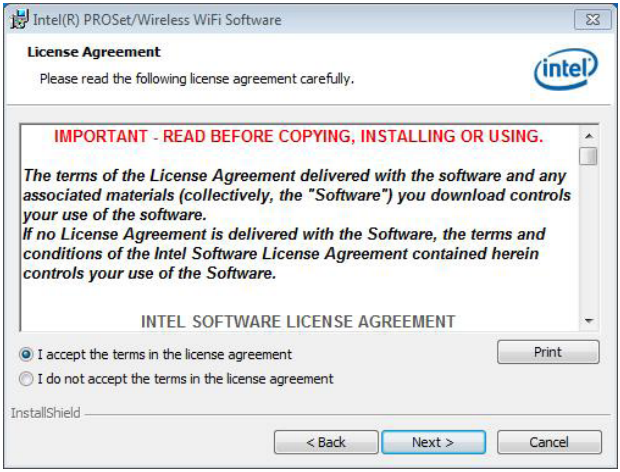
   The installer then starts to prepare for the setup.




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

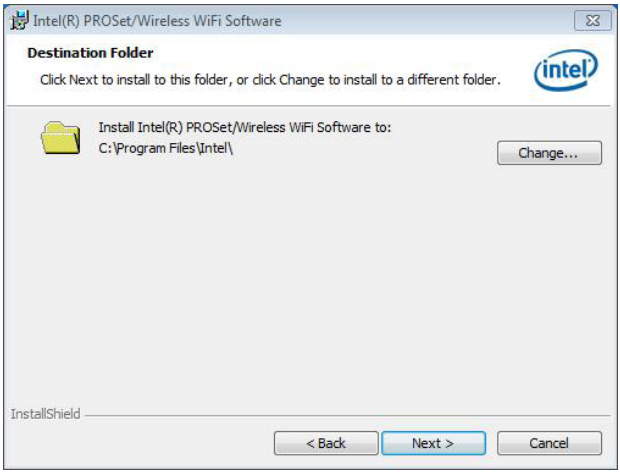
4. Click the **Next** button to proceed.

   The installer then prompts the license agreement.



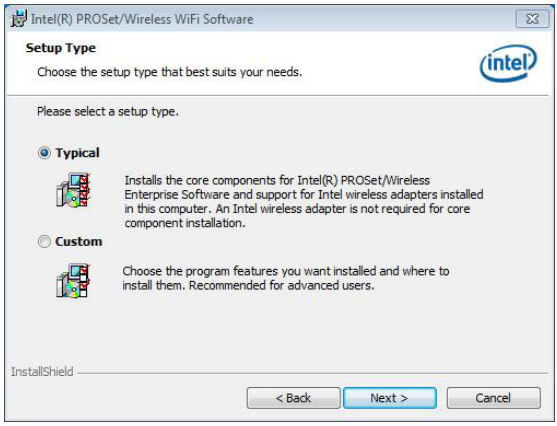

5. Select **I accept the terms in the license agreement** and click the **Next** button to proceed.

   The installer then asks where to install the software.



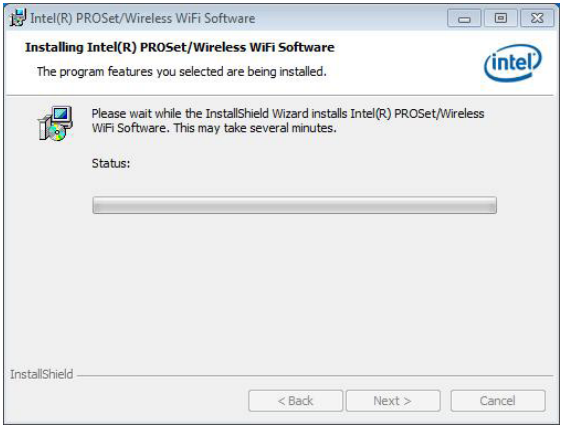
6. Click the **Change...** button to browse for an alternate folder to install the software to, or simply click the **Next** button to install the software to the suggested folder.

