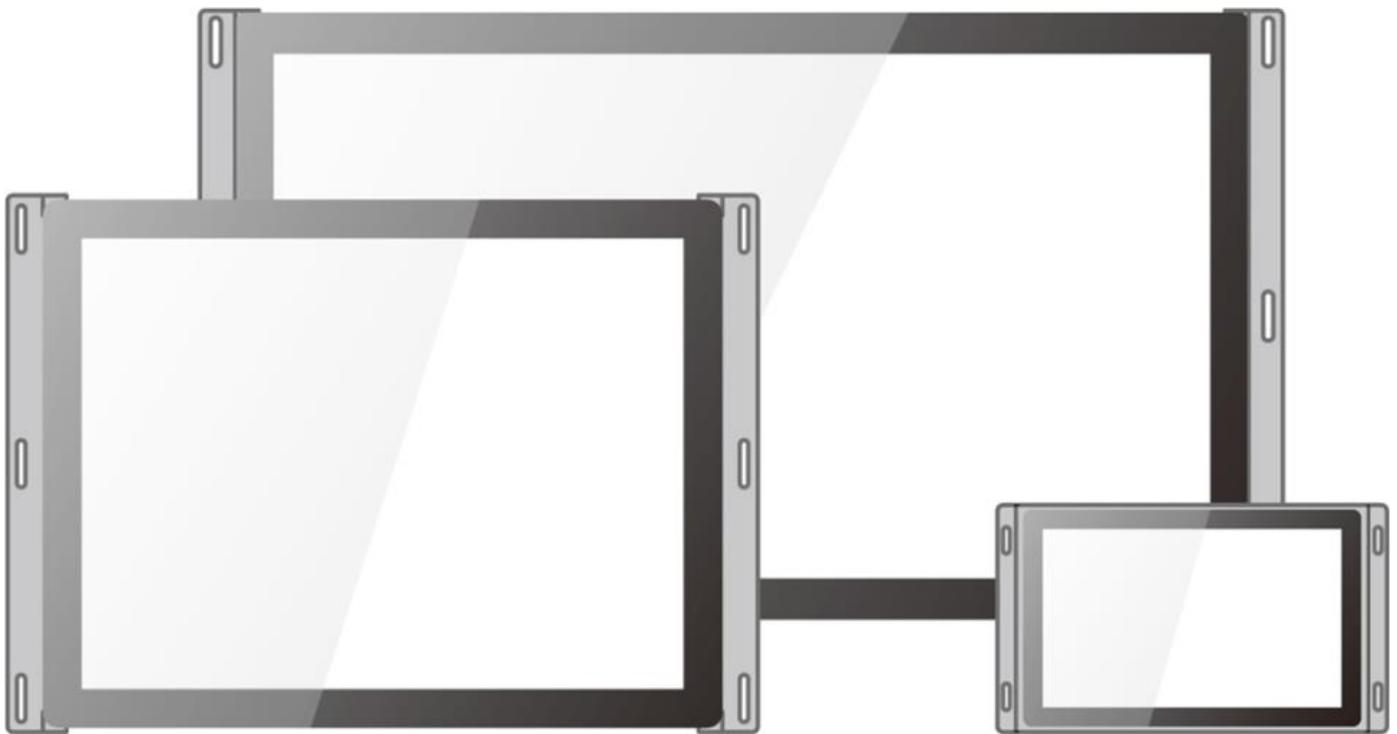


7~23.8"

P-Cap Open Frame Panel PC

Intel® Celeron® Bay Trail-M N2930 1.83 GHz



Model No. W07IB3S-POT1
W10IB3S-POA1
R15IB3S-POC3
W15IB3S-POA4
R19IB3S-POM1
W22IB3S-POA3
W24IB3S-POA2

User Manual

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Preface

Copyright Notice

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Disclaimer

We reserve the right to make changes, without notice, to any product, including circuits and/or software described or contained in this manual in order to improve design and/or performance. We assume no responsibility or liability for the use of the described product(s) conveys no license or title under any patent, copyright, or masks work rights to these products, and make no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified. Applications that are described in this manual are for illustration purposes only. We make no representation or guarantee that such application will be suitable for the specified use without further testing or modification.

Warranty

Our warranty guarantees that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at his/her option, repair or replace the defective product at no charge to the customer, provide it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service. If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W16Axxxxxxx means October of year 2016.

Customer Service

We provide a service guide for any problem by the following steps: First, visit the website of our distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance.

You may need the following information ready before you call:

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

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

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 '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 choc 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 risque 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 châssis 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 châssis.

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 châssis.

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.
- 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.

CAUTION

Always ground yourself to remove any static charge before touching the board. 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.

About This User Manual

This User Manual provides information about using the Winmate®7~23.8" P-Cap Open Frame Panel PC. The documentation set provides information for specific user needs, and includes:

- **7~23.8" P-Cap Open Frame Panel PC User Manual** – contains detailed description on how to use the panel PC, its components and features.



NOTE:

Some pictures in this guide are samples and can differ from actual product.

Document Revision History

Version	Date	Note
1.0	22-Sep-2017	New document release
1.1	22-Feb-2018	Revise mechanical drawing
1.2	30-Apr-2019	Add 23.8" model.

Chapter 1: Introduction

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

1.1 Overview

Congratulations on purchasing Winmate® P-Cap Open Frame Panel PC. Versatile panel PC in an open-frame housing designed for rear and VESA mounting with integrated bracket design for KIOSK applications.

The Winmate P-Cap Open Frame Panel PC is a microprocessor-controlled computer that runs on Intel® Celeron® Bay Trail-M N2930 processor and has 7", 10.1", 15", 15.6", 21.5" and 23.8" screen size. Panel PC feature all necessary connectors, USB 3.0 and USB 2.0, serial port, HDMI and two RJ-45 Ethernet ports. It is designed to meet the demanding performance requirements of today's business and industrial applications.

1.2 Product Features

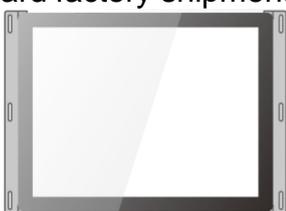
Winmate® P-Cap Open Frame Panel PC features:

- 7", 10.1", 15", 15.6", 19", 21.5" and 23.8" screen size
- Intel® Celeron® Bay Trail-M N2930 1.83 GHz
- Slim-line design in open-frame housing
- Multi Touch P-Cap flat design
- Windows 8.1 /10 IoT system
- 12V DC input with power jack
- Wall mount
- Suitable for KIOSK applications

1.3 Package Contents

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**

Varies by product specifications



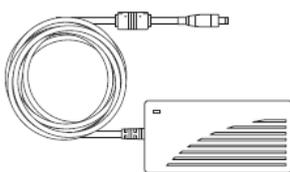
- **Quick Start Guide (Hardcopy)**

Part No.9152111102J



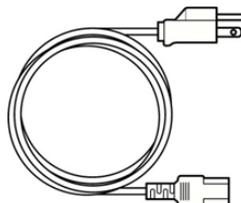
- **Driver CD**

Part No.9171111103M



- **AC Adapter (12V/ 50W)**

Part No.922D050W12VA



- **Power Cable**

Varies by country



- **Black Screw Bolts***

Varies by product

**Notice: Screw bolts provided by Winmate only to be used to screw the panel PC onto a console from the rear side. If you prefer your own bolts, please make sure to use M4 and 30mm in length*

1.4 Product Overview

This section describes physical appearance of the Open Frame Panel PC.

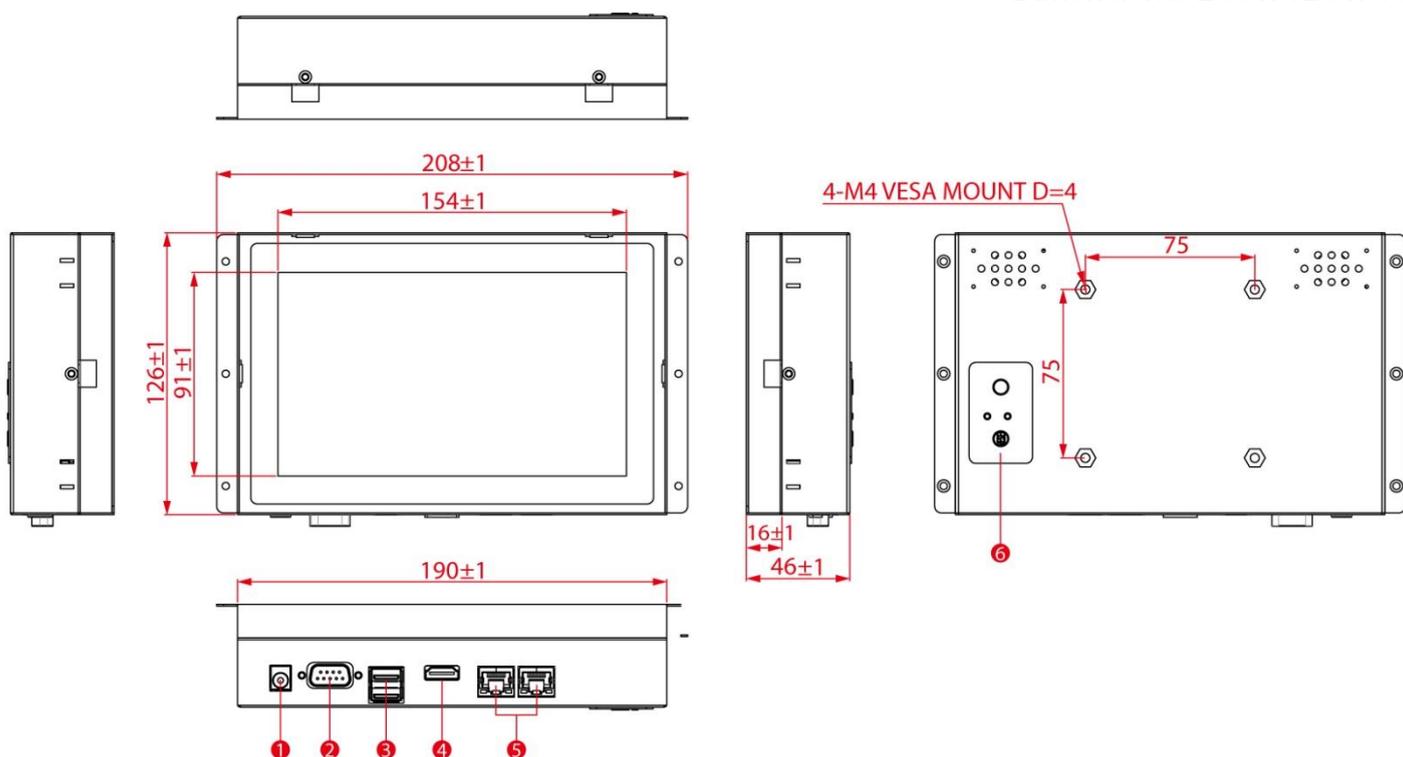
Notice that input and output connectors vary by product size and specifications. The picture above shows only a prototype model for information purposes only.

This section describes physical appearance of the P-Cap Open Frame Panel PC.

Notice that input and output connectors vary by product size and specifications. The picture above shows only a prototype model for information purposes only.

