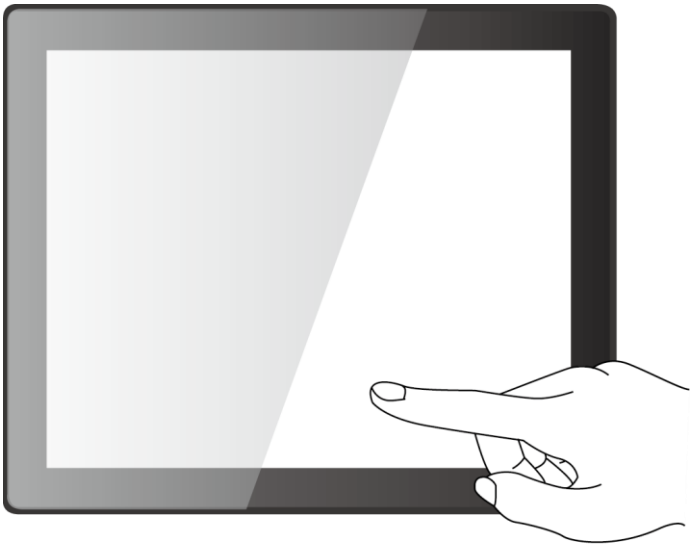
M-Series HMI

12”/15”/17”/19”/ 21.5” P-CAP touchscreen
Intel® Core ™ i5-6200U 2.3 GHz, up to 2.8 GHz



Multifunctional Design

Model No.: R12IKWS-MHM2
R15IKWS-MHC3
R17IKWS-MHM1
R19IKWS-MHA1
W22IKWS-MHA3

User Manual

Version 1.0
Document part Number: 9152111I102E

PREFACE

Copyright Notice

Trademark Acknowledgement

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 1W16Axxxxxxxx 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 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 potential 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 connections lorsque l'alimentation est présente. Des composantes électroniques sensibles peuvent être endommagées 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 verifier votre mise à la terre afin d'éliminer toute charge statique avant de toucher la carte CPU. Les équipements électroniques moderns 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 charge, 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 manufacturier.

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.

Important Information

Countries/ Area	Symbol	This equipment complies with essential requirements of:
European Union 	CE	Electromagnetic Compatibility Directive (2014/30/EU) Low Voltage Directive (2014/35/EU) Restrictions of the use of certain hazardous substances (RoHS) Directive (2011/65/EU)
USA 	FC	FCC Part 15 Subpart B Regulations Class B

Federal Communications Commission Radio Frequency Interface Statement

FC

This device complies with part 15 FCC rules.
Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "B" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

European Union

This equipment is in conformity with the requirement of the following EU legislations and harmonized standards. Product also complies with the Council directions.

Electromagnetic Compatibility Directive (2014/30/EU)

- EN55024: 2010/ A1: 2015
  - IEC61000-4-2: 2009
  - IEC61000-4-3: 2006+A1: 2007+A2: 2010
  - IEC61000-4-4: 2012
  - IEC61000-4-5: 2014
  - IEC61000-4-6: 2014
  - IEC61000-4-8: 2010
  - IEC61000-4-11: 2004
- EN55032: 2012/AC:2013
- EN61000-3-2:2014
- EN61000-3-3:2013

Low Voltage Directive (2014/35/EU)

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/ A2:2013

ABOUT THIS USER MANUAL

This User Manual provides information about using the Winmate® M-Series HMI with Intel® Core ™ i5-6200U processor. The documentation set for the M -Series HMI provides information for specific user needs, and includes:

- **M-Series HMI User Manual** – contains detailed description on how to use the HMI, its components and features.
- **M-Series HMI Quick Start Guide** - describes how to get the HMI device up and running.

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

Document Revision History

Version	Date	Note
1.0	7-Mar-2017	Initial release

CONTENTS

INTRODUCTION

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

CHAPTER 1: INTRODUCTION

Thank you for purchasing Winmate® M-Series HMI. M-Series HMI is designed to provide versatile and cost-effective solution for your industrial needs. P-CAP multi-touch screen equipped with industrial motherboard offers various input/ output connectors. Intel® Core ™ i5-6200U processor onboard with fanless cooling system assures steady performance and silent functioning.

