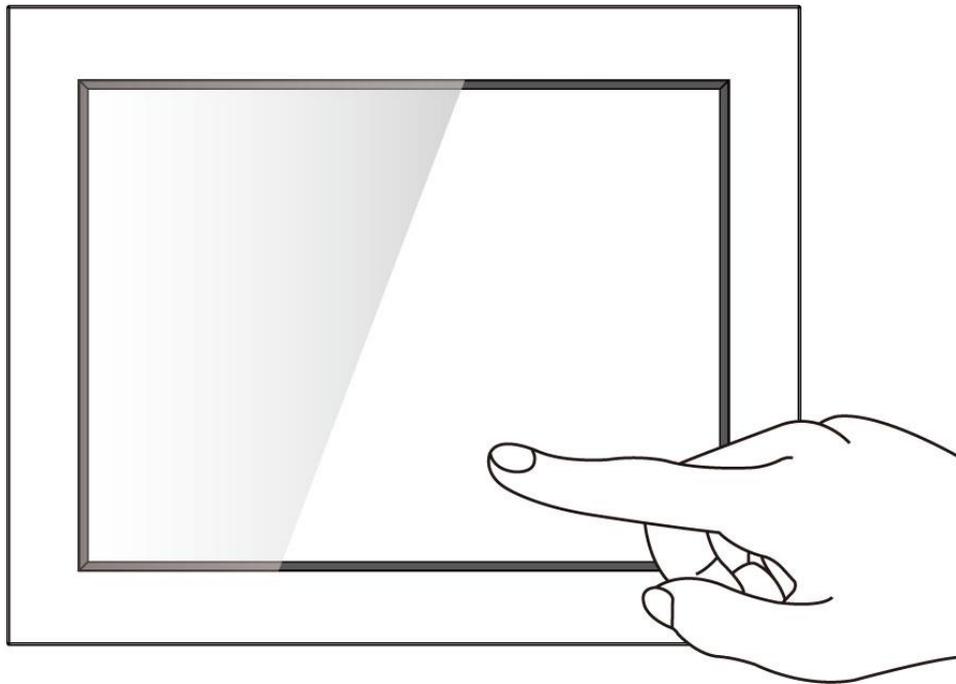


SlimLine IB32-ES

Stainless Resistive Panel PC

Intel® Celeron® Bay Trail-M N2930 1.83 GHz



Full IP65

User Manual

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Version 1.0

Advisory Conventions

Four types of advisories are used throughout the user manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. These are Notes, Important, Cautions, and Warnings. The following is an example of each type of advisory.



NOTE:

A note is used to emphasize helpful information



IMPORTANT:

An important note indicates information that is important for you to know.



CAUTION/ ATTENTION

A Caution alert indicates potential damage to hardware and explains how to avoid the potential problem.

Une alerte d'attention indique un dommage possible à l'équipement et explique comment éviter le problème potentiel.



WARNING!/ AVERTISSEMENT!

An Electrical Shock Warning indicates the potential harm from electrical hazards and how to avoid the potential problem.

Un Avertissement de Choc Électrique indique le potentiel de chocs sur des emplacements électriques et comment éviter ces problèmes.



ALTERNATING CURRENT / MISE À LE TERRE!

The Protective Conductor Terminal (Earth Ground) symbol indicates the potential risk of serious electrical shock due to improper grounding.

Le symbole de Mise à Terre indique le risqué potentiel de choc électrique grave à la terre incorrecte.

Safety Information

WARNING! / AVERTISSEMENT!



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

Toujours débrancher le cordon d'alimentation du chassis lorsque vous travaillez sur celui-ci. Ne pas brancher de connexions lorsque l'alimentation est présente. Des composants électroniques sensibles peuvent être endommagés par des sauts d'alimentation. Seulement du personnel expérimenté devrait ouvrir ces chassis.

CAUTION/ATTENTION



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

Toujours vérifier votre mise à la terre afin d'éliminer toute charge statique avant de toucher la carte CPU. Les équipements électroniques modernes sont très sensibles aux décharges d'électricité statique. Toujours utiliser un bracelet de mise à la terre comme précaution. Placer toutes les composantes électroniques sur une surface conçue pour dissiper les charges, ou dans un sac anti-statique lorsqu'elles ne sont pas dans le chassis.

Safety Precautions

For your safety carefully read all the safety instructions before using the device.

Keep this user manual for future reference.

- Always disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The openings on the enclosure are for air convection and to protect the equipment from overheating.



CAUTION/ATTENTION

Do not cover the openings!

Ne pas couvrir les ouvertures!

- Before connecting the equipment to the power outlet make sure the voltage of the power source is correct.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
- Never pour any liquid into an opening. This could cause fire or electrical shock.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- All cautions and warnings on the equipment should be noted.

***Let service personnel to check the equipment in case any of the following problems appear:**

- The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well or you cannot get it to work according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
- Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20°C (-4°F) or above 60°C (140°F). It may damage the equipment.

**CAUTION/ATTENTION**

Use the recommended mounting apparatus to avoid risk of injury.
Utiliser l'appareil de fixation recommandé pour éliminer le risque de blessure.

**WARNING! / AVERTISSEMENT!**

Only use the connection cords that come with the product. When in doubt, please contact the manufacturer.
Utiliser seulement les cordons d'alimentation fournis avec le produit.
Si vous doutez de leur provenance, contactez le fabricant.

**WARNING! / AVERTISSEMENT!**

Always ground yourself against electrostatic damage to the device.
Toujours vérifier votre mise à la terre afin que l'équipement ne se décharge pas sur vous.

- Cover workstations with approved anti-static material. Use a wrist strap connected to a work surface and properly grounded tools and equipment.
- Use anti-static mats, heel straps, or air ionizer for added protection.
- Handle electrostatic-sensitive components, PCB's and assemblies by the case or the edge of the board.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting and removing connectors or test equipment.
- Keep the work area free of non-conductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Use filed service tools, such as cutters, screwdrivers, and vacuum cleaners that are conductive.
- Always put drivers and PCB's component side on anti-static foam.

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Introduction

This chapter gives you product overview, describes features and hardware specification. You will find all accessories that come with the device in the packing list. Mechanical dimensions and drawings included in this chapter.



Chapter 1: Introduction

SlimLine ES IP65 Stainless Resistive Panel PC is rugged, industrial-grade panel PC series built to withstand challenging environments, undergoing rigorous testing to ensure safety and top performance. All of the models in the series are sealed to IP65 standard. Stainless housing features anti-corrosion properties making it suitable for food, chemical and pharmaceutical industries.

SlimLine ES IP65 Stainless Resistive Panel PC goes beyond that of the standard industrial panel computers with rugged construction, powerful performance, and flexible mounting options.

1.1 Product Features

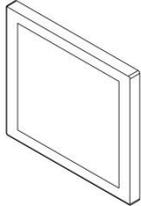
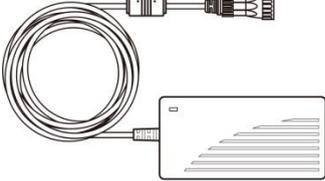
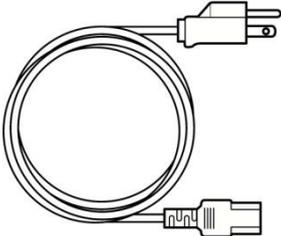
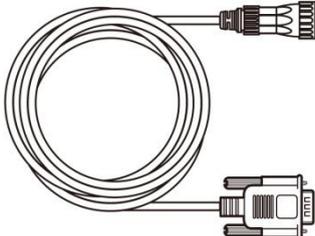
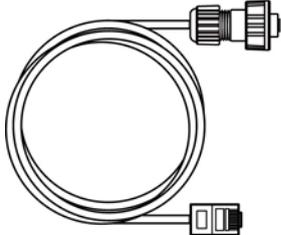
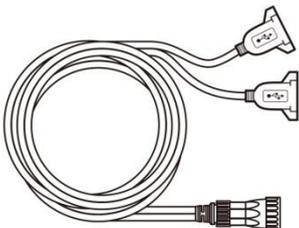
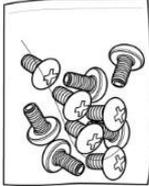
SlimLine IB32-ES IP65 Stainless Resistive Panel PC features:

- Intel® Celeron Bay Trail-M N2930 1.83 GHz Processor
- Fanless Design
- Full IP65 dust and water resistant
- Stainless Housing with Anti-Corrosion Treatment
- Optical Bonding with Anti-moisture Treatment (Optional)
- 5 Wire Resistive Touch/ Anti-Reflection Protection Glass (Optional)
- Various mounting solutions: Yoke mount and VESA mount

1.2 Package Content

Carefully remove the box and unpack your Panel PC. Please check if all the items listed below are inside your package. If any of these items are missing or damaged contact us immediately.

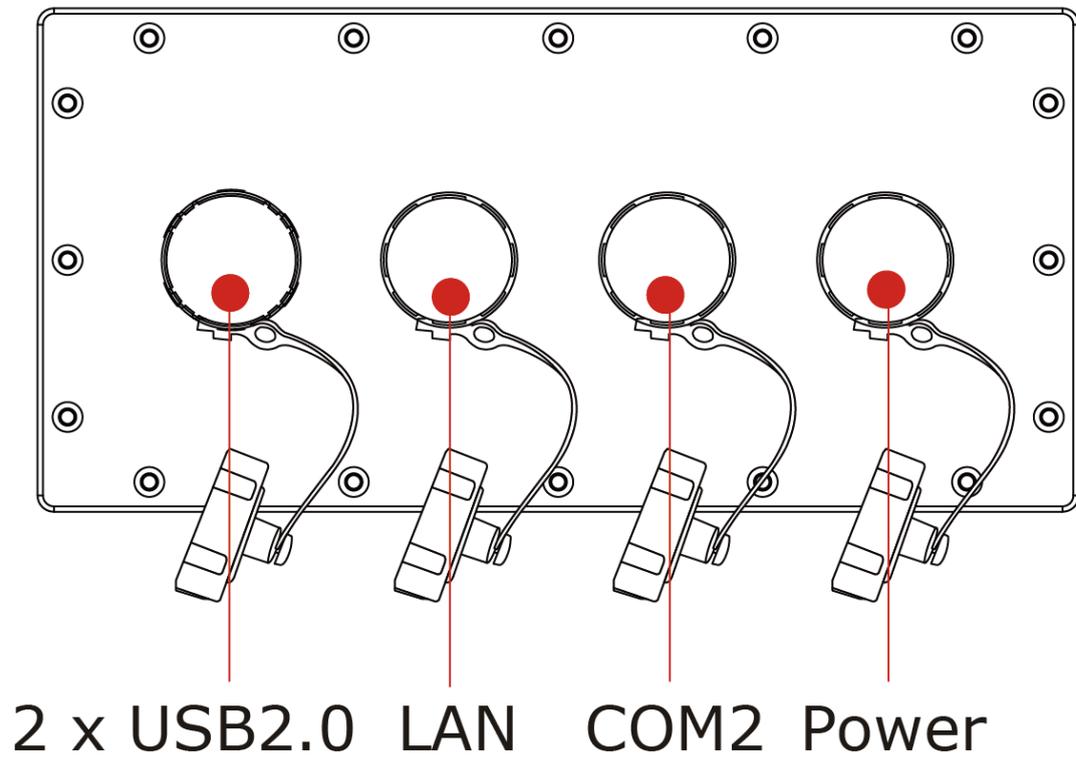
Standard factory shipment list

| | | |
|---|---|---|
|  |  |  |
| Panel PC | IP65 Stainless Resistive Panel PC Quick Start Guide (Hardcopy) | Driver CD & SBC User Manual |
| Varies by product specifications | 91521111101R | IB32: 91711111101Y |
|  |  |  |
| AC Adapter | Power Cable | Serial Cable |
| 50W 90PO12050002 80W 90PO12080003 | Varies by destination | 94G0103090Q0 |
|  |  |  |
| Ethernet Cable | USB Cable | VESA Screws |
| 94I0080080KF | 9480108080Q0 | 913511101101 |

1.3 Connector Placement

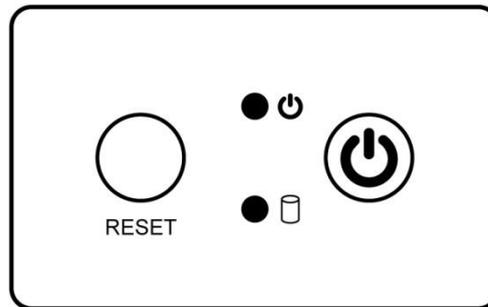
IP65 Flat Stainless Resistive Panel PC has IP65 type connectors with protection cap.

For cable specifications refer to the [Ch.2, "Cable Specifications"](#) of this user manual.

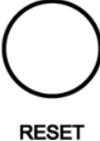


1.4 Physical Button and LED Indicators

Physical Button and LED Indicators located on the rear side of the Panel PC.



Physical Buttons

| Icon | Button | Description |
|---|------------------|---|
|  | Reset | Press to reset the system |
|  | Power On/ Off | Press to power on or power off the device |

LED Indicators

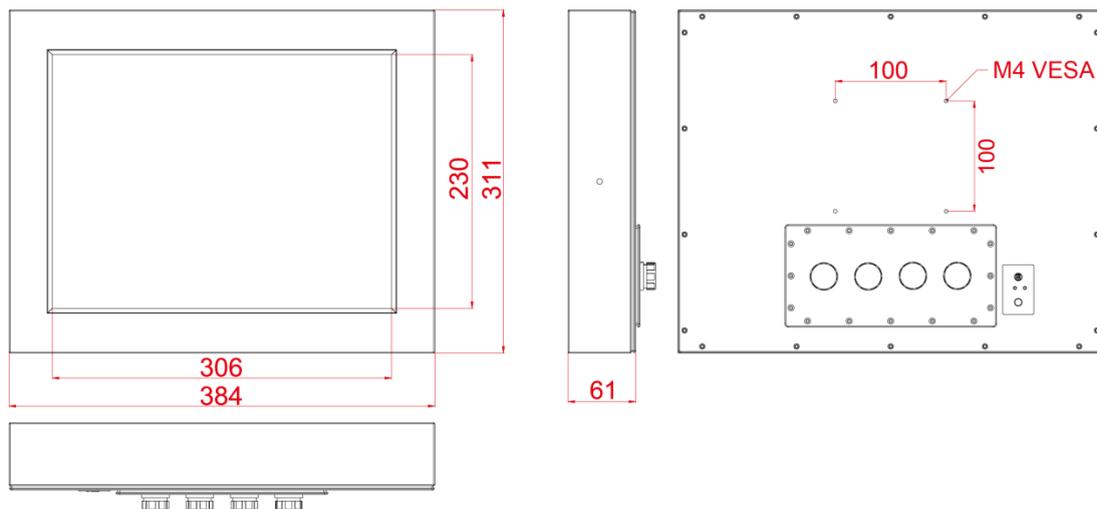
| LED Type | Status | Description |
|---|----------|--|
|  | On | Power is on |
| | Off | Power is off |
|  | Blinking | Storage activity (Data is being read or written) |
| | Off | System is idle |

1.5 Schematics and Dimensions

This section contains mechanical drawing of the panel PC. Notice that this is a simplified drawing and some components are not marked in detail.

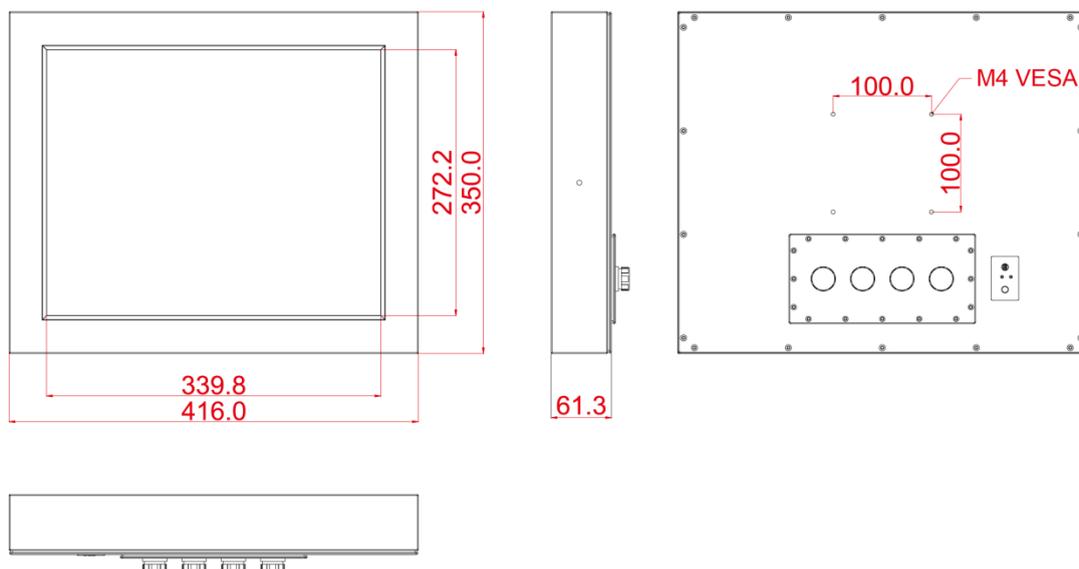
1.5.1 Dimensions 15"

Unit: mm



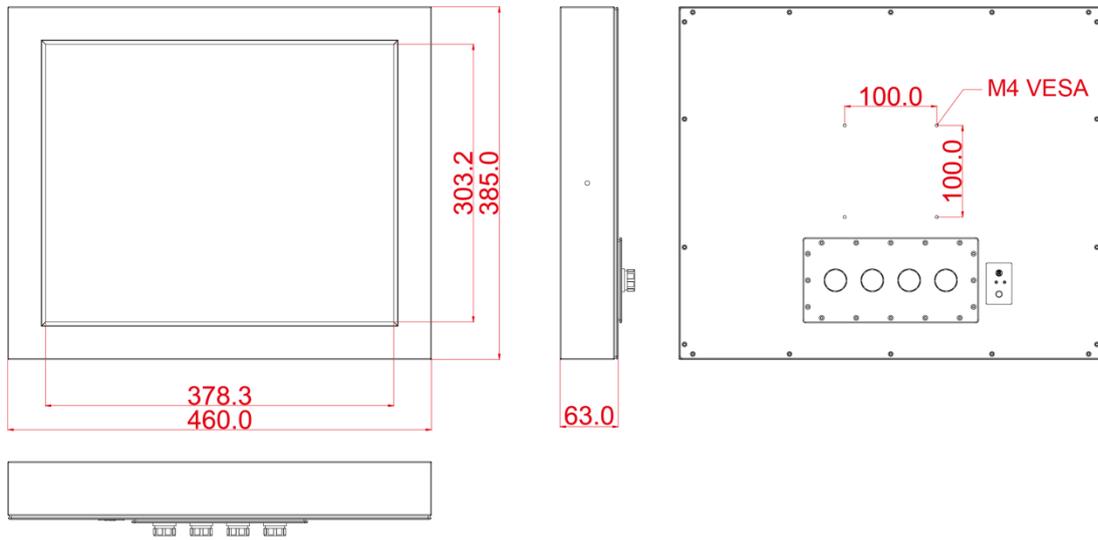
1.5.2 Dimensions 17"

Unit: mm



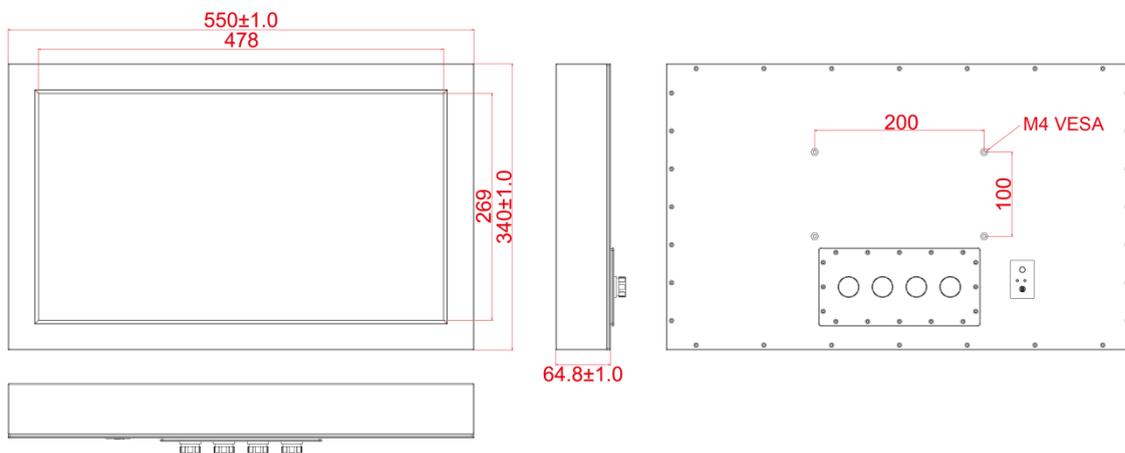
1.5.3 Dimensions 19"

Unit: mm



1.5.4 Dimensions 21.5"

Unit: mm



Getting Started

This chapter tells you important information on power supply, adapter and precautions tips. Pay attention to power considerations.