7", W07IB3S-POT1

Unit: mm
Dimensions: 208 x 126 x 46

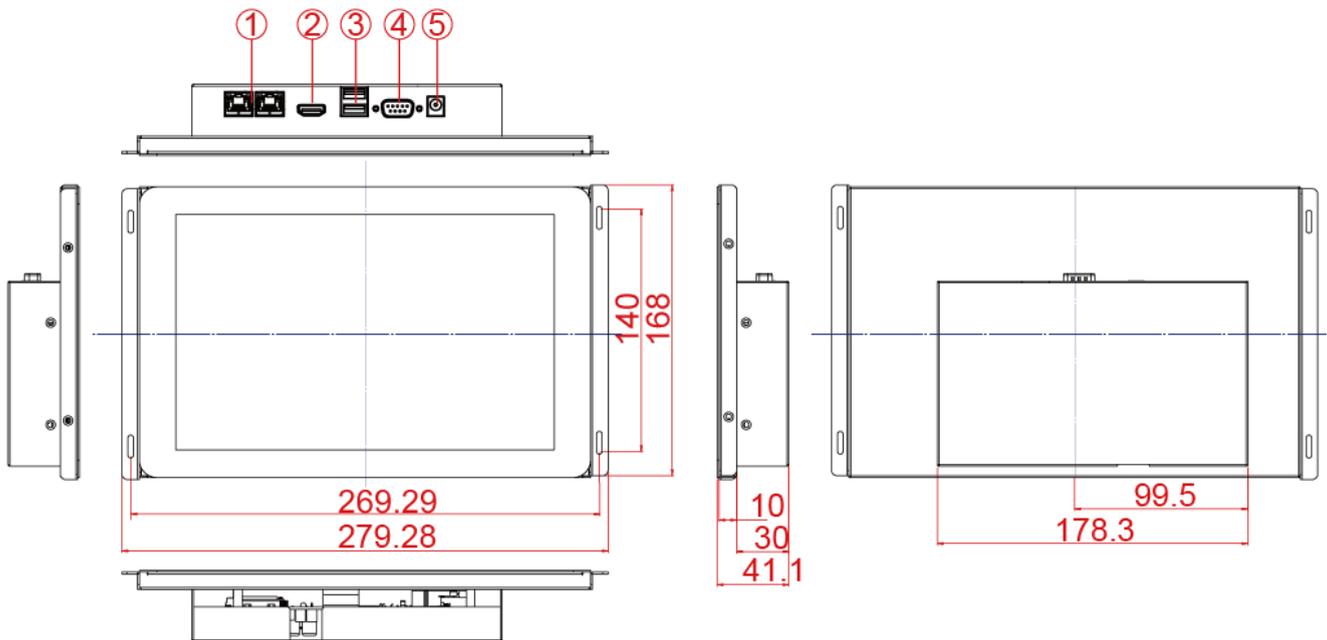


No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

10.1", W10IB3S-POA1

Unit: mm

Dimensions: 279.28 x 168 x 41.1

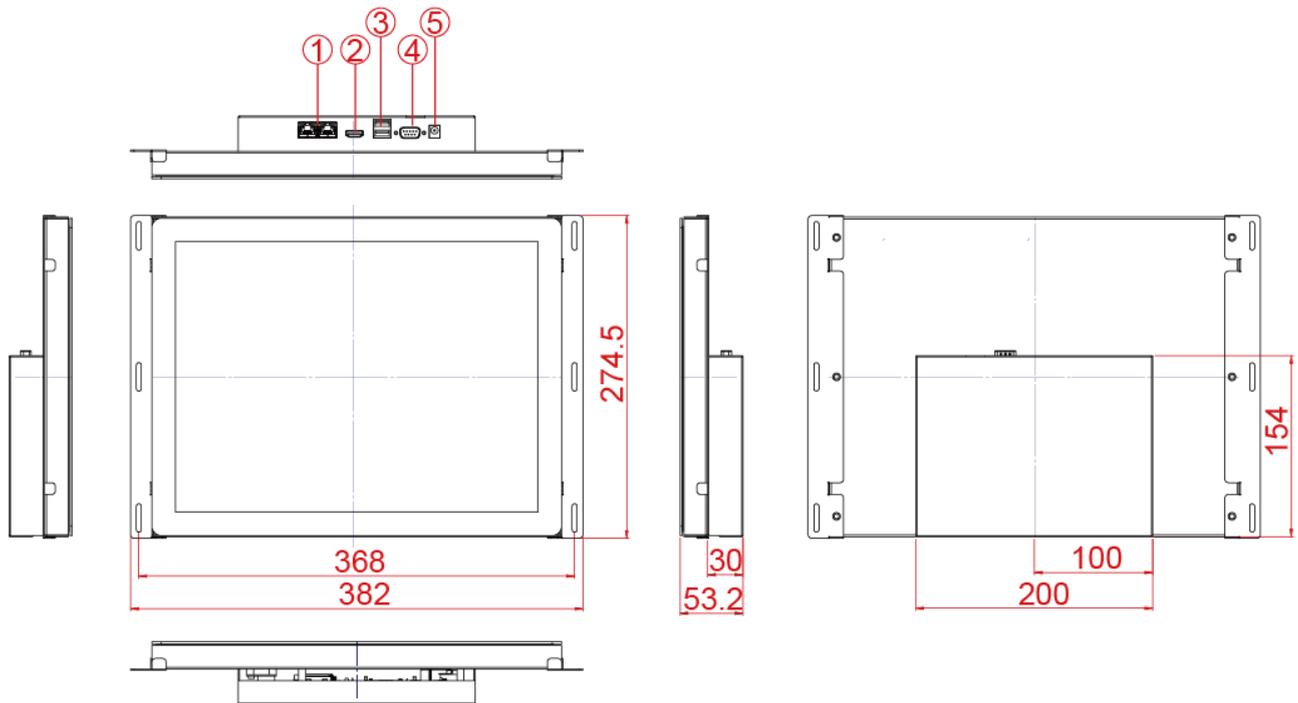


No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

15", R15IB3S-POC3

Unit: mm

Dimensions: 382 x 274.5 x 53.2

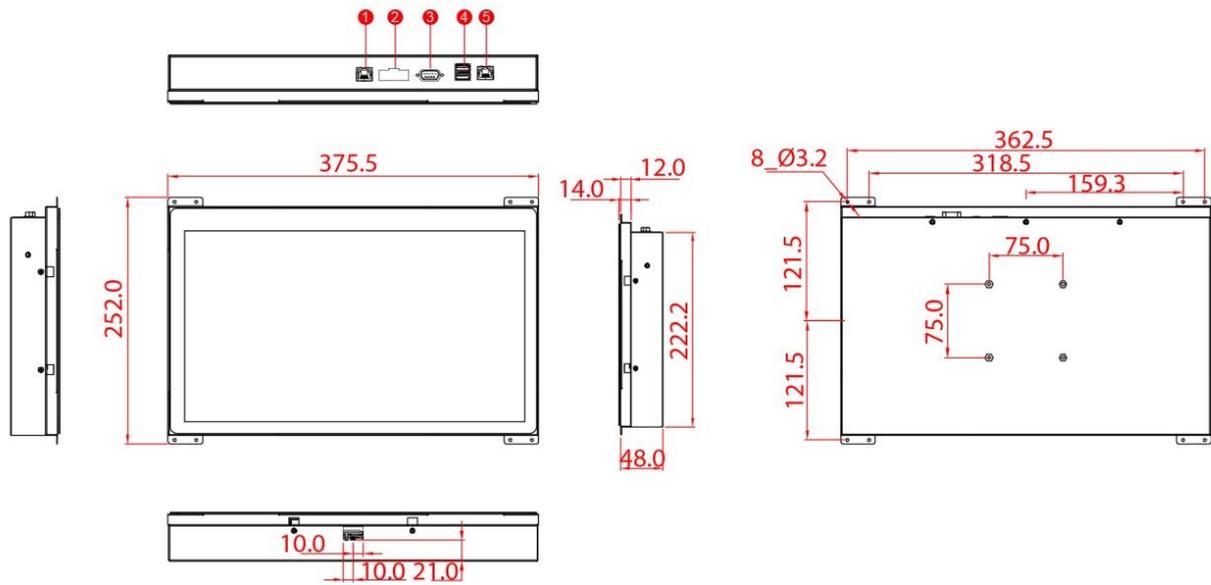


No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

15.6", W15IB3S-POA4

Unit: mm

Dimensions: 375.5 x 252 x 48

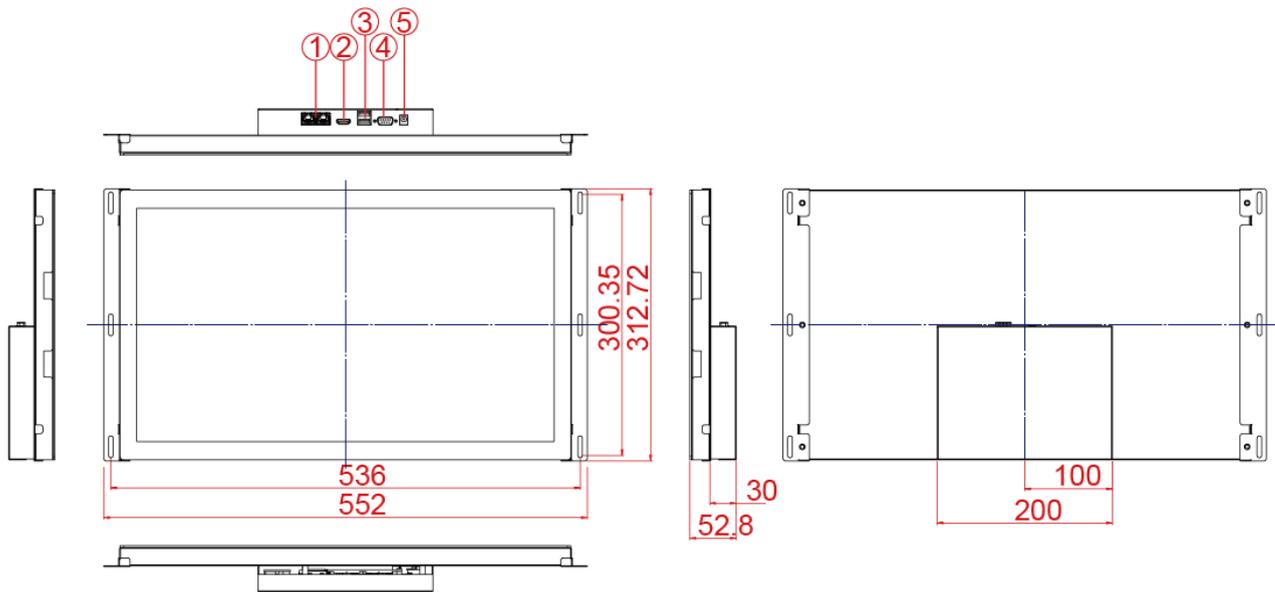


No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

21.5", W22IB3S-POA3

Unit: mm

Dimensions: 552 x 312.72 x 52.8

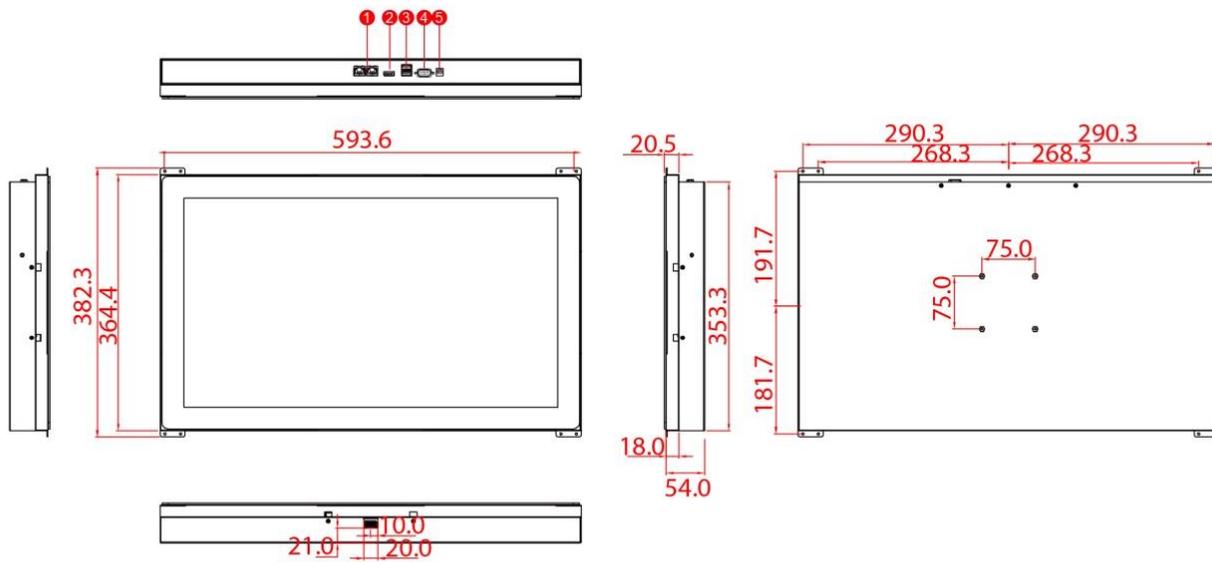


No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

23.8", W24IB3S-POA2

Unit: mm

Dimensions: 593.6 x 382.3 x 54



No	Description	No	Description
①	RJ-45 (LAN) x 2	④	RS-232/422/485
②	HDMI	⑤	12V DC IN Power Jack
③	USB 2.0 x 1, USB 3.0 x 1		

Chapter 2: Mounting

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



2.1 Wall Mount

The Open Frame Panel PC supports open frame wall mount that enables you to install the unit onto a wall (where space has been cut out to accommodate the rest of the hardware).



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.



CAUTION/ ATTENTION

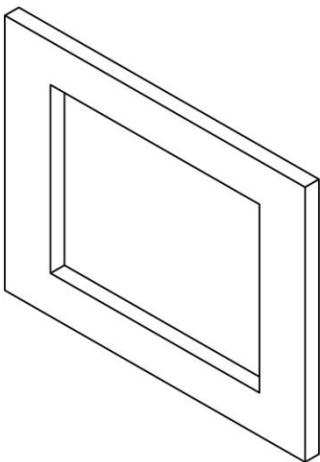
Follow mounting instructions and use recommended mounting hardware to avoid the risk of injury.

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

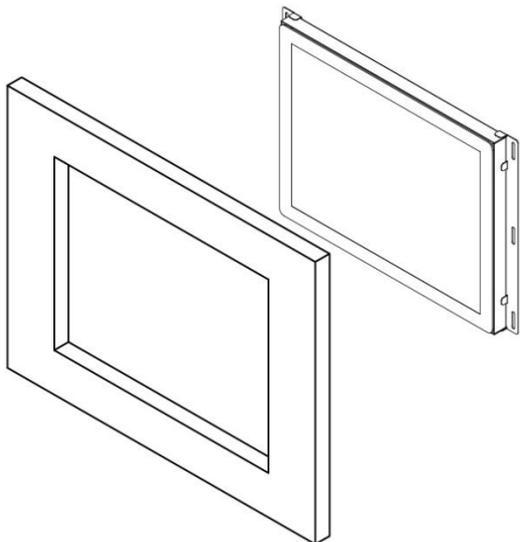
Installation Instruction

1. Make a cutout on the fixture (ex. wall) according to the cutout dimensions of the panel PC.
2. Based on the drawing, mark screw holes on the rear side of the fixture. Place panel PC on the fixture from the rear side.
3. Use electric screwdriver to fasten M3 screws from the rear side.
4. You complete the installation. Please connect all the peripherals if needed.

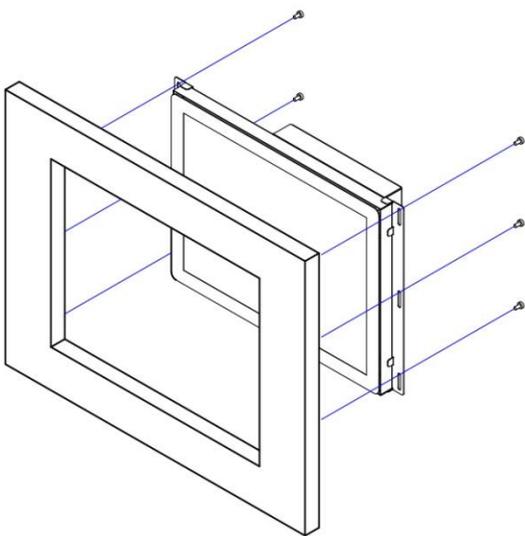
1



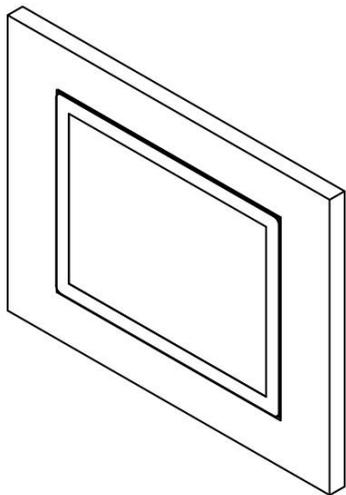
2



3



4



Chapter 3: Getting Started

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



3.1 Cable Mounting Considerations

For a nice look and safe installation, make sure cables are neatly hidden behind the device.