M-Series HMI perfectly fits in applications where total costs of ownership (TCO) and quick recovery of failure is important. The flexible system design provides easy access to components and can be serviced by local maintenance team.

Versatile, easy-to-service and upgradable M-Series HMI is the best solution for industrial and building automation.

1.1 Product Features

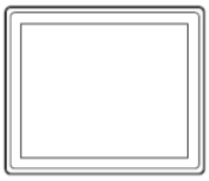
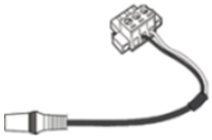
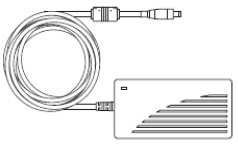
Winmate® M-Series HMI (Skylake) has the following features:

- Intel® Core ™ i5-6200U 2.3 GHz, up to 2.8 GHz
- Signature true flat display screen with edge-to-edge design
- Aluminum, anti-corrosion treated housing
- Superior Sealing with front IP65 protection against dust and water
- Projected Capacitive Multi Touch (P-CAP)
- Fanless cooling system
- Support wide range 9-29V isolation DC input
- One Quick & Easy Removable 2.5” SSD Bay Slot
- Support PCIe x4 Card

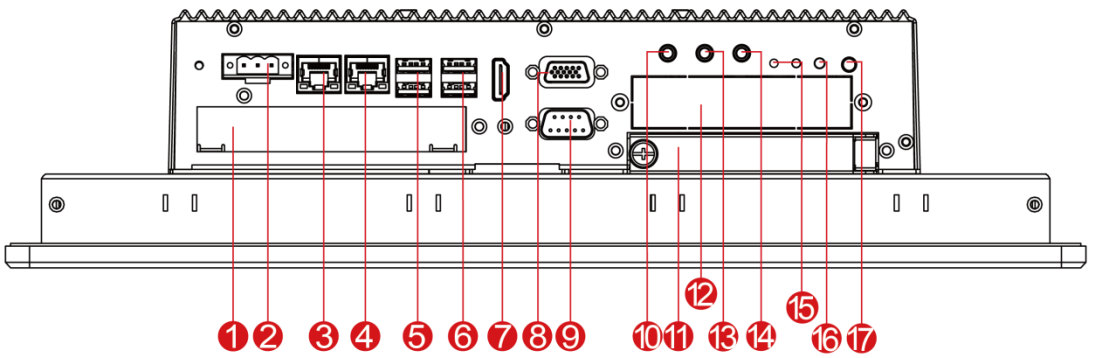
1.2 Package Contents

Carefully remove the box and unpack your HMI device. 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:

			
HMI Device	**Quick Start Guide (Hardcopy)**	**Driver CD & User Manual**	**Mounting Clips & Screws** **12” HMI – 8 pcs** **15” HMI – 12 pcs** **17”/ 19” HMI – 14 pcs** **21.5” HMI – 16 pcs**
			
3-pin Terminal Block	**Power Cord**	**AC Adapter (12V/ 80W)**	

1.3 I/O Layout



No	Description	No	Description
①	PCIe Slot Cover for one half-length PCIe x4 card	⑩	Mic in
②	9-29V isolation DC-in	⑪	2.5” HDD x 1
③	Giga LAN	⑫	Expansion module*
④	Giga LAN	⑬	Line in
⑤	USB 3.0 x 2	⑭	Line out
⑥	USB 3.0 x 2	⑮	HDD LED indicator
⑦	HDMI output	⑯	Reset
⑧	VGA Output	⑰	Power Button
⑨	RS-232/422/485		

***Expansion module configurations (Preliminary):**

- USB 2.0 x 4
- Giga LAN x 2
- COM x 2
- 3G with SIM x 1
- USB 3.0 x 2

1.4 Power Button

M-Series HMI has a Power On/ Off button on the front side.