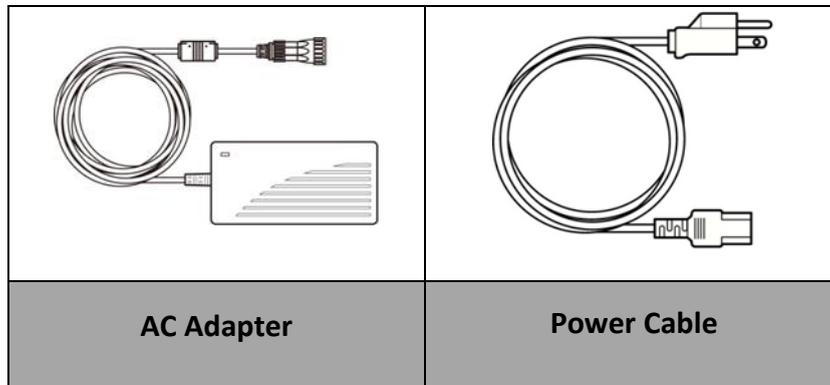
Chapter 2: Getting Started

This chapter provides information on how to connect the panel PC to the source of power, connector pinouts and the guideline to turn on/off the Panel PC.

2.1 Powering On

2.1.1 AC Adapter Components

AC Adapter supplied with the power cord.



AC Adapter specifications vary by panel size.

| Size | 15" | 17" | 19" | 21.5" |
|------------|----------|----------|----------|----------|
| AC Adapter | 12V/ 50W | 12V/ 80W | 12V/ 80W | 12V/ 80W |

Safety Precautions:

- Do not use the adapter in a high moisture environment
- Never touch the adapter with wet hands or foot
- Allow adequate ventilation around adapter while using
- Do not cover the adapter with paper or other objects that will reduce cooling
- Do not use the adapter while it is inside a carrying case
- Do not use the adapter if the cord is damaged
- There are NO serviceable parts inside
- Replace the unit if it is damaged or exposed to excess moisture

While using the AC Adapter always:

- Plug-in the power cord to easy accessible AC outlet
- Plug-in the AC adapter to a grounded outlet



ALTERNATING CURRENT / MISE À LE TERRE!

This product must be grounded. Use only a grounded AC outlet. Install the additional PE ground wire if the local installation regulations require it.

**If you do not use a grounded outlet while using the device, you may notice an electrical tingling sensation when the palms of your hands touch the device.*

Ce produit doit être mis à la terre. Utiliser seulement un cordon d'alimentation avec mise à la terre. Si les règlements locaux le requiert, installer des câbles de mise à la terre supplémentaires.

**Si vous n'utiliser pas une prise d'alimentation avec mise à la terre, vous pourriez remarquer une sensation de picotement électrique quand la paume de vos mains touche à l'appareil.*

2.1.2 Power Considerations

The Panel PC operates on external DC power. Use the AC adapter included in the package.



CAUTION/ATTENTION

Use only the AC adapter included in your package. Using other AC adapters may damage the device.

Utiliser seulement le convertisseur AC inclu avec votre appareil. Utiliser d'autres convertisseurs pourraient endommager l'appareil.

2.1.3 Power Consumption

The table below shows power consumption and AC adapter for the IP65 Stainless Resistive Panel PC.

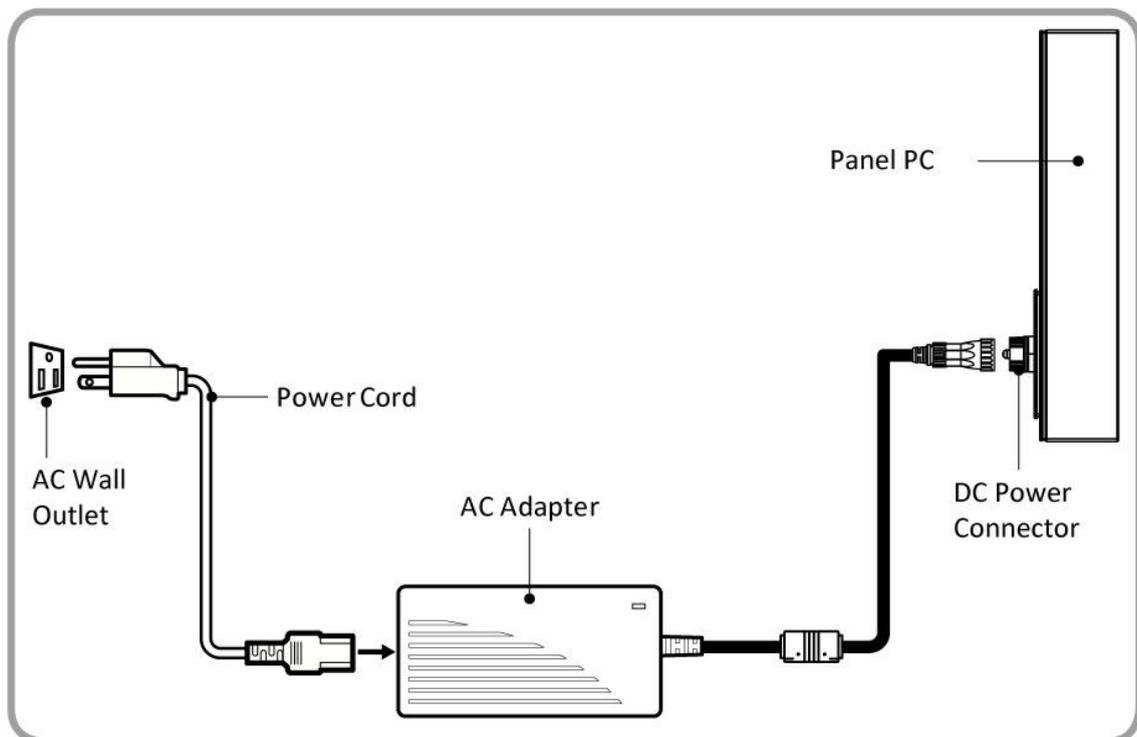
| Size | 15" | 17" | 19" | 21.5" |
|--------------------|------------|------------|------------|------------|
| Power Consumption* | 38W (typ.) | 43W (typ.) | 45W (typ.) | 56W (typ.) |

**With maximum backlight and high CPU load.*

2.1.4 Connecting the Power

Cable Mounting Instruction

1. Connect the AC adapter to the DC-in jack connector located on the back side of the Panel PC.
2. Connect the power cord to AC adapter.
3. Plug the power cord to the AC outlet and the device will turn on automatically.

**Note:**

Power cords vary in appearance by region and country.

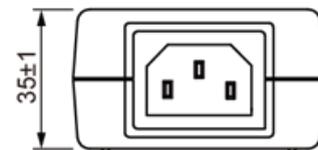
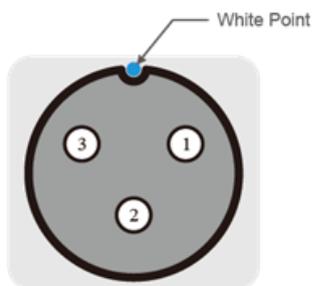
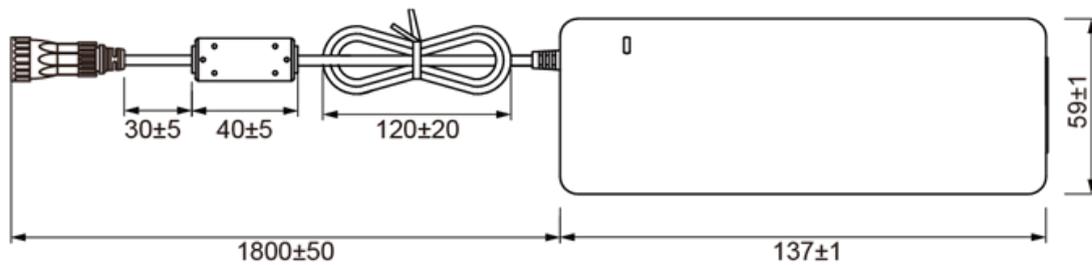
2.2 Connector Pin Assignments

This Panel PC is equipped with four connectors which are IP65 level and fool-proofing design. Use only the cables that are included in the package. The pin assignments of the cables are as follows.

2.2.1 Power Cable

The IP65 Stainless Resistive Panel PC has IP65 connector. Use power cable to connect Panel PC to the source of power.

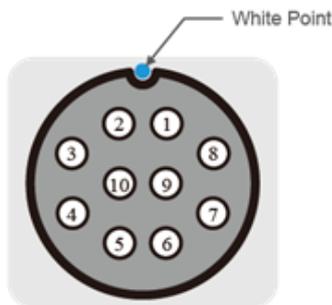
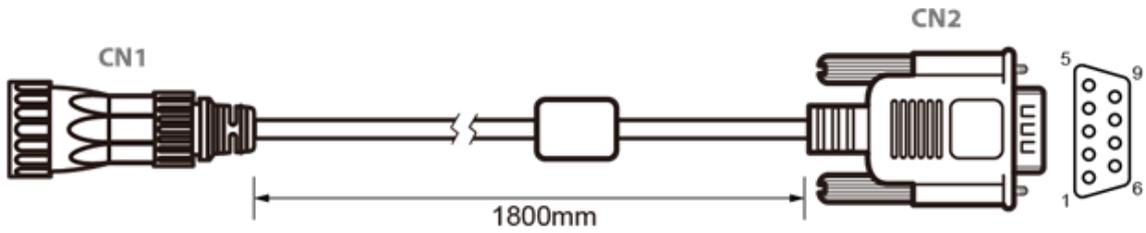
The IP65 Stainless Resistive Panel PC supports 12V DC power input.



| Pin No. | Symbols | Color |
|---------|---------|-------|
| CN1-3 | GND | Black |
| CN1-2 | shield | |
| CN1-1 | VCC | White |

2.2.2 Serial Cable

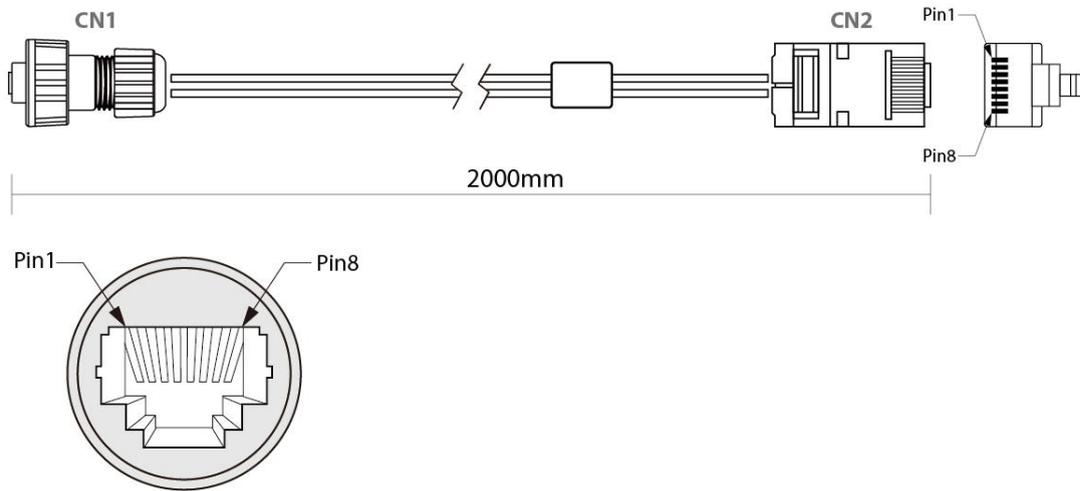
The IP65 Stainless Resistive Panel PC has IP65 serial port connector. Use serial cable to connect serial interfaces.



| Pin No. | Symbols | Color | | Pin No. | Symbols | Color |
|---------|----------|--------|---|---------|----------|--------|
| CN1-1 | DCD-CON2 | Green | ↔ | CN2-1 | DCD-CON2 | Green |
| CN1-2 | DSR-CON2 | Brown | ↔ | CN2-6 | DSR-CON2 | Brown |
| CN1-3 | RXD-CON2 | Red | ↔ | CN2-2 | RXD-CON2 | Red |
| CN1-4 | RTS-CON2 | Orange | ↔ | CN2-7 | RTS-CON2 | Orange |
| CN1-5 | TXD-CON2 | Blue | ↔ | CN2-3 | TXD-CON2 | Blue |
| CN1-6 | CTS-CON2 | White | ↔ | CN2-8 | CTS-CON2 | White |
| CN1-7 | DTR-CON2 | Purple | ↔ | CN2-4 | DTR-CON2 | Purple |
| CN1-8 | RI-CON2 | Yellow | ↔ | CN2-9 | RI-CON2 | Yellow |
| CN1-9 | GND-CON2 | Black | ↔ | CN2-5 | GND-CON2 | Black |
| CN1-10 | NC | | ↔ | CN2-10 | NC | |

2.2.3 Ethernet Cable

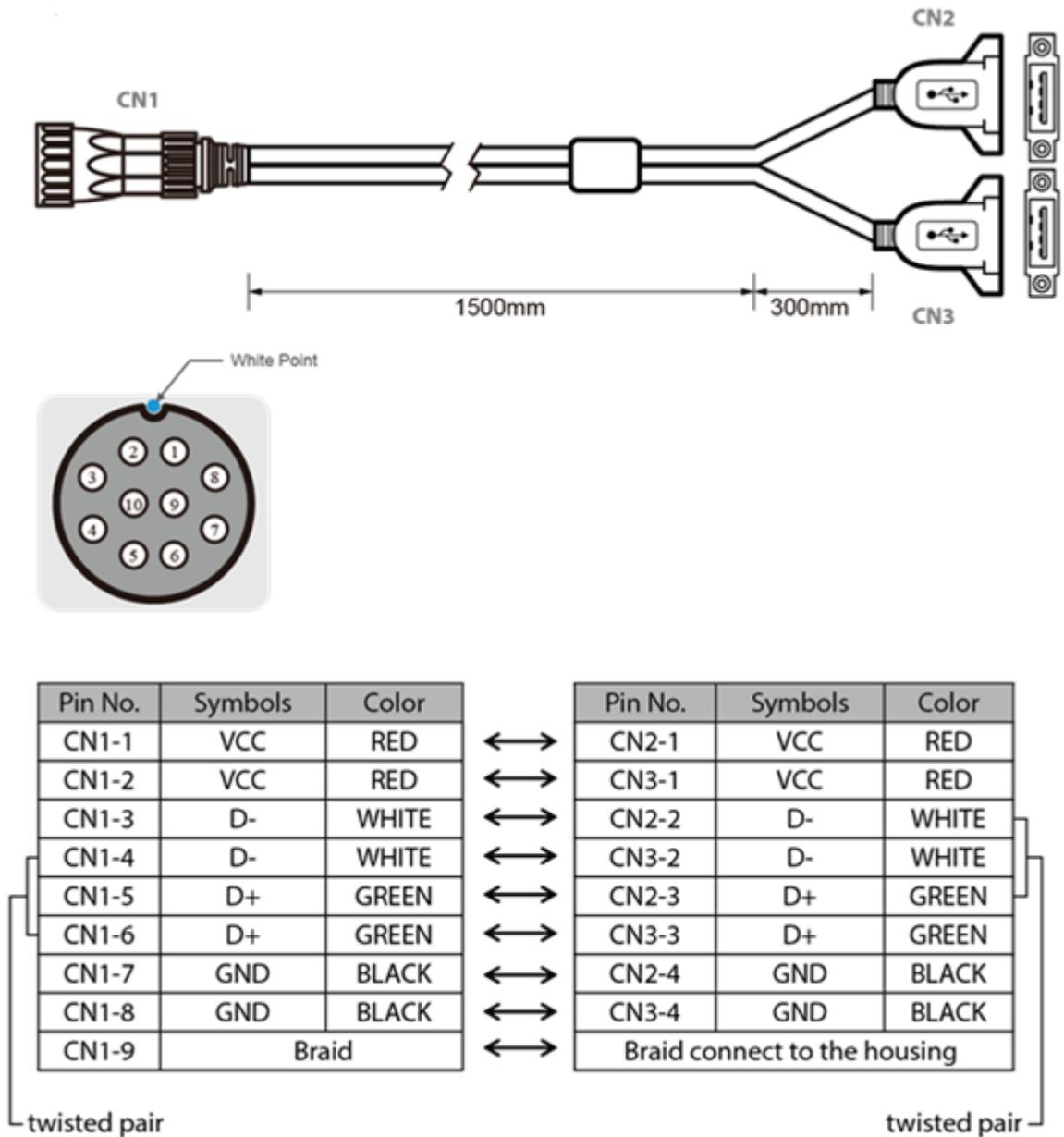
The IP65 Stainless Resistive Panel PC has IP65 Ethernet connector. Use Ethernet cable to connect the Panel PC to the Internet.



| Plug | Wire Color | Conn. | |
|------|----------------|-------|-------|
| 1 | Orange / White | 1 | Twist |
| 2 | Orange | 2 | |
| 3 | Green / White | 3 | Twist |
| 4 | Blue | 4 | |
| 5 | Blue / White | 5 | |
| 6 | Green | 6 | Twist |
| 7 | Brown / White | 7 | |
| 8 | Brown | 8 | |

2.2.4 USB 2.0 Cable

Flat IP65 Stainless Resistive Panel PC has one Full IP65 USB2.0 connector. Use USB2.0 cable to connect external devices such as mouse or keyboard to the Panel PC.