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.

3.2 Wiring Requirements

The following common safety precautions should be observed before installing any electronic device:

- Strive to use separate, non-intersecting paths to route power and networking wires. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.
- Keep the wires separated according to interface. The rule of thumb is that wiring that shares similar electrical characteristics may 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.
- Do not run signal or communication wiring and power wiring in the same conduit. To avoid interference, wires with different signal characteristics (i.e., different interfaces) should be routed separately.
- Be sure to disconnect the power cord before installing and/or wiring your device.
- Verify the maximum possible current for each wire gauge, especially for the power cords. Observe all electrical codes dictating the maximum current allowable for each wire gauge.
- If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

Be careful when handling the unit. When the unit is plugged in, the internal components generate a lot of heat which may leave the outer casing too hot to touch.

3.3 Connecting Power

This section provides information on how to use connectors on the P-Cap Open Frame Panel PC. Notice that connectors are located on the top rear side of the device. Be cautious while working with these modules. Please carefully read the content of this chapter in order to avoid any damages.

Installation instruction:

1. Connect the Panel PC to a power jack.
2. Connect the other side of the thermal block to the AC adapter.
3. Connect the AC adapter to the power cord.
4. Plug in the power cord to a working AC wall outlet. The device will boot automatically.



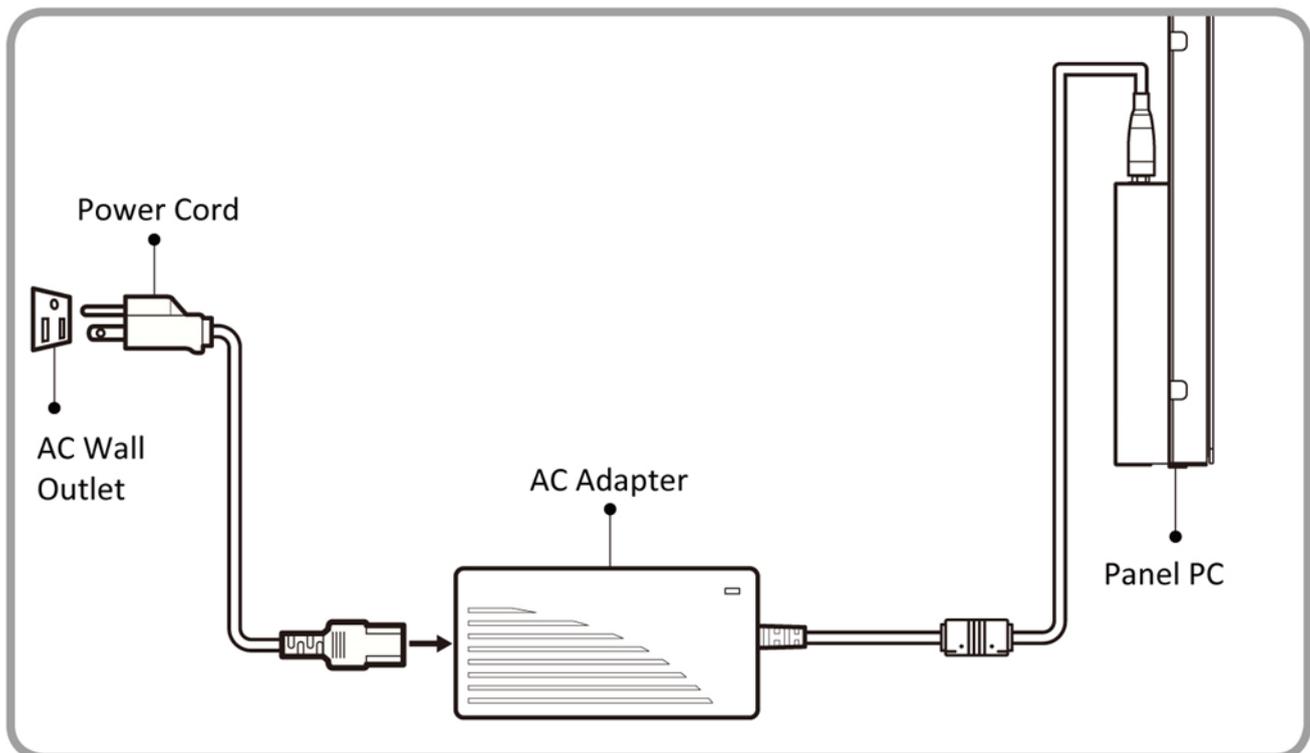
CAUTION

Use only the AC adapter included in your package (Rating: Output 4.2 A). Using other AC adapters may damage the device.



ALTERNATING CURRENT

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

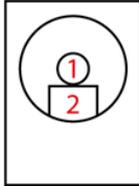


3.4 Connecting to Other Devices

This section explains how to connect external interfaces to the Panel PC.

3.4.1 Power Input Connector

DC power source input is a power jack connector. Power Input is 12V DC in.



Pin No	Name
1	12V
2	GND

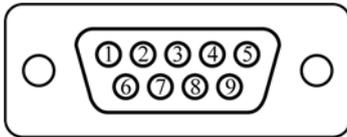


Voltage

Minimum Voltage 11.4V
Maximum Voltage 12.6V
Maximum Current 4.2A

3.4.2 Serial Port Connector

Use COM1 serial port connector to connect your panel PC to external devices such as mouse, modem or printer.



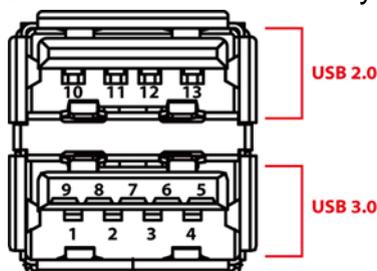
Refer to User Manual for instructions on to configure serial port settings.

Pin No	RS232	RS422	RS485
1	DCD	TxD-	D-
2	RXD	TxD+	D+
3	TXD	RxD+	NC
4	DTR	RxD-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

how

3.4.3 USB 2.0 & USB 3.0 Connector

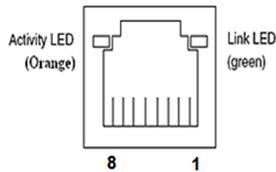
Use USB connector to connect your panel PC to other USB 2.0/ USB3.0 compatible devices.



Pin No	Name	Pin No	Name
1	+5V	2	USB_D-
3	USB_D+	4	GND
5	STDA_SSRX-	6	STDA_SSRX+
7	GND_DRAIN	8	STDA_SSTX-
9	STDA_SSTX+	10	+5V
11	USB_D-	12	USB_D+
13	GND		

3.4.4 RJ-45 Connector

The panel PC supports one RJ45 10/100/1000 Mbps Ethernet interface for connecting to the internet.



Pin №	Signal Name	Pin №	Signal Name
1	TX1+	2	TX1-
3	TX2+	4	TX2-
5	TX3+	6	TX3-
7	TX4+	8	TX4-

3.4.5 HDMI Connector

Use HDMI connector to connect your Panel PC to external display.



Pin №	Signal Name	Pin №	Signal Name
1	TMDS_DATA2+	2	GND
3	TMDS_DATA2-	4	TMDS_DATA1+
5	GND	6	TMDS_DATA1-
7	TMDS_DATA0+	8	GND
9	TMDS_DATA0-	10	TMDS_CLOCK+
11	GND	12	TMDS_CLOCK-
13	CEC	14	NC
15	DDC_CLOCK	16	DDC_DATA
17	GND	18	5V
19	Hot Plug Detect		

3.5 Configuring Serial Port Settings

Serial port COM1 can be configured for RS-232, RS-422 or RS-485. Jumpers are located on the motherboard. You need to open the housing in order to access the jumpers.



CAUTION/ ATTENTION

It is recommended to use factory jumper settings. Opening the housing when it is sealed may damage the device and its parts.

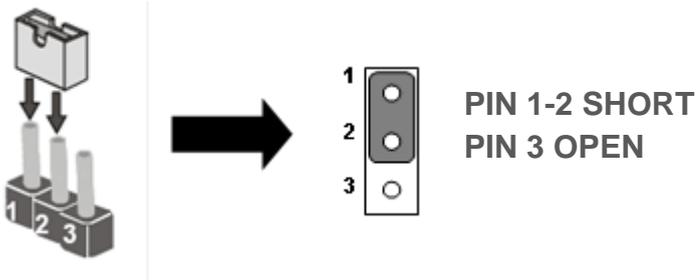
Il est recommandé d'utiliser la configuration d'usine de cavalier. Ouvrir le châssis lorsqu'il est scellé peut endommager l'appareil et ses pièces.



NOTE:

A pair of needle nose pliers may be helpful when working with jumpers. If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes. Generally, you simply need a standard cable to make most connections.

The jumper setting diagram is shown below. When the jumper cap is placed on both pins, the jumper is SHORT. The illustration below shows a 3-pin jumper; pins 1 and 2 are short. If you remove the jumper cap, the jumper is OPEN.



The picture below shows RS-232/422/485 (J8/J9) jumper setting.

RS232 [Ⓢ]		RS422 [Ⓢ]		RS485 [Ⓢ]	
JP8 [Ⓢ]	JP9 [Ⓢ]	JP8 [Ⓢ]	JP9 [Ⓢ]	JP8 [Ⓢ]	JP9 [Ⓢ]
<p>RS232</p>	<p>RS232</p>	<p>RS422</p>	<p>RS422/485</p>	<p>RS485</p>	<p>RS422/485</p>

Example: To make RS-232 Settings, set the Jumper 8 Pin 1-2 to the SHORT position, and Jumper 9 Pin 1-2, 4-5, 7-8, 10-11 to the SHORT position.

Chapter 4: Operating the Device

In this chapter you will find instructions on how to operate the panel PC.



4.1 Operating System

P-Cap Open Frame Panel PC supports several versions of Windows OS: Windows 10 IoT, , Windows Embedded 8 Standard, Windows 7 Pro for Embedded Systems, and Windows Embedded Standard 7– WS7P.



IMPORTANT:

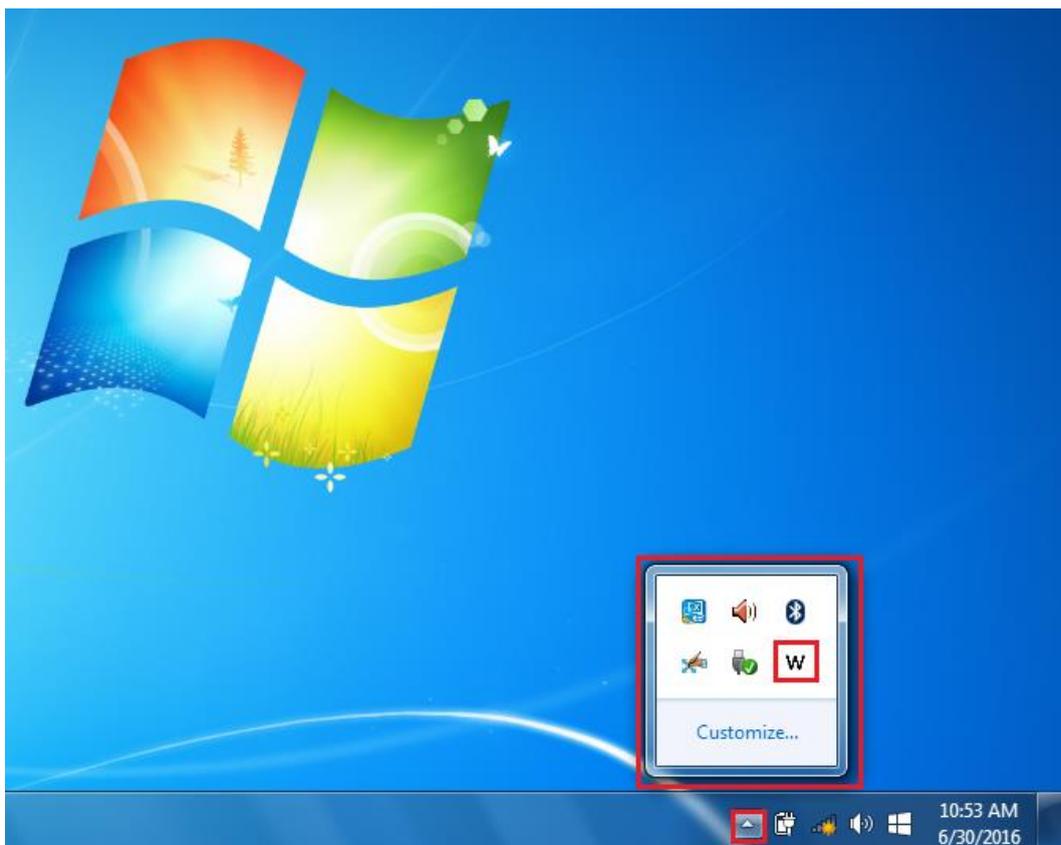
The device is shipped with the OS System according to your order. Contact us if you have any questions regarding OS settings.

