

Panel PC

User's Manual

NO. G03-PCNC7ACFP-F

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CAUTION Safety Precautions

- Operate the product according to the correct installation steps and with great care to make sure safety and comfort using experience. Please refer to the following safety instruction guide to avoid danger of electric shock or fire. Abide by the previous safety instruction guide to use and maintain the product and the hard disk to make sure of safe operating environment.
- Please follow the instruction manual for operation guide.
- The appropriate operating temperature ranges from 0 °C–50 °C.
- The operation humidity for this product is 5% to 80% RH.
- To avoid high temperature, please DO NOT overload the maximum power of the external power supply while the system is consuming high voltage. Be aware of the maximum temperature allowance of the power supply.
- See to it that the product is not working near the water.
- Always unplug power cable and other hardware cables from the system before cleaning.
- Apply only dry cloth for cleansing the product.
- Make sure that there is no heat source nearby when the product is working.
- Make sure that the thermal louver of the product is not blocked.
- Make sure to remove the power plug from the product when there is a thunder storm.
- Please remove the power plug from the product when you are not going to use the product for a long time.
- Make sure to set up or use the product on a stable surface.
- Make sure not to drop the product or strike it by any means.
- Make sure not to move the product when the power is on.
- Make sure not to step on the power cables and other cables or rest anything in them..
- Be sure to ground yourself to prevent static charge when installing any internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
- Disconnect the power cord from the Panel PC unit prior to any installation. Be sure both the system and all external devices are turned off. Sudden surge of power could ruin sensitive components. Make sure the Panel PC unit is properly grounded.
- Do not open the system's back cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:
 - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on human body.
 - When handling boards and components, wear a grounding wrist strap available from most electronic component stores.
- Please contact qualified technician for maintenance or repair.
- Use only accessories and parts that are made by the qualified manufacturer.






User's Notice

Copyright of this manual belongs to the manufacturer. No part of this manual, including the products and software described in it may be reproduced, transmitted or translated into any language in any form or by any means without written permission of the manufacturer.

This manual contains all information required for the utilization of this product to meet the user's requirements. But it will change, correct at any time without notice. Manufacturer provides this manual "as is" without warranty of any kind, and will not be liable for any indirect, special, incidental or consequential damages (including damages for loss of profit, loss of business, loss of use of data, interruption of business and the like).

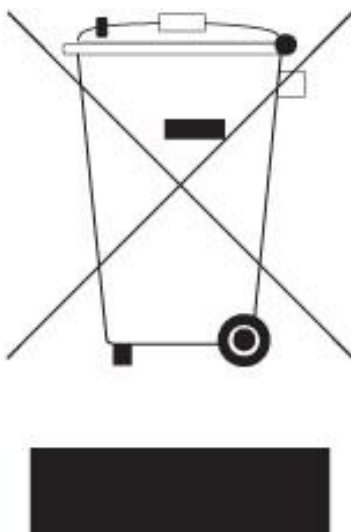
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Package Contents

AC-DC Adapter	Power Cord	Wi-Fi antenna	Fixed Parts	USB Fixed Parts
				
X1	X1	X2	Optional	Optional

Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. To minimize pollution and ensure environment protection of mother earth, please recycle.



Chapter 1

Introduction

1-1 General Descriptions

Thank you for purchasing the system, a new product developed, designed and manufactured under leading technical power and consistent dedication to fine workmanship.

- 10-points Multi Capacitive Touch
- Cable-less,streamlined enclosure for highly efficient heat dissipation enclosed in robust aluminum casing
- Edge-to-edge narrow bezel design and fan-less cooling system
- Designed for easy wall mount, panel mount, and VESA mount installation
- A true flat, easy-to-clean front surface with edge-to-edge design
- USB 3.0 ports support lock device.
- IO ports designed for easy connection
- Onboard Intel® Bay Trail series SoC processor, with low power consumption never denies high performance
- Onboard 4GB DDR3L 1333Mhz SO-DIMM
- Support 1 * 2.5" SATA HDD Device, 1* Mini PCIe, 1* M.2 connector
- Support dual Gigabit LAN
- Support 4G SIM card socket
- Support 802.11 b/g/n WiFi communication
- Support VGA output
- Support multiple COM ports

The system has the following features besides other basic functions:

- **WiFi:** the Mini PCI-E onboard socket in the board is integrated a with a WiFi card(802.11 b/g/n) that can act as a mini wireless modem when external antennas are connected. Different computers in the house can build wireless connections through the Mini TOP system and take necessary data from it, thus reducing the complexity in network establishment.
- **Giga LAN:** The system is integrated with Gigabit LAN network controller with ACPI management realizing efficient power management for the operating system.
- **USB3.0:** Experience Fastest data transfers at 5Gb/s with USB3.0 the new latest connectivity standard. Built connect easily with next-generation components and peripherals, USB3.0 transfers data 10x faster and backward compatible with previous USB2.0 components.
- **CPU Usage:** The CPU Usage diagram shows a beautiful data curve that indicates a pretty low CPU usage percentage for video playback of different formats. GPU performances are excellent as well.
- **dB Value:** The design of the system takes into consideration the needed quiet operating environment in the living room and the average dB value is below 26

under normal operation to ensure the tranquility when you are absorbed in film watching.

1-2 Specifications

Main CPU Board

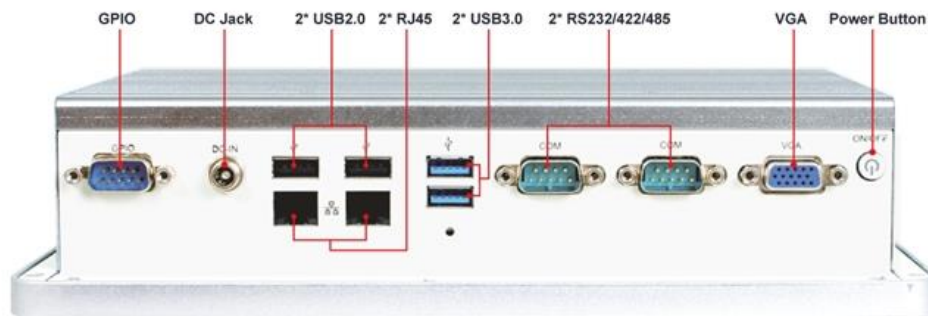
- **CPU**
 - Intel® Bay Trail series SoC processor
- **System Memory**
 - Onboard 4GB DDR3L 1333MHz SO-DIMM
- **BIOS**
 - AMI 64Mb Flash ROM

I/O System

- **Standard I/O**
 - For HPC101SC-FP1900B Series**
 - 1* Power Button
 - 1* Lockable 9~28V DC-in Power Jack
 - 1* VGA
 - 2* RS-232/422/485
 - 2* USB 3.0
 - 2* USB 2.0
 - 2* RJ-45 for Gigabit Ethernet (Intel i211AT)
 - 1* GPIO Port-Male
 - For HPC156SC-FP1900B & HPC238SC-FP1900B Series**
 - 1* Power Button
 - 1* Lockable 9~28V DC-in Power Jack
 - 1* VGA
 - 2* RS-232/422/485 + 2* RS-232
 - 2* USB 3.0
 - 4* USB 2.0
 - 2* RJ-45 for Gigabit Ethernet (Intel i211AT)
 - 1* GPIO Port -Female

1-3 I/O Outlets

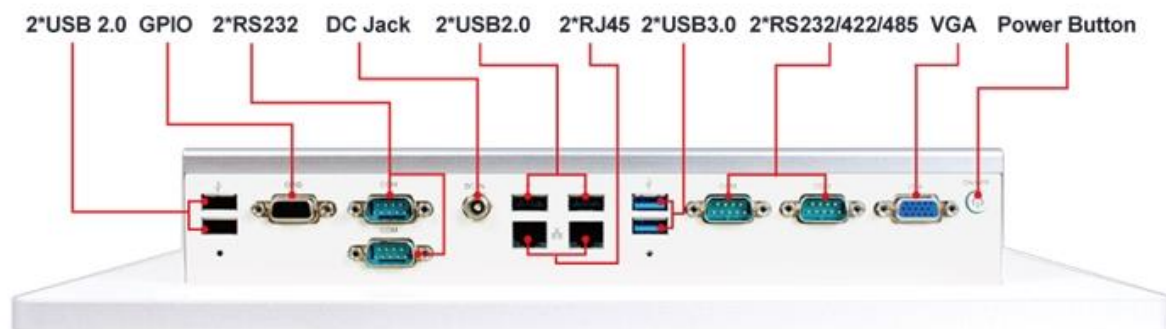
For HPC101SC-FP1900B Series:



Bottom View

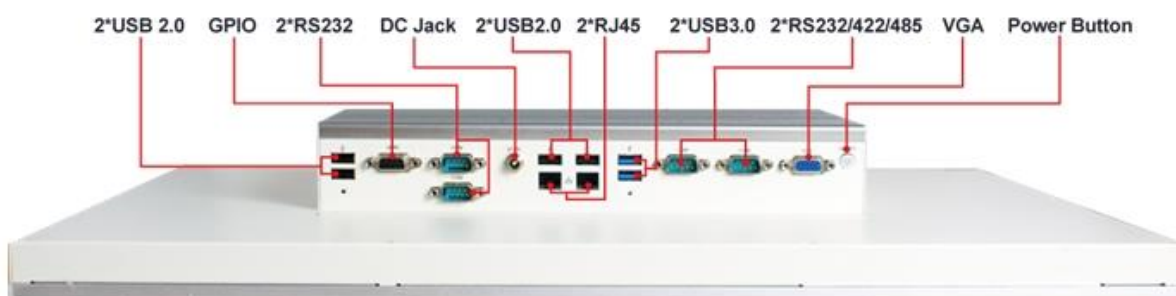
Rear IO	Q'ty
Power Button	1
DC-in	1
VGA	1
RS232/422/485	2
USB3.0	2
USB2.0	2
RJ-45	2
GPIO-male	1

For HPC156SC-FP1900B Series:



Bottom View

For HPC238SC-FP1900B Series:



Bottom View










Rear IO	Q'ty
Power Button	1
DC-in	1
VGA	1
RS232/422/485	2
RS232	2
USB3.0	2
USB2.0	4
RJ-45	2
GPIO-female	1

Notice:

1. The diagrams in this manual only serve for illustration, if there is any differences that we do not cover, please refer to the actual product you purchase. 2. Model **HPC156SC-FP1900B** & **HPC238SC-FP1900B** series share the same IO specifications, as the above diagram shows; 3. The main differences of **HPC156SC-FP1900B** & **HPC238SC-FP1900B** series are mainly in size and panel frame outlook.

1-4 Connector Pin Definition

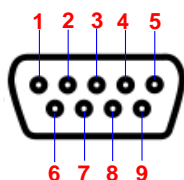
(1) Connector Function

Icon	Name	Function
	Power Button	Press to turn on/off the system.
	VGA Port	To connect display device that support VGA specification.
	COM Port	Mainly for user to connect external MODEM or other devices that supports Serial Communications Interface.
	USB 3.0 Port	To connect USB keyboard, mouse or other devices compatible with USB specification. USB 3.0 ports supports up to 5Gbps data transfer rate.
	USB 2.0 Port	To connect USB keyboard, mouse or other devices compatible with USB specification.
	RJ-45 LAN Port	This connector is standard RJ-45 LAN jack for Network connection.
	DC-in Power Jack Connector	For user to connect compatible power adapter to provide power supply for the system.
	GPIO Connector-Male	Male General Purpose Input Output port.
	GPIO Connector-Female	Female General Purpose Input Output port.

(2) I/O Connectors Pin Definition

COM Port Connector

The pin assignment for RS-232/ 422/ 485 is listed as follows:



Pin NO.	RS232	*RS422 (optional)	*RS485 (optional)
1	DCD	TX-	DATA-
2	RXD	TX+	DATA+
3	TXD	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

COM1 & COM2 ports can function as RS232/422/485 port. In normal settings COM1/COM2 functions as RS232 port. With compatible COM cable they can function as RS422 or RS 485 port. User also needs to go to BIOS to set '**Transmission Mode Select**' for COM1/COM2 (refer to Page 26) at first, before using specialized cable to connect different pins of this port.

VGA Port Connector

The pin assignment for VGA port is listed as follows:

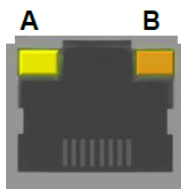
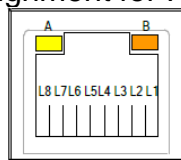


Pin No.	1	2	3	4	5
Definition	R	G	B	NC	GND
Pin No.	6	7	8	9	10
Definition	R-GND	G-GND	B-GND	+5V	GND
Pin No.	11	12	13	14	15
Definition	NC	SDA	H-SYN	V-SYN	SCL

RJ-45 Ethernet Connector

Ethernet connection can be established by plugging one end of the Ethernet cable into this RJ-45 connector and the other end (phone jack) to a 1000/100/10-Base-T hub.