1.5 Reset Button

M-Series HMI has a Reset Button located on the front side. Press reset button to reboot the computer forcibly.

1.6 LED Indicator

M-Series HMI provides one HDD LED indicator for status monitoring.

LED Indicator:

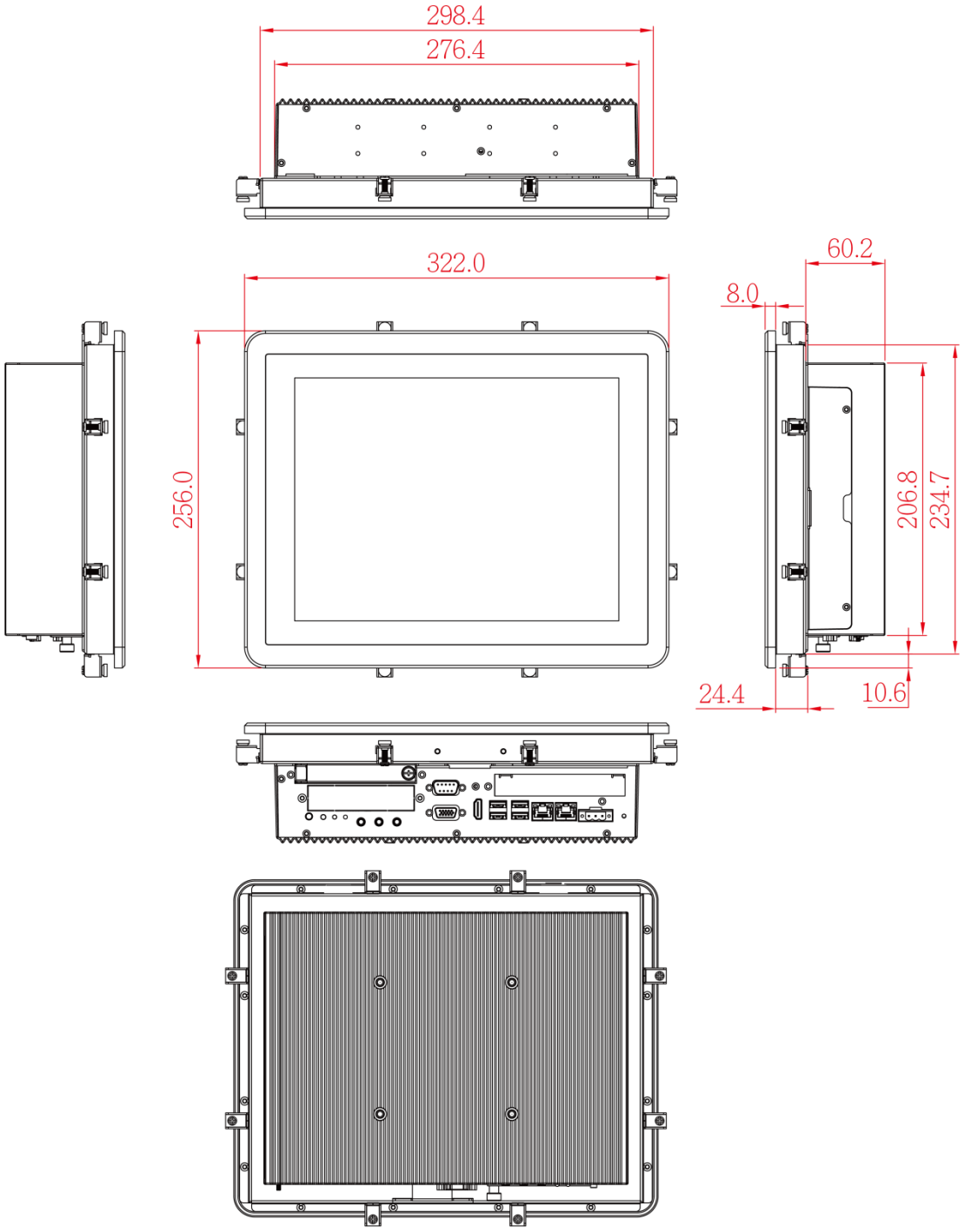
LED Indicator	Color	Description
HDD	Off	Slot is empty; drive is not yet discovered by the system.
	Green	HDD operating normally.