4.2 How to Enable Watchdog

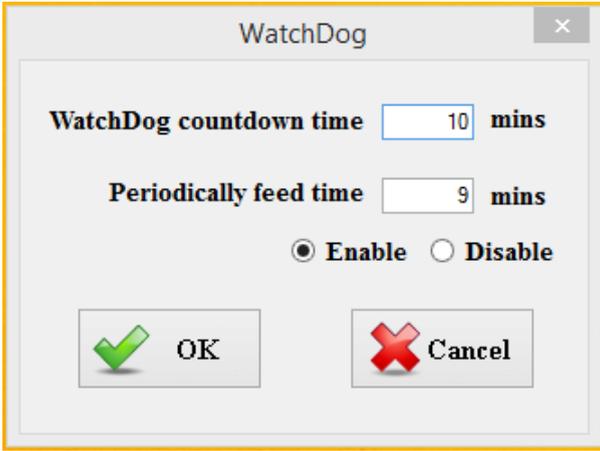
To enable Watchdog, you need to download Winmate Watchdog utility. Find more information on Watchdog in “Watchdog Guide” that you can download from Winmate Download Center. Refer to the User Manual for more details.

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>

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:

1. Connect the computer to the power source. Make sure the computer stays plugged in to power source during the recovery process.
2. Turn on the computer, and when the boot screen shows up, press **Tab+ F6** to initiate the Recovery Wizard.
3. The following screen shows the Recovery Wizard. Click **Recovery** button to continue.



4. 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.

Chapter 4: 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.

5.1 How and When to Use BIOS Setup

To enter the BIOS setup, you need to connect an external USB keyboard, external monitor and press Del key when the prompt appears on the screen during start up. The prompt screen shows only few seconds so need press **Del** key quickly.



IMPORTANT:

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

You may need to run BIOS setup utility for reasons listed below:

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

BIOS Navigation Keys

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 ↑ and cursor ↓ 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:**

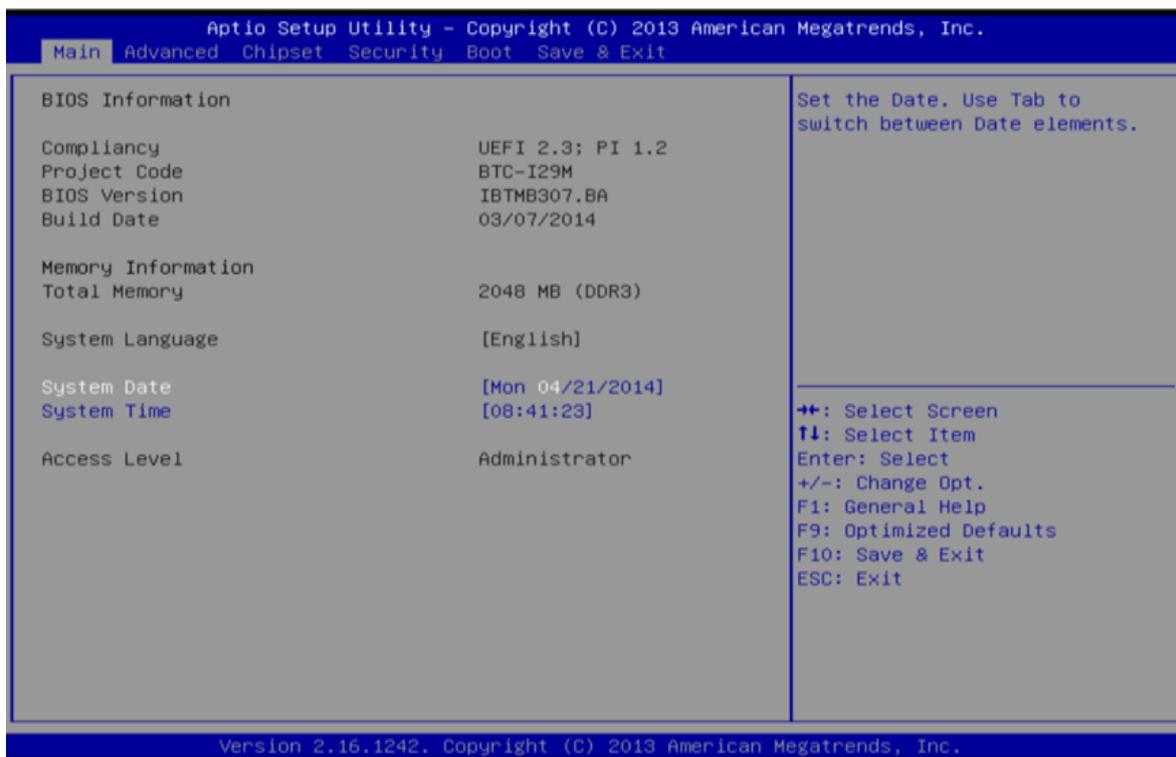
You can press the F1, F2, F3, F4, +/-, and Esc keys by connecting a USB keyboard to your computer.

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

5.2 BIOS Functions

5.2.1 Main Menu

The Main menu displays the basic information about your system including BIOS version, processor RC version, system language, time, and date. 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.



BIOS Information

Shows system information including UEFI BIOS version, model name, built date, etc.

Total Memory

Shows system memory size, VGA shared memory will be excluded.

System Date

Set the system date. Note that the 'Day' automatically changes when you set the date.

System Time

Set the system internal clock.

Access Level

Shows the access level of current user.

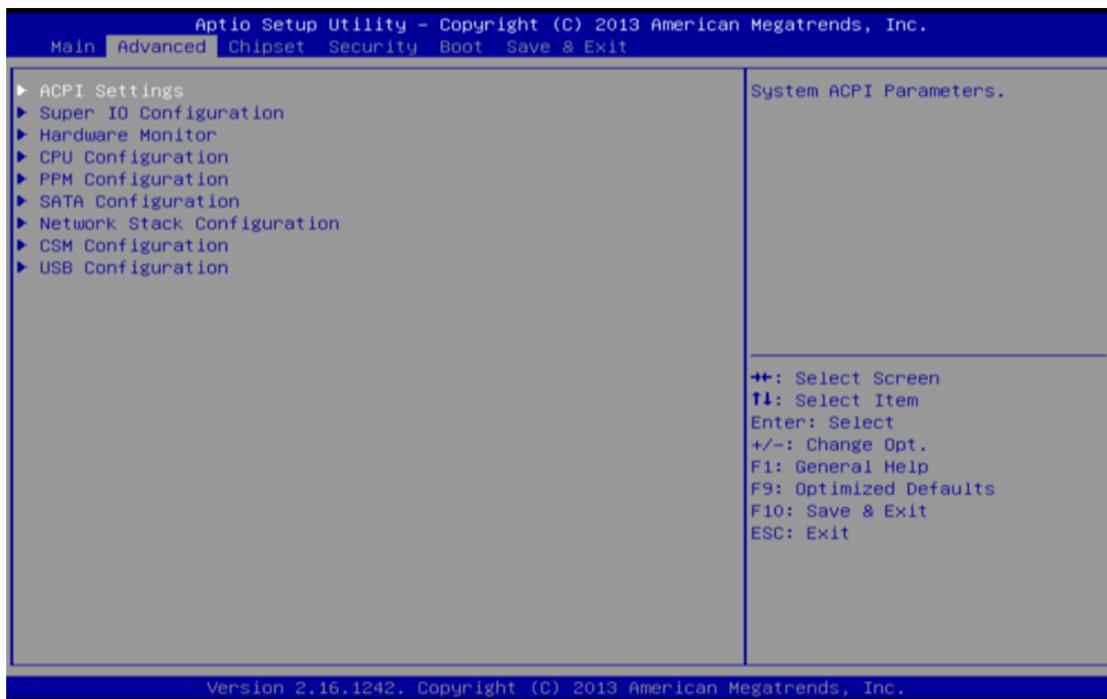
5.2.2 Advanced Settings

Select the Advanced Tab from the setup menu to enter the advanced BIOS setup screen. You can select any of the items on the left frame of the screen to go to the sub menu for the item, such as CPU Configuration. You can use the <Arrow> keys enter all advanced BIOS setup options. The advanced BIOS setup menu is shown below. The submenus described on the following pages.

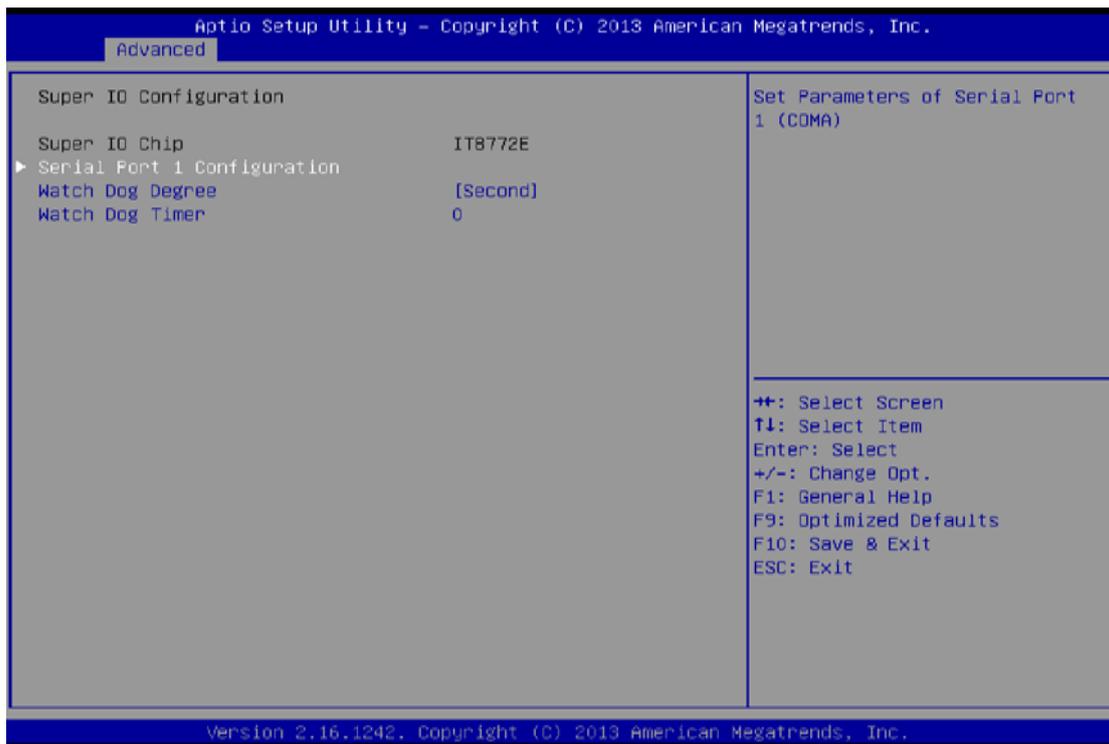


CAUTION

- Handle advanced BIOS settings page with caution. Any changes can affect the operation of your computer.
- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.
- The options and default settings might be different by RAM or CPU models.



5.2.2.1 Super I/O Configuration



Serial Port 1 Configuration

Serial Port

This item enables or disables Serial Port (COM).

Options: Enabled (Default) / Disabled

Change Settings

This item allows you to select an optimal setting for Super IO device.

Options: Auto (Default) / IO=3F8h; IRQ=4 / IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12

Watch Dog Degree

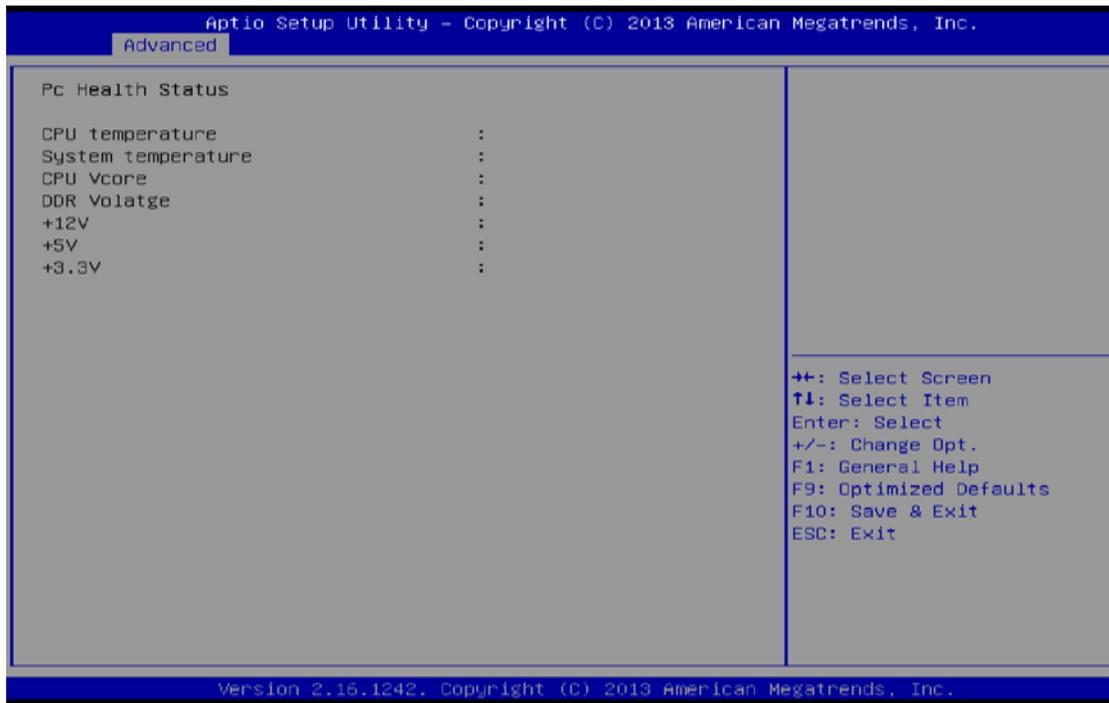
This item allows you to determine the functional degree of Watch Dog.