The pin assignment for RJ-45 Ethernet LAN connectors are listed as follows:

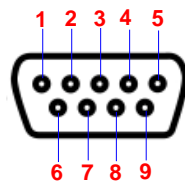


Pin	Definition	Pin	Definition
L1	MDI0+	L5	MDI2+
L2	MDI0-	L6	MDI2-
L3	MDI1+	L7	MDI3+
L4	MDI1-	L8	MDI3-
A	Active LED (Yellow)		
B	100 LAN LED (Green) / 1000 LAN LED (Orange)		

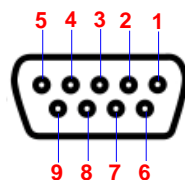
GPIO (9-pin Block): GPIO Port

GPIO Port Connector

The pin assignment for GPIO connector is listed as follows:



GPIO-Male



GPIO-Female

Pin No.	Definition
1	GPIO
2	GPIO
3	GPIO
4	GPIO
5	GND
6	GPIO
7	GPIO
8	GPIO
9	GPIO

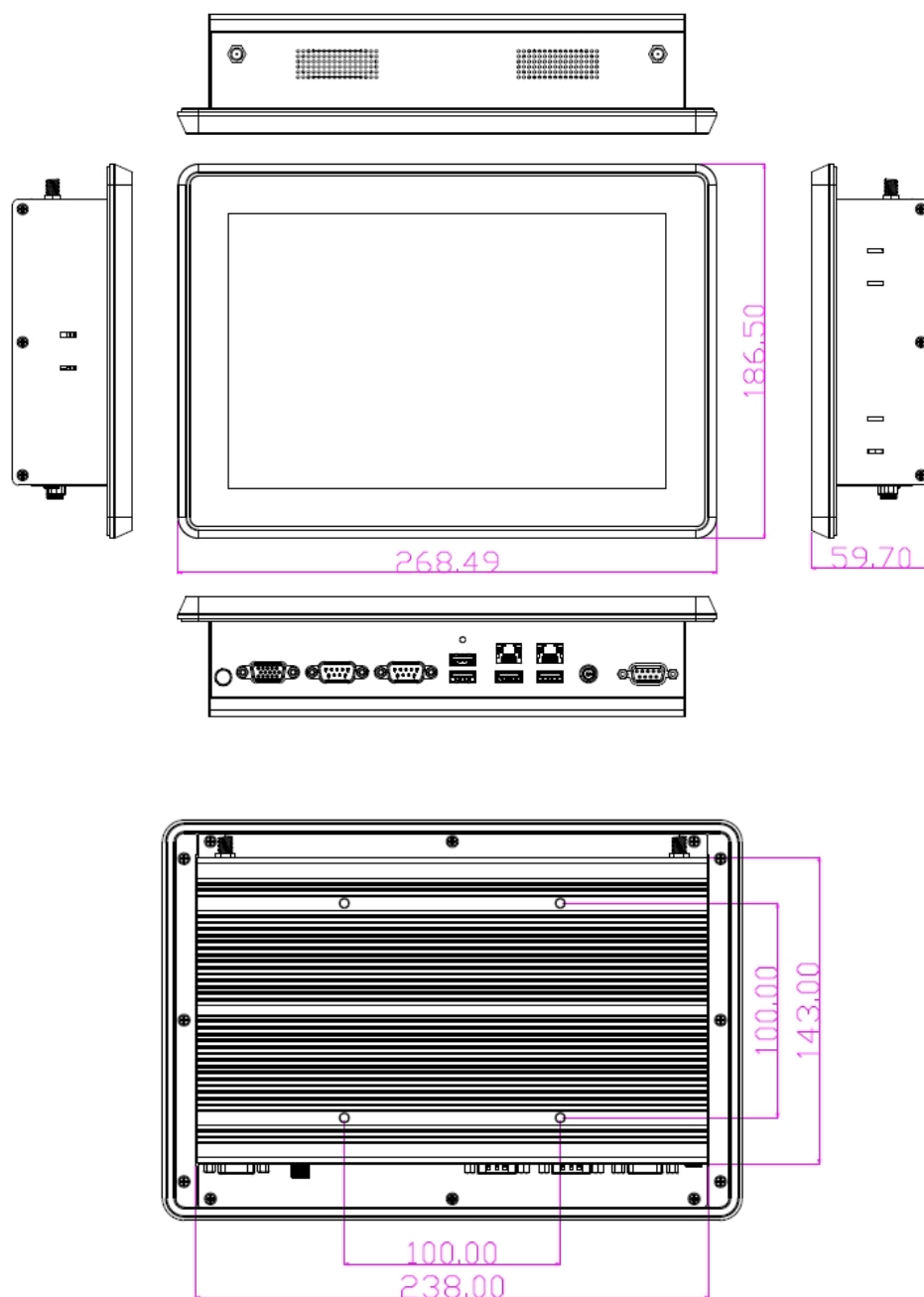
***Note:** GPIO port comes in 2 types: male and female. Please refer to the actual specification of the product you purchase and choose compatible cable for correct connection.

Chapter 2

Hardware and Installation

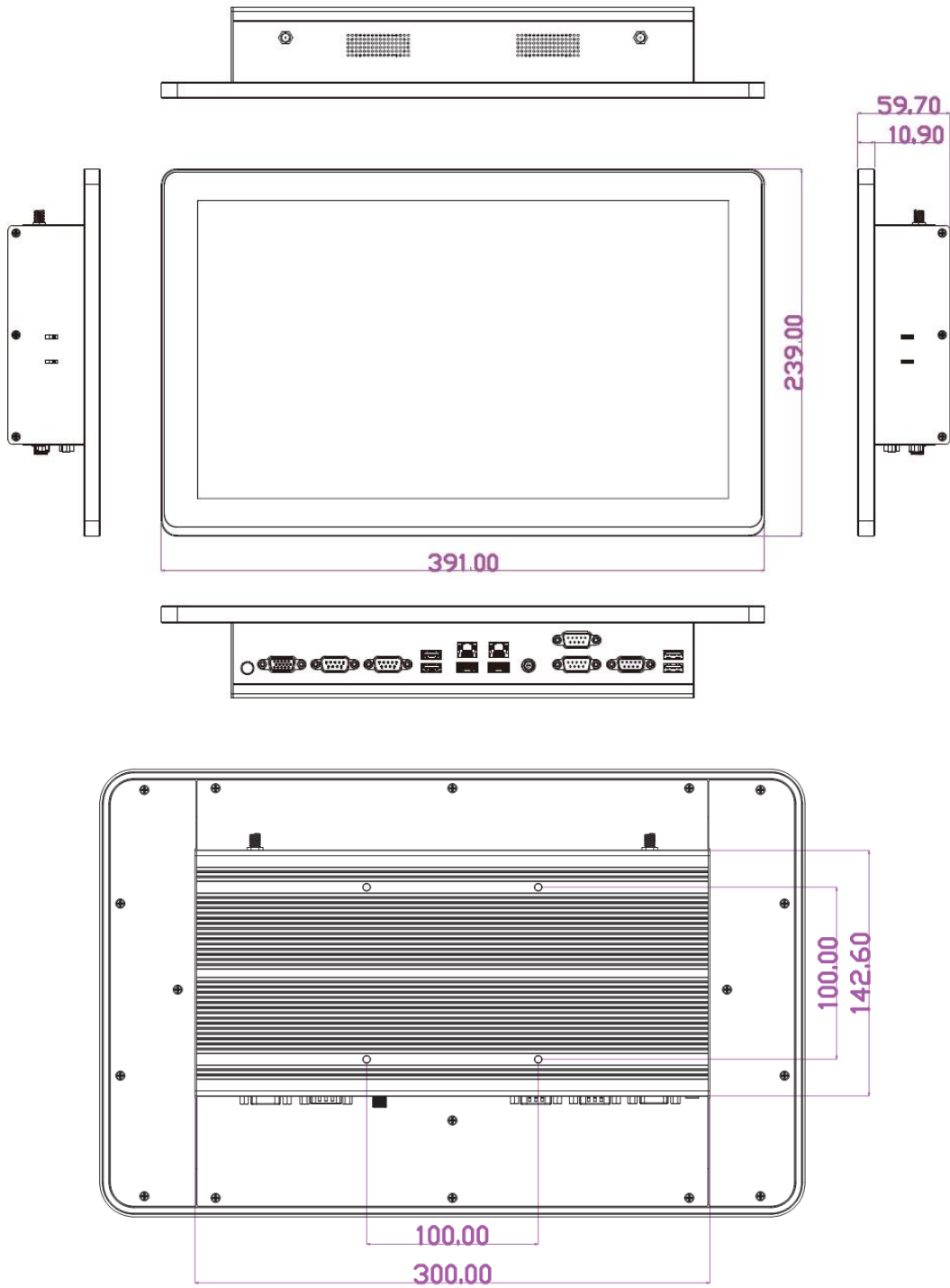
2-1 Dimension and Outlines

Product Dimension for HPC101SC-FP1900B Series:



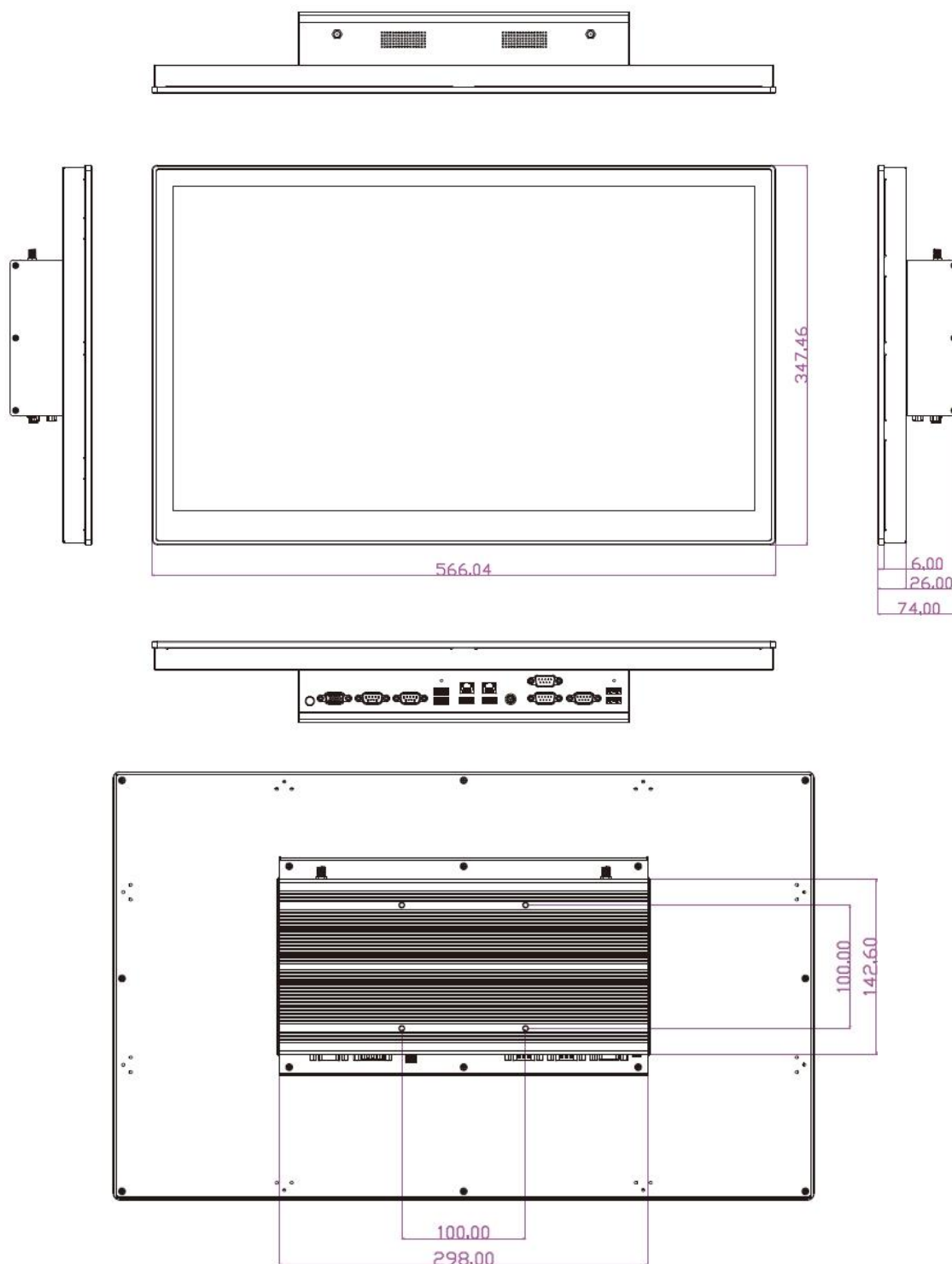
** Measure Unit: mm.*

Product Dimension for HPC156SC-FP1900B Series:



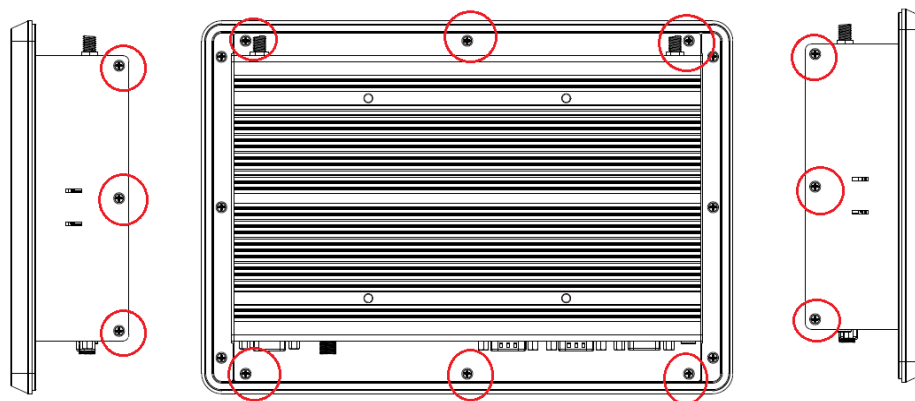
** Measure Unit: mm.*

Product Dimension for HPC238SC-FP1900B Series:

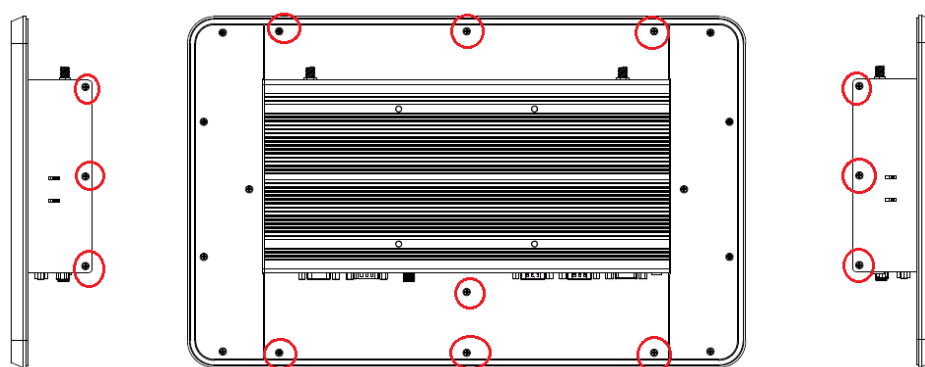


** Measure Unit: mm.*

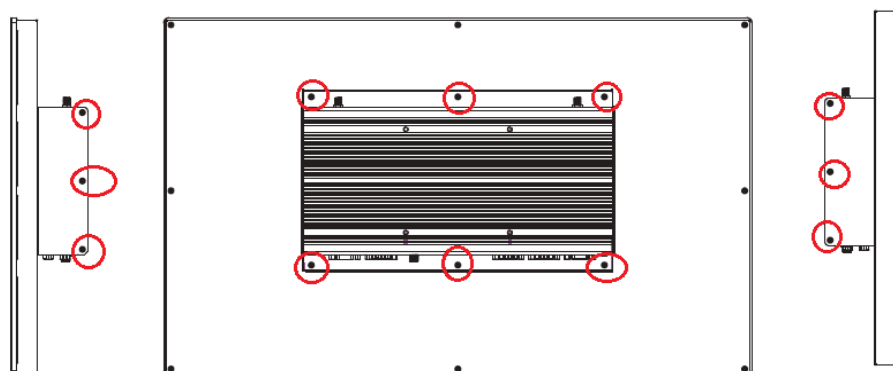
2-2 To Open the Chassis



HPC101SC-FP1900B



HPC156SC-FP1900B



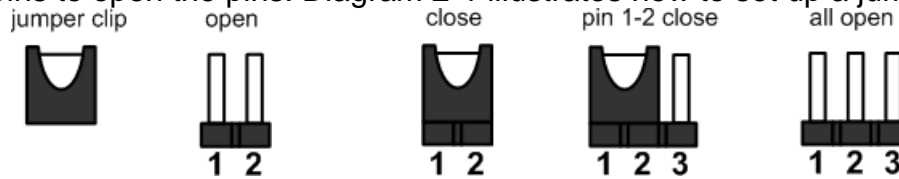
HPC238SC-FP1900B

Use a screwdriver to unscrew the screws marked above that lock the back cover (see red circles). Remove them to open the chassis.

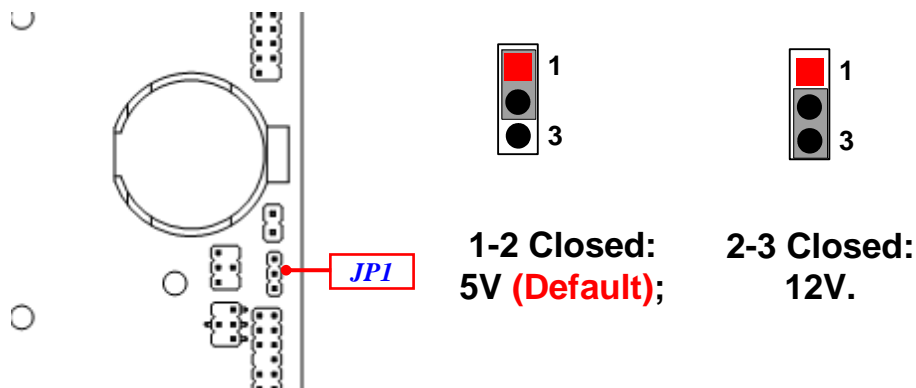
Notice: When lifting the cover up to open the chassis for further installation, see to it that the connecting cables are not unplugged. It is very important for the cables connected to their original places for normal functioning.

2-3 Jumper Settings

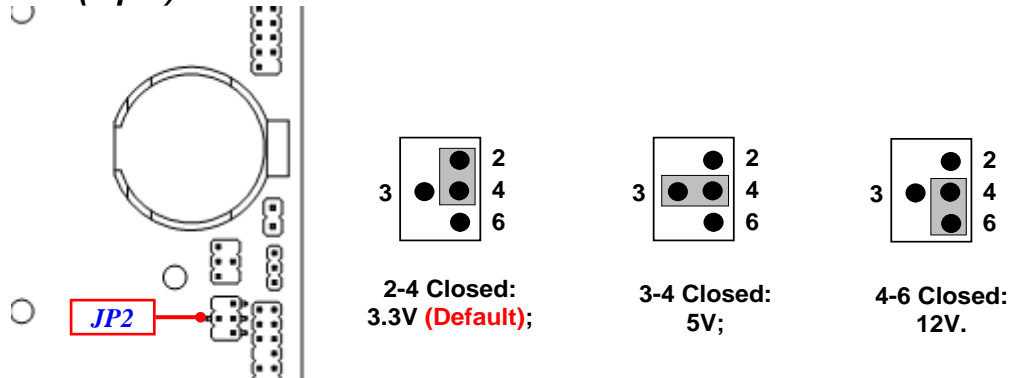
Jumper is a small component consisting of jumper clip and jumper pins. Install jumper clip on 2 jumper pins to close the pins. And remove jumper clip from 2 jumper pins to open the pins. Diagram 2-1 illustrates how to set up a jumper.



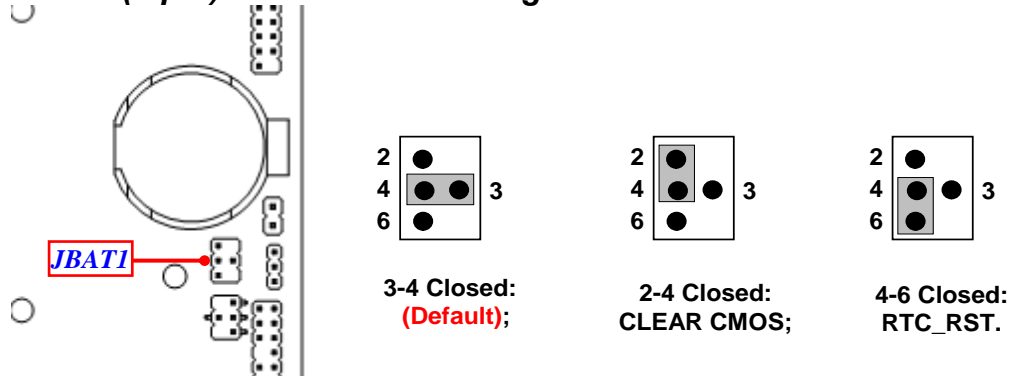
(1) JP1 (3-pin): eDP Backlight VCC 5V /12V Select



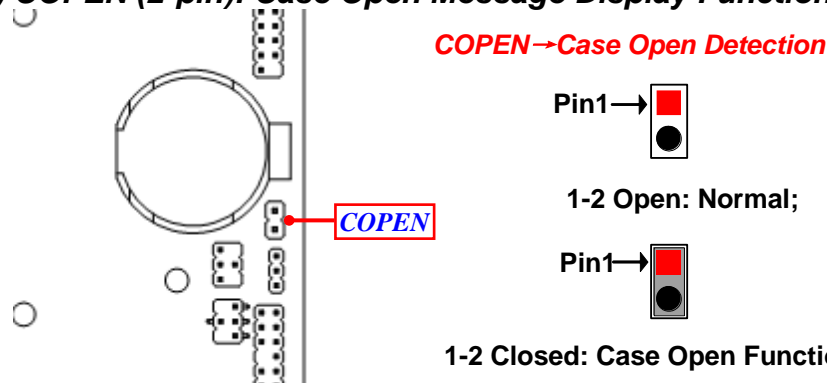
(2) JP2 (4-pin): eDP LCD VCC 3.3V / 5V /12V Select



(3) JBAT1 (4-pin): Clear CMOS Setting

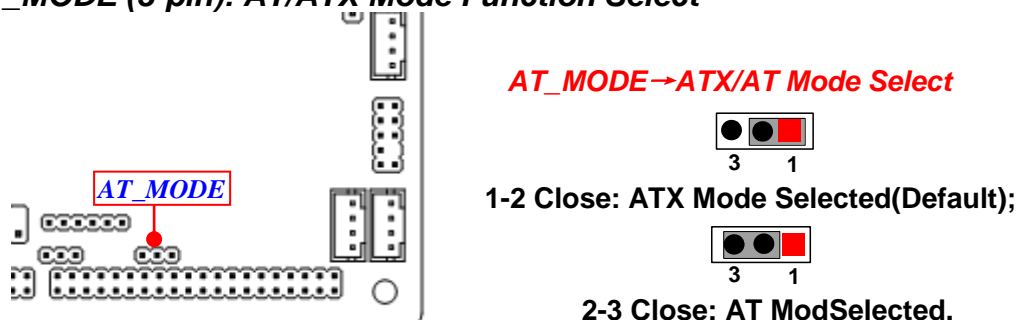


(4) COPEN (2-pin): Case Open Message Display Function Select



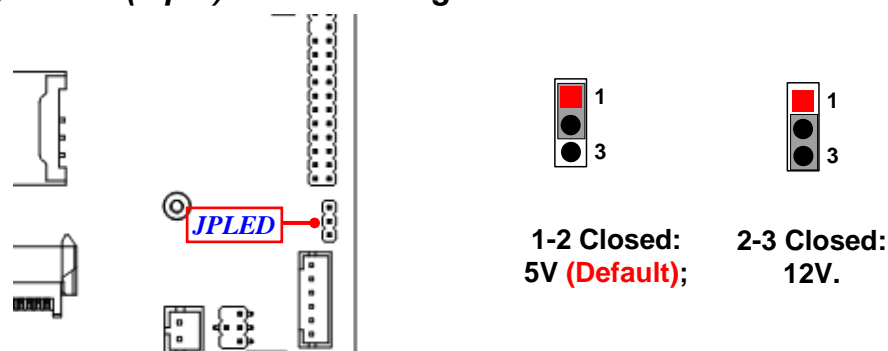
Pin 1-2 Closed: Case open display function enabled. Use needs to enter BIOS and enable 'Case Open Detect' function. In this case if you case is removed, next time when you restart your computer a message will be displayed onscreen to inform you of this.