2.3 Turning On and Off

The unit is configured to **Power ON** when is connected to the power source (refer to [Ch.2, “Powering On”](#) section of this user manual for more details on how to power on the HMI device).

You can **Turn OFF** the Panel PC with the Windows power settings.

To shut down the device:

1. Tap **Start**  **>Shut down.**
2. Wait for your Panel PC to completely turn off before disconnecting the power cord (if necessary).

Operating the Device

This chapter provides detailed information on how to operate the device. If you have been using touch-screen Panel PCs before, the interface may look familiar. Sections include system settings parameters.



Chapter 3: Operating the Device

In this chapter you will find instructions on how to operate the Panel PC with Hot Tab.

3.1 Operating System

IP65 Stainless Resistive Touch Panel PC supports several versions of Windows OS: Windows 10 IoT Enterprise, Windows Embedded 8.1 Industry Pro, Windows Embedded 8 Standard, Windows 7 Pro for Embedded Systems, and Windows Embedded Standard 7 – WS7P.



IMPORTANT:

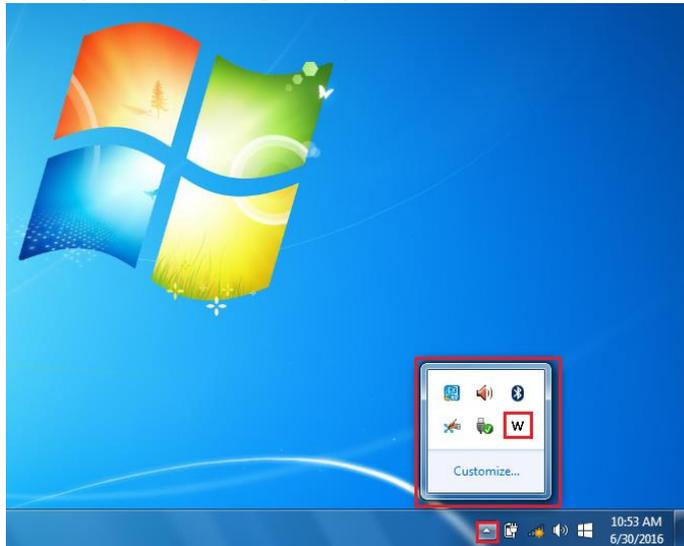
The device is shipped with the OS System according to your order. Contact us if you have any questions regarding OS settings.

3.2 How to Enable Watchdog

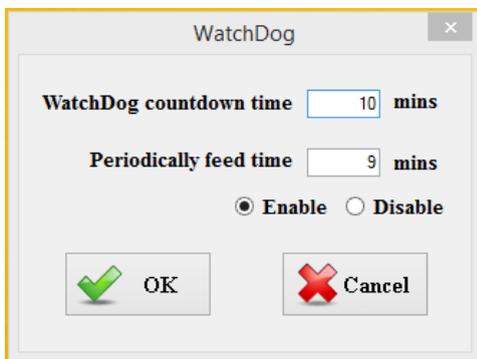
To enable the Watchdog function, you need to install the Watchdog utility.

To enable watchdog in Watchdog AP follow the instructions below:

1. On the right bottom side of the desktop screen, click  **triangle button** to show hidden icons.
2. Click  icon to open Watchdog utility.



3. In Watchdog utility window set countdown time and periodically feed time, or disable watchdog.



Example:

Every 10 min watchdog will monitor the system, in case any error occurs the system will restart automatically when the countdown time reaches 0. Every 9 min watchdog timer will be reset to 10 min.

| Settings | Description |
|-------------------------|---|
| Watchdog Countdown Time | The system automaticity restarts when this countdown time reaches zero. <i>Default: 10 min</i> |
| Periodically Feed Time | To set a cycle time to automatically reset watchdog timer. <i>Default: 9 min</i> |
| Enable / Disable | Enable or disable watchdog. <i>Default: Enable</i> |

AMI UEFI BIOS Setup

BIOS Setup Utility is a program for configuration basic Input / Output system settings of the computer for optimum use. This chapter provides information on how to use BIOS setup, its functions and menu.

4

Chapter 4: AMI UEFI BIOS Setup

BIOS Setup Utility is a program for configuration basic Input / Output system settings of the computer for optimum use. This chapter provides information on how to use BIOS setup, its functions and menu.

4.1 When and How to Use BIOS Setup

To enter the BIOS setup, you need to connect an external USB keyboard, press **** key when the prompt appears on the screen during start up. The prompt screen shows only few seconds, you need to press **** key quickly. If the message disappears before your respond, restart the system by turning it OFF and ON, and enter the BIOS again.



IMPORTANT:

Updated BIOS version may be published after the manual released. Check the latest version of BIOS on the website.

Run BIOS setup utility for:

1. Error message on screen indicates to check BIOS setup
2. Restoring the factory default settings.
3. Modifying the specific hardware specifications
4. Necessity to optimize specifications

4.2 BIOS Functions

BIOS Navigation Keys

BIOS navigation keys for keyboard control are listed below.

The following keys are enabled during POST:

| Key | Function |
|-------|--|
| Del | Enters the BIOS setup menu. |
| F7 | Display the boot menu. Lists all bootable devices that are connected to the system. With cursor \uparrow and cursor \downarrow and by pressing <ENTER> , select the device used for the boot. |
| Pause | Pressing the [Pause] key stops the POST. Press any other key to resume the POST. |

The following Keys can be used after entering the BIOS Setup.

| Key | Function |
|----------|----------------------------|
| F1 | General Help |
| F2 | Previous Values |
| F3 | Optimized Defaults |
| F4 | Save & Exit |
| Esc | Exit |
| +/- | Change Opt. |
| Enter | Select or execute command |
| Cursor ↑ | Moves to the previous item |
| Cursor ↓ | Goes to the next item |
| Cursor ← | Moves to the previous item |
| Cursor → | Goes to the next item |

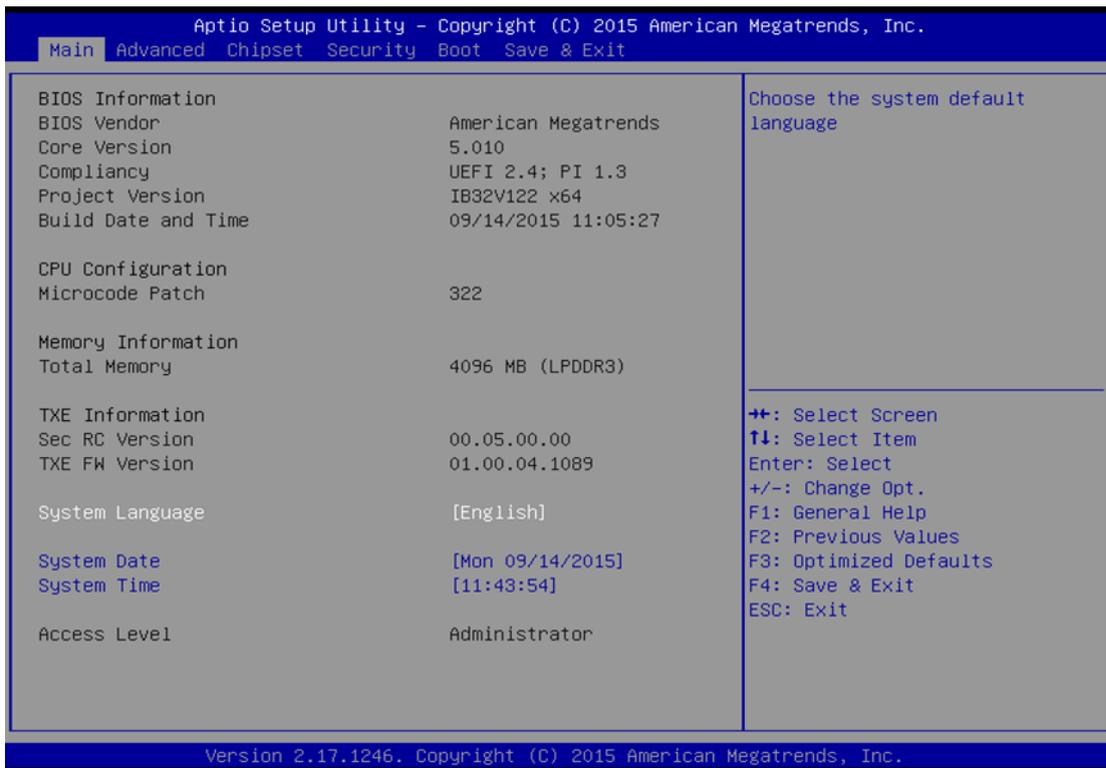
**NOTE:**

You can press the F1, F2, F3, F4, +/-, and Esc keys by connecting a USB keyboard to your device.

4.2.1 Main Menu

When you enter BIOS setup, the first menu that appears on the screen is the main menu. It contains the system information including BIOS version, processor RC version, system language, time, and date.

Immediately after the **[DEL]** key is pressed during startup, the main BIOS setup menu appears:



| BIOS Setting | Description | Setting Option | Effect |
|------------------|--|--------------------------------|---|
| System Language | Displays the system language. [English] is set up by default. | Adjustment of the language | Set the language in other language. The language in this device is English. |
| System Date/Time | This is current date setting. The time is maintained by the battery when the device is turned off. | Date and time changes. | Set the date in the format [mm/dd/yyyy]; The time in the format: [hh/mm/ss] |
| Access Level | The current user access settings | Changes to the level of access | Administrator is set up by the default |

4.2.2 Advanced Menu

The advanced menu also uses to set configuration of the CPU and other system devices. There are sub menus on the left frame of the screen.

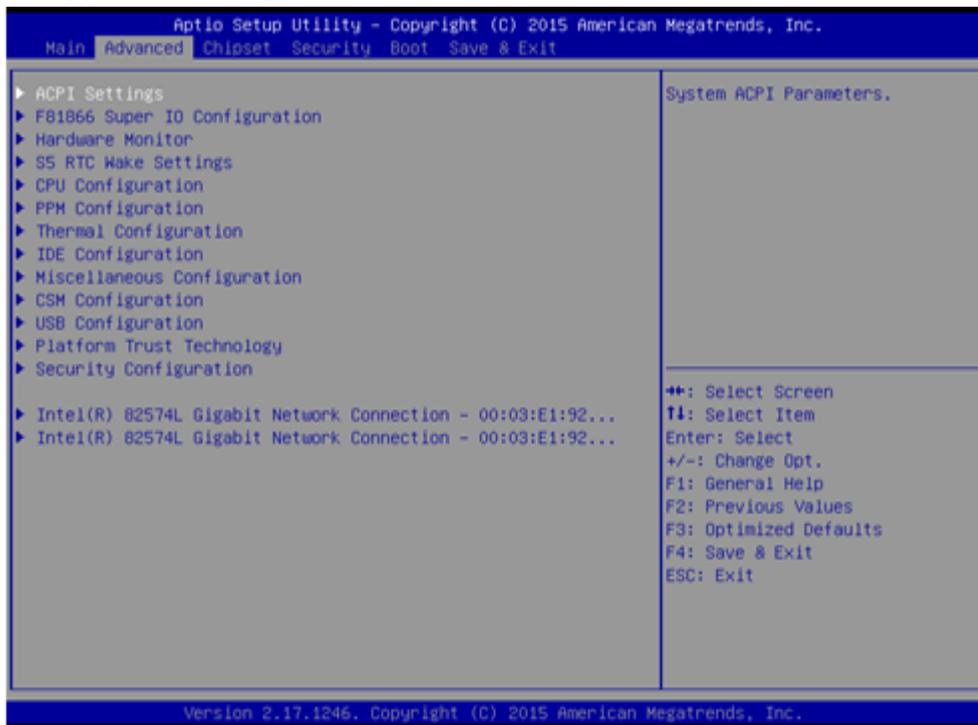


IMPORTANT:

Handle advanced BIOS settings page with caution. Any changes can affect the operation of your computer.

For items marked ► press <Enter> for more options.

Advanced Configuration and Power Interface (ACPI) settings allow to control how the power switch operates. The power supply can be adjusted for power requirements. You can use the screen to select options of ACPI configuration. A description of the selected items will appear on the right side of the screen.



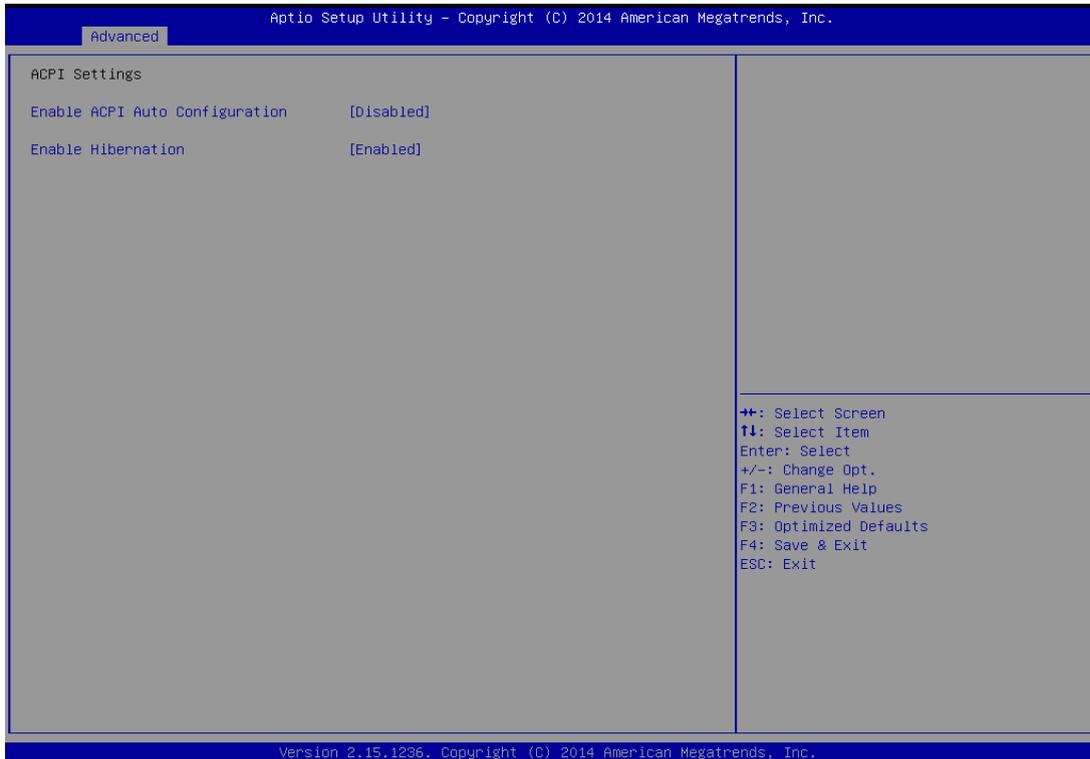
| BIOS Setting | Description | Setting Option | Effect |
|-------------------------------|--------------------------------------|----------------|---------------|
| ACPI Settings | Configures ACPI settings | Enter | Opens submenu |
| F81866 Super IO Configuration | Configures IO settings | Enter | Opens submenu |
| Hardware Monitor | Configures Hardware Monitor settings | Enter | Opens submenu |
| S5 RTC Wake Settings | Configures RTC Wake parameters | Enter | Opens submenu |
| CPU Configuration | Configures CPU settings | Enter | Opens submenu |

| | | | |
|-----------------------------|---|-------|---------------|
| PPM Configuration | Configures PPM settings | Enter | Opens submenu |
| Thermal Configuration | Configures Thermal Parameters | Enter | Opens submenu |
| IDE Configuration | Configures IDE Parameters | Enter | Opens submenu |
| Miscellaneous Configuration | Configures Miscellaneous Parameters | Enter | Opens submenu |
| CSM Configuration | Configures CSM Parameters | Enter | Opens submenu |
| USB Configuration | Configures USB Settings | Enter | Opens submenu |
| Platform Trust Technology | Configures Platform Trust Technology parameters | Enter | Opens submenu |
| Security Configuration | Configures Security parameters | Enter | Opens submenu |

For items marked ► press <Enter> for more options.