Options: Second (Default) / Minute

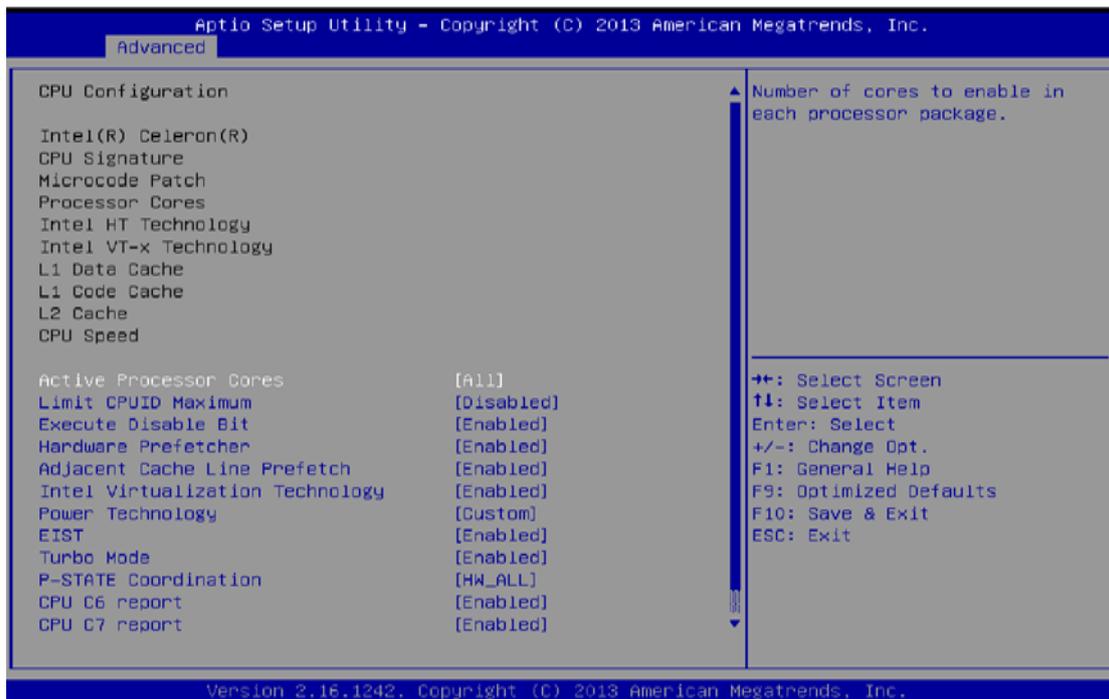
Watch Dog Timer

Options: 0 for disabled (Default) / Min=1, Max=65535

5.2.2.2 Hardware Monitor



5.2.2.3 CPU Configuration



Active Processor Cores

This item sets number of cores to enable in each processor package

Options: All (Default) / 1

Limit CPUID Maximum

When the computer is booted up, the operating system executes the CPUID instruction to identify the processor and its capabilities. Before it can do so, it must first query the processor to find out the highest input value CPUID recognizes. This determines the kind of basic information CPUID

can provide the operating system.

Options: Disabled (Default) / Enabled

Execute-Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.).

Options: Enabled (Default) / Disabled

Hardware Prefetcher

The processor has a hardware prefetcher that automatically analyzes its requirements and prefetches data and instructions from the memory into the Level 2 cache that are likely to be required in the near future. This reduces the latency associated with memory reads.

Options: Enabled (Default) / Disabled

Adjacent Cache Line Prefetch

The processor has a hardware adjacent cache line prefetch mechanism that automatically fetches an extra 64-byte cache line whenever the processor requests for a 64-byte cache line. This reduces cache latency by making the next cache line immediately available if the processor requires it as well.

Options: Enabled (Default) / Disabled

Intel Virtualization Technology

Virtualization Technology can virtually separate your system resource into several parts, thus enhance the performance when running virtual machines or multi interface systems.

Options: Enabled (Default) / Disabled

Power Technology

This item enables or disables the power management features.

Options: Custom (Default) / Disable / Energy Efficient

EIST

This item enables or disables Intel SpeedSteps.

Options: Enabled (Default) / Disabled

Turbo Mode

This item enables or disables Turbo Mode

Options: Enabled (Default) / Disabled

P-STATE Coordination

This item changes P-STATE Coordination.

Options: HW_ALL (Default) / SW_ALL / SW_ANY

CPU C6 Report

This item enables or disables CPU C6 (ACPI C3) report to OS.

Options: Enabled (Default) / Disabled

CPU C7 Report

This item enables or disables CPU C7 (ACPI C3) report to OS.

Options: Enabled (Default) / Disabled

Package C state limit

This item enables or disables package C state limit

Options: No Limit (Default) / C0 / C1 / C3 / C6 / C7

5.2.2.4 PPM Configuration



EIST

This item enables or disables Intel SpeedSteps.

Options: Enabled (Default) / Disabled

CPU C state Report

This item enables or disables CPU C state report to OS.

Options: Enabled (Default) / Disabled

Enhanced C state

This item enables or disables Enhanced CPU C state

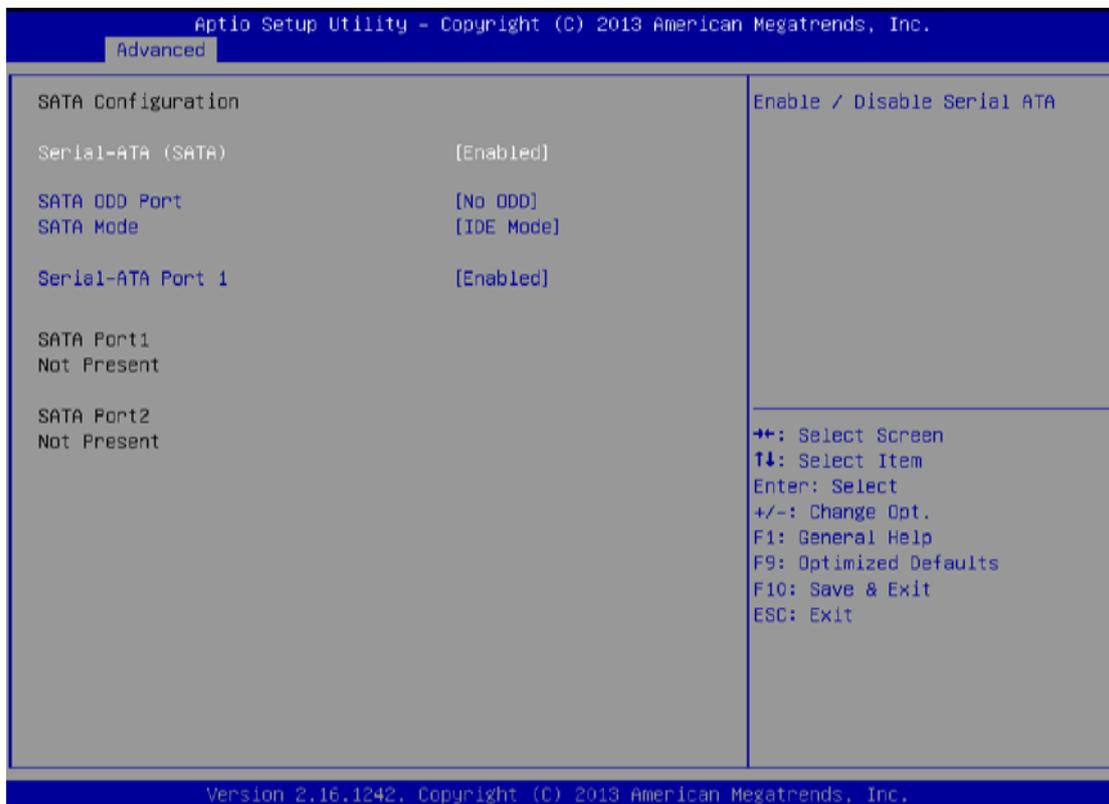
Options: Enabled (Default) / Disabled

Max CPU C-state

This option controls Max C state that the processor will support.

Options: C7 (Default) / C6 / C1

5.2.2.5 SATA Configuration



Serial-ATA (SATA)

This item enables/disables Serial ATA Device.

Options: Enabled (Default) / Disabled

SATA ODD Port

This item selects SATA ODD Port

Options: No ODD (Default) / Port0 ODD / Port1 ODD

SATA Mode

This item determines how SATA controller(s) operate.

Options: IDE (Default) / AHCI

Serial-ATA Port 1

This item enables/disables Serial ATA Port 1

Options: Enabled (Default) / Disabled

5.2.2.6 Network Stack Configuration



Network Stack

This item enables or disables UEFI network stack

Options: Disabled (Default) / Enabled

Note: The following items appear only when you set the Network Stack function to [Enabled]

IPv4 PXE Support

This item enables or disables IPv4 PXE Boot Support. If disabled IPv4 boot option will not be created.

Options: Enabled (Default) / Disabled

IPv6 PXE Support

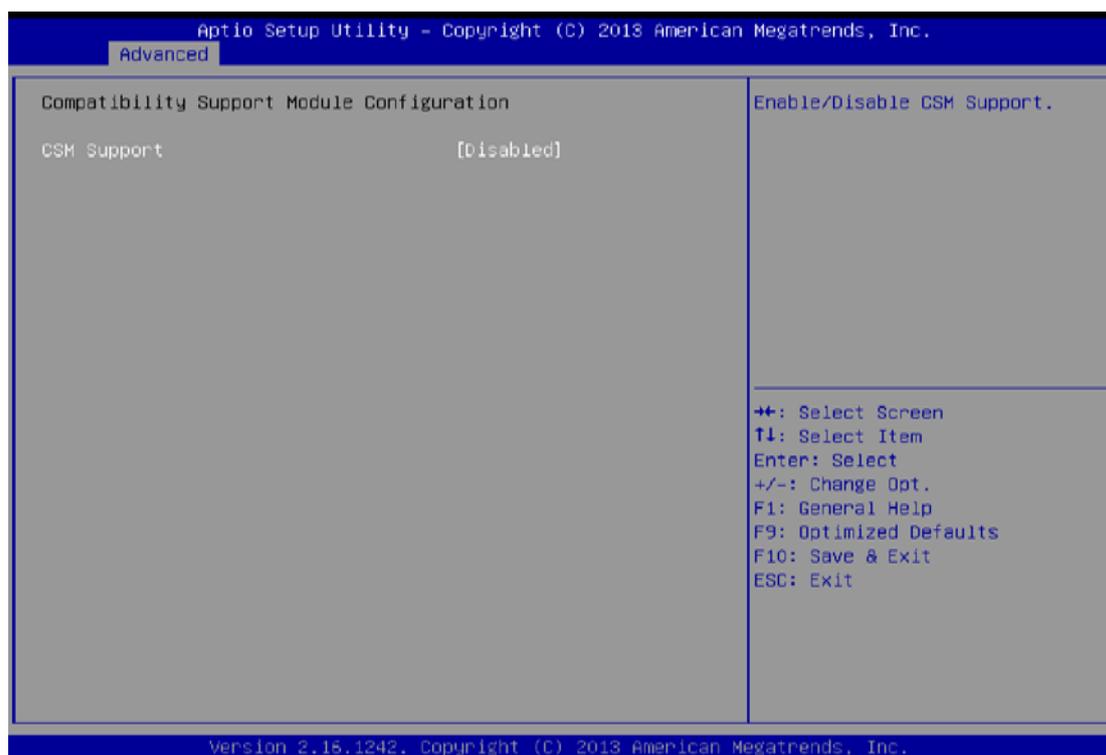
This item enables or disables IPv6 PXE Boot Support. If disabled IPv6 boot option will not be created.

Options: Enabled (Default) / Disabled

PXE boot wait time

Wait time to press ESC key to abort the PXE boot.

5.2.2.7 CSM Configuration



CSM Support

This item enables or disables CSM Support

Options: Disabled (Default) / Enabled

Note: The following items appear only when you set the CSM Support to [Enabled]

GateA20 Active

Upon Request – FA20 can be disabled using BIOS services. Always – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB

Options: Upon Request (Default) / Always

Option ROM Messages

This item sets the display mode for option ROM.

Options: Force BIOS (Default) / Keep Current

INT19 Trap Response

BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED–execute the trap during legacy boot.

Options: Immediate (Default) / Postponed

Boot option filter

This option controls what devices system can boot to.

Options: Legacy only (Default) / UEFI and Legacy / UEFI only

Network

This option controls the execution of UEFI and Legacy PXE OpROM

Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Storage

This option controls the execution of UEFI and Legacy Storage OpROM

Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Video

This option controls the execution of UEFI and Legacy Video OpROM

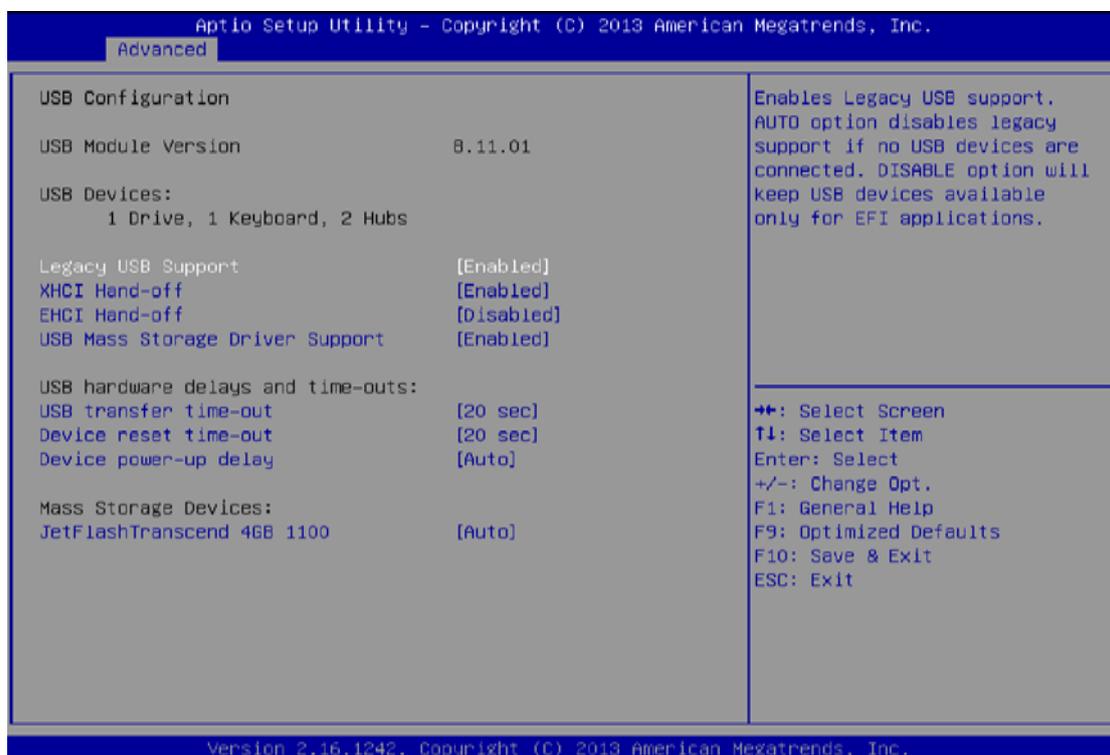
Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Other PCI devices

For PCI devices other than Network, Mass storage or video defines which OpROM to launch.