(5) AT_MODE (3-pin): AT/ATX Mode Function Select

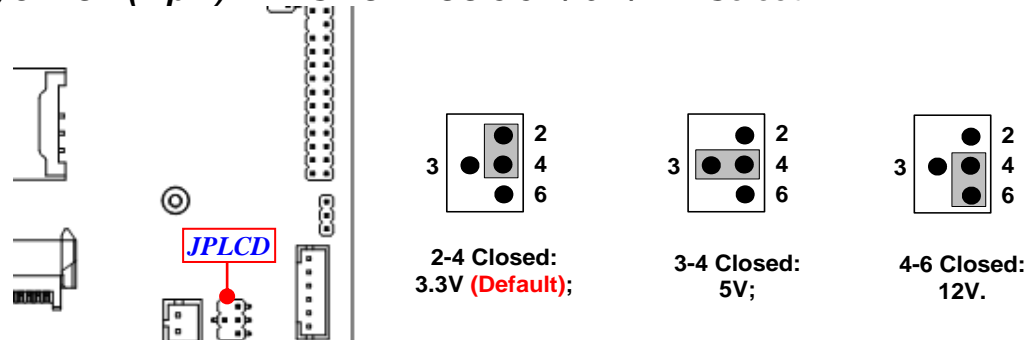


***ATX Mode Selected:** Press power button to power on after power input ready;
AT Mode Selected: Directly power on as power input ready.

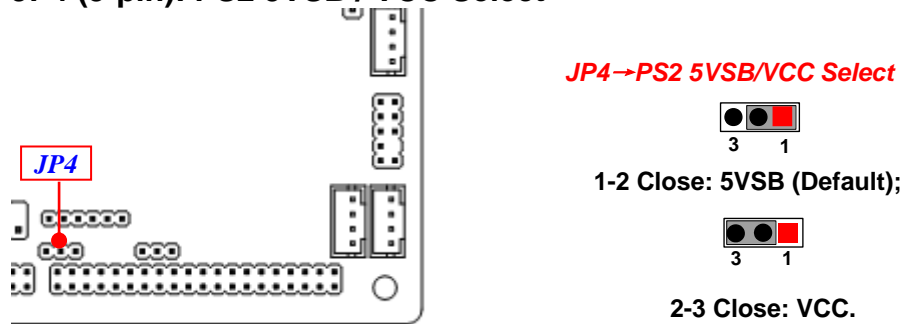
(6) JPLED (3-pin): LVDS Backlight VCC 5V / 12V Select



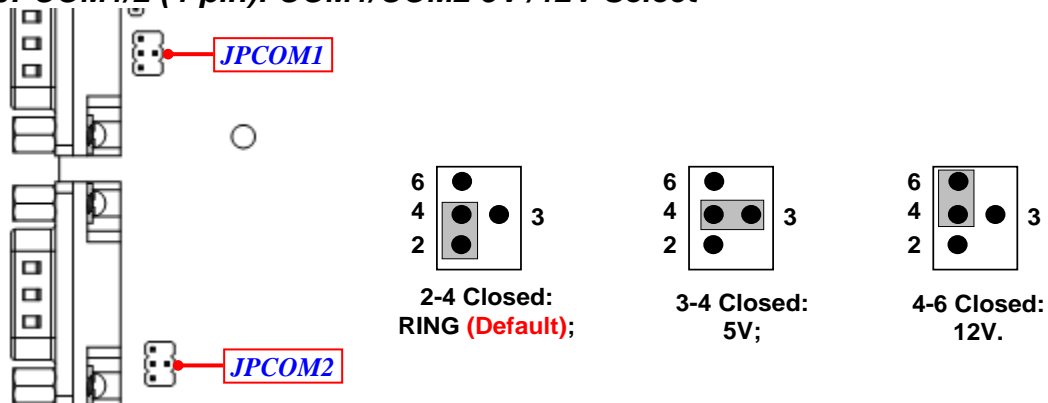
(7) JPLCD (4-pin): LVDS LCD VCC 3.3V / 5V / 12V Select



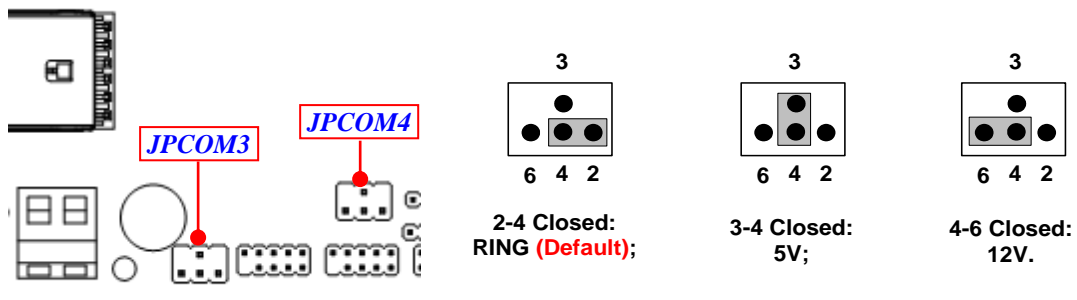
(8) JP4 (3-pin): PS2 5VSB / VCC Select



(9) JPCOM1/2 (4-pin): COM1/COM2 5V/12V Select



(10) JPCOM3/4 (4-pin): COM3/COM4 5V/12V Select



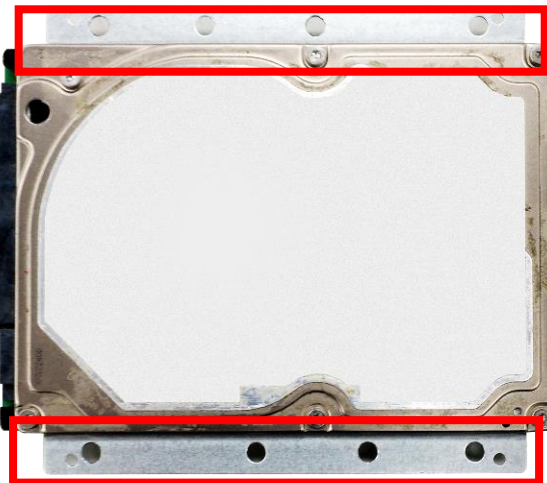
2-4 Hardware Installation

Remove the screws that lock the back cover to the system from the back side before hardware installation procedures (refer to 2-2).

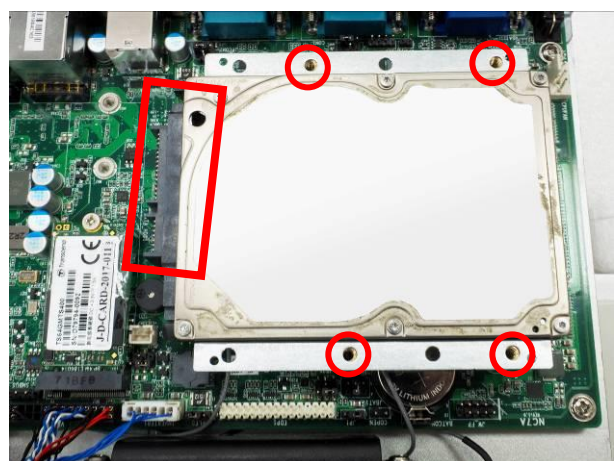
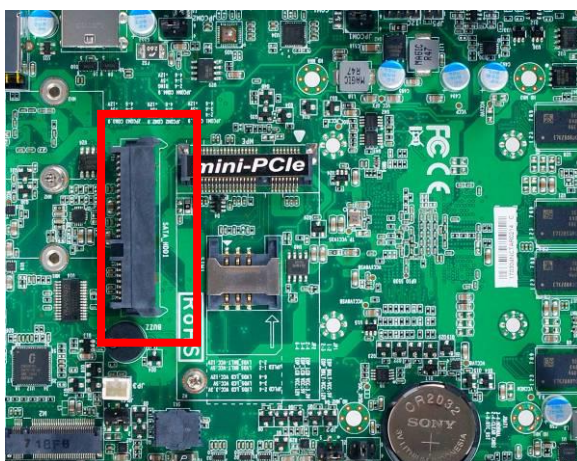
Notice: When lifting the cover up to open the chassis for further installation, see to it that the connecting cables are not unplugged. It is very important for the cables connected to their original places for normal functioning.

2-4-1 To Install HDD

Please refer to the following instructions and illustration to install a 2.5" SATA HDD. Before installation, **please refer to 2-2** to open the back cover and disassemble the pre-installed HDD racks from the system.



1. Align the racks to both sides of the SATA HDD as showed above. Match the screw holes of the racks to corresponding screw holes of the HDD.
2. Lock the HDD to the HDD racks by tightening screws into matched screw holes.



3. Find the 2.5" HDD connector on the motherboard.
4. Push the installed HDD into HDD connector on the board as showed. Lock the racked with HDD installed to the board by tightening the screws in the marked spots.

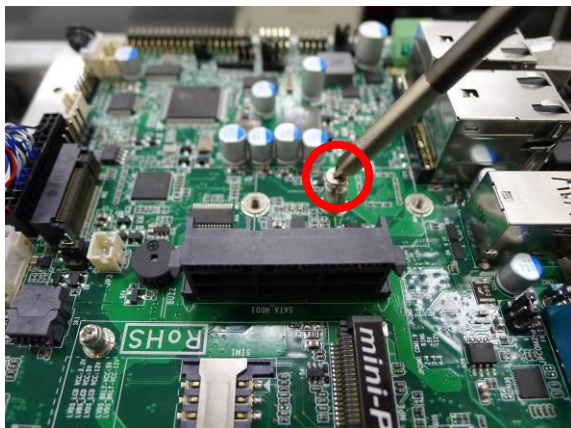
2-4-2 To Install M.2 SSD Card

This M.2 Socket 3 connector support compatible type 2242/2260/2280 SATA SSD module.

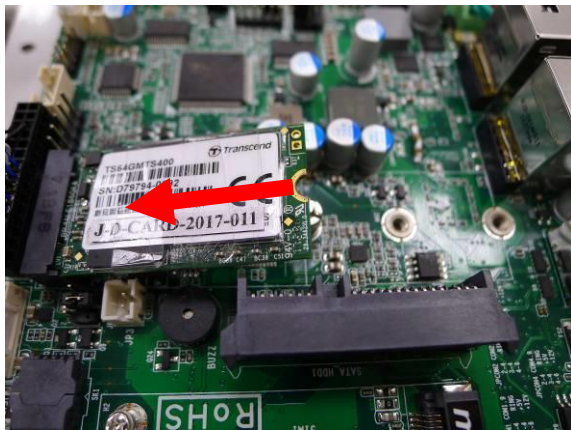
Nut Location	MH1	MH2	MH3
Card Length	4.2 cm	6 cm	8 cm
Module Type	Type 2242	Type 2260	Type 2280



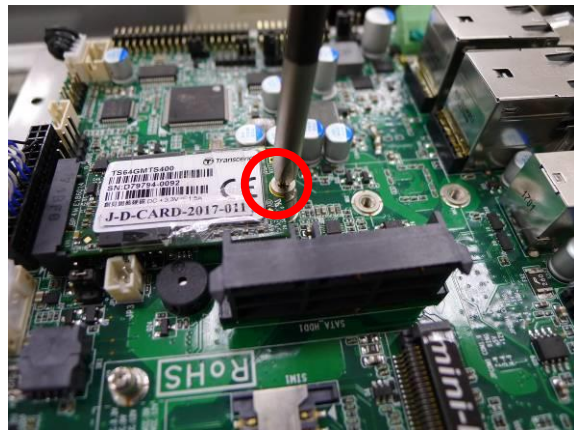
1. Find M.2 Slot on the motherboard.
2. Prepare compatible M.2 SATA or M.2 PCIe SSD card. Different type of cards has different length. Find corresponding nut location for further installation.



3. Remove the screw post and nut fixed at location **MH2** by default (Skip step 2 & 3 and go straight to Step 4 if you are going to use the default nut).
4. Lock the screw post into the location corresponding to the length of the module you wish to install.



5. Align and insert corresponding M.2 module, as the photo shows.



6. Tighten up the screw to secure the module into the M.2 connector. Make sure not over-tighten the screw to avoid possible damage to the module.

2-4-3 To Install Wireless LAN Card

Please refer to the following instructions and illustration for the installation of the wireless LAN card.



1. Locate the Mini-PCIE card slot on the board. Remove the marked screw and use it to lock WIFI card to the slot in later installation.



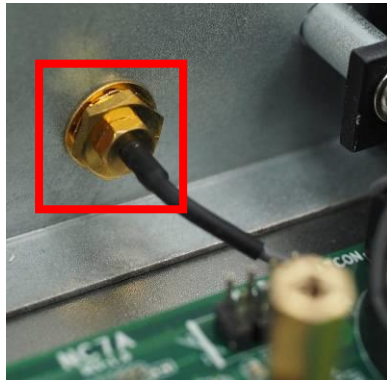
2. Insert the gold-figure side of the compatible WI-FI card into the slot and press down.



3. Lock the card to the board by tightening up the screw to the marked spot.



4. Press the metal hat on the end of the antenna string to the antenna slot on the card as showed.



5. **Internal View:** Put the above metal gasket into the antenna head at first, and then push this antenna head into the back side of the rear panel.