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

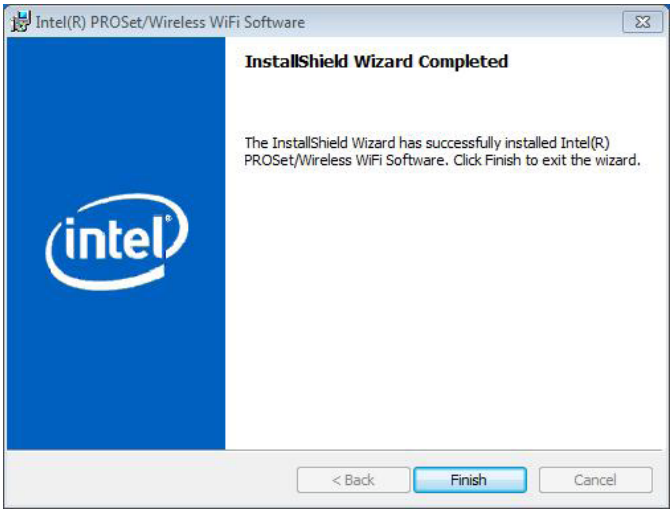



7. Select **Typical** to install both the driver and the application program (recommended) or select **Custom** to choose the features to install. Then click the **Next** button to proceed.

   The software installation then starts, progresses and finishes.



8. Click the **Finish** button to quit the software installation.

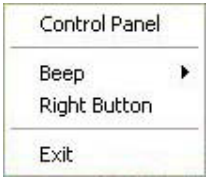


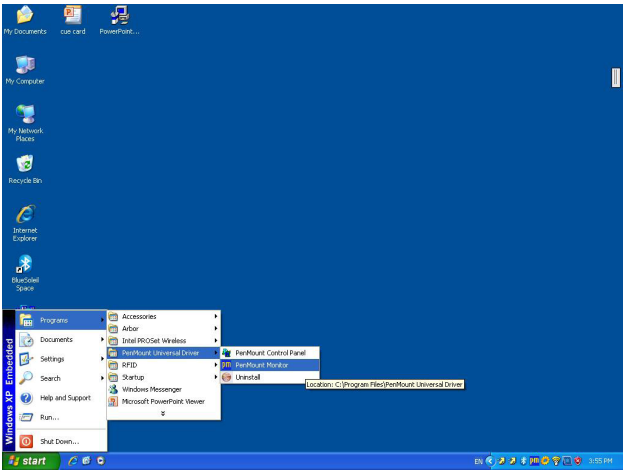

9. The computer's Wi-Fi feature is ready-to-use, see the document of the application program to know how to connect the computer to a Wi-Fi hotspot.

# Appendix B: PenMount Utilities

## B.1. PenMount Monitor

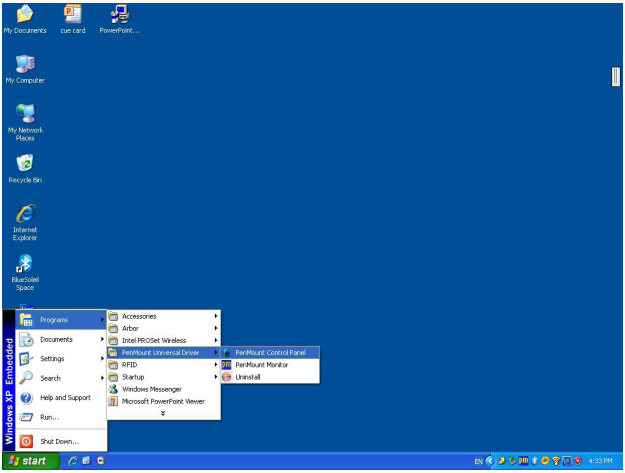
The PenMount Monitor icon (pm) will appear in the system tray at the bottom-right corner after you turn on ***PenMount Monitor*** from ***Programs/ PenMount Universal Driver/PenMount Monitor.*** Right-click the pm icon in system tray and display its submenu.