4.2.2.1 ACPI Settings

Advanced Configuration and Power Interface (ACPI) settings allow to control how the power switch operates. The power supply can be adjusted for power requirements. You can use the screen to select options of ACPI configuration. A description of the selected items will appear on the right side of the screen.



| BIOS Setting | Description | Setting Option | Effect |
|--------------------------------|------------------------------|-----------------|-----------------------------------|
| Enable ACPI Auto Configuration | BIOS ACPI Auto Configuration | Enable/ Disable | Enables or Disables this function |
| Enable Hibernation | Control hibernation | Enable/ Disable | Enables or Disables this function |

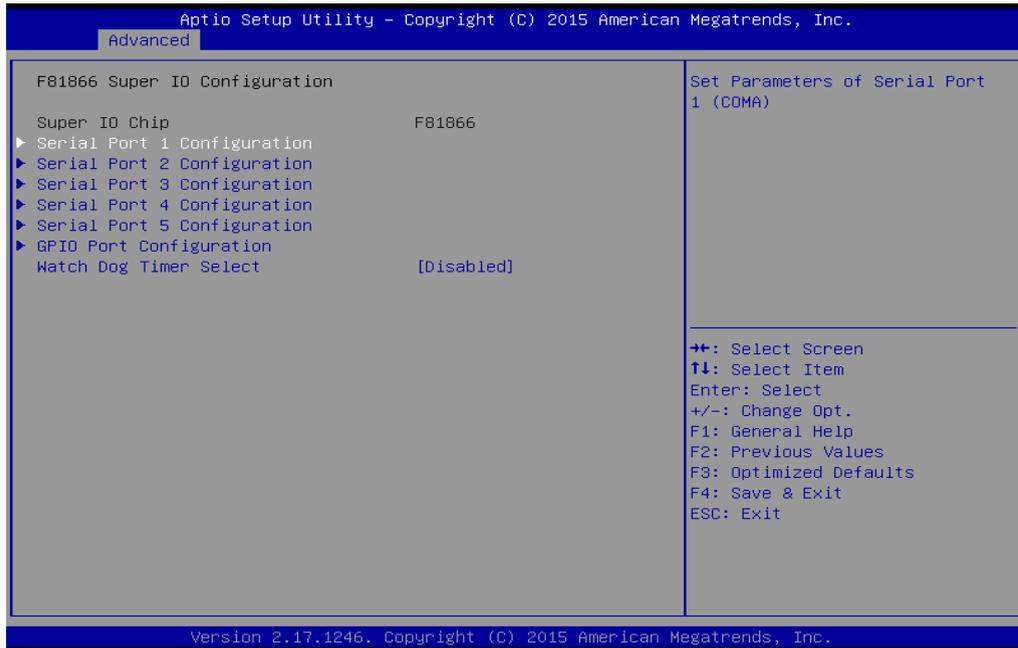
4.2.2.2 F81866 Super IO Configuration

You can use the screen to select options for Super IO Configuration, and change the value of the option selected. A description of the selected item appears on the right side of the screen.

For items marked with ►, please press <Enter> for more options.

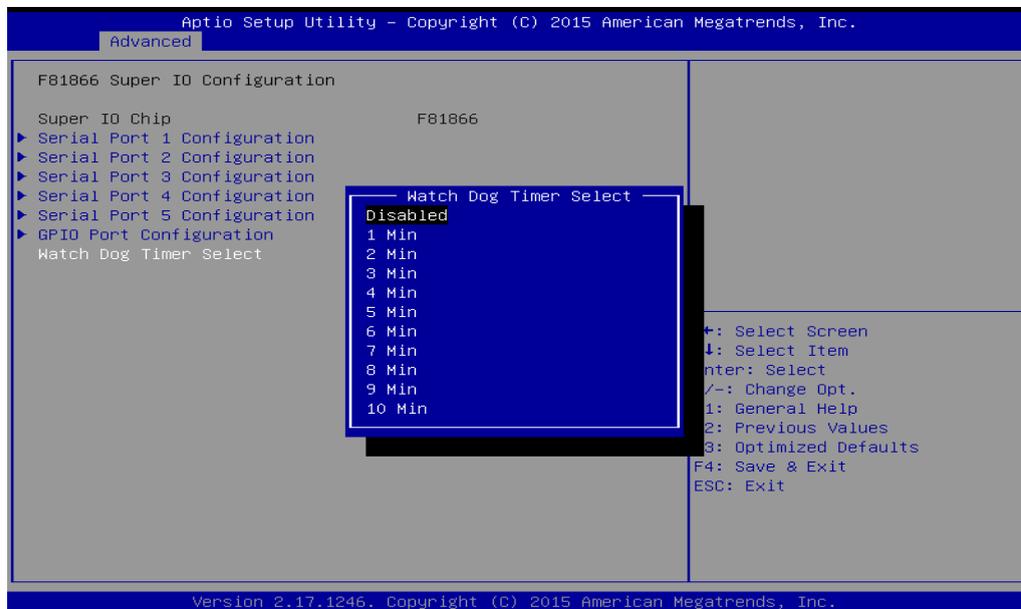
Serial Port 1~5

Use these items to set parameters related to serial port 1~5.



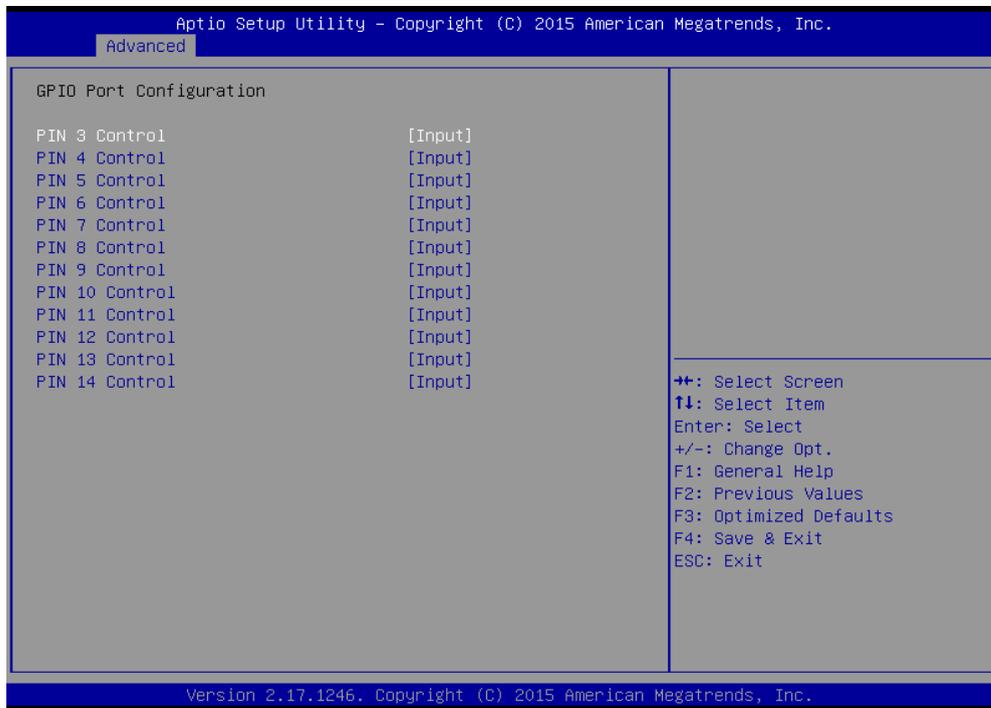
Watch Dog Time Select

You can either disable **Watch Dog Time Select**, or set up the time. Use <Arrow> keys to navigate and please press <Enter> to select the item.



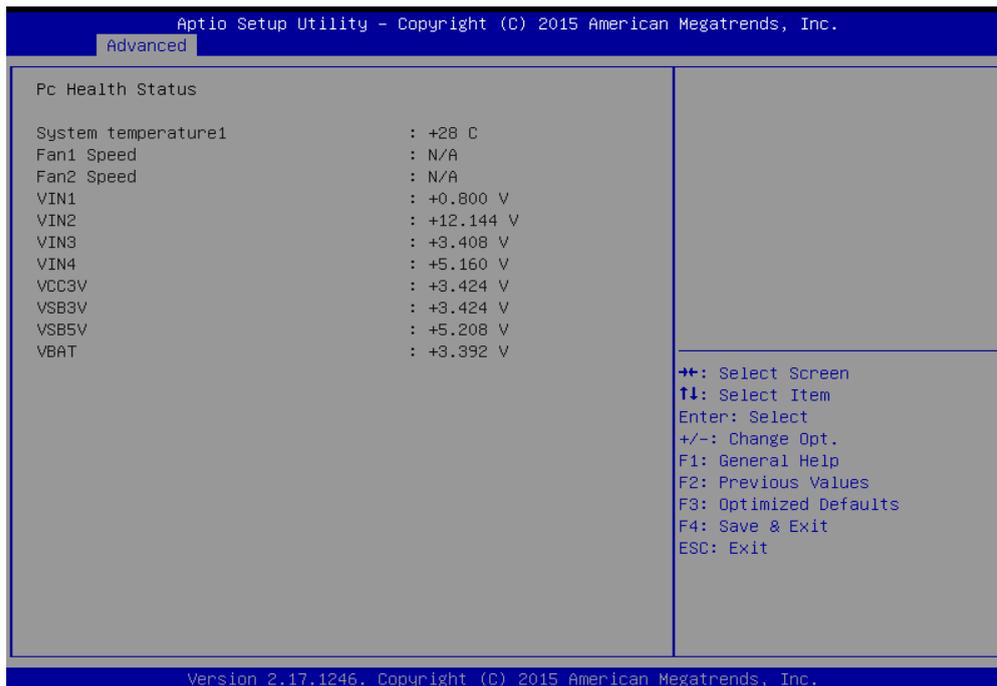
GPIO Port Configuration

You can use the screen to change GPIO Port setting. Use these items to set parameters related to **PIN3-PIN14 Control**.



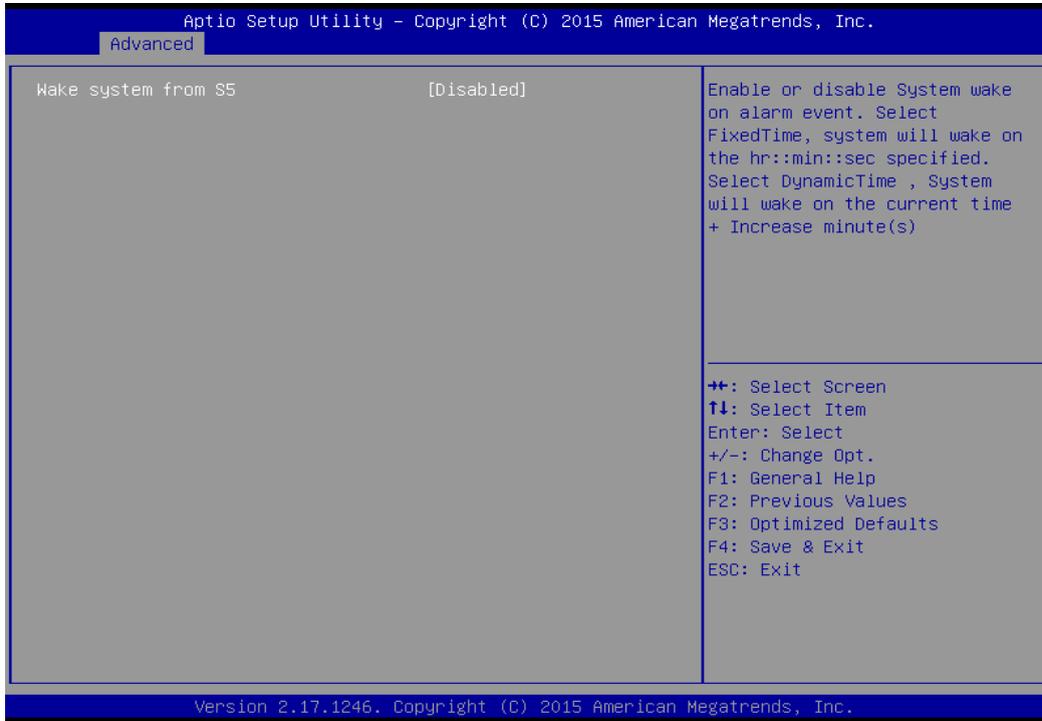
4.2.2.3 Hardware Monitor

You can check PC Health Status parameters such as system temperature, fan speed etc.



4.2.2.4 S5 RTC Wake Settings

Wake system from S5 enables or disables system wake on alarm event. It allows you to wake up the system in a certain time.

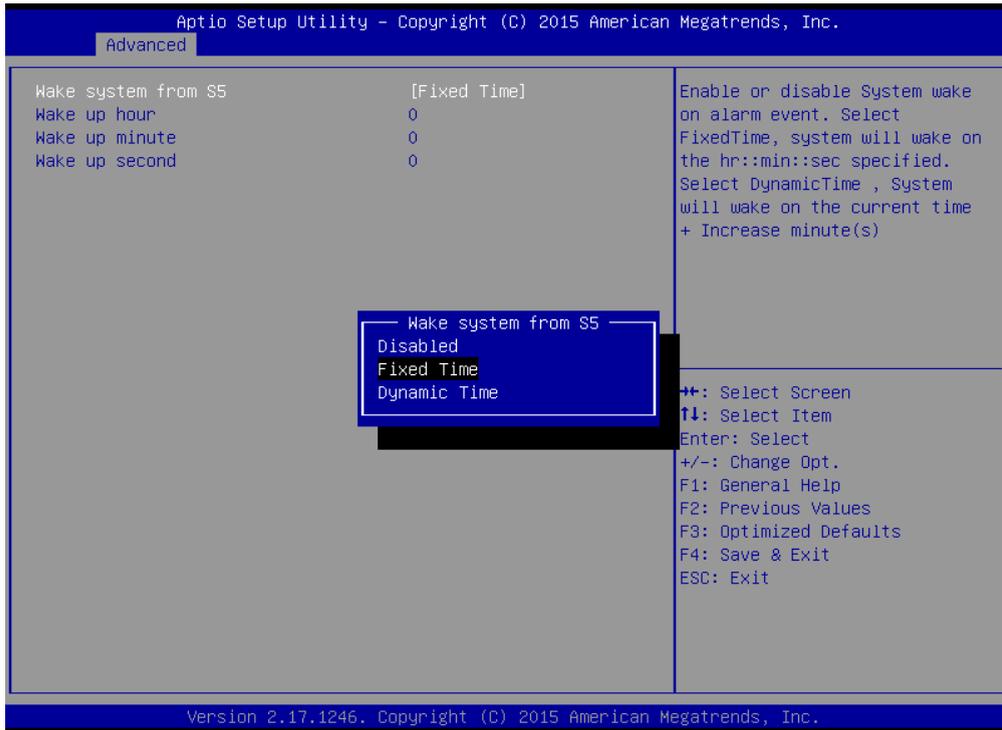


Wake System from S5 with fixed time setting

Select **Fixed Time** to set the system to wake on the specified time.

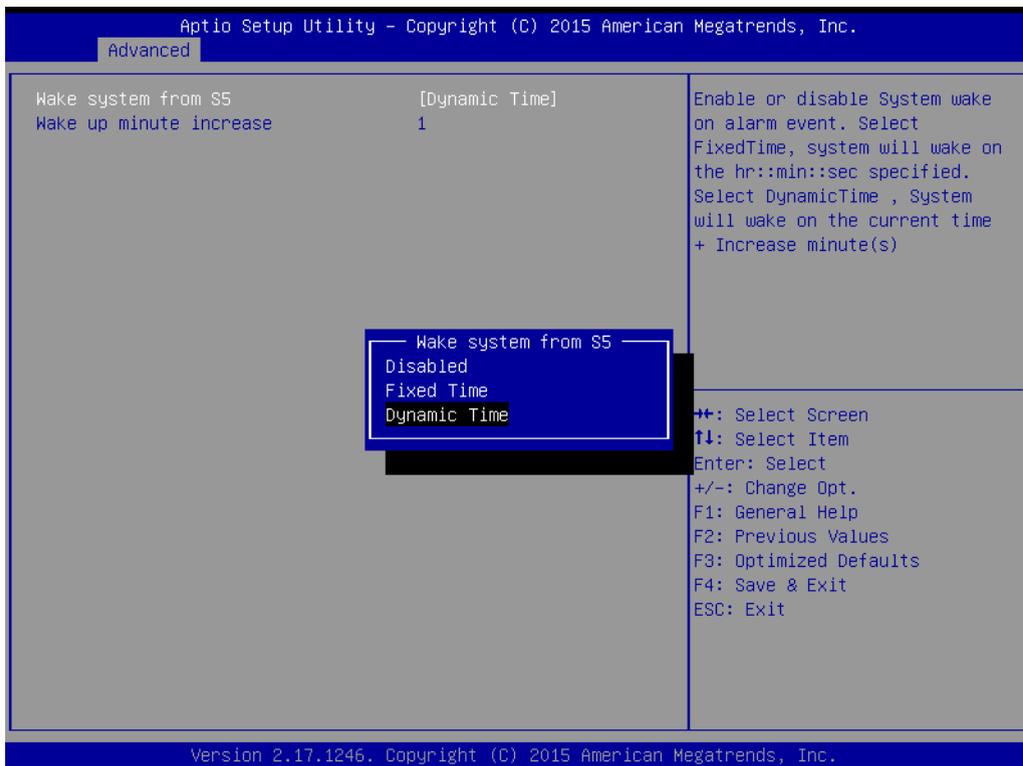
Use Navigation Keys   to switch among the items: Day, Hour, Minute and Second. Type the desired value in the selected item.

For example: If you want the system to start up automatically at 15:30:30, the 10th day of each month, then you should enter 10, 15, 30, and 30 from top to bottom.

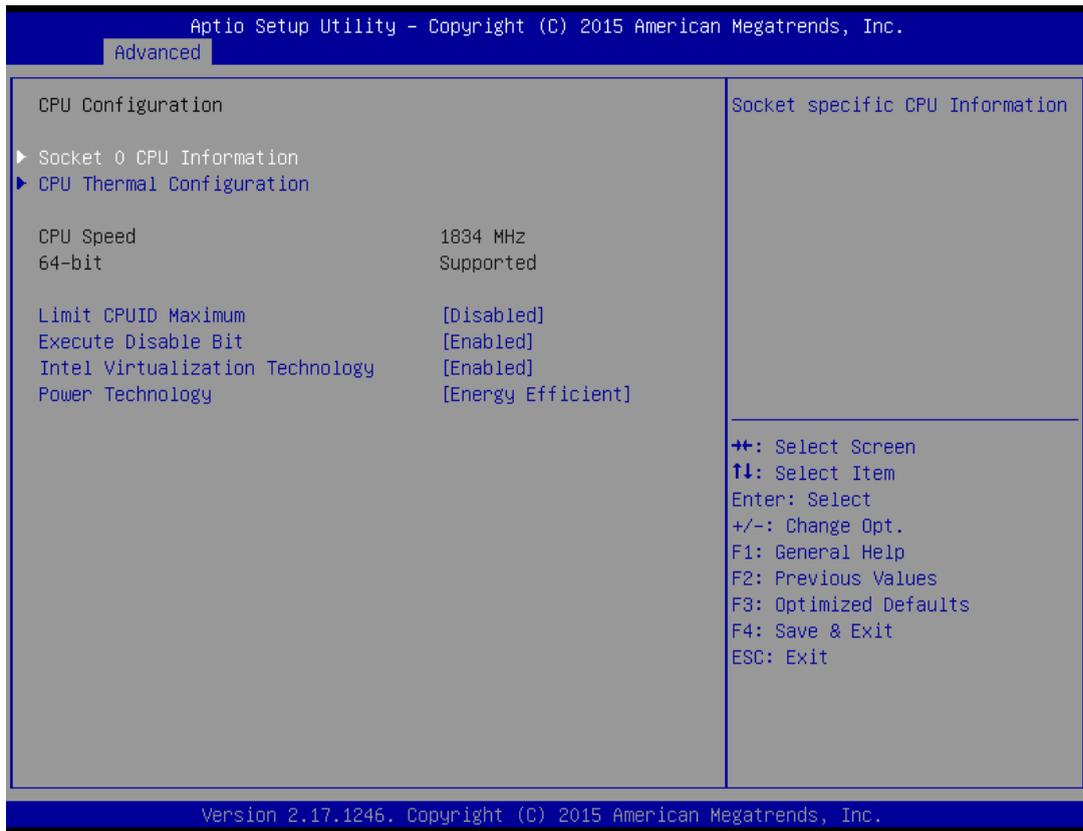


Wake system from S5 after dynamic time setting

Select **Dynamic Time** to set the system to wake on the current time + increase minute (s).