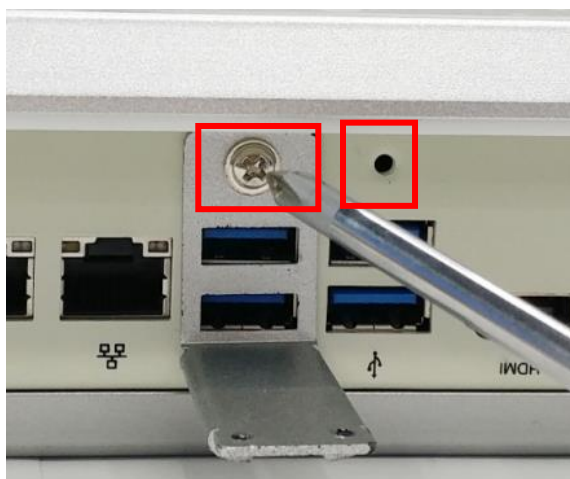
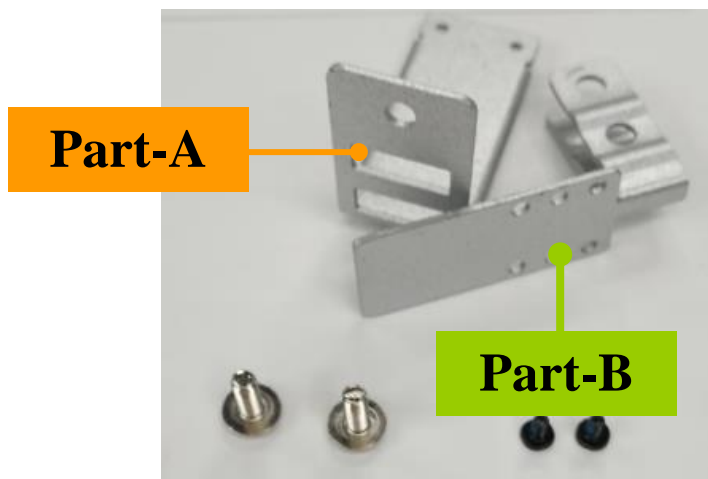
6. **External View:** Put the metal ring into the antenna head, and then lock the antenna head to the front side of the rear panel the above hexagonal bolt.

After the above steps finished, please remove the antenna plugs from the Wi-Fi antenna holes in the rear panel. Connect the external Wi-Fi receiver antenna to the antenna connector on the rear panel.

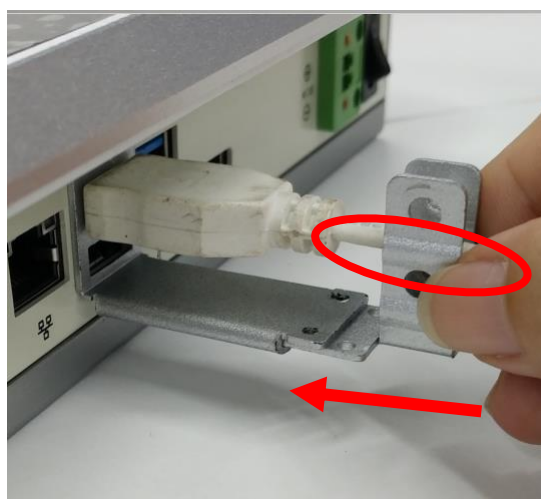
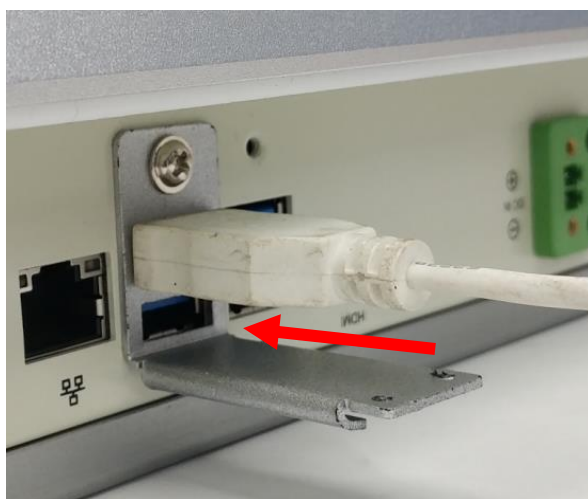


NOTE: Please use an extended bracket when using a half-size Mini card.

2-4-4 To Install Optional USB Device Fixed Parts



1. The USB device fixed accessories include **Part-A**, **Part-B** and 2 sets of screws of different size.
2. Align the screw hole of **Part-A** to corresponding screws hole from the IO panel of the chassis, and then lock **Part-A** to the panel with the bigger screw, as the photo shows.

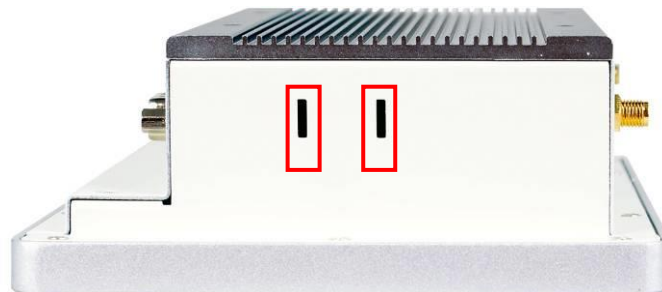


3. Insert the cable end of USB device you wish to connect to USB port of the chassis, as the photo shows.
4. Insert **Part-B** into corresponding slot of the **Part-A** and choose the installing length by adjusting the screw holes from both parts. Make sure the screw holes from both parts matched and the USB cable fitted into the reserved slot of **Part-B**, as the photo shows.

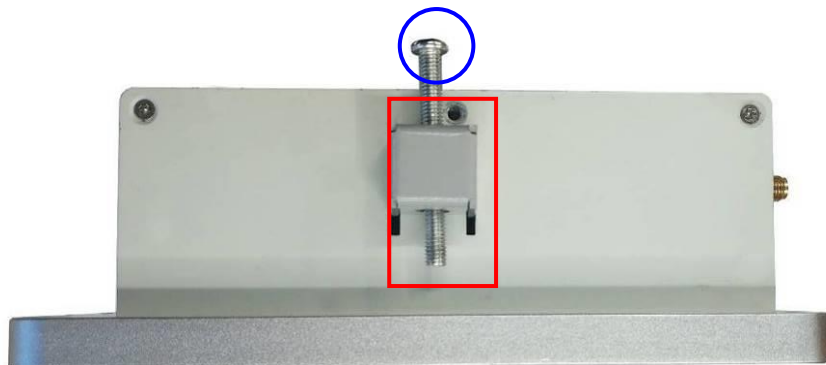


5. Turn over the system on a flat operation platform and lock **Part-B** to **Part-A** by tightening the 2 screws in the marked spots.
6. Fastening the USB device cable by tightening up the other screw in the marked spot.

2-4-5 To Install Optional Chassis Fixed Parts



1. Insert corresponding edges of the fixed part into the slots until they matched. Make sure the fixed part is installed in the way the photo shows, with protruding tips upwards.
2. The models that support this fixing mode have pairs of slots reserved on both sides of the system. User can choose the height or position of installing spot.



3. Insert corresponding edges of the fixed part into the slots until they matched. Tightening up the screw so that the fixed part can be fitted into the slots tightly. Install other fixed parts to the system in the same way.

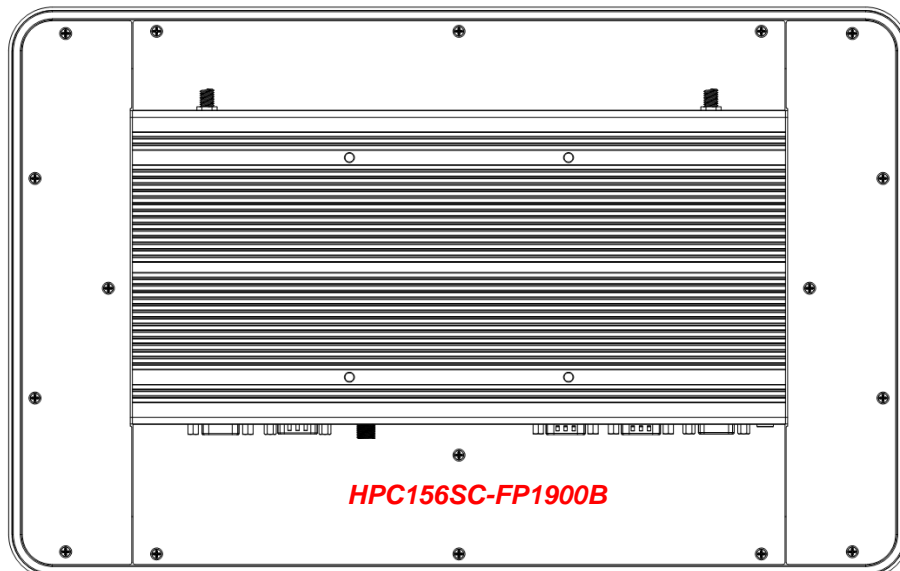
***Note:1. Fixed parts are only optional for specific models.** Please refers to the actual prodcut for spefication; **2. The photos in the manual is for illutrution purpose only.** If there are any differences between the photos and the actual product, please refer to the actual product.

2-5 To Affix Waterproof Silicone Strips

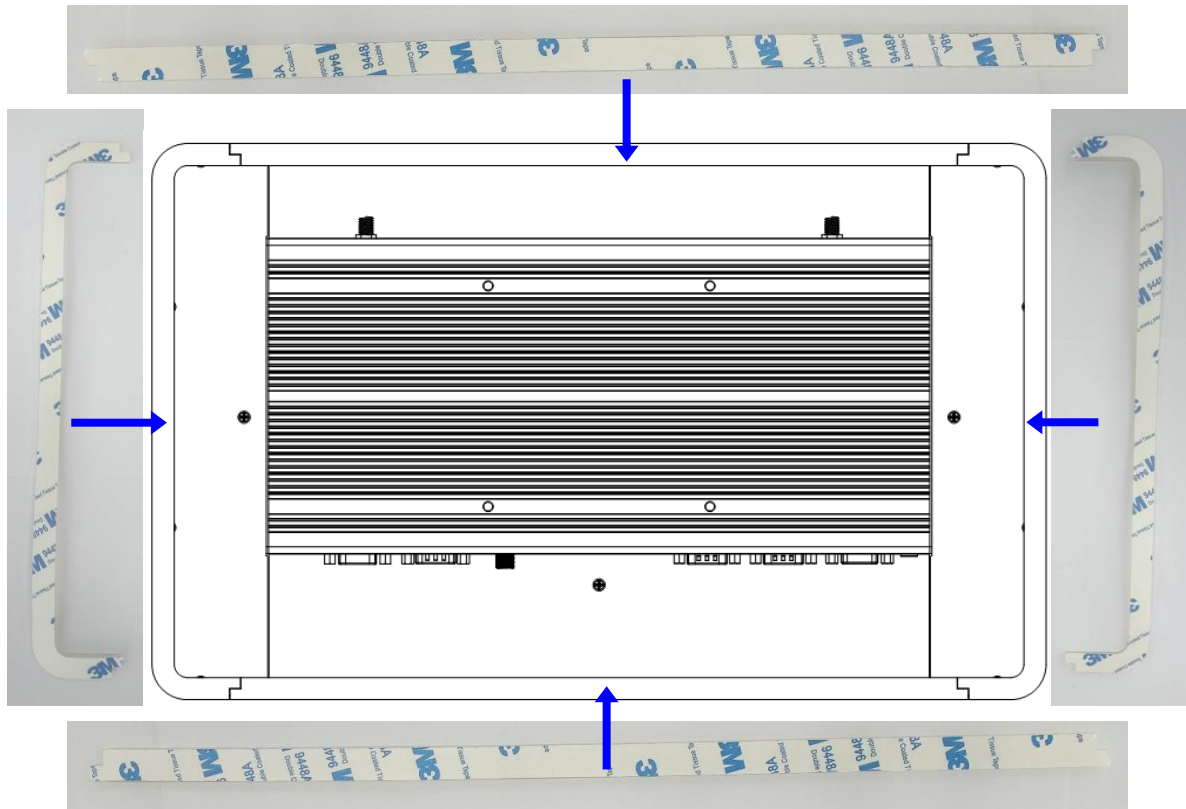
In consideration of expansion purpose from our user, we do not affix the waterproof silicone strips to the back cover of the system **HPC156SC-FP1900B**. User can find the silicone strips from the accessories package and stick them upon the edges of the back cover of the system **HPC156SC-FP1900B** after necessary hardware installation finished, as the following steps show:



1. Find the 4* waterproof silicone strips from the accessories package.



2. This is the back cover of the system without silicon strips affixed.



3. Tear off the paper from the back of the adhesive silicon strips and affix the above 4 strips with the adhesive sides upon the edges of the back cover, as the photo show.