PenMount Monitor has the following functions:

| | |
|---|---|
| **Control Panel** | Launch the **PenMount Control Panel** utility. You may also launch it from ***Programs***. |
| **Beep** | Set the Beep function for each device. |
| **Right Button** | After ticking this item, a mouse icon  appears on the right side of your screen. |
| **Exit** | Exits the PenMount Monitor function. |

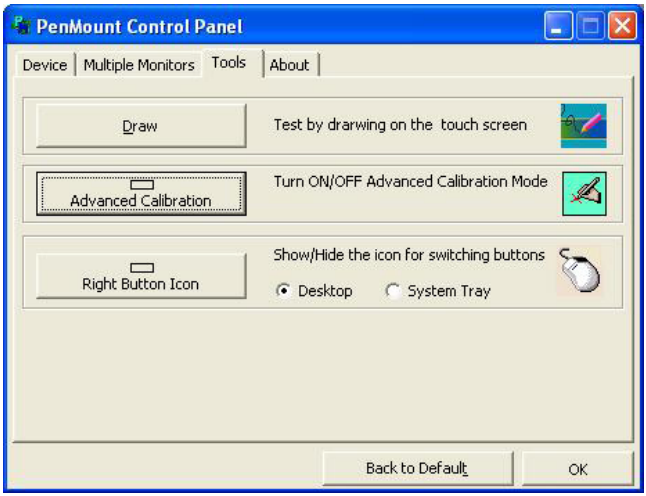

My Documents
cue card
PowerPoint...
My Computer
My Network Places
Recycle Bin
Internet Explorer
BlueSoleil Space
Windows XP Embedded
Programs
Documents
Settings
Search
Help and Support
Run...
Shut Down...
Accessories
Arbor
Intel PROSet Wireless
PenMount Universal Driver
RFID
Startup
Windows Messenger
Microsoft PowerPoint Viewer
PenMount Control Panel
PenMount Monitor
Uninstall
start
4:33 PM

## B.2. PenMount Control Panel

After you have selected the ***Control Panel*** item on the pop-up menu or open it up from ***Programs*** (as shown on previous page), the PenMount Control Panel utility UI appears as below. The functions of the **PenMount Control Panel** such as Device, Calibrate, Setting, Multiple Monitors, Tools and About are explained in the following sections.

### The Tools Tab

When you click the PenMount icon in the system tray and select "Control Panel" from the menu, "PenMount Control Panel" will appear. Among the four tabs - Device, Multiple Monitors, **Tools** and About - the function of Tools should be described first as follows:




**Draw**

Tests or demonstrates the PenMount touch screen operation.

**Advanced Calibration**

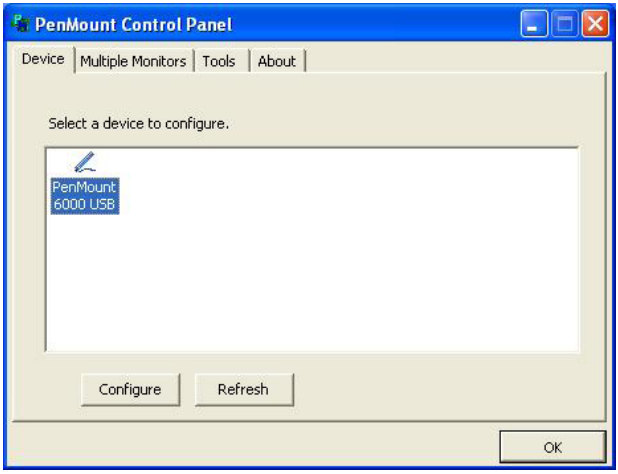
Enable Advanced Calibration function.

**Right Button Icon**

Enable right button function. The icon can be shown on Desktop or in the system tray at the bottom-right corner.

### The Device Tab

In this window, you can find out how many devices are detected on your system. On the **Device** tab, select the device icon and tap **Configure,** or double tap the device icon for touch screen calibration.




And then another window with the **Calibrate** tab appears.