Options: Legacy only (Default) / UEFI first

5.2.2.8 USB Configuration



Legacy USB Support

This item determines if the BIOS should provide legacy support for USB devices like the keyboard, mouse, and USB drive. This is a useful feature when using such USB devices with operating systems that do not natively support USB (e.g. Microsoft DOS or Windows NT).

Options: Enabled (Default) / Disabled / Auto

XHCI Hand-Off

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

Options: Enabled (Default) / 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.

Options: Disabled (Default) / Enabled

USB Mass Storage Driver Support

The item allows you to enable or disable USB Mass Storage Driver Support.

Options: Enabled (Default) / Disabled

USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.

Options: 20 sec (Default) / 1 sec / 5 sec / 10 sec

Device reset time-out

The item sets USB mass storage device Start Unit command time-out.

Options: 20 sec (Default) / 10 sec / 30 sec / 40 sec

Device power-up delay

“Auto” uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.

Options: Auto (Default) / Manual

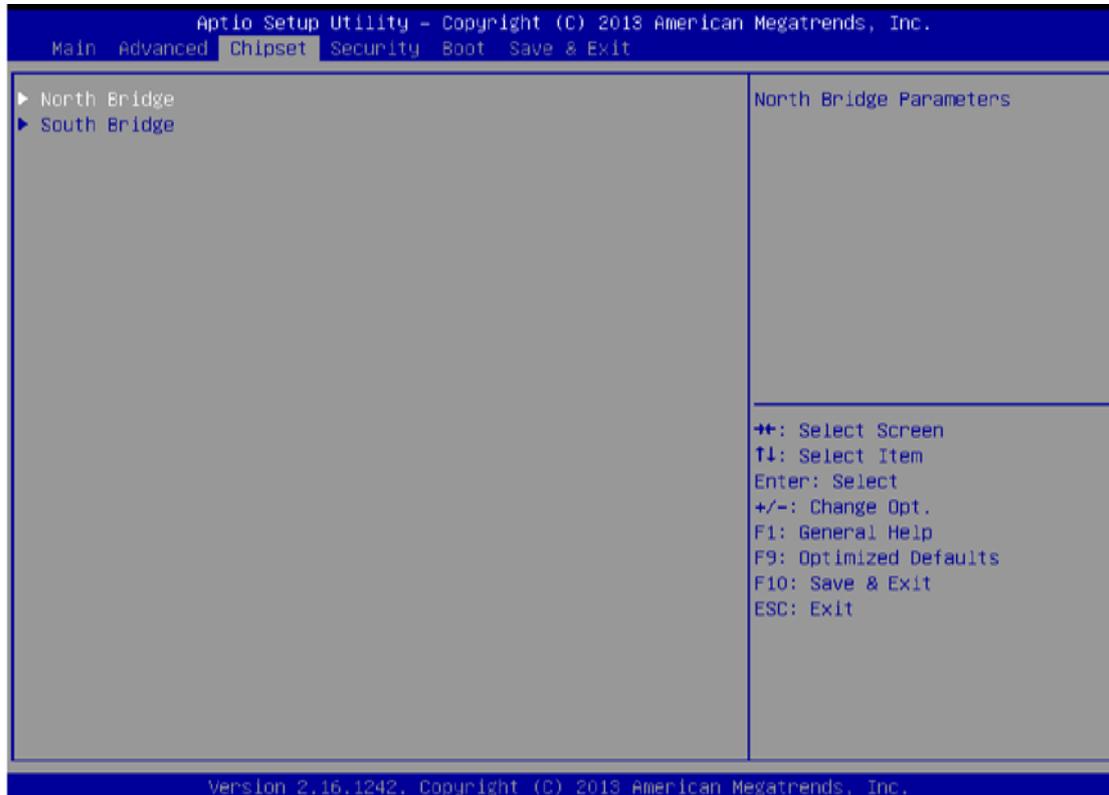
Device power-up delay in seconds

Delay range is 1 ~ 40 seconds, in one second increments.

Options: 5 (Default)

5.2.3 Chipset Menu

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.



5.2.3.1 North Bridge

Intel IGD Configuration

Integrated Graphics Device

Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Apaptor.

Disable: Always disable IGD.

Options: Enabled (Default) / Disabled

IGD Turbo Enable

Enable: Enable IGD Turbo Enable. Disable: Enable IGD Turbo Disable.

Options: Enabled (Default) / Disabled

Primary Display

This item selects which of IGD/PCI Graphics device should be Primary Display.

Options: IGD (Default) / Auto / PCI / SG

GFX Boost

This item enables or disables GFX Boost.

Options: Disabled (Default) / Enabled

PAVC

This item enables or disables Protected Audio Video Control

Options: LITE Mode (Default) / Disabled / SERPENT Mode

DVMT Pre-Allocated

This item selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device

Options: 64M (Default) / 96M / 128M / 160M / 192M / 224M / 256M / 288M / 320M / 352M / 384M / 416M / 448M / 480M / 512M

DVMT Total Gfx Mem

This item selects DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.

Options: 256MB (Default) / 128MB / MAX

Aperture Size

This item selects the Aperture Size.

Options: 256MB (Default) / 128MB / 512MB

GTT Size

This item selects the GTT Size.

Options: 2MB (Default) / 1MB

VCC_Vnn Config for Power state2

This item enables or disables Vcc Vnn Config for power state2

Options: Disabled (Default) / Enabled

RC6 (Render Standby)

This item enables or disables render standby support.

Options: Enabled (Default) / Disabled

LCD Control**Boot Display Device**

This item allows you to select the display device.

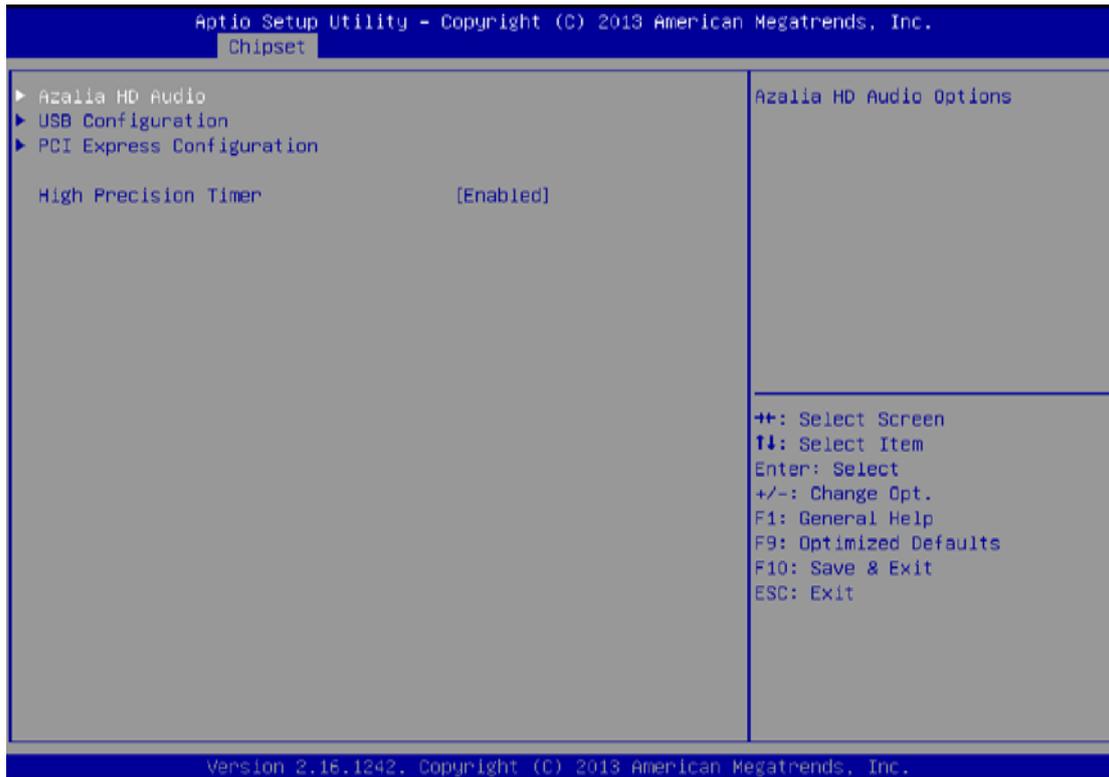
Options: Auto (Default)

Max TOLUD

This item sets maximum value of TOLUD.

Options: Dynamic (Default) / 1GB / 1.25GB / 1.5GB / 1.75GB / 2GB / 2.25GB / 2.5GB / 2.75GB / 3GB

5.2.3.2 South Bridge



Azalia HD Audio

Azalia Controller

This item controls detection of the Azalia device. Disabled = Azalia will be unconditionally disabled. Enabled = Azalia will be unconditionally Enabled. Auto = Azalia will be enabled if present, disabled otherwise.

Options: Enabled (Default) / Disabled

Azalia HDMI Codec

This item enables or disables internal HDMI codec for Azalia.

Options: Enabled (Default) / Disabled

HDMI Port B/C

This item enables or disables HDMI Port B/C.

Options: Enabled (Default) / Disabled

Audio AMP output

This item selects Audio AMP output dB value.

Options: 11dB (Default) / 14dB / 19dB / 25dB

USB Configuration

XHCI Mode

The item selects Mode of operation of xHCI controller.

Options: Smart Auto (Default) / Auto / Enabled / Disabled

USB 2.0(EHCI) Support

This item controls the USB EHCI (USB 2.0) functions. One EHCI controller must always be enabled.

Options: Disabled (Default) / Enabled

USB Per Port Control

Control each of the USB ports (0-3). Enable: Enable USB per port; Disable: Use USB port X settings.

Options: Enabled (Default) / Disabled

USB Port 0/1/2/3

This item enables or disables USB Port 0.

Options: Enabled (Default) / Disabled

PCI Express Configuration

Onboard LAN

This item enables or disables Onboard PCIE LAN.

Options: Enabled (Default) / Disabled

Onboard LAN Option ROM

This item enables or disables the Boot Option for Legacy Network Devices.

Options: Disabled (Default) / Enabled

High Precision Timer

This item enables or disables the High Precision Event Timer.

Options: Enabled (Default) / Disabled

5.2.4 Security Menu

This section allows to configure and improve system, and set up some system features according to your preferences.



Administrator Password

This item sets Administrator Password.

User Password

This item sets User Password.

Secure Boot

Secure Boot can be enabled if 1. System running in user mode with enrolled Platform Key(PK)2.CSM function is disabled.

Options: Disable (Default) / Enabled

Key Management

Enroll All Factory Default Keys

It allows you to immediately load/clear the default Security Boot keys, Platform key (PK), Key-exchange Key (KEK), Signature database (db), and Revoked Signatures (dbx). The Platform Key (PK) state will change from Unloaded mode to Loaded mode. The settings are applied after reboot or at the next reboot.

Platform Key (PK)

Delete PK – Allows you to delete the PK file from your system.

Set new PK – Allows you set new PK file.

Key Exchange Key Database (KEK)

Delete KEK – Allows you to delete the KEK file from your system.

Set new KEK – Allows you set new KEK file.

Append Var to KEK – Allows you append Var to KEK.

Authorized Signature Database (DB)

Delete DB – Allows you to delete the DB file from your system.

Set new DB – Allows you set new DB file.

Append Var to DB – Allows you append Var to DB.

Authorized Timestamps Database (DBT)

Delete DBT – Allows you to delete the DBT file from your system.

Set new DBT – Allows you set new DBT file.

Append Var to DBT – Allows you append Var to DBT.