The screws on the 4 edges of the back cover are under the strips when this process finished. If the user wishes to open the chassis afterwards, he has to tear off the strips to remove screws. Make sure the adhesive side put upwards without sticking to anything before affixing it back to the cover.

Chapter 3

Introducing BIOS

Notice! The BIOS options in this manual are for reference only. Different configurations may lead to difference in BIOS screen and BIOS screens in manuals are usually the first BIOS version when the board is released and may be different from your purchased motherboard. Users are welcome to download the latest BIOS version from our official website.

The BIOS is a program located on a Flash Memory on the motherboard. This program is a bridge between motherboard and operating system. When you start the computer, the BIOS program will gain control. The BIOS first operates an auto-diagnostic test called POST (power on self test) for all the necessary hardware, it detects the entire hardware device and configures the parameters of the hardware synchronization. Only when these tasks are completed done it gives up control of the computer to operating system (OS). Since the BIOS is the only channel for hardware and software to communicate, it is the key factor for system stability, and in ensuring that your system performance as its best.

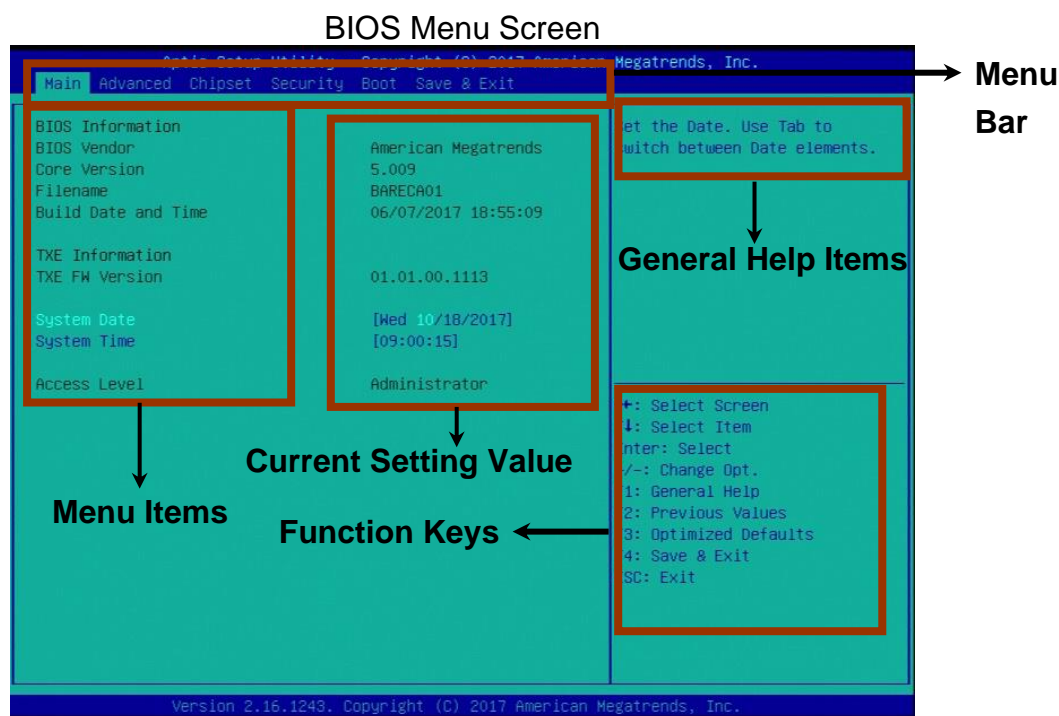
3-1 Entering Setup

Power on the computer and by pressing immediately allows you to enter Setup. If the message disappears before your respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to

Press **** to enter Setup

3-2 BIOS Menu Screen

The following diagram show a general BIOS menu screen:



3-3 Function Keys

In the above BIOS Setup main menu of, you can see several options. We will explain these options step by step in the following pages of this chapter, but let us first see a short description of the function keys you may use here:

- Press ←→ (left, right) to select screen;
- Press ↑↓ (up, down) to choose, in the main menu, the option you want to confirm or to modify.
- Press <Enter> to select.
- Press <+>/<-> keys when you want to modify the BIOS parameters for the active option.
- [F1]: General help.
- [F2]: Previous values.
- [F3]: Optimized defaults.
- [F4]: Save & Exit.
- Press <Esc> to quit the BIOS Setup.

3-4 Getting Help

Main Menu

The on-line description of the highlighted setup function is displayed at the top right corner the screen.

Status Page Setup Menu/Option Page Setup Menu

Press [F1] to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <Esc>.

3-5 Menu Bars

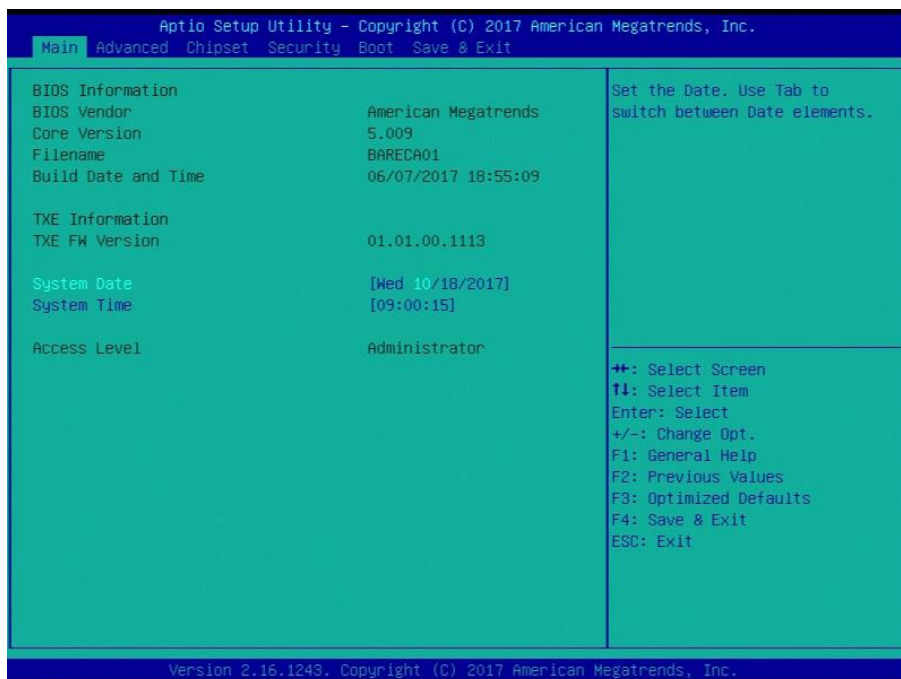
There are six menu bars on top of BIOS screen:

Main	To change system basic configuration
Advanced	To change system advanced configuration
Chipset	To change chipset configuration
Security	Password settings
Boot	To change boot settings
Save & Exit	Save setting, loading and exit options.

User can press the right or left arrow key on the keyboard to switch from menu bar. The selected one is highlighted.

3-6 Main Menu

Main menu screen includes some basic system information. Highlight the item and then use the <+> or <-> and numerical keyboard keys to select the value you want in each item.



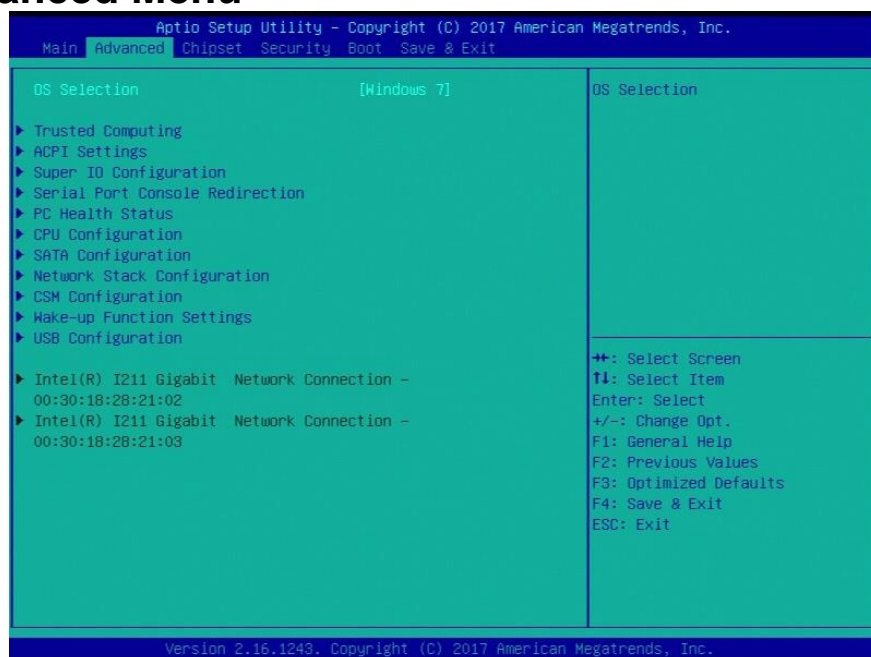
System Date

Set the date. Please use [Tab] to switch between date elements.

System Time

Set the time. Please use [Tab] to switch between time elements.

3-7 Advanced Menu



OS Selection

Use this item to select OS.

The optional settings are: [Windows 8.X]; [Linux/Android]; [Windows 7].

▶ **Trusted Computing**

Press [Enter] to make settings for the following sub-item:

Configuration

Security Device Support

Use this item to enable or disable BIOS support for security device. OS will not show Security Device. TCG EFI protocol and INT1A interface will not be available. The optional settings: [Disabled]; [Enabled].

When set as [Enabled], the following sub-items shall appear:

TPM State

Use this item to enable or disable Security Device. NOTE: computer will reboot during restart in order to change state of the Device.

The optional settings: [Disabled]; [Enabled].

▶ **ACPI Settings**

Press [Enter] to make settings for the following sub-item:

ACPI Sleep State

Use this item to select ACPI sleep state the system will enter when the suspend button is pressed.

The optional settings are: [Suspend Disabled]; [S3 only (Suspend to RAM)].

▶ **Super I/O Configuration**

Press [Enter] to make settings for the following sub-items:

Super IO Configuration

▶ **Serial Port 1/2 Configuration**

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are: [Auto]; [IO=3F8h; IRQ=4;]; [IO=2F8h; IRQ=3;]; [IO=3E8h; IRQ=4;]; [IO=2E8h; IRQ=3;].

Transmission Mode Select

Use this item to select transmission mode.

The optional settings are: [RS422]; [RS232]; [RS485].

Serial Port FIFO Mode

Use this item to select an optimal setting for FIFO Mode.

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128Byte FIFO].

▶ **Serial Port 3/4/5/6 Configuration**

Press [Enter] to make settings for the following items:

Serial Port

Use this item to enable or disable serial port (COM).

The optional settings are: [Disabled]; [Enabled].

Change Settings

Use this item to select an optimal setting for super IO device.

The optional settings are: [Auto]; [IO=3F8h; IRQ=10;]; [IO=2F8h; IRQ=10;]; [IO=3E8h; IRQ=10;]; [IO=2E8h; IRQ=10;]; [IO=2F0h; IRQ=10;]; [IO=2E0h; IRQ=10;].

Serial Port FIFO Mode

Use this item to select an optimal setting for FIFO Mode.

The optional settings are: [16-Byte FIFO]; [32-Byte FIFO]; [64-Byte FIFO]; [128Byte FIFO].

OS Select for Serial Port

Serial port supports for Windows or Linux. The optional settings are: [Windows]; [LINUX].

ERP Support

Use this item to disable or enable ERP to active all wake-up functions.

The optional settings are: [Disabled]; [Enabled].

Case Open Detect

Use this item to disable or enable case open functions and show message in POST.

The optional settings are: [Disabled]; [Enabled].

PS2 KB/MS Connect

Use this item to set PS2 Connect Primary Devices.

The optional settings are: [Keyboard First]; [Mouse First].

WatchDog Reset Timer

This item support WDT reset function.

The optional settings: [Disabled]; [Enabled].

Use this item to enable or disable WatchDog Timer Control. When set as [Enabled], the following sub-items shall appear:

WatchDog Reset Timer Value

User can set a value in the range of [10] to [255] seconds or in the range of [1] to [255] minutes.

WatchDog Reset Timer Unit

The optional settings are: [Sec.]; [Min.].

WatchDog Wake-up Timer

Support WDT Wake-up.

The optional settings: [Disabled]; [Enabled]. When set as [Enabled], the following sub-items shall appear:

WatchDog Wake-up Timer Value

User can set a value in the range of [10] to [4095] seconds when 'WatchDog Wake-up Timer Unit' set as [Sec.], or in the range of [1] to [4095] minutes when 'WatchDog Wake-up Timer Unit' set as [Min.].

WatchDog Wake-up Timer Unit

The optional settings are: [Sec.]; [Min.].