1.7 Dimensions

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

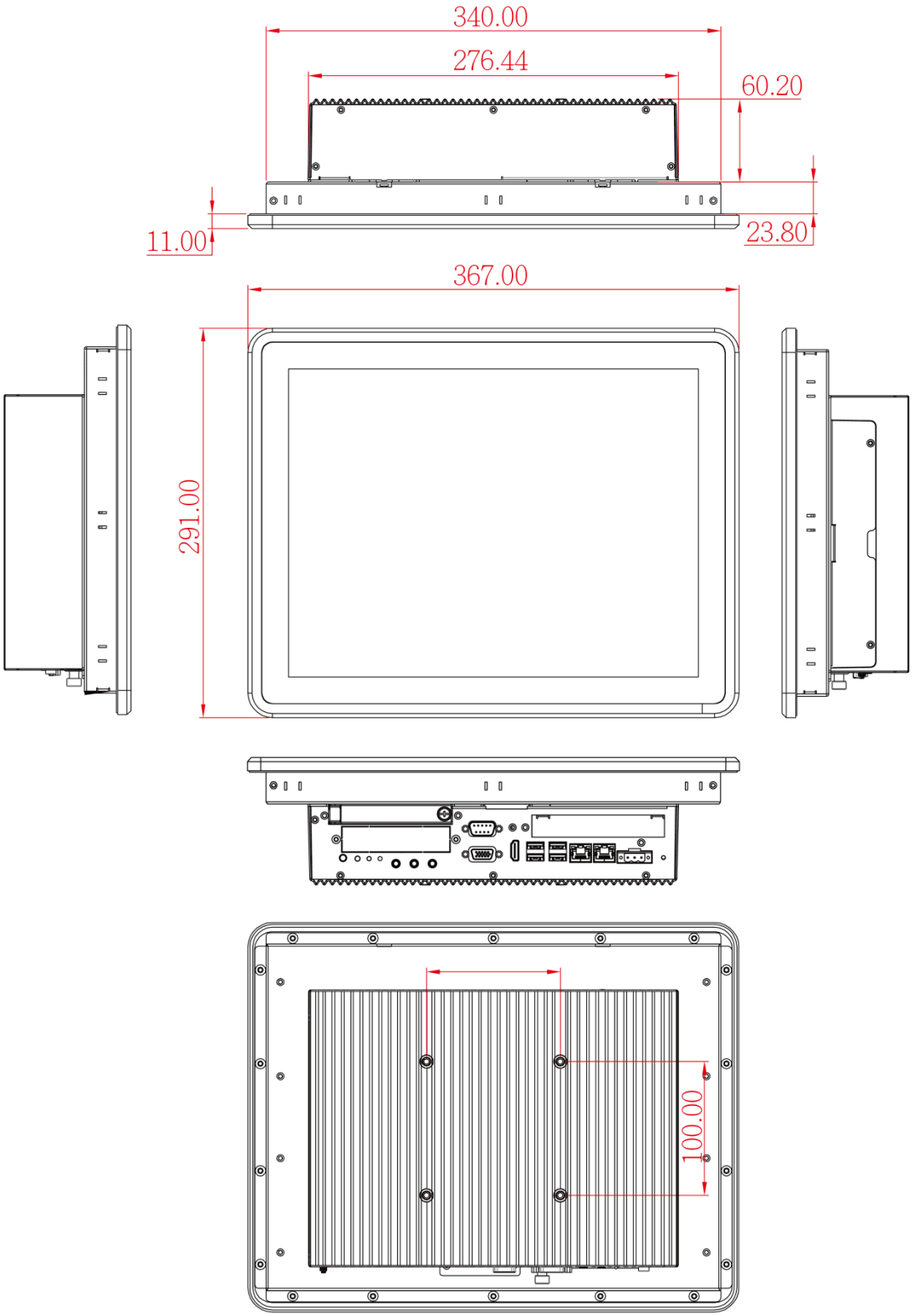
1.7.1 Dimensions 12”