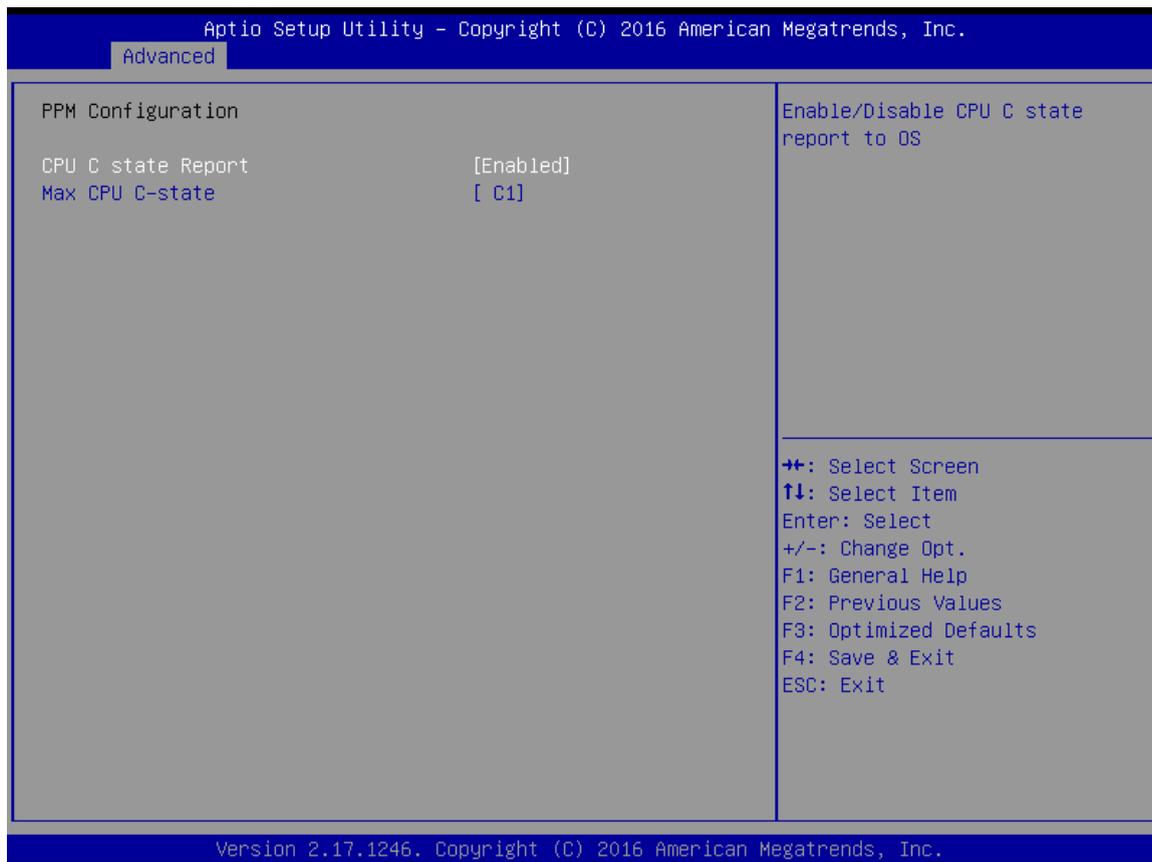


4.2.2.5 CPU Configuration



| BIOS Setting | Description | Setting Option | Effect |
|---------------------------------|--|------------------|------------------------------|
| Socket CPU Information | This item contains socket specific CPU information. | Enter | Open sub-menu |
| CPU Thermal Configuration | Thermal control | Enter | Open sub-menu |
| Limit CPUID Maximum | Limits CPIID Maximum | Disabled/Enabled | Enable/Disable this function |
| Execute Disable Bit | Execute Disable Bit | Disabled/Enabled | Enable/Disable this function |
| Intel Virtualization Technology | Allows to run recent OS and applications | Enabled/Disabled | Enable/Disable this function |
| Power Technology | Control the performance and power management functions of the processors | Disabled | Disable this function |
| | | Energy Efficient | Enable energy efficient mode |

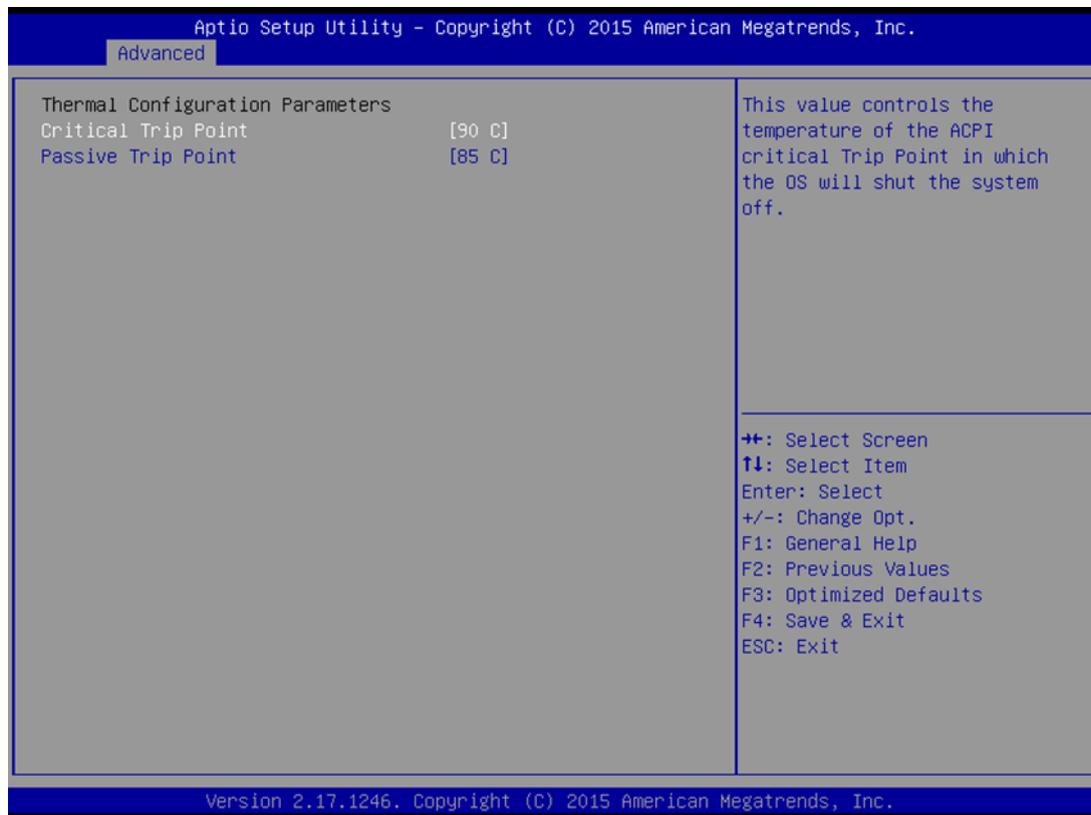
4.2.2.6 PPM Configuration



| BIOS Setting | Description | Setting Option | Effect |
|--------------------|---|----------------------|--|
| CPU C State Report | Shows CPU C State Report | Enabled/ Disabled | Enable or Disable CPU C state report to OS |
| Max CPU C-State | Allows to enter power-saving mode in order to save energy | C1, C3, C6, C7, Auto | Enable or Disable CPU C Max CPU S-Sate |

4.2.2.7 Thermal Configuration

This menu allows controlling thermal settings of the computer. Refer to the descriptions on the top right side of the screen for detailed information about each setting.



| BIOS Setting | Description | Setting Option | Effect |
|---------------------|--|--|--|
| Critical Trip Point | Specifies the temperature at which the OS will shut down the system | 90C, 87C, 85C, 79C, 71C, 63C, 55C, 47C, 39C, 31C, 23C, 15C | Select the disable temperature for the system to shut down |
| Passive Trip Point | Specifies the temperature at which the OS will begin adjusting the processor | 90C, 87C, 85C, 79C, 71C, 63C, 55C, 47C, 39C, 31C, 23C, 15C | Select the disable temperature for the system to start adjusting the processor |

4.2.2.8 IDE Configuration

Aptio Setup Utility - Copyright (C) 2015 American Megatrends, Inc.

Advanced

| | |
|--|---|
| IDE Configuration Serial-ATA (SATA) [Enabled] SATA Speed Support [Gen2] SATA Mode [AHCI Mode] Serial-ATA Port 0 [Enabled] SATA Port0 HotPlug [Disabled] Serial-ATA Port 1 [Enabled] SATA Port1 HotPlug [Disabled] SATA Port0 SSE032GPTC0-S8 (32.0GB) SATA Port1 Not Present | Enable / Disable Serial ATA ++: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit |
|--|---|

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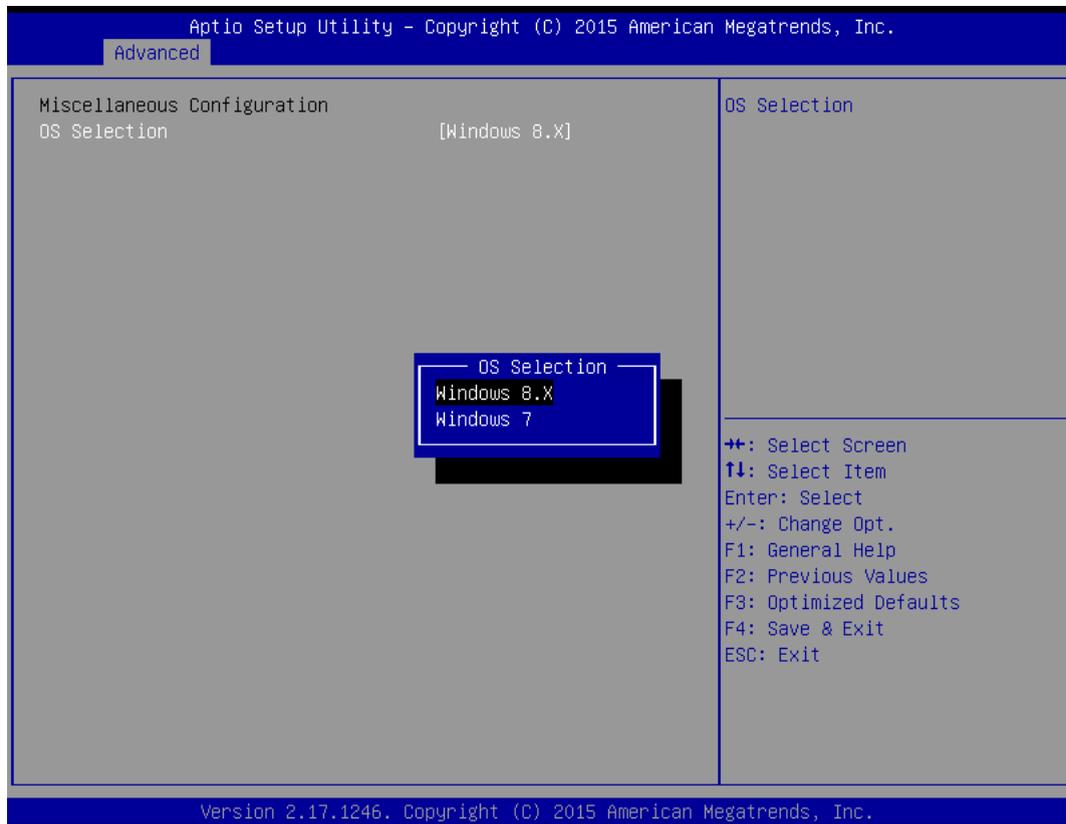
| BIOS Setting | Description | Setting Option | Effect |
|--------------------|--|----------------------|--|
| Serial- ATA (SATA) | Responsible for supporting chipset drives with SATA interface. | Enabled/ Disabled | Enable or disable this function |
| SATA Speed Support | Allows forcing the speed limit SATA II ports standard IDE / SATA-controller chipset. | Gen1 | The maximum speed will be limited to 150 MB/s |
| | | Gen2 | The maximum speed will be limited to 300 MB/s |
| | | Disabled | Disables manual configuration of SATA II ports (mode will be selected based on the specifications of connected drives) |

| | | | |
|--------------------|---|-------------------|--|
| SATA Mode | This option specifies the operation mode of modern IDE / SATA-controller chipset | [AHCI] | Selecting this option allows you to take full advantage of the extended host controller SATA II |
| | | [IDE] | SATA controller will operate in a mechanism similar to a conventional IDE-controller |
| | | [RAID] | Allows combining hard drives in RAID-arrays in order to improve the reliability of data storage, or to increase the speed. |
| Serial- ATA Port 0 | The option turns on or off Port 0 of SATA channels of standard IDE / SATA-controller chipset. | Enabled/ Disabled | Turn on (Enabled) or turn off (Disabled) Port 0 |
| SATA Port0 HotPlug | This feature that allows you to attach and remove a SATA Port0 | Enabled/ Disabled | Enable or disable this function |
| Serial- ATA Port 1 | The option turns on or off Port 1 of SATA channels of standard IDE / SATA-controller chipset. | Enabled/ Disabled | Turn on (Enabled) or turn off (Disabled) Port 1 |
| SATA Port1 HotPlug | This feature that allows you to attach and remove a SATA Port1 | Enabled/ Disabled | Enable or disable this function |

4.2.2.9 Miscellaneous Configuration

OS Selection

This item allows users to select the proper Operating System.



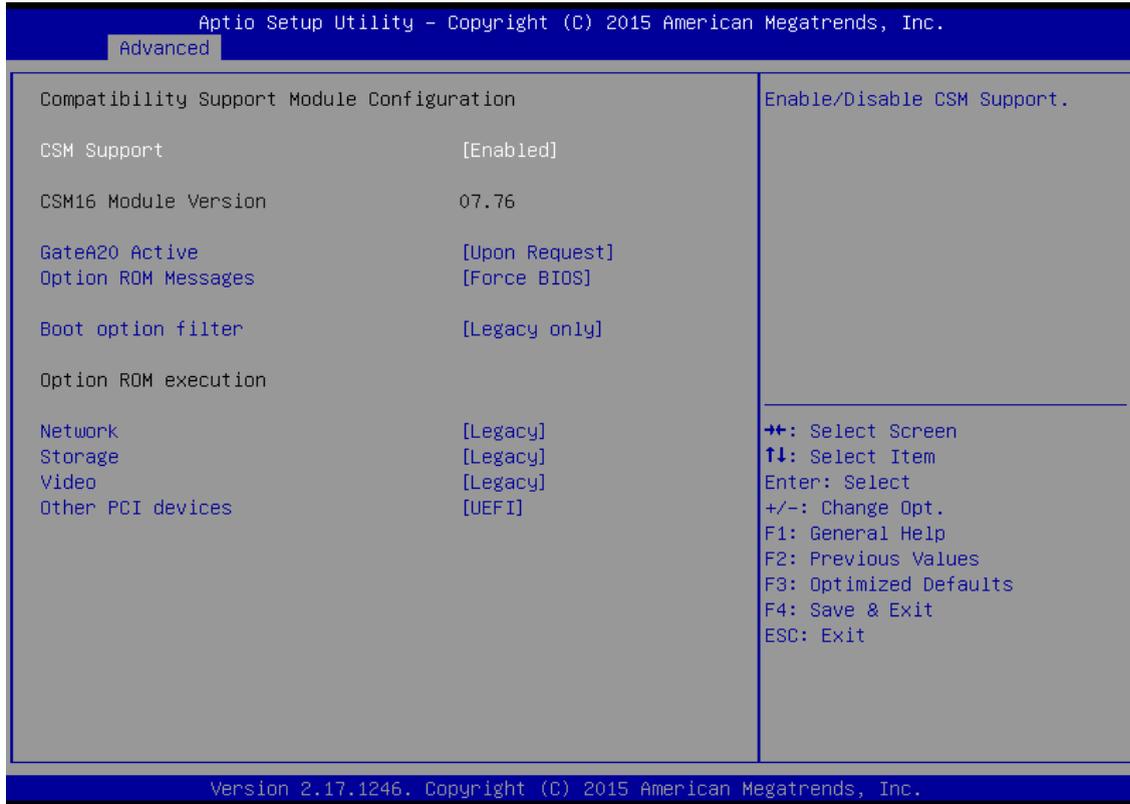
| BIOS Setting | Description | Setting Option | Effect |
|--------------|--------------------------------------|----------------|-----------------|
| Windows 8.X | Allows user to choose the proper OS. | Enter | Use Windows 8.X |
| Windows 7 | Allows user to choose the proper OS. | Enter | Use Windows 7 |



IMPORTANT:

The device will be shipped with OS according to your order. BIOS OS Selection menu varies accordingly.