### Device Calibration Dialog

### The Calibrate Tab

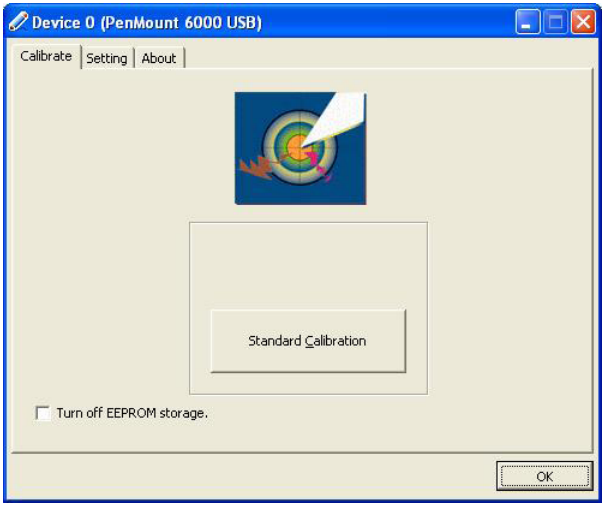
This function offers two ways to calibrate your touch screen. '**Standard Calibration**' adjusts most touch screens while '**Advanced Calibration**' adjusts aging touch screens.

**Standard Calibration**

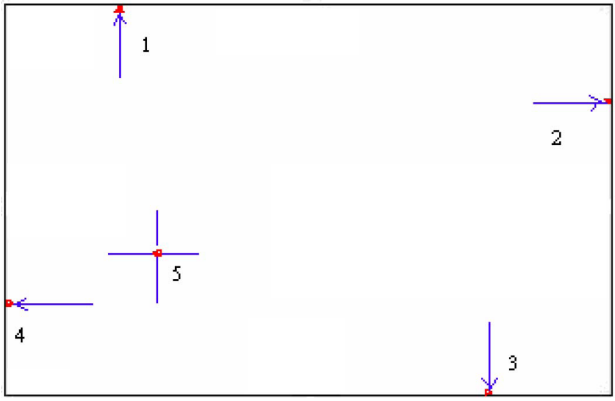
The Standard Calibration function lets you match the touch screen to your display so that the point you touch is accurately tracked on screen. Standard Calibration only requires four points for calibration and one point for confirmation. Under normal circumstance Standard Calibration is all you need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

By default, only the Standard Calibration button is available.

1. Please tap the Standard Calibration button to start calibration procedures.




2. After tapping the button, the arrow appears pointing to a red square. Use your finger or stylus to touch the red square and hold down until the screen shows the message - "Lift off to proceed".
3. And then the next arrow appears. After the fifth red point calibration is complete, the program will jump out automatically, or you may press ESC key to quit it manually.

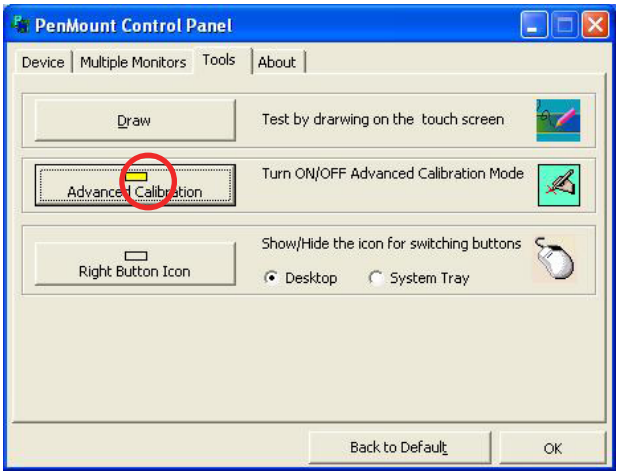


Note: The older the touch screen gets, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for better accuracy. Please follow the step as below:

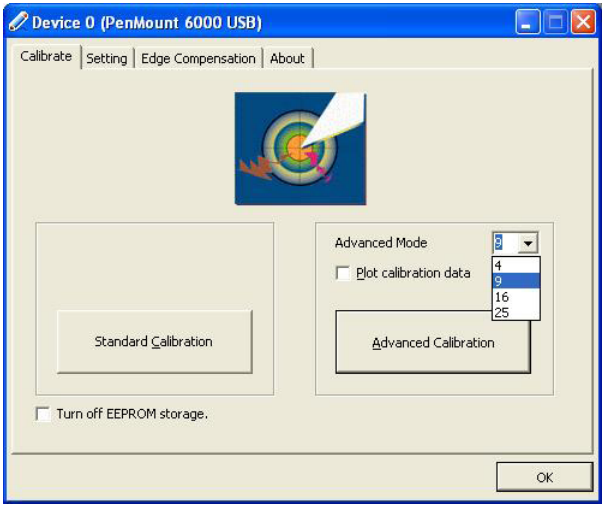
**Advanced Calibration**

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 4, 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.