Unit: mm



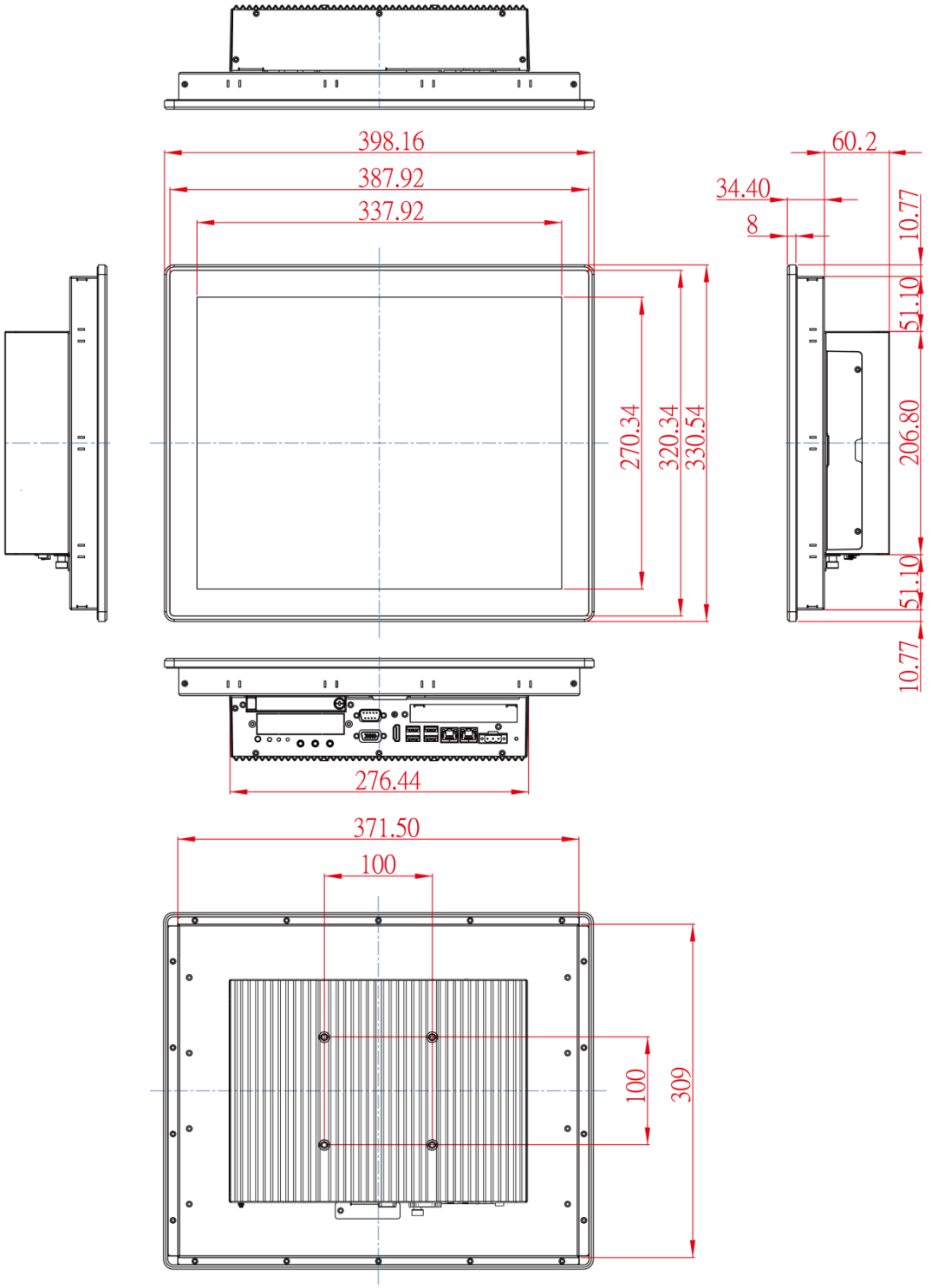
1.7.2 Dimensions 15”