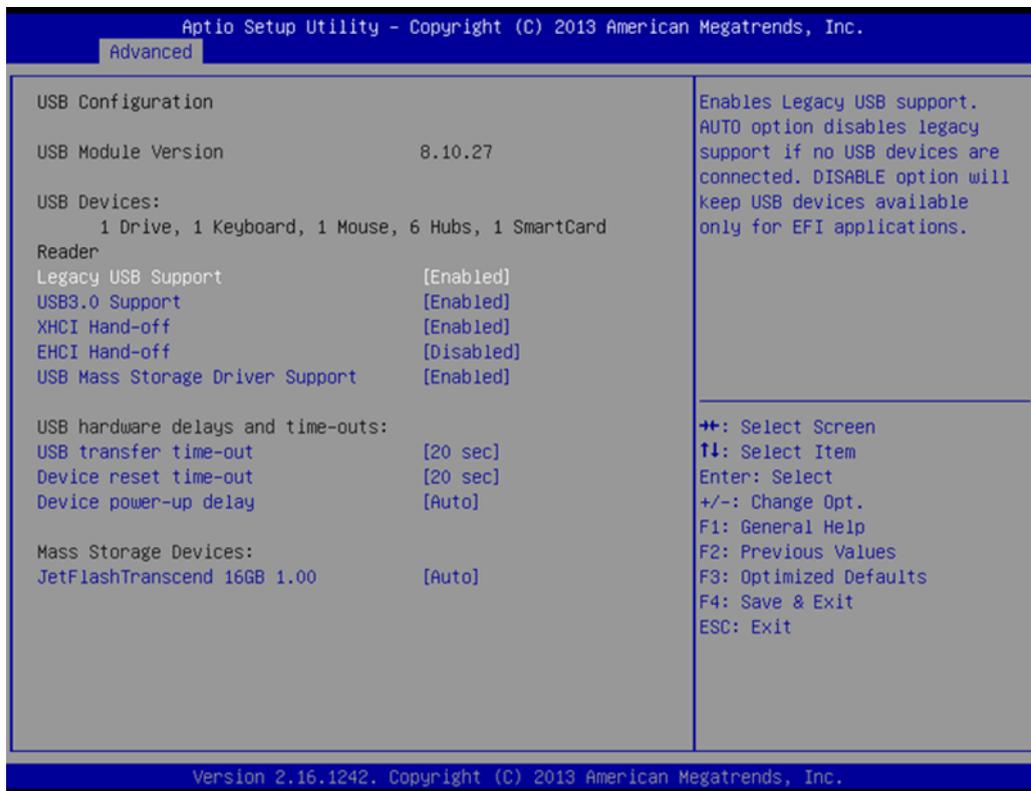
4.2.2.10 CSM Configuration



| BIOS Setting | Description | Setting Option | Effect |
|---------------------|---|------------------|--|
| CSM Support | The Compatibility Support Module (CSM) is a component of the UEFI firmware that provides legacy BIOS compatibility by emulating a BIOS environment, allowing legacy operating systems and some option ROMs that do not support UEFI to still be used. | Enabled/Disabled | Enable or disable the Compatibility Support Module |
| GetaA20 Active | Activate GetaA20 | Upon Request | Enable or disable this function |
| Option ROM Messages | Receiving ROM Messages Settings | Force BIOS | Set ROM messages parameters |
| Network | Specifies which Network option ROM is booted | UEFI | Only UEFI option ROMs are booted |
| | | Legacy | |
| Storage | Specifies which Storage option ROM is booted | UEFI | Only UEFI option ROMs are booted |
| | | Legacy | Only Legacy option ROMs are booted |

| | | | |
|-------------------|---|--------|------------------------------------|
| Video | Specifies which Video option ROM is booted | UEFI | Only UEFI option ROMs are booted |
| | | Legacy | Only Legacy option ROMs are booted |
| Other PCI Devices | Specifies which option ROM is booted for devices other than the network, storage or video | UEFI | Only UEFI option ROMs are booted |
| | | Legacy | Only Legacy option ROMs are booted |

4.2.2.11 USB Configuration



| BIOS Setting | Description | Setting Option | Effect |
|--------------------|---|----------------|--|
| Legacy USB Support | User can enable or disable USB port. | Disable | Will keep USB devices available only for EFI applications. |
| | | Enable | Enable all the USB devices |
| USB 3.0 Support | User can enable or disable USB 3.0 (XHCI) controller support. | Enable | Enable USB 3.0 is enable |
| | | Disable | USB 3.0 is disable |

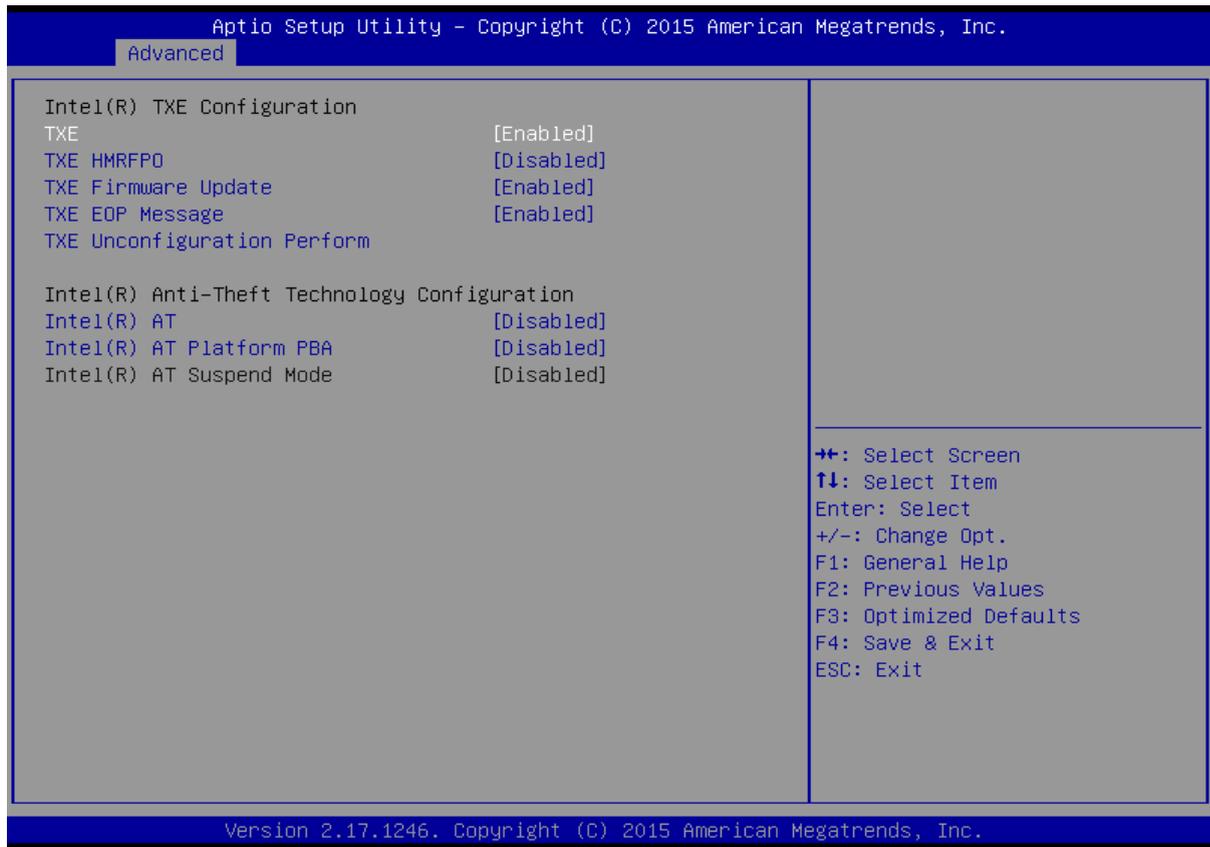
| | | | |
|---------------------------------|---|--------------------------------------|---|
| XHCI Hand-off | This is a workaround for OSs without XHCI hand-off support. | Disable | Disables this function |
| | | Enable | Enables this function |
| EHCI Hand-off | This is a workaround for OSs without ECHI hand-off support. | Disable | Disables this function |
| | | Enable | Enables this function |
| USB mass storage driver support | User can Enable or disable USB mass storage driver support. | Disable | Disables this function |
| | | Enable | Enables this function |
| USB Transfer time-out | The time-out value for control, bulk, and interrupt transfers. | 1 Sec 5 Sec 10 Sec 20 Sec | Depends on the time-out value |
| Device Reset time-out | USB mass storage device start unit command time-out. | 10 Sec 20 Sec 30 Sec 40 Sec | Depends on the time-out value |
| Device power-up delay | 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 |

4.2.2.12 Platform Trust Technology



| BIOS Setting | Description | Setting Option | Effect |
|--------------|------------------------------------|------------------|-----------------------------------|
| fTPM | Trusted Platform Module parameters | Enabled/Disabled | Enables or disables this function |

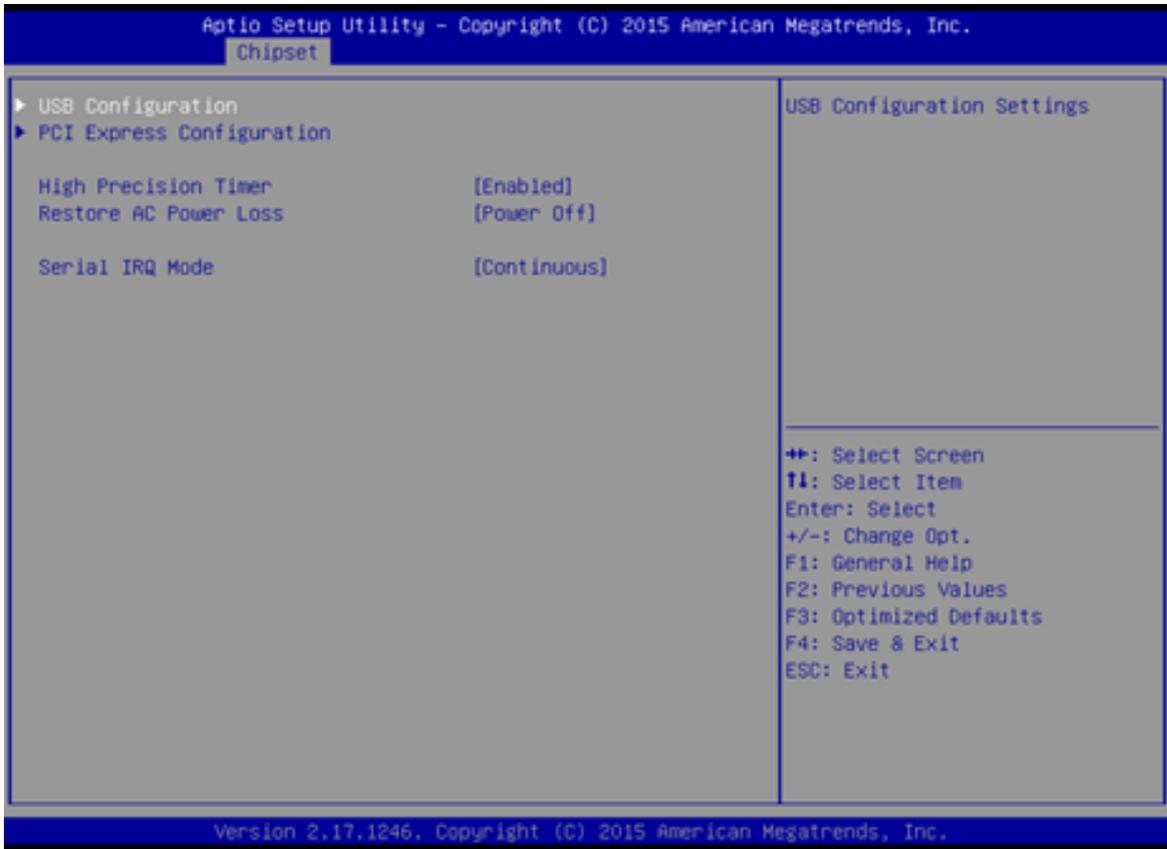
4.2.2.13 Security Configuration



| BIOS Setting | Description | Setting Option | Effect |
|------------------------|---|------------------|-----------------------------------|
| TXE | Trusted Execution Technology parameters | Enabled/Disabled | Enables or disables this function |
| TXE HMRFPD | TXE HMRFPD parameters | Enabled/Disabled | Enables or disables this function |
| TXE Firmware Update | TXE Firmware Update parameters | Enabled/Disabled | Enables or disables this function |
| TXE EOP Message | TXE EOP Message parameters | Enabled/Disabled | Enables or disables this function |
| Intel® AT | Intel® AT parameters | Enabled/Disabled | Enables or disables this function |
| Intel® AT Platform PBA | Intel® AT Platform PBA parameters | Enabled/Disabled | Enables or disables this function |

4.2.3 Chipset Menu

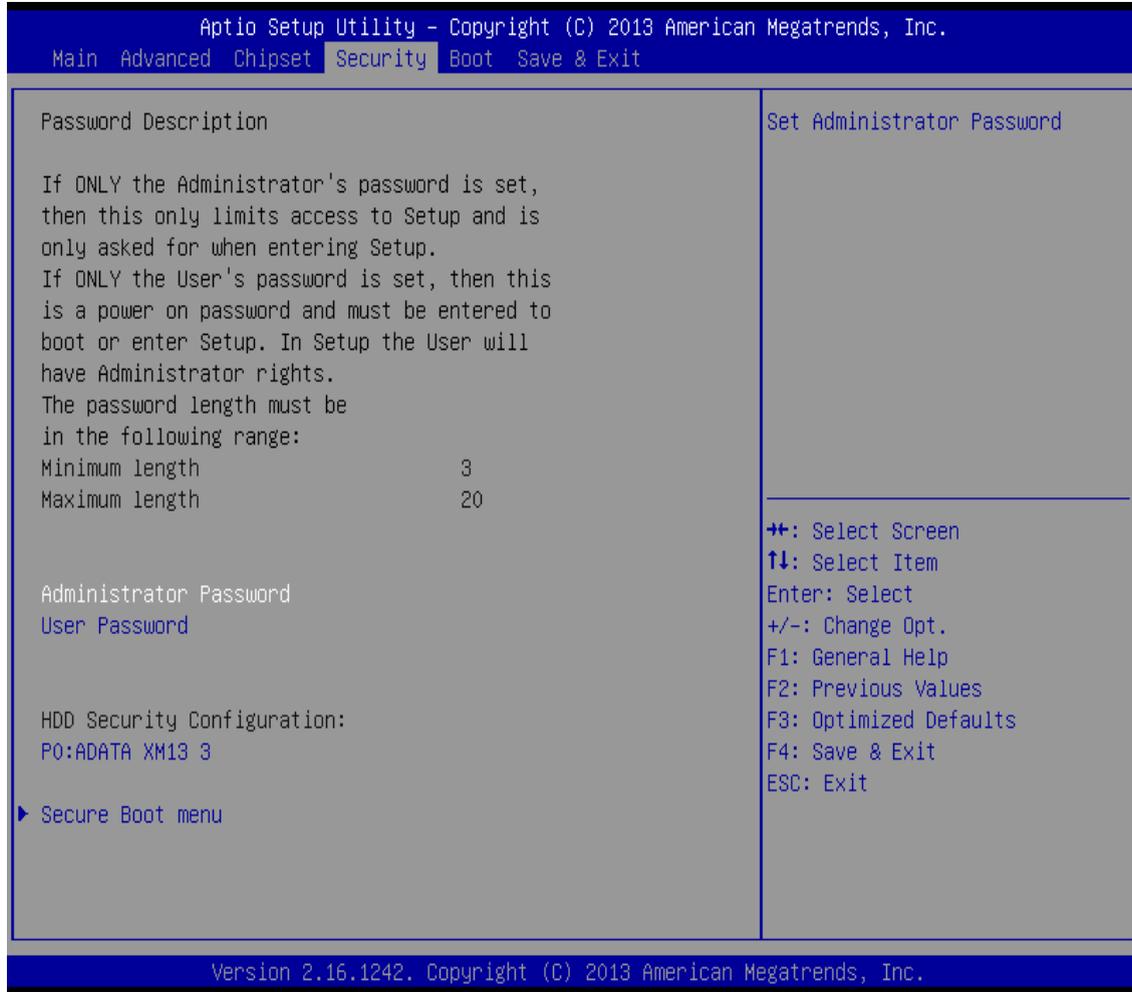
For items marked with ►, please press <Enter> for more options.



| BIOS Setting | Description | Setting Option | Effect |
|-----------------------|---|---------------------|--|
| High Precious Timer | Allow to set up High Precious Timer settings | Enabled/ Disabled | Enables/Disables this function |
| Restore AC Power Loss | This function allows to set up booting options after a power failure | Power on/ Power off | Boot automatically after a power failure |
| Serial IRQ Mode | When working with personal computer hardware, installing and removing devices, the system relies on interrupt requests. Interrupt request | Continuous | Allow user to set up desired IRQ Mode |

4.2.4 Security Menu

In the Security menu, users can set administrator password, user password, and HDD security configuration.



| BIOS Setting | Description | Setting Option | Effect |
|------------------------|---|----------------|----------------|
| Administrator Password | Displays whether or not an administrator password has been set. | Enter | Enter password |
| User Password | Display whether or not a user Password has been set. | Enter | Enter password |

4.2.5 Boot Configuration

The Boot menu sets the sequence of the devices to be searched for the operating system. The bootable devices will be automatically detected during POST and shown here, allowing you to set the sequence that the BIOS uses to look for a boot device from which to load the operating system.