1. Come back to PenMount Control Panel and select the **Tools** tab. Tap the Advanced Calibration button to enable it (when enabled, the small rectangle in the middle appears in yellow).

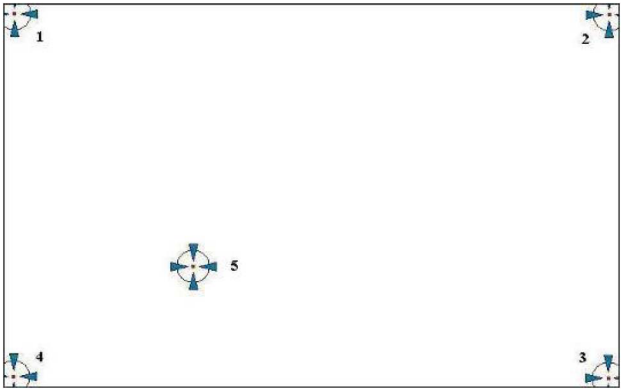


2. Select **Device** to calibrate, and then you can start to do "Advanced Calibration". Tap the arrow to pull down the drop-down menu and select the number determining how many points will be used for calibration.




Note: You are recommended to use a stylus during Advanced Calibration for greater accuracy.

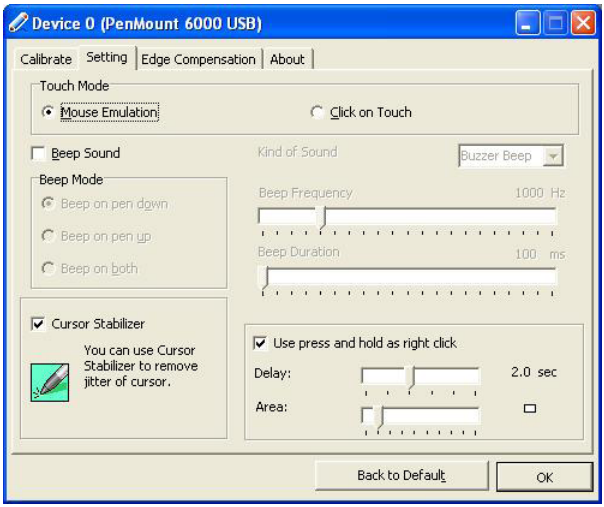
3. After tapping the button, a crosshair will appear on screen. Use your finger or stylus to touch the red spot inside it and hold down until the screen shows this message - “Lift off to proceed” and then the next crosshair will appear. After all crosshairs are clicked, the program will jump out automatically, or you may press ESC key to quit it manually.



**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.

**Turn off EEPROM storage**
Tick this function to disable the write-in of calibration data in Controller.

**The Setting Tab**




| | |
|---|---|
| **Touch Mode** | This mode enables and disables the mouse's ability to drag on-screen icons. |
| **Mouse Emulation** | Select this mode and the mouse functions as normal and allows dragging of icons. |
| **Click on Touch** | Select this mode and the mouse only provides a click function, and dragging is disabled. |

| | |
|---|---|
| **Beep Sound** | Turn On/Off Beep Sound. |
| **Beep on Pen Down** | Beep occurs when pen is down. |
| **Beep on Pen Up** | Beep occurs when pen is up. |
| **Beep on Both** | Beep occurs when pen is down or up. |
| **Beep Frequency** | Modifies sound frequency. |
| **Beep Duration** | Modifies sound duration. |
| **Cursor Stabilizer** | Enable the function supporting to prevent cursor shake. |
| **Use press and hold as right click** | You can set the time out and area as you need. |

**The Edge Compensation 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.