ATX Power Emulate AT Power

This item support Emulate AT power function, MB power On/Off control by power supply. Use needs to select AT or ATX Mode on MB jumper at first (refer to **Page 14**, AT_MODE jumper for ATX Mode / AT Mode Select).

► **Serial Port Console Redirection**

COM1

Console Redirection

The optional settings: [Disabled]; [Enabled]. When set as [Enabled], the following sub-items shall appear:

► **Console Redirection Settings**

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Press [Enter] to make settings for the following items:

Terminal Type

The optional settings: [VT100]; [VT100+]; [VT-UTF8]; [ANSI].

Emulation: VT100: ASCII char set; VT100+: Extends VT100 to support color, function keys, etc.; VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes; ANSI: Extended ASCII char set.

Bits per second

Use this item to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

The optional settings: [9600]; [19200]; [38400]; [57600]; [115200].

Data Bits

The optional settings: [7]; [8].

Parity

A parity bit can be sent with the data bits to detect some transmission errors.

The optional settings: [None]; [Even]; [Odd]; [Mark]; [Space].

Even: parity bit is 0 if the num of 1's in the data bits is odd; Mark: parity bit is always 1; Space: Parity bit is always 0; Mark and Space Parity do not allow for error detection.

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard settings is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

The optional settings: [1]; [2].

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a “stop” signal can be sent to stop the data flow. Once the buffers are empty, a “start” signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

The optional settings: [None]; [Hardware RTS/CTS].

VT-UTF8 Combo Key Support

Use this item to enable VT-UTF8 Combination Key Support for ANSI/VT100 terminals.

The optional settings: [Disabled]; [Enabled].

Recorder Mode

With this mode enable only text will be sent. This is to capture Terminal data.

The optional settings: [Disabled]; [Enabled].

Resolution 100x31

Use this item to enable or disable extended terminal resolution.

The optional settings: [Disabled]; [Enabled].

Legacy OS Redirection Resolution

On Legacy OS, the Number of Rows and Columns supported redirection.

The optional settings: [80x24]; [80x25].

Putty KeyPad

Use this item to select FunctionKey and KeyPad on Putty.

The optional settings: [VT100]; [LINUX]; [XTERMR6]; [SCO]; [ESCN]; [VT400].

Redirection After BIOS POST

The settings specify if BootLoader is selected then Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legacy Console Redirection is enabled for Legacy OS.

The optional settings: [Always Enable]; [BootLoader].

Serial Port for Out-of-Band Management/

Windows Emergency Management Services (EMS)

Console Redirection

The optional settings: [Disabled]; [Enabled]. When set as [Enabled], the following sub-items shall appear:

► Console Redirection Settings

The settings specify how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

Press [Enter] to make settings for the following items:

Out-of-Band Mgmt Port

The default setting is are: [COM1].

Terminal Type

The optional settings: [VT100]; [VT100+]; [VT-UTF8]; [ANSI].

Emulation: VT100: ASCII char set; VT100+: Extends VT100 to support color, function keys, etc.; VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes; ANSI: Extended ASCII char set.

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100.

Bits per second

Use this item to select serial port transmission speed. The speed must be matched on the other side. Long or noisy lines may require lower speeds.

The optional settings: [9600]; [19200]; [57600]; [115200].

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a “stop” signal can be sent to stop the data flow. Once the buffers are empty, a “start” signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

The optional settings: [None]; [Hardware RTS/CTS]; [Software Xon/Xoff].

► **PC Health Status**

Press [Enter] to view current hardware health status, set shutdown temperature, or make further settings in ‘**SmartFan Configuration**’.

SmartFAN Configuration

Press [Enter] to make settings for SmartFAN Configuration:

CPUFAN Type

The optional settings are: [4-Pin]; [3-Pin].

CPUFAN Smart Mode

The optional settings are: [Disabled]; [Enabled].

When set as [Enabled], the following sub-items shall appear:

CPUFAN Full-Speed Temperature

Use this item to set CPUFAN full speed temperature. Fan will run at full speed when above the pre-set temperature.

CPUFAN Full-Speed Duty

Use this item to set CPUFAN full speed duty. Fan will run at full speed when above the pre-set duty.

CPUFAN Idle-Speed Temperature

Use this item to set CPUFAN idle speed temperature. Fan will run at idle speed when below the pre-set temperature.

CPUFAN Idle-Speed Duty

Use this item to set CPUFAN idle speed duty. Fan will run at idle speed when below the pre-set duty.

Shutdown Temperature

Use this item to select system shutdown temperature.

The optional settings are: [Disabled]; [70 °C/156 °F]; [75 °C/164 °F]; [80 °C/172 °F]; [85 °C/180 °F]; [90 °C/188 °F].

► **CPU Configuration**

Press [Enter] to view current CPU configuration and make settings for the following sub-items:

Limit CPUID Maximum

The optional settings: [Disabled]; [Enabled].

This item should be set as [Disabled] for Windows XP.

Execute Disable Bit

The optional settings: [Disabled]; [Enabled].

Hardware Prefetcher

The optional settings are: [Disabled]; [Enabled].

Use this item to enable the Mid Level Cache (L2) streamer prefetcher.

Adjacent Cache Line Prefetch

The optional settings are: [Disabled]; [Enabled].
Use this item to enable Mid Level Cache (L2) prefetching of adjacent cache lines.

EIST

The optional settings are: [Disabled]; [Enabled].
Use this item to enable or disable Intel Speed Step function.

CPU C State Report

Use this item to enable or disable CPU C state report to OS.
The optional settings are: [Disabled]; [Enabled].

When set as [Enabled], user can see **Enhanced C state**:

Enhanced C state

Use this item to enable or disable CPU Cstate.
The optional settings are: [Disabled]; [Enabled].

Max CPU C-State

This item controls Max C-state that the processor will support.
The optional settings are: [C7]; [C6]; [C1].

S0ix

Use this item to enable or disable CPU S0ix state.
The optional settings are: [Disabled]; [Enabled].

► **SATA Configuration**

Press [Enter] to make settings for the following sub-items:

SATA Controller

The optional settings are: [Enabled]; [Disabled].
When user set it as [Enabled], the following items will show up for user to make further settings:

SATA Speed Support

The optional settings are: [Gen1]; [Gen2].

SATA Mode

The optional settings are: [IDE Mode]; [AHCI Mode].

SATA Port

The optional settings are: [Enabled]; [Disabled].

M.2

The optional settings are: [Enabled]; [Disabled].

► **Network Stack Configuration**

Press [Enter] to go to '**Network Stack**' screen to enable or disable UEFI Network Stack.

Network Stack

The optional settings are: [Enabled]; [Disabled].
When set as [Enabled], the following sub-items shall appear:

Ipv4 PXE Support

The optional settings are: [Disabled]; [Enabled].
Use this item to enable Ipv4 PXE Boot Support. When set as [Disabled], Ipv4 boot optional will not be created.

Ipv6 PXE Support

The optional settings are: [Disabled]; [Enabled].
Use this item to enable Ipv6 PXE Boot Support. When set as [Disabled], Ipv6 boot optional will not be created.

PXE Boot Wait Time

Use this item to set wait time to press [ESC] key to abort the PXE boot.

► **CSM Configuration**

Compatibility Support Module Configuration

Boot Option Filter

This option controls Legacy/UEFI ROMs priority.

The optional settings are: [UEFI and Legacy]; [Legacy only]; [UEFI only].

Network

This item controls the execution of UEFI and Legacy PXE OpROM.

The optional settings are: [Do Not Launch]; [UEFI only]; [Legacy only].

Storage

This option controls the execution of UEFI and Legacy Storage OpROM.

The optional settings are: [Do Not Launch]; [UEFI only]; [Legacy only].

Other PCI Devices

This item determines OpROM execution policy for devices other than Network, storage or video.

The optional settings are: [UEFI First]; [Legacy Only].

► **Wakeup Function Settings**

Press [Enter] to make settings for the following sub-items:

Wake-up System with Fixed Time

Use this item to enable or disable system wake-up by RTC on alarm event.

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], system will wake on the Hour/Minute/Second specified.

Wake-up System with Dynamic Time

Use this item to enable or disable system wake-up by RTC on alarm.

The optional settings: [Disabled]; [Enabled].

When set as [Enabled], system will wake on the (current time) + (Increase minute(s)). The range is from [1] to [60] minute(s). .

PS2 KB/MS Wake-Up from S3-S5

PS2 KB/MS Wake-up is affected by ERP function in S4-S5. Please disable ERP before activating this function in S4-S5.

The optional settings: [Disabled]; [Enabled].

USB1 Wake-up from S3

Use this item to enable or disable USB wake-up. It is affected by ERP function in S4. Please disable ERP before activating this function in S4.

The optional settings: [Disabled]; [Enabled].

► **USB Configuration**

USB Configuration

Legacy USB Support

The optional settings are: [Enabled]; [Disabled]; [Auto].

[Enabled]: To enable legacy USB support.

[Disabled]: To keep USB devices available only for EFI specification,

[Auto]: To disable legacy support if no USB devices are connected.

XHCI Hand-off

This is a workaround for OSES without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

The optional settings are: [Enabled]; [Disabled].

EHCI Hand-off

This is a workaround for OSES without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.

The optional settings are: [Disabled]; [Enabled].

USB Mass Storage Driver Support

The optional settings are: [Disabled]; [Enabled].

USB Hardware Delays and Time-outs:

USB Transfer time-out

Use this item to set the time-out value for control, bulk, and interrupt transfers.

The optional settings are: [1 sec]; [5 sec]; [10 sec]; [20 sec].

Device reset time-out

Use this item to set USB mass storage device start unit command time-out.

The optional settings are: [10 sec]; [20 sec]; [30 sec]; [40 sec].

Device power-up delay

Use this item to set maximum time the device will take before it properly reports itself to the host controller. 'Auto' uses default value: for a root port it is 100 ms, for a hub port the delay is taken from hub descriptor.

The optional settings: [Auto]; [Manual].

Select [Manual] you can set value for the following sub-item: '**Device Power-up Delay in Seconds**'.

Device Power-up Delay in Seconds

The delay range is from [1] to [40] seconds, in one second increments.

3-8 Chipset Menu



▶ North Bridge

Press [Enter] to view current using memory information and make settings for the following sub-items:

PAVC

Use this item to enable or disable Protected Audio Video Control.

The optional settings are: [Disabled]; [LITE Mode]; [SERPENT Mode].

DVMT Pre-Allocated

Use this item to select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.

The optional settings are: [64M]; [96M]; [128M]; [160M]; [192M]; [224M]; [256M];

[288M]; [320M]; [352M]; [384M]; [416M]; [448M]; [480M]; [512M].

DVMT Total Gfx Mem

Use this item to select DVMT 5.0 total graphics memory size used by the internal graphics device.

The optional settings are: [128M]; [256M]; [MAX].

Aperture Size

The optional settings are: [128M]; [256M]; [512MB].

GTT Size

The optional settings are: [1M]; [2M].

Primary IGFX Boot Display

Use this item to select the video device which will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

The optional settings are: [VBIOS Default]; [CRT]; [LFP].

Active LFP

The optional settings are: [Disable]; [LVDS]; [eDP].

When set as [LVDS], user can make settings in 'LCD Panel Type'.

The optional settings are: [800x600 24-bit 1ch]; [800x600 18-bit 1ch]; [1024x600 18-bit 1ch]; [1024x768 24-bit 1ch]; [1024x768 18-bit 1ch]; [800x480 18-bit 1ch]; [1366x768 18-bit 1ch]; [1440x900 18-bit 2ch]; [1366x768 24-bit 1ch]; [1440x900 24-bit 2ch]; [1280x1024 24-bit 2ch]; [1280x800 18-bit 1ch]; [1280x800 24-bit 1ch]; [1680x1050 24-bit 2ch]; [1280x768 24-bit 1ch]; [1920x1080 24-bit 2ch].

Note: Please go back to 'Primary IGFX Boot Display' for further setting:

The optional settings are: [VBIOS Default]; [CRT]; [LFP].

When set as [eDP], user can make settings in 'Backlight Control'.

The optional settings are: [PWM Inverted]; [PWM Normal].

Note: Please go back to 'Primary IGFX Boot Display' for further setting:

The optional settings are: [VBIOS Default]; [CRT]; [LFP].

► **South Bridge**

Press [Enter] to make settings for the following sub-items:

Mini PCIE

Use this item to enable or disable Mini-PCIE.

The optional settings are: [Disabled]; [Enabled].

Speed

Use this item to select PCIe Port Speed.

The optional settings are: [Auto]; [Gen2]; [Gen1].

Onboard PCIE LAN1/LAN2

Use this item to control the Onboard PCIE LAN1/LAN2 device.

The optional settings are: [Enabled]; [Disabled].

Audio Controller

Use this item to control the detection of the Azalia HD Audio device.