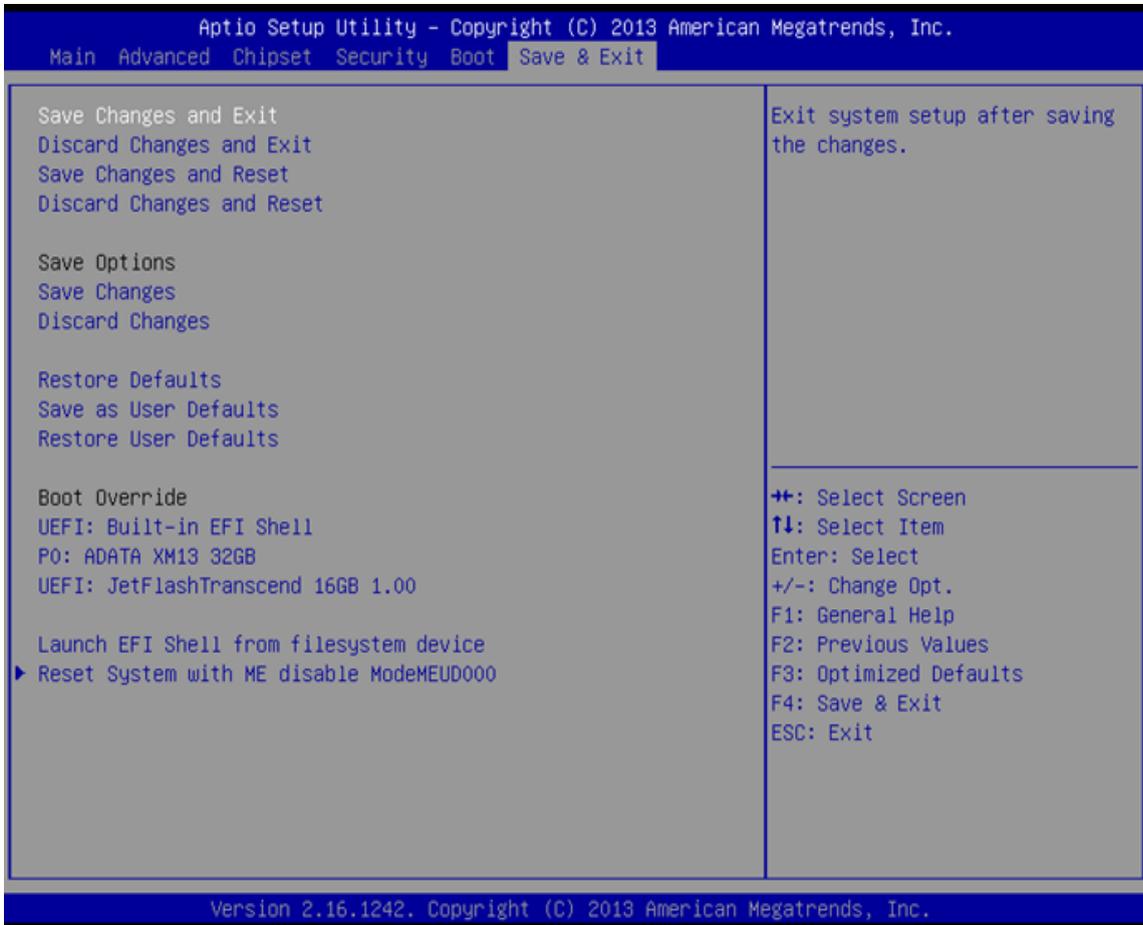


| BIOS Setting | Description | Setting Option | Effect |
|----------------------|---|----------------|------------------------|
| Setup Prompt Timeout | Allows user to configure the number of seconds to stay in BIOS setup prompt screen. | Enter | Set the prompt timeout |
| Boot NumLock State | Enables or disables NumLock feature on the numeric keypad of the keyboard after the POST (Default: On). | On | Remains On |
| | | Off | Remains OFF |
| Quite Boot | Determines if POST message or OEM logo (default = Black background) is displayed. | Disabled | Disables this function |
| | | Enabled | Enables this function |

| | | | |
|--------------------------------|---|-----------------------------------|----------------------------------|
| Fast Boot | Enables or disables Fast Boot to shorten the OS boot process. (Default: Disabled). | Disabled | Disables this function |
| | | Enabled | Enables this function |
| Boot Mode Select | Specifies which mode will be used for booting | Legacy | Only Legacy option is booted |
| | | UEFI | Only UEFI option is booted |
| Boot Option #1~#6 | Specifies the overall boot order from the available devices | Ex: Boot Option#1 (hard drive) | Hard drive as the first priority |
| USB Key Drive BBS Priorities | USB Key Drive BBS Priorities | Enter | Open sub-menu |
| Hard Disk Drive BBS Priorities | Hard Disk Drive BBS Priorities | Enter | Open sub-menu |
| Network Drive BBS Priorities | Network Drive BBS Priorities | Enter | Open sub-menu |

4.2.6 Save & Exit

The Exit menu displays a way how to exit BIOS Setup utility. After finishing your settings, you must save and exit for changes to be applied.



| BIOS Setting | Description | Setting Option | Effect |
|--------------------------|--|----------------|------------------------------------|
| Save Changes and Exit | This saves the changes to the CMOS and exits the BIOS Setup program. | Enter <YES> | Save changes |
| Discard Changes and Exit | This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Save Changes and Reset | Reset the system after saving the changes. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |

| | | | |
|---------------------------|--|-------------|------------------------------------|
| Discard Changes and Reset | Reset system setup without saving any changes | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Save Changes | Save changes done so far to any of the setup options. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Discard Changes | Discard changes done so far to any of the setup options. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Restore Default | Restore/load default values for all the setup options. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Save as User Defaults | Save the changes done so far as User defaults. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |
| Restore User Defaults | Restore the User Defaults to all the setup options. | Enter <YES> | Saves the changes |
| | | Enter <NO> | Return to the BIOS Setup Main Menu |

4.3 Using Recovery Wizard to Restore Computer

**Note:**

Before starting the recovery process, make sure to backup all user data. The data will be lost after the recovery process.

To enable quick one-key recovery procedure:

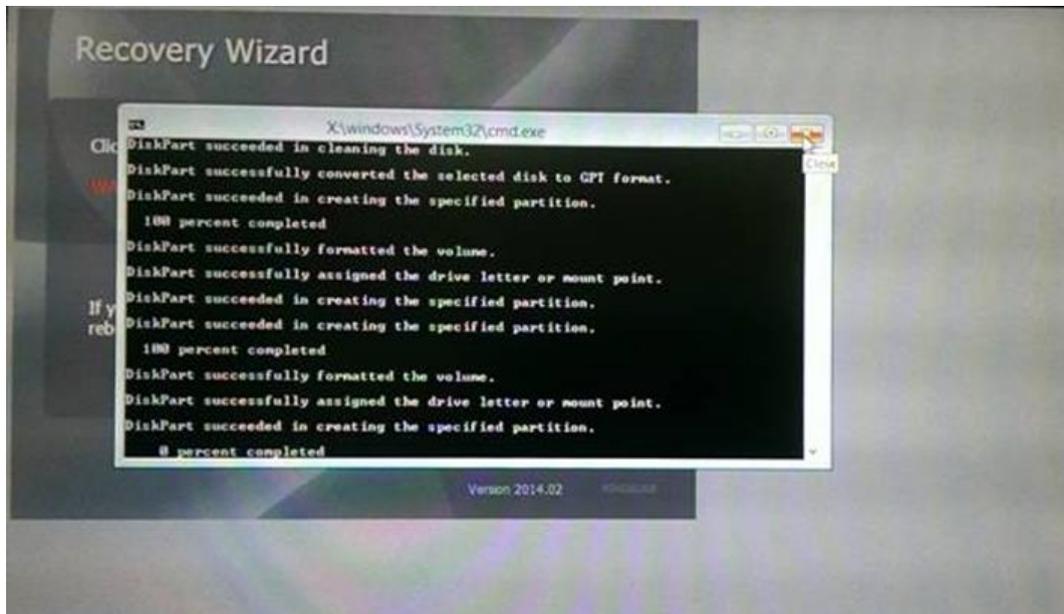
- Plug-in the AC adapter to Bay Trail series computer. Make sure the computer stays plugged in to power source during the recovery process.
- Turn on the computer, and when the boot screen shows up, press the **F6** to initiate the Recovery Wizard.
- The following screen shows the Recovery Wizard. Click **Recovery** button to continue.



A warning message about data loss will show up. Make sure the data is backed up before recovery, and click **Yes** to continue.



Wait the recovery process to complete. During the recovery process, a command prompt will show up to indicate the percent of recovery process complete. The system will restart automatically after recovery completed.



Driver Installation

This chapter describes how to install all necessary drivers.

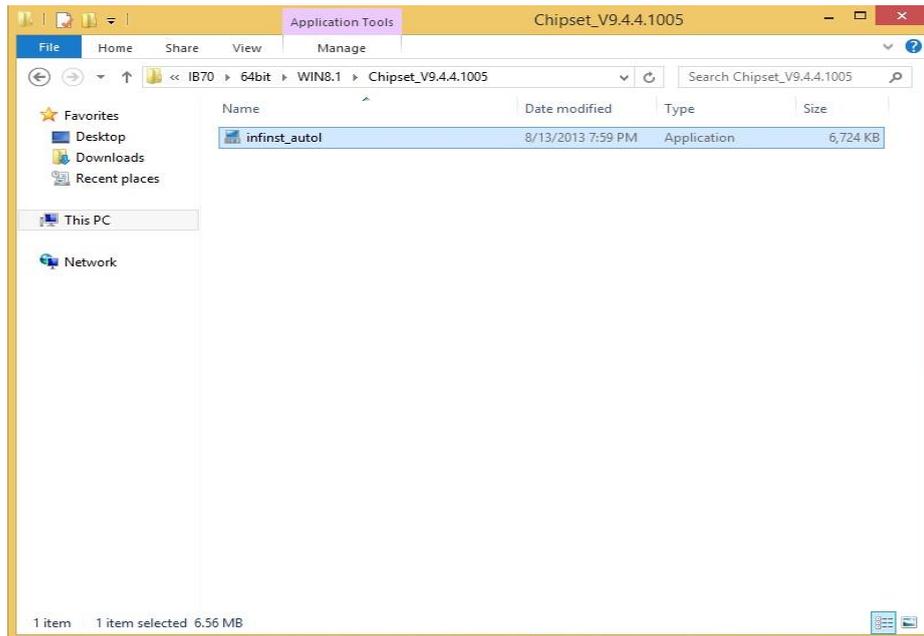
5

Chapter 5: Driver Installation

This chapter provides guideline to driver installations.

5.1 Chipset Driver

Step 1 Insert the CD that comes with the motherboard. Open the file document “Chipset Driver” and click “infinst_auto.exe” to install driver.



Step 2 Click **Next** to continue.



Step 3 Click **Yes** to agree the license terms.



Step 4 Click **Next** to install the driver.



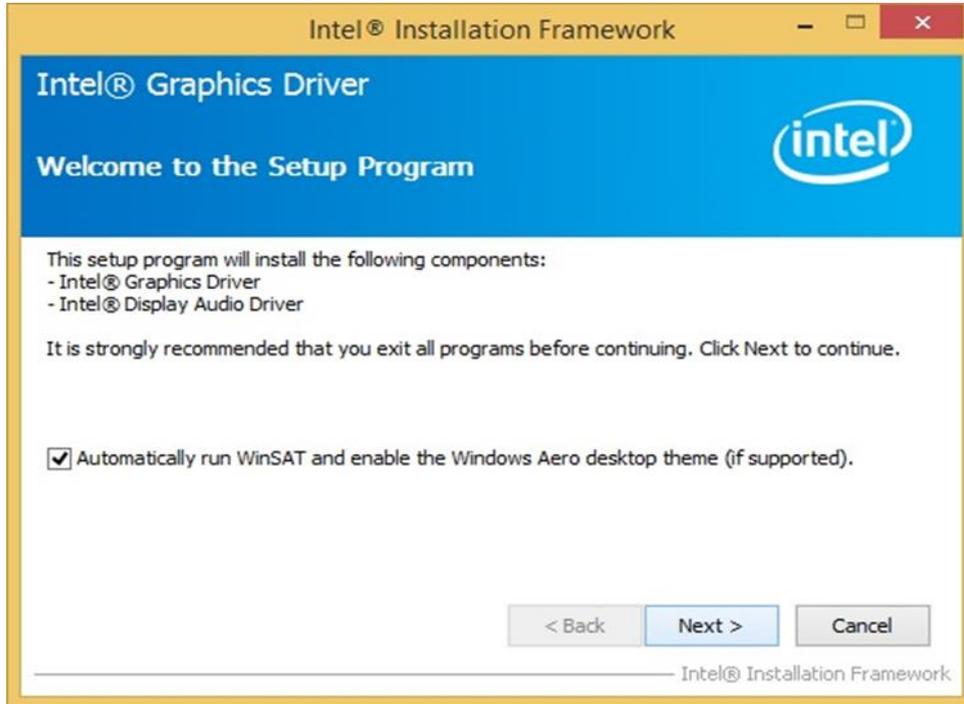
Step 5 Software setup progress window will appear, click **Next** to continue.

Step 6 Click **“Yes, I want to restart this computer now”** to finish the installation.

5.2 Graphics Driver

Step 1 Insert the CD that comes with the motherboard. Open the file document “**Graphics Driver**” and click **Setup** to execute the setup.

Step 2 Setup Welcome Window will appear, click **Next** to continue the process.



Step 3 Carefully read the license terms and click **Yes** to agree.

Step 4 Check Readme file information, and click **Next** to install driver.

Step 5 Click **Next** to continue.

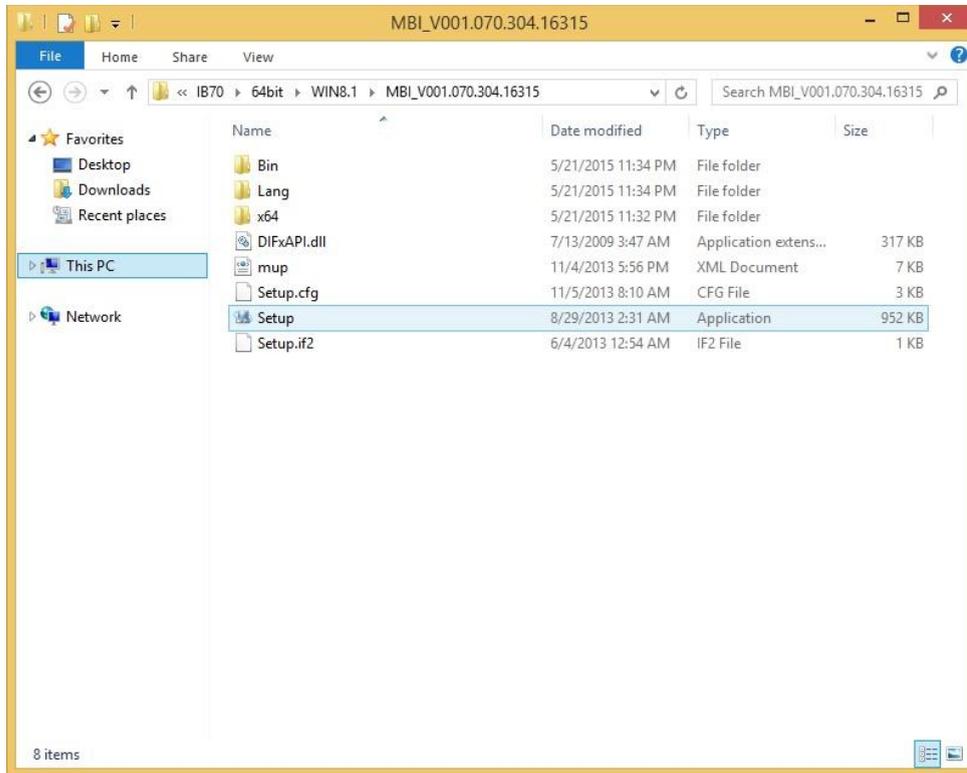
Step 6 Windows Security window will appear, click “**Install this driver software anyway**” to continue.

Step 7 Setup Progress window will appear, click **Next** to continue the installation.

Step 8 Setup is complete, click “**Yes, I want to restart this computer now**” to finish the installation and restart the computer.

5.3 Intel Sideband Fabric Device (Intel MBI) Driver (Windows 8)

Step 1 Insert the CD that comes with the motherboard. Open the file document “**MBI**” and click “**Setup.exe**” to install the driver.



Step 2 Welcome to the setup program window will appear, click **Next** to start the installation.

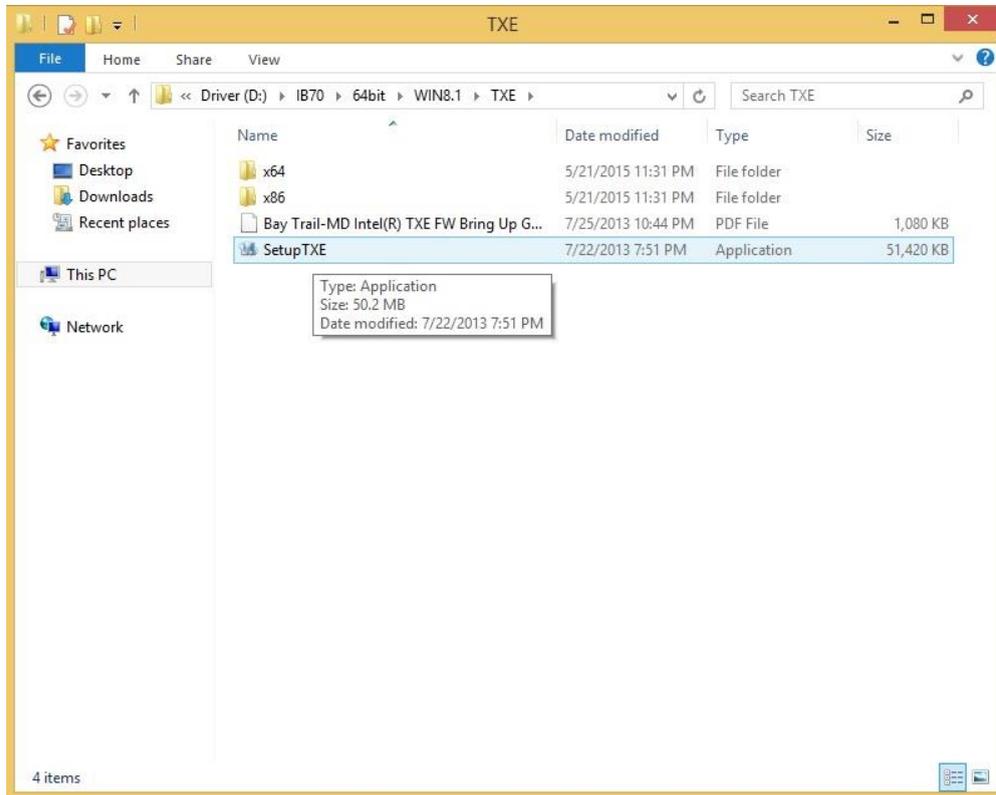
Step 3 Carefully read the License Agreement terms and click **Yes** to agree.

Step 4 Setup progress will appear, please wait for the operations to be performed, then click **Next** to continue.

Step 5 The installation is complete, click “**Yes, I want to restart this computer now**” to finish and restart the computer.

5.4 Intel Trusted Engine Interface (Intel TXE) Driver

Step 1 Insert the CD that comes with the motherboard. Open the file document “TXE” and click “Setup TXE.exe” to install the driver.



Step 2 Welcome to the setup program window will appear, click **Next** to start the installation.

Step 3 Carefully read the license terms and click **Yes** to agree.

Step 4 Confirmation window will appear, click **Next** to continue the driver installation.

Step 5 Please wait while the product is being installed.