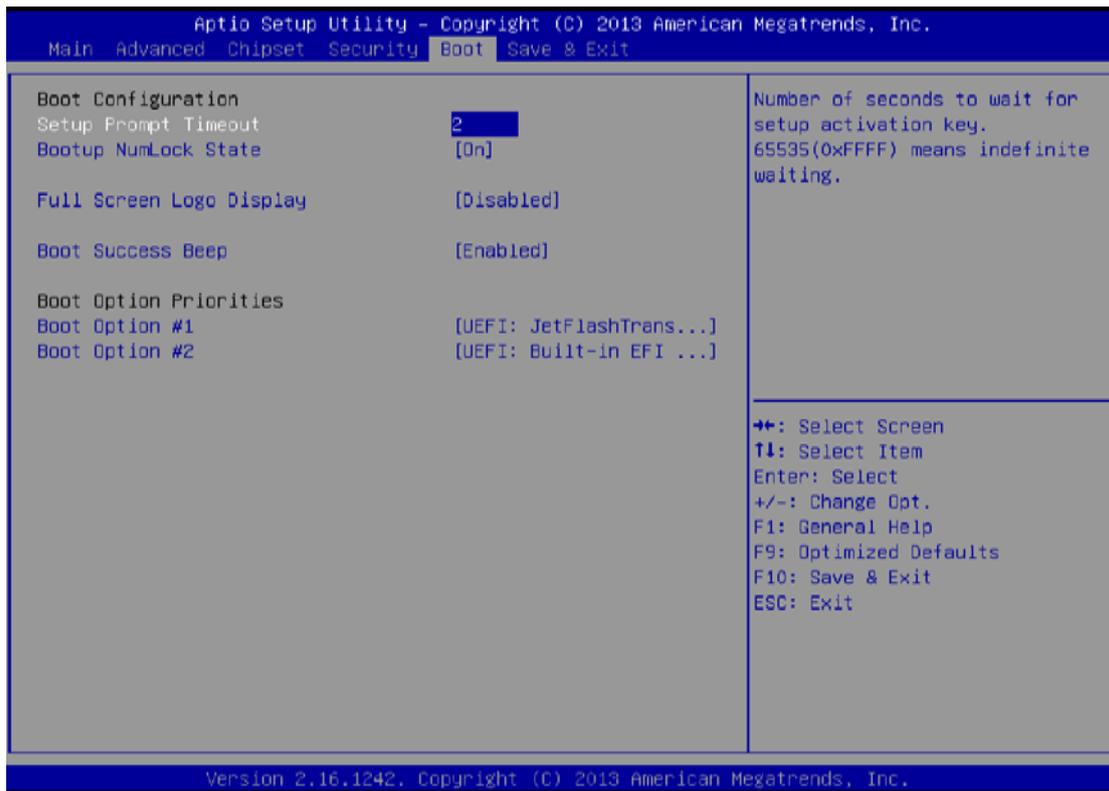
Forbidden Signature Database (DBX)

Delete DBX – Allows you to delete the DBX file from your system.

Set new DBX – Allows you set new DBK file.

Append Var to DBX – Allows you append Var to DBX.

5.2.5 Boot Menu



Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key.

Options: 2 (Default)

Bootup NumLock State

This item selects the keyboard NumLock state.

Options: On (Default) / Off

Full Screen Logo Display

This item allows you to enable/disable Full Screen Logo Show function.

Options: Disabled (Default) / Enabled

Boot Success Beep

When this item is set to Enabled, BIOS will let user know boot success with beep.

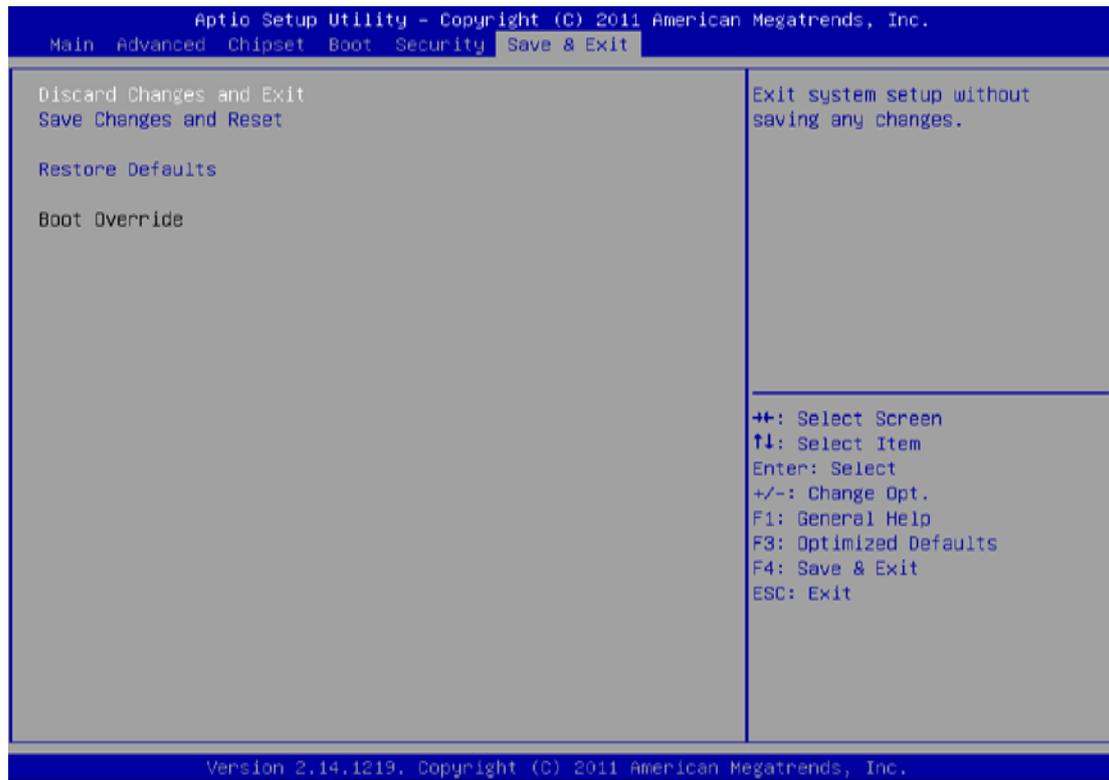
Options: Enabled (Default) / Disabled

Boot Option

The items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

5.2.6 Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.



Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

Save Changes and Reset

Reset the system after saving the changes.

Restore Defaults

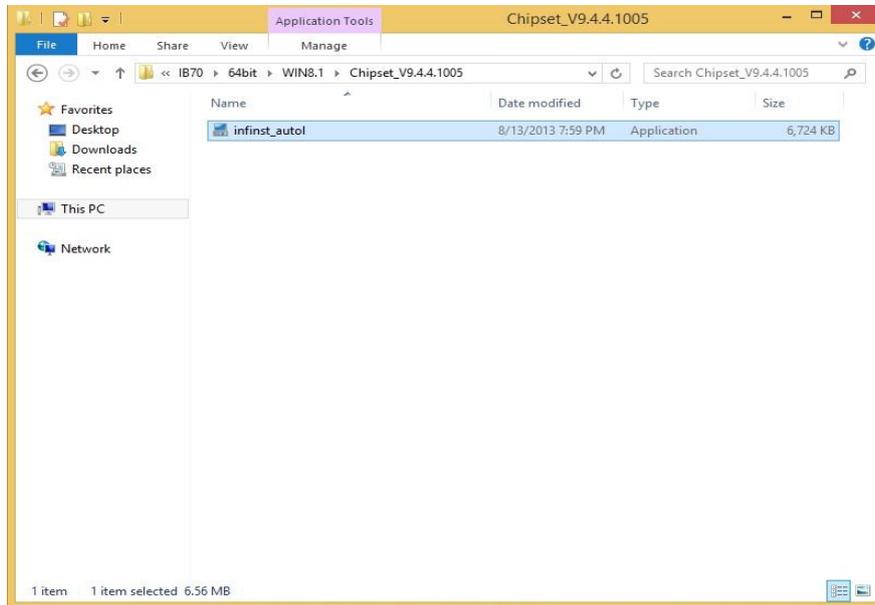
This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

Chapter 6: Driver Installation

This chapter describes how to install all necessary drivers.

6.1 Installing 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.



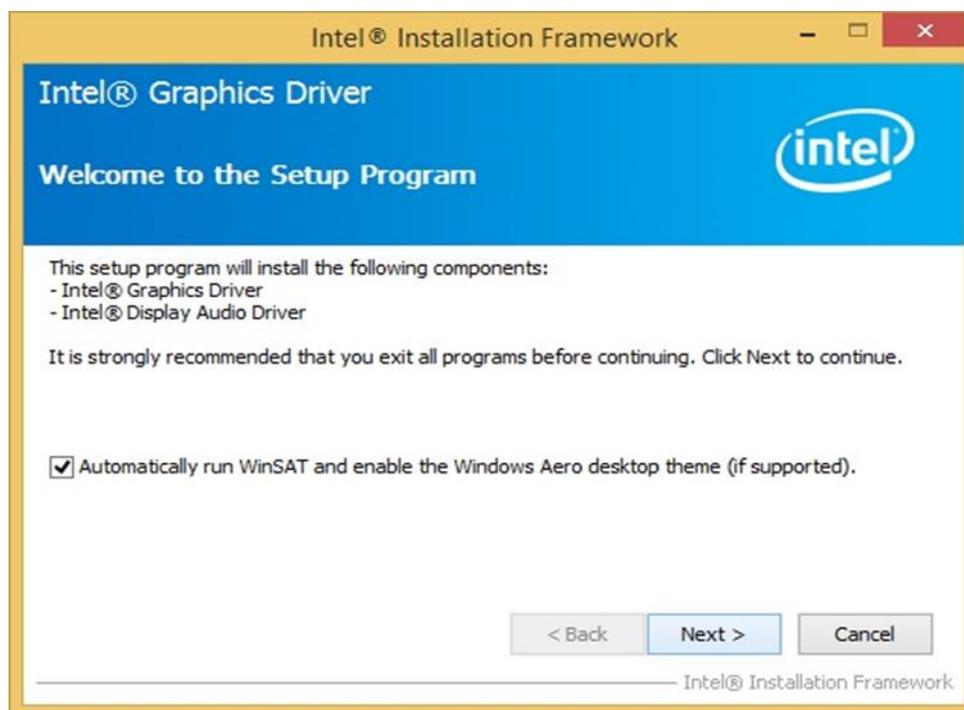
Step 5 Software setup progress window will appear, click **Next** to continue.

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

5.2 Installing 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.

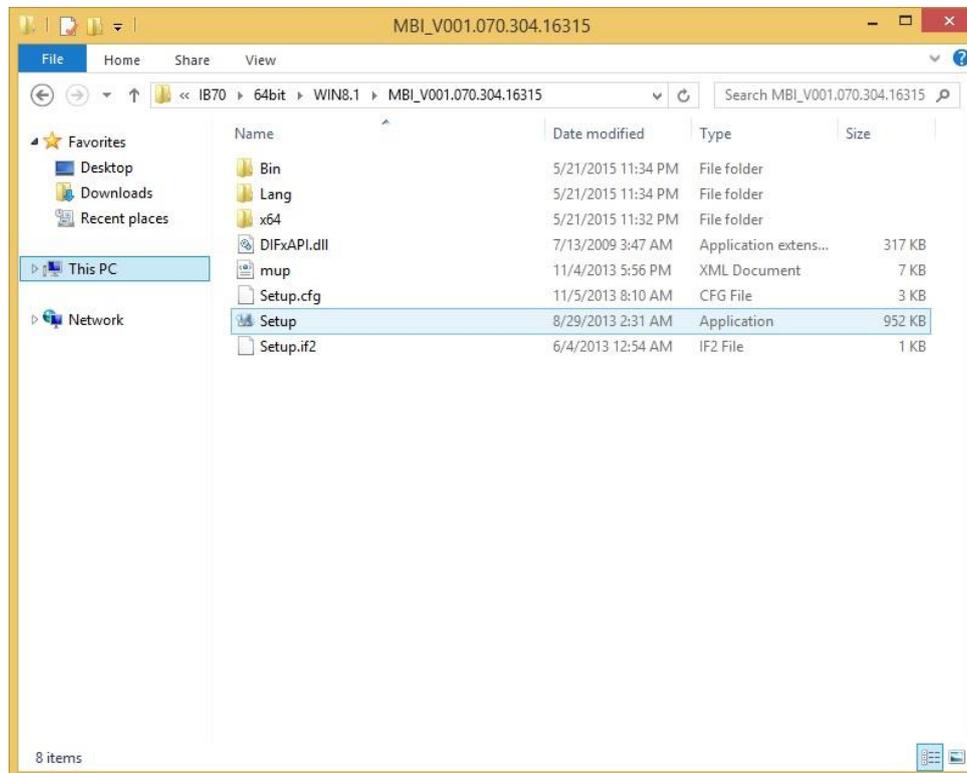
Step 7 Setup Progress window will appear, click **Next** to continue the installation.

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

5.3 Installing Intel Sideband Fabric Device (Intel MBI) Driver

For Windows 8 only.

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.

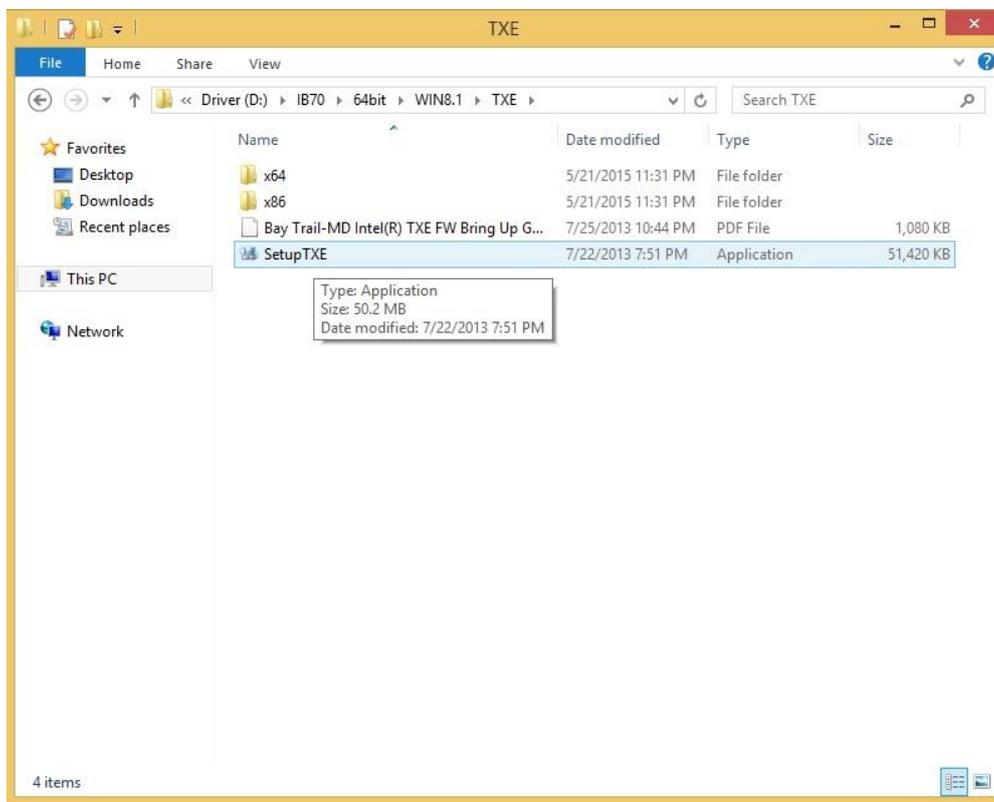
Step 3 Carefully read the License Agreement terms and click **Yes** to agree.