The optional settings are: [Disabled]; [Enabled].

[Disabled]: Azalia will be unconditionally disabled;

[Enabled]: Azalia will be unconditionally enabled;

► **USB Configuration**

USB 3.0 Support

The optional settings are: [Enabled]; [Auto]; [Disabled].

* **Note:** When set as [Auto] or [Disabled], USB 2.0 Support is applicable, for user to make further settings.

USB 2.0 Support

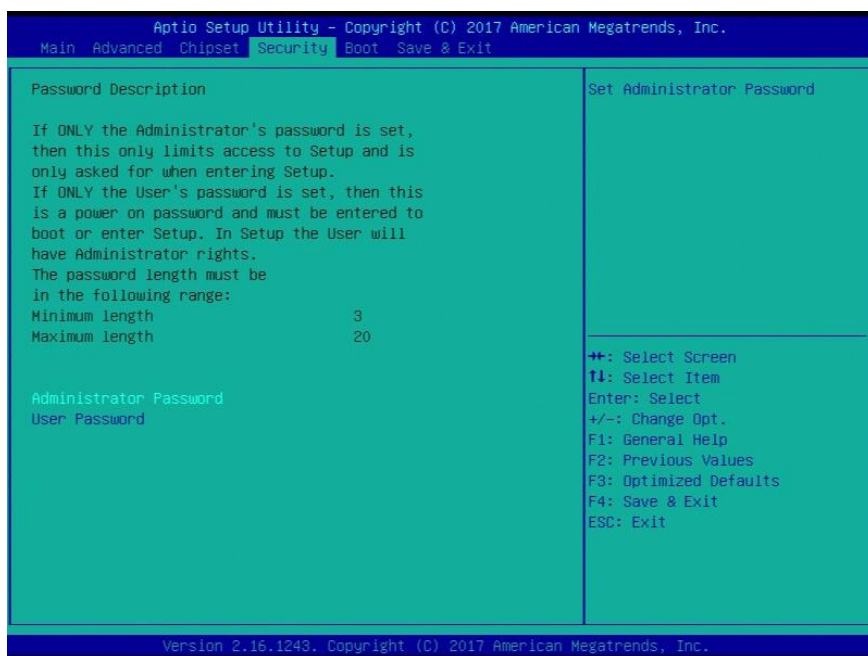
The optional settings are: [Enabled]; [Disabled].

System State after Power Failure

Use this item to select the system state when AC power is re-applied after a power loss. The options- <Always On> and <former State> are affected by ERP function. Please disable ERP to support <Always On> and <Former State>.

The optional settings are: [Always Off]; [Always On]; [Former State].

3-9 Security Menu



Security menu allow users to change administrator password and user password settings.

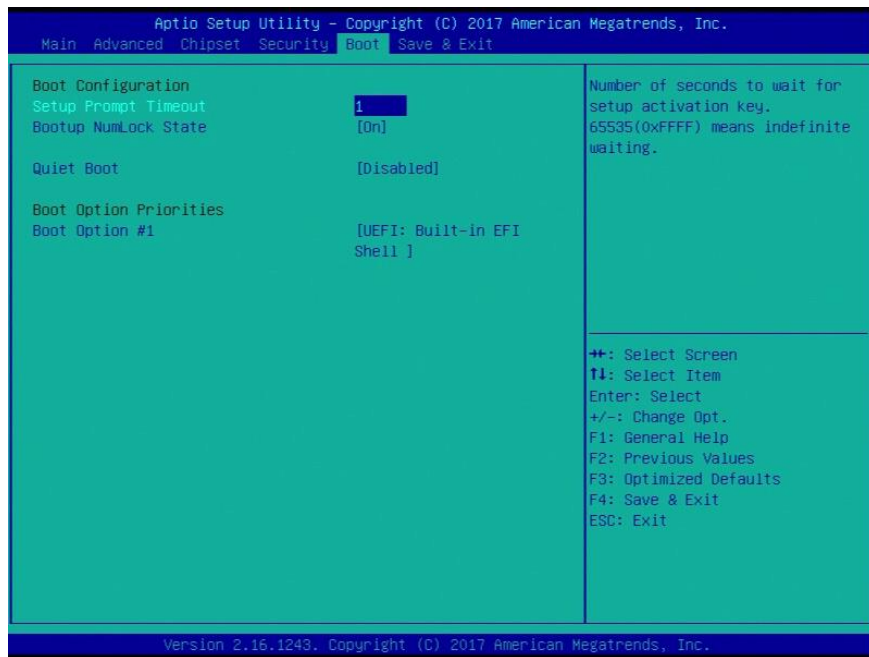
Administrator Password

Press [Enter] to create new administrator password. Press again to confirm the new administrator password.

User Password

Press [Enter] to create new user password. Press again to confirm the new user password.

3-10 Boot Menu



Boot Configuration

Setup Prompt Timeout

Use this item to set number of seconds to wait for setup activation key.

Bootup Numlock State

Use this item to select keyboard NumLock state.

The optional settings are: [On]; [Off].

Quiet Boot

The optional settings are: [Disabled]; [Enabled].

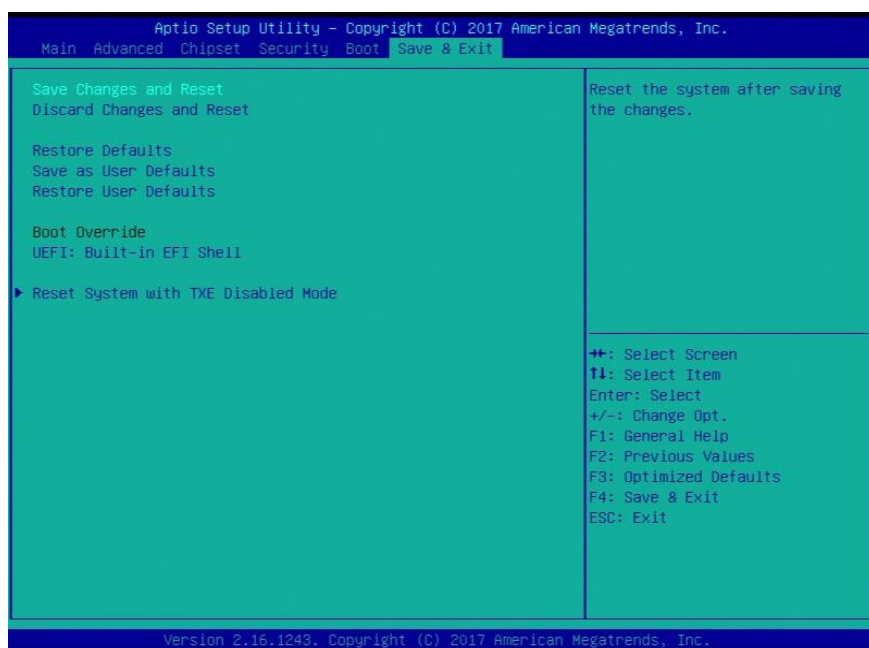
Boot Option Priorities

Boot Option # 1

Use this item to set system boot order.

The optional settings are: [UEFI: Built-in EFI Shell]; [Disabled].

3-11 Save & Exit Menu



Save Changes and Reset

This item allows user to reset the system after saving the changes.

Discard Changes and Reset

This item allows user to reset the system without saving any changes.

Restore Defaults

Use this item to restore /load default values for all the setup options.

Save as User Defaults

Use this item to save the changes done so far as user defaults.

Restore User Defaults

Use this item to restore defaults to all the setup options.

Boot Override

UEFI: Built-in EFI Shell

Launch Internal EFI shell application (shell.efi).

▶ Reset System with TXE Disabled Mode

Press [Enter] for TXE to run into the temporary disable mode. Ignore if TXE Ignition FM.

Chapter 4

Touch Panel

HPC101SC-FP1900B is designed based on the technology of projected capacitive type multi-touch screen of which specifications are listed below:

Specification

Display	
Front Bazel	NEMA 4 rugged protection, Full planar metal border
Display Type	10.1" with LED backlight
Brightness	400 nits
Display Color	16.2M
Resolution	1280 x 800 @ 60Hz
Viewing Angle (H/V)	170°/170 °
Pixel Pitch	0.1695 x 0.1695 mm
Aspect Ratio	16:10
Contrast Ratio	800:1
Response Time	30 ms
Touch Screen	
Type	projected capacitive type
Active Range	387.00 x 231.00mm ±0.3mm
Transparency	≥85%
Surface Hardness	≥6H(JIS-5400)
Glass haze value	≤3%

HPC156SC-FP1900B is designed based on the technology of of projected capacitive type multi-touch screen of which specifications are listed below:

Specification

Display	
Front Bazel	NEMA 4 rugged protection, Full planar metal border
Display Type	15.6" with LED backlight
Brightness	250 nits
Display Color	262K
Resolution	1920 x 1080 @ 60Hz
Viewing Angle (H/V)	170°/170 °
Pixel Pitch	0.17925 x 0.17925 mm
Aspect Ratio	16:9
Contrast Ratio	800:1
Response Time	35 ms
Touch Screen	
Type	Projective capacitive type
Active Range	387.00 x231.00 mm ±0.3mm
Transparency	≥85%
Surface Hardness	≥6H(JIS-5400)
Glass haze value	≤3%

HPC238SC-FP1900B is designed based on the technology projective capacitive type multi-touch screen of which specifications are listed below:

Specification

Display	
Front Bazel	NEMA 4 rugged protection, metal front bazel
Display Type	23.8" with LED backlight
Brightness	250 nits
Display Color	16.7M
Resolution	1920x 1080 @ 60Hz
Viewing Angle (H/V)	160°/160 °
Pixel Pitch	0.2745 x 0.2745 mm
Aspect Ratio	16:9
Contrast Ratio	1000:1
Response Time	25 ms
Touch Screen	
Type	Projective capacitive type
Active Range	528.04 x 297.46mm ±0.3mm
Transparency	85±5% (Glass haze value: ≤3%)
Surface Hardness	≥6H(ASTM D3363, pressure 1N/45 °)
Operating Force	≤10g

Appendix

General Notices

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked with the Conformity European (CE) Marking, which indicates compliance with the applicable Directive and European standards and amendments identified.

Shielded Cables Notice

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Peripheral Devices Notice

Only peripherals (input/out devices, terminals, printers, etc) certified to comply with Class B limits may be attached to this equipment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Wireless Related Information

Wireless Interoperability

Wireless LAN PCI Express Mini Card is designed to be interoperable with any wireless LAN product that is based on Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CKK), and/or Orthogonal Frequency Division Multiplexing (OFDM) radio technology, and is compliant to:

The IEEE802.11a/b/g/n Standard on Wireless LANs was defined and approved by the Institute of Electrical and Electronics Engineers.

The Wireless Fidelity (WiFi) certification as defined by the Wi-Fi Alliance.

Usage Environment and Your Health

Wireless LAN PCI Express Mini Card emits radio frequency electromagnetic energy like other radio devices. However, the level of energy emitted is far much less than the electromagnetic energy emitted by wireless devices like for example mobile phones.

Due to the fact that Wireless LAN PCI Express Mini Card operates within the guidelines found in radio frequency safety standards and recommendations, we believe the integrated wireless cards are safe for use by consumers. These standards and recommendations reflect the consensus of the scientific community and result from deliberations of panels and committees of scientists who continually review and interpret the extensive research literature.

In some situation or environment, the use of Wireless LAN PCI Express

Mini Card may be restricted by the proprietor of the building or responsible representatives of the organization. These situations may for example include:

Using the integrated wireless cards on board of airplanes, or in hospitals

In any other environment that the risk of interference to other devices and service are perceived or identified to be harmful.

If you are uncertain of the policy that applies on the use of wireless devices in a specific organization (e.g., airport or hospital), you are encouraged to ask for authorization to use Wireless LAN PCI Express Mini Card prior to turning on the computer.

Electronic Emissions Notices

European Union Compliance Statement Class B Compliance

European Union – Compliance to the Electromagnetic Compatibility Directive

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. We cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the installation of option cards from other manufacturers.

This product has been tested and found to comply with the limits Class B Information Technology Equipment according to European Standard EN55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment.

FCC Rules and Regulations-Part 15

This device uses, generates and radiates radio frequency energy. The radio frequency energy produced by this device is well below the maximum exposure allowed by the Federal Communications Commission (FCC)

- This device complies with the limits for the Class B digital device pursuant to Part 15 subject to the following two conditions:
- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

The FCC limits are designed to provide reasonable protection against harmful interference when the equipment is installed and used in accordance with the instruction manual and operated in a commercial environment. However, there is no guarantee that interference will not occur in a particular commercial installation, or if operated in a residential area.

If harmful interference with radio or television reception occurs when the device is turned on, the user must correct the situation at the user's own expense. The user is encouraged to try one or more of the following corrective measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that on which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.