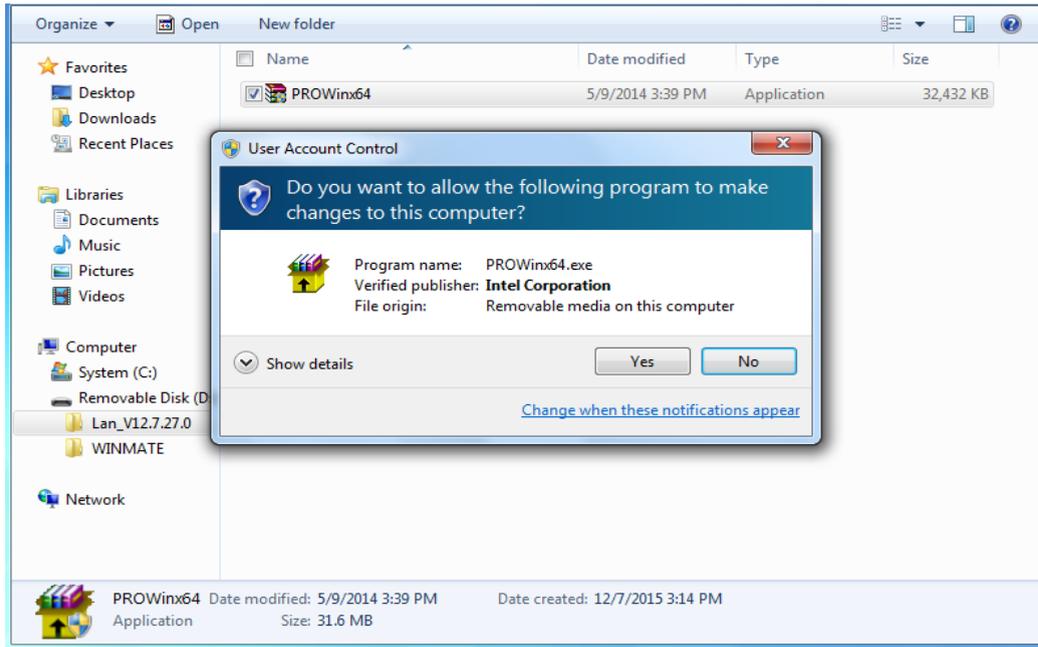
Step 6 The installation is complete, click **Finish** to complete the installation and restart the computer.

5.5 Intel Network Connections Driver

User must confirm the type of operating system is being used before installing Intel Network Connections. Follow the steps below to complete the installation.

Step 1 Click “PROWin64.exe”

Step 2 Click **Yes** to start the installation.



Step 3 Welcome window will appear, click **Next** to install the driver.

Step 4 In the program maintenance window you will see two options available. “Remove” is to remove Intel Networks Connections from your computer, and “Modify” is to make any changes. Choose **Modify** to continue.

Step 5 In the **Setup Options** window choose “Intel® PRO Set for Windows® Device Manger”, “Intel® Network Connections SNMP Agent” and “Advanced Network Services”.

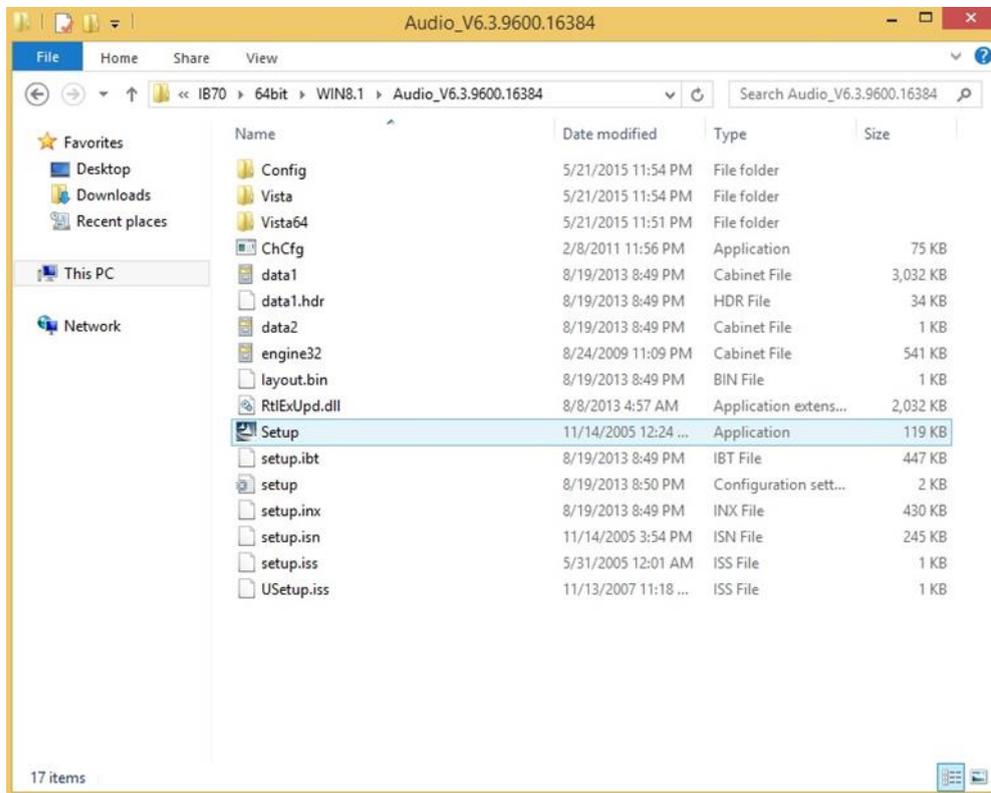
Step 6 The wizard is ready to begin installation, click **Install** to continue.

Step 7 Install wizard completed, click **Finish** to complete the installation.

5.6 Audio Driver

The ALC886 series are high-performance 7.1+2 channel high definition audio codecs that provide ten DAC channels for simultaneous support of 7.1 sound playback, plus 2 channels of independent stereo sound output (multiple streaming) through the front panel stereo outputs. The series integrates two stereo ADCs that can support a stereo microphone, and feature Acoustic Echo Cancellation (AEC), Beam Forming (BF), and Noise Suppression (NS) technology.

Step 1 Insert the CD that comes with the motherboard. Open the file document “Audio Driver” and click “Setup.exe” to install the driver.



Step 2 Please wait while the InstalShield Wizard prepares the setup.

Step 3 Welcome window will appear, click **Next** to install the driver.

Step 4 It might take some time to configure new software installation. Please wait.

Step 5 Windows security will appear, click **Install** to install the audio driver.

Step 6 The installation is complete, select “**Yes, I want to restart my computer now**”, and click **Finish** to complete the installation.

Mounting Solutions

This chapter provides step-by-step mounting guide for all available mounting options.

6

Chapter 6: Mounting Solutions

This chapter provides mounting guide for all available mounting options. Pay attention to cautions and warning to avoid any damages.

**WARNING! / AVERTISSEMENT!**

Follow mounting instructions and use recommended mounting hardware to avoid the risk of injury.

Suivez les instructions de montage et d'utilisation recommandé le matériel de montage pour éviter le risque de blessure.

6.1 Cable Mounting Considerations

For a nice look and safe installation, make sure cables are neatly hidden behind the HMI device. Refer to [Chapter 2, section 2.1](#) for the cable installation instruction.

**WARNING! / AVERTISSEMENT!**

Observe all local installation requirements for connection cable type and protection level.

Suivre tous les règlements locaux d'installations, de câblage et niveaux de protection.

**WARNING! / AVERTISSEMENT!**

Turn off the device and disconnect other peripherals before installation.

Éteindre l'appareil et débrancher tous les périphériques avant l'installation.

**ALTERNATING CURRENT / MISE À LE TERRE!**

To prevent electrical shock, the Safety Ground location on the rear must be bonded to the local earth ground through a minimum 12 AWG wire as short as possible

Pour éviter les chocs électriques, l'emplacement de la prise terre à l'arrière doit être lié à terre locale, à travers un 12 AWG minimum et aussi court que possible.

6.2 Safety Precautions

Observe the following common safety precautions before installing any electronic device:

- Use separate, non-intersecting paths to route power and networking wires. If power wiring and device wiring paths must be crossed make sure the wires are perpendicular at the intersection point.
- Keep the wires separated according to the interface. Wires that share similar electrical characteristics must be bundled together.
- Do not bundle input wiring with output wiring. Keep them separate.

When necessary, it is strongly advised that you label wiring to all devices in the system.

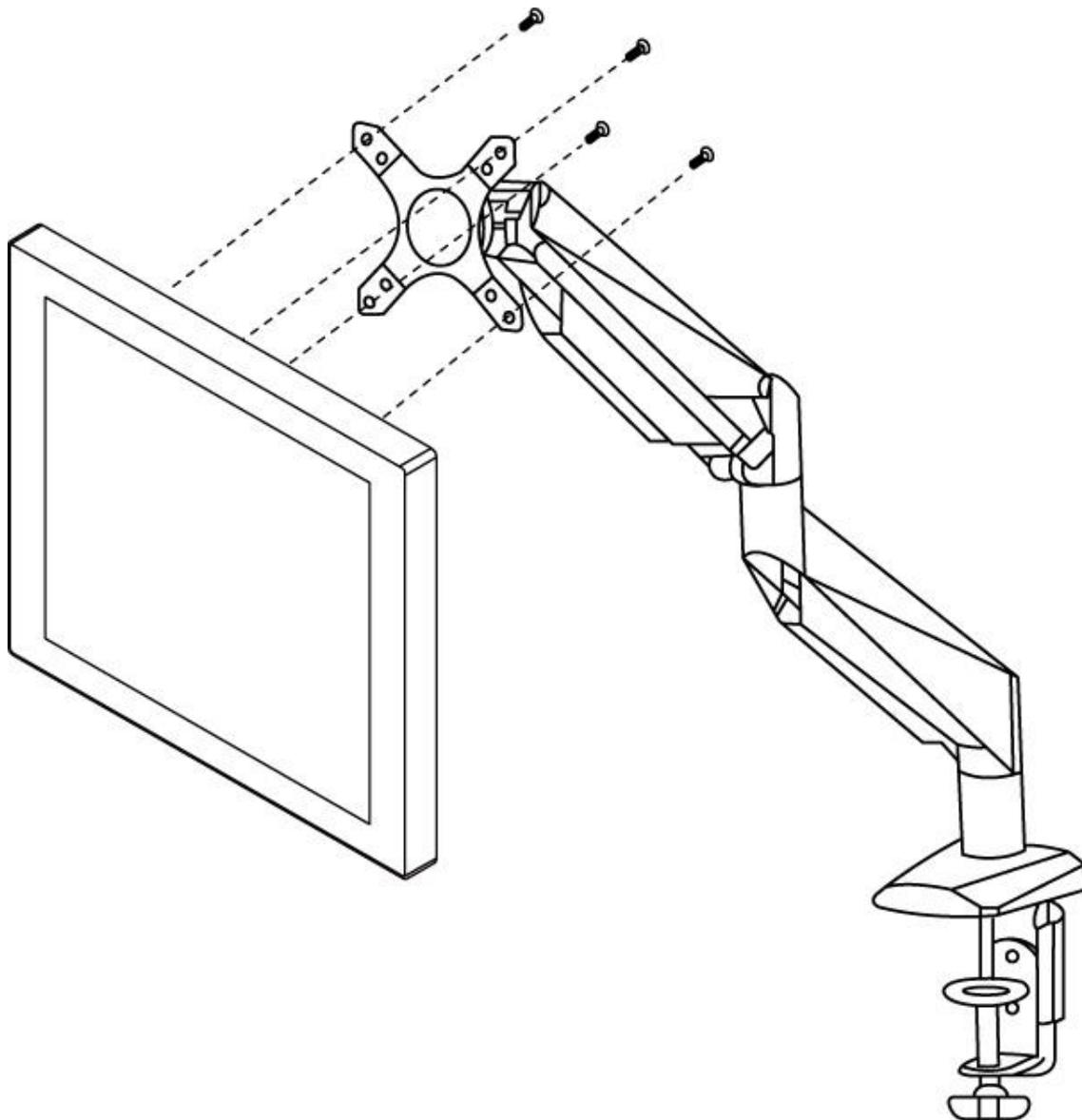
6.3 Mounting Guide

IP65 Stainless Resistive Touch Panel PC comes with different mounting options suitable for most of the industrial applications. The main mounting approach is chassis - very user-friendly in terms of installation. Refer to sub-sections below for more details.

6.3.1 VESA Mount

The IP65 Stainless Resistive Touch Panel PC has VESA mount holes on the rear side. Follow instructions below to mount the unit with VESA Mount bracket (not supplied).

| Size | VESA Plate Dimensions | Screw hole diameter |
|---------------|-----------------------|---------------------|
| 15", 17", 19" | 100 x 100 mm | VESA M4x5 mm |
| 21.5" | 100 x 200 mm | VESA M4x5 mm |



Mounting Steps:

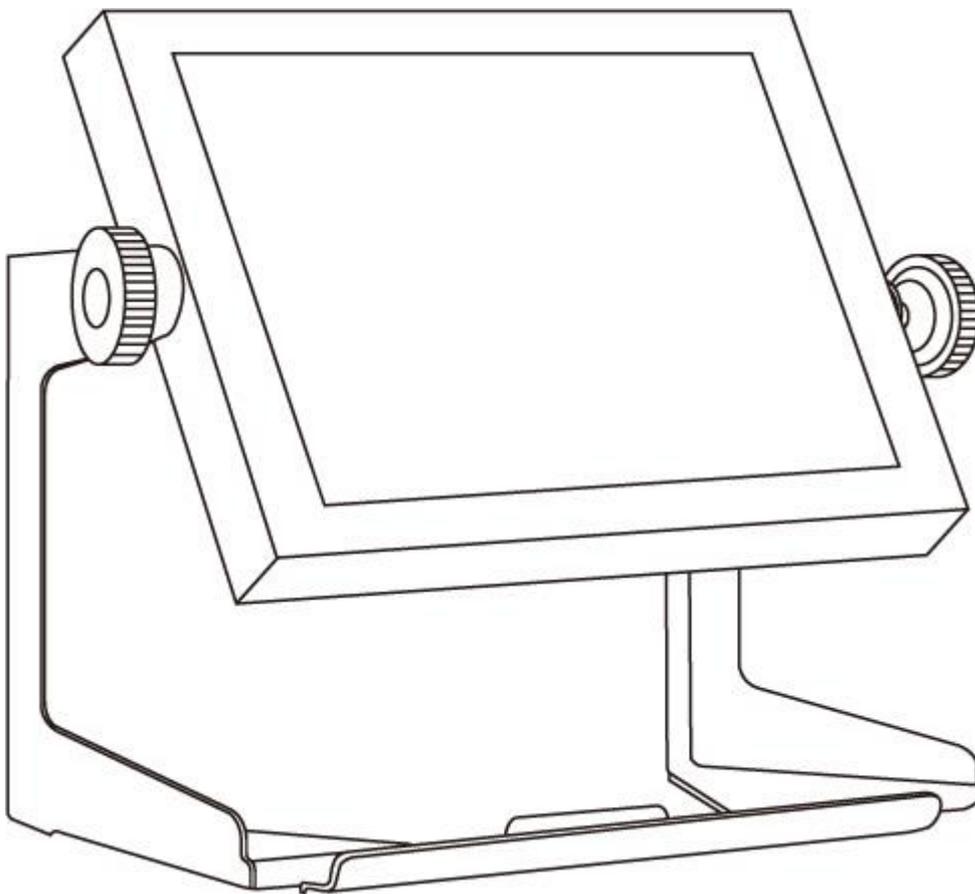
1. Screw VESA bracket to the fixture (ex. swing arm) with four VESA screws.
2. Place the device on VESA bracket.

**NOTE:**

Notice that both hooks on bracket should lock the notches on the back cover of the device.

6.3.2 Yoke Mount

Yoke Mount solution allows installing the Panel PC with the bracket (not supplied).

**Mounting instruction:**

1. Place the Panel PC on the bracket stand, aiming screw holes for each other.
2. Secure screws to fix the device upon the bracket stand.
3. Firmly secure the locking handle to the Panel PC.

Product Specifications

This section includes product specifications.



Appendix A: Product Specifications

Hardware Specifications

| | Model Name | | | |
|---------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|
| | WM 15-IB32-ES | WM 17-IB32-ES | WM 19-IB32-ES | WM 22W-IB32-ES |
| Display | | | | |
| Size | 15" | 17" | 19" | 21.5" |
| Resolution | 1024 x 768 | 1280 x 1024 | 1280 x 1024 | 1920 x 1080 |
| Brightness | 250 <i>cd/m²</i> (typ.) | 350 <i>cd/m²</i> (typ.) | 250 <i>cd/m²</i> (typ.) | 250 <i>cd/m²</i> (typ.) |
| Contrast Ratio | 700 : 1 (typ.) | 1000 : 1 (typ.) | 1000 : 1 (typ.) | 1000 : 1 (typ.) |
| Viewing Angle | -70~70(H);- 65~60(V) | -85~85(H);- 80~80(V) | -85~85(H);- 80~80(V) | -85~85(H);- 80~80(V) |
| Max Colors | 16.2M | 16.7M | 16.7M | 16.7M |
| System | | | | |
| Processor | Intel® Celeron® Bay Trail-M N2930 1.83 GHz | | | |
| BIOS | AMI 16Mbit Flash | | | |
| System Chipset | Intel® Atom™ SoC Integrate | | | |
| System Memory | 1 x SO-DIMM, Default 4GB, Max 8GB DDR3L 1600 | | | |
| Storage | Default 64GB | | | |
| Audio | Built in ALC886 HD Audio Codec | | | |
| Ethernet | 2 x RJ45 Gigabit LAN (1 x RJ45 internal) | | | |
| USB | 6 x USB2.0 (4 x USB internal) 4 x RS232 (3 x RS232 internal) | | | |
| Expansion Slot | 1 x Mini PCIe (Internal) | | | |
| SSD Interface | 1 x Mini PCIe SSD | | | |
| Power Input | DC-IN (Lockable, Power Jack) | | | |
| Security | Trusted Platform Module (TPM 1.2) | | | |
| Input/ Output Connectors | | | | |
| Ethernet LAN | 1 x RJ45 - 10/100/1000 Mbps | | | |
| COM | 1 x RS232 | | | |
| USB | 2 x USB Type-A Receptacle | | | |
| Power | 1 x 12V DC | | | |

| Mechanical Specification | | | | |
|-----------------------------|---------------------------------|------------|------------|------------|
| Cooling System | Fanless | | | |
| Mounting | Yoke Mount, VESA Mount | | | |
| Environmental Consideration | | | | |
| Operating Temperature | 0°C to +45°C | | | |
| Operating Humidity | 30% to 90% (non-condensing) | | | |
| IP Rating | Full IP65 | | | |
| Power Specifications | | | | |
| Power Input | 12V DC IN (Lockable Power Jack) | | | |
| Power Consumption | 38W (typ.) | 43W (typ.) | 45W (typ.) | 56W (typ.) |
| Standards and Certification | | | | |
| Certification | CE, FCC, RoHs | | | |

Software support – Drivers

| Item | Driver | Windows 7 | Windows 8 | Windows 10 |
|------|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1 | Chipset Driver | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2 | Graphics Driver | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3 | Audio Driver | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 | Intel Sideband Fabric Device (Intel MBI) Driver | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 | Intel Trusted Engine Interface (Intel TXE) Driver | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6 | USB 3.0 Driver | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | Watchdog Driver | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Software Support- SDK

| Item | File Type | Description |
|------|-------------------|---------------------|
| 1 | Watchdog SDK & AP | Watchdog SDK and AP |