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 Installing Intel Trusted Engine Interface (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.

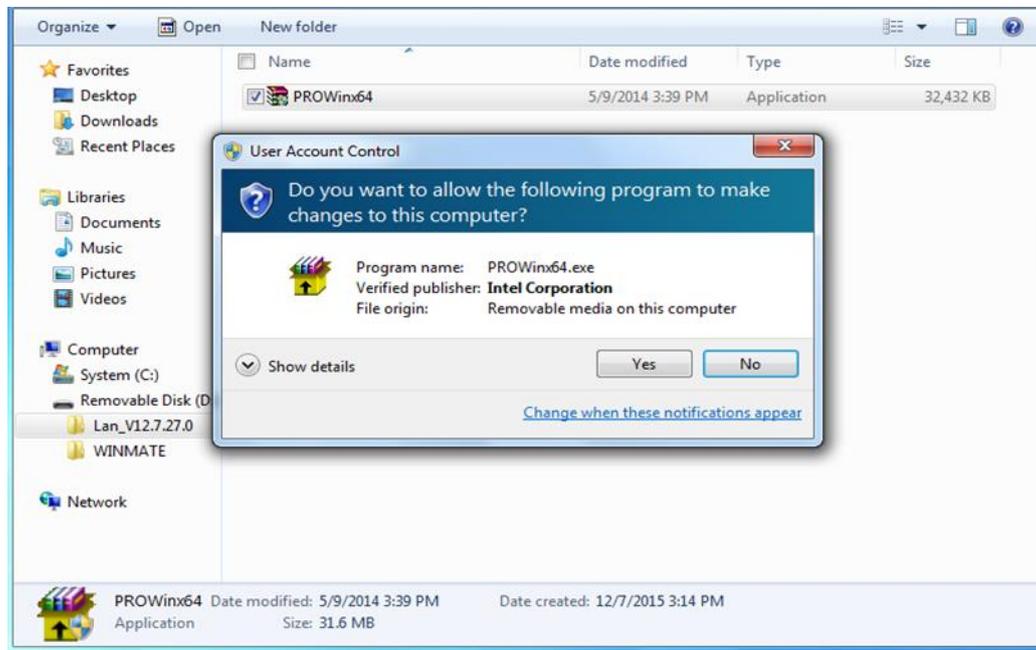
Step 6 The installation is complete, click **Finish** to complete the installation and restart the computer.

5.5 Installing Intel Network Connections

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”.

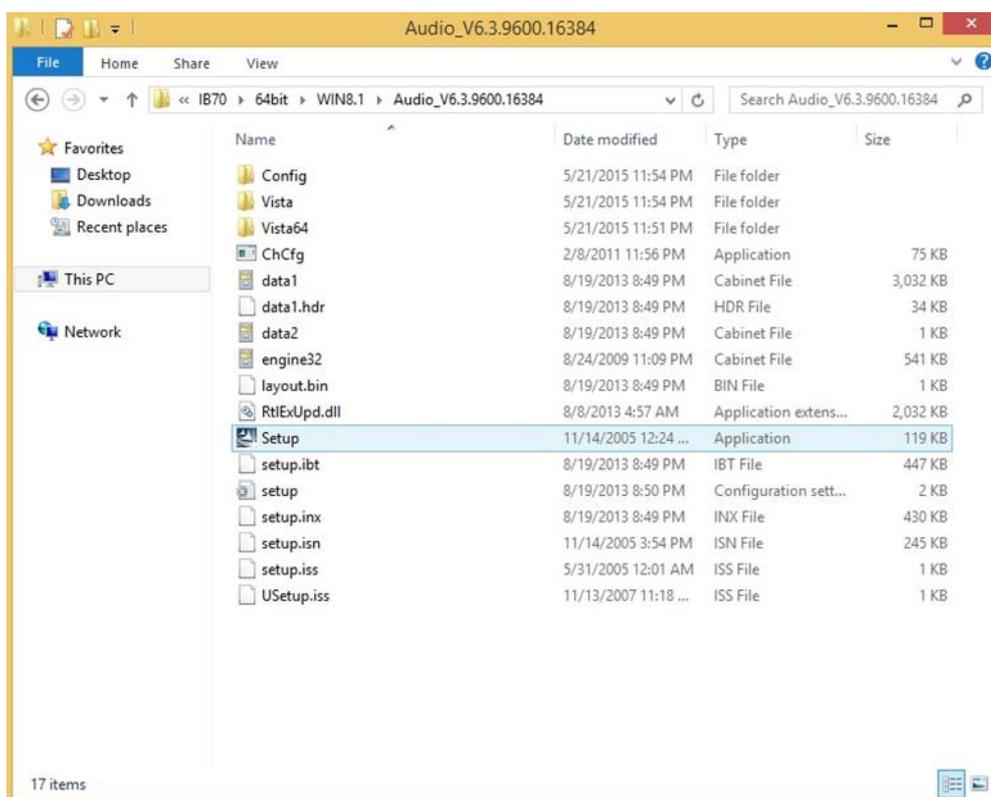
Step 6 The wizard is ready to begin installation, click **Install** to continue.

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

5.6 Installing 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.

Chapter 6: Technical Support

This chapter includes the directory for technical support. Free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

6.1 Introduction

Winmate provides the following SDK and Utilities for Open Frame Panel PC with Intel® Celeron® N2930:

Item	File Type	Description
1	SDK	Watchdog SDK
2	Utility	Watchdog Utility

To find the Drivers and SDK, please refer to the Driver CD that comes in the package or contact us. Also, you can download drivers from [Winmate Download Center](#).

Winmate Download Center

Go to <http://www.winmate.com/> > Support > Download Center > Panel PC > IB32

Or follow the link: <http://www.winmate.com/DownCenter/DownLoadCenter.asp?DownType=0353>

6.2 Problem Report Form

P-Cap Open Frame Panel PC

Customer name:	
Company:	
Tel.:	Fax:
E-mail:	Date:

Product Serial Number: _____

Problem Description: Please describe the problem as clearly as possible. Detailed description of the occurred problem will allow us to find the best solution to solve the problem as soon as possible.

Appendix A: Product Specifications

	Model Name			
	W07IB3S-POT1	W10IB3S-POA1	R15IB3S-POC3	W15IB3S-POA4
Display				
Size	7"	10.1"	15"	15.6"
Resolution	1024 x 600	1920 x 1200	1024 x 768	1920x1080
Brightness	500 nits	700 nits	250 nits	300 nits
Contrast Ratio	700:1 (typ.)	750:1 (typ.)	700:1 (typ.)	800:1 (typ.)
Viewing Angle	-75~75(H); -70~75 (V)	-89~89(H); -89~89(V)	- 80~80(H);-70~70(V)	-85~85(H);-85~85(V)
Max. Colors	16.7M (8 bit)	16.7M (8 bit)	16.7M (8 bit)	262K
Touch	P-Cap	P-Cap, AG Coating (Optional)	P-Cap, AG Coating(Optional)	P-Cap
System				
Processor	Intel® Celeron® Bay Trail-M N2930, 1.83GHz	Intel® Celeron® Bay Trail-M N2930, 1.83GHz	Intel® Celeron® Bay Trail-M N2930,1.83GHz	Intel® Celeron® Bay Trail-M N2930, 1.83GHz
System Chipset	Intel® ATOM SoC Integrated	Intel® ATOM SoC Integrated	Intel® ATOM SoC Integrated	Intel® ATOM SoC Integrated
Memory	SODIMM DDR3L 1600/1333, max. 8 GB	SODIMM DDR3L 1600/1333, max. 8 GB	SODIMM DDR3L 1600/1333, max. 8 GB	SODIMM DDR3L 1600/1333, max. 8 GB
Storage	mSATA SSD 64GB (Default)	mSATA SSD 64GB (Default)	mSATA SSD 64GB (Default)	mSATA SSD 64GB (Default)
LAN	Intel® I210-AT GbE LAN x 2	Intel® I210-AT GbE LAN x 2	Intel® I210-AT GbE LAN x 2	Intel® I210-AT GbE LAN x 2
Expansion Slot	Mini PCIe (1 for WiFi, 1 for 3G)	Mini PCIe (1 for WiFi, 1 for 3G)	Mini PCIe (1 for WiFi, 1 for 3G)	Mini PCIe (1 for WiFi, 1 for 3G)
OS	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded
Input/ Output Connectors				
Ethernet LAN	2 x RJ45-10/100/1000 Mbps (LAN)	2 x RJ45-10/100/1000 Mbps (LAN)	2 x RJ45-10/100/1000 Mbps (LAN)	2 x RJ45-10/100/1000 Mbps (LAN)
Serial Interface	1xRS232/422/485	1xRS232/422/485	1xRS232/422/485	1xRS232/422/485
USB	1 x USB 3.0, 1 x USB 2.0	1 x USB 3.0, 1 x USB 2.0	1 x USB 3.0, 1 x USB 2.0	1 x USB 3.0, 1 x USB 2.0
HDMI	1 x HDMI	1 x HDMI	1 x HDMI	1 x HDMI
Power	1 x Power Jack	1 x Power Jack	1 x Power Jack	1 x Power Jack
Mechanical Specifications				
Cooling	Fanless design	Fanless design	Fanless design	Fanless design
Mounting	Wall Mount	Wall Mount	Wall Mount	Wall Mount
Dimensions, mm	208 x 126 x 46	279.28 x 168 x 41.1	350 x 292 x 48	382 x 274.5 x 53.2
Power Specifications				
Power Input	12V DC	12V DC	12V DC	12V DC
Power Consumption	17W (typ.)	24W (typ.)	43W (typ.)	43W (typ.)
Environmental Consideration				
Operating Temp.	0°C ~ +50°C	0°C ~ +50°C	0°C ~ +50°C	0°C ~ +50°C
Operating Humidity	10% ~ 90%(non- condensing, RH)	10% ~ 90% (non- condensing, RH)	10% ~90% (non- condensing, RH)	10% ~ 90%(non- condensing, RH)

	Model Name		
	R19IB3S-POM1	W22IB3S-POA3	W24IB3S-POA2
Display			
Size	19"	21.5"	23.8"
Resolution	1280 x 1024	1920 x 1080	1920 x 1080
Brightness	250 <i>nits</i>	250 <i>nits</i>	250 <i>nits</i>
Contrast Ratio	1000 : 1 (typ.)	1000:1 (typ.)	3000 : 1 (typ.)
Viewing Angle	-85~85(H);-80~80(V)	-89~89(H); -89~89(V)	-89~89(H); -89~89(V)
Max. Colors	16.7M (8 bit)	16.7M (8 bit)	16.7M (8 bit)
Touch	P-Cap, AG Coating (Optional)	P-Cap, AG Coating (Optional)	P-Cap
System			
Processor	Intel® Celeron® Bay Trail-M N2930, 1.83 GHz	Intel® Celeron® Bay Trail-M N2930, 1.83 GHz	Intel® Celeron® Bay Trail-M N2930, 1.83 GHz
System Chipset	Intel® ATOM SoC Integrated	Intel® ATOM SoC Integrated	Intel® ATOM SoC Integrated
Memory	SODIMM DDR3L 1600/1333, max. 8 GB	SODIMM DDR3L 1600/1333, max. 8 GB	SODIMM DDR3L 1600/1333, max. 8 GB
Storage	mSATA SSD 64GB (Default)	mSATA SSD 64GB (Default)	mSATA SSD 64GB (Default)
LAN	Intel® I210-AT GbE LAN x 2	Intel® I210-AT GbE LAN x 2	Intel® I210-AT GbE LAN x 2
Expansion Slot	Mini PCIe (1 for WiFi, 1 for 3G Module)	Mini PCIe (1 for WiFi, 1 for 3G Module)	Mini PCIe (1 for WiFi, 1 for 3G Module)
OS	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded	Windows 10 IoT Enterprise Windows 8 Embedded Windows 7 Embedded
Input/ Output Connectors			
Ethernet LAN	2 x RJ 45-10/100/1000 Mbps (LAN)	2 x RJ 45-10/100/1000 Mbps (LAN)	2 x RJ 45-10/100/1000 Mbps (LAN)
Serial Interface	1 x RS232/422/485	1 x RS232/422/485	1 x RS232/422/485
USB	1 x USB 3.0, 1 x USB 2.0	1 x USB 3.0, 1 x USB 2.0	1 x USB 3.0, 1 x USB 2.0
HDMI	1 x HDMI	1 x HDMI	1 x HDMI
Power	1 x Power Jack	1 x Power Jack	1 x Power Jack
Mechanical Specifications			
Cooling System	Fanless design	Fanless design	Fanless design
Mounting	Wall Mount	Wall Mount	Wall Mount
Dimensions, mm	438.9 x 382.3 x 54	552 x 312.72 x 52.8	593.6 x 382.3 x 54
Power Specifications			
Power Input	12V DC	12V DC	12V DC
Power Consumption	35W (typ.)	60W (typ.)	45W (typ.)
Environmental Consideration			
Operating Temperature	0°C ~ +50°C	0°C ~ +50°C	0°C ~ +50°C
Operating Humidity	10% ~ 90% (non-condensing, RH)	10% ~ 90% (non-condensing, RH)	10% ~ 90% (non-condensing, RH)