Unit: mm



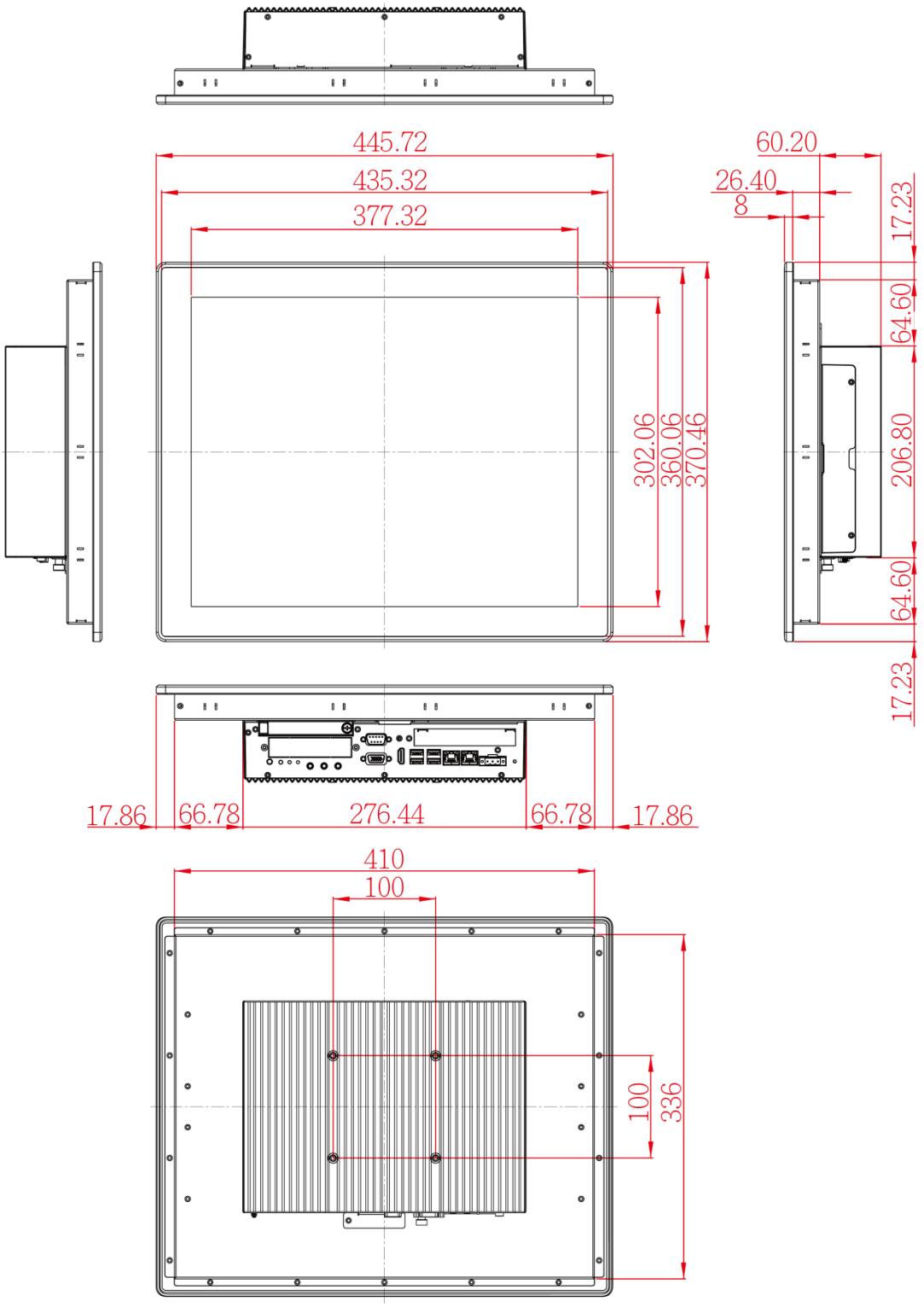
1.7.3 Dimensions 17”

Unit: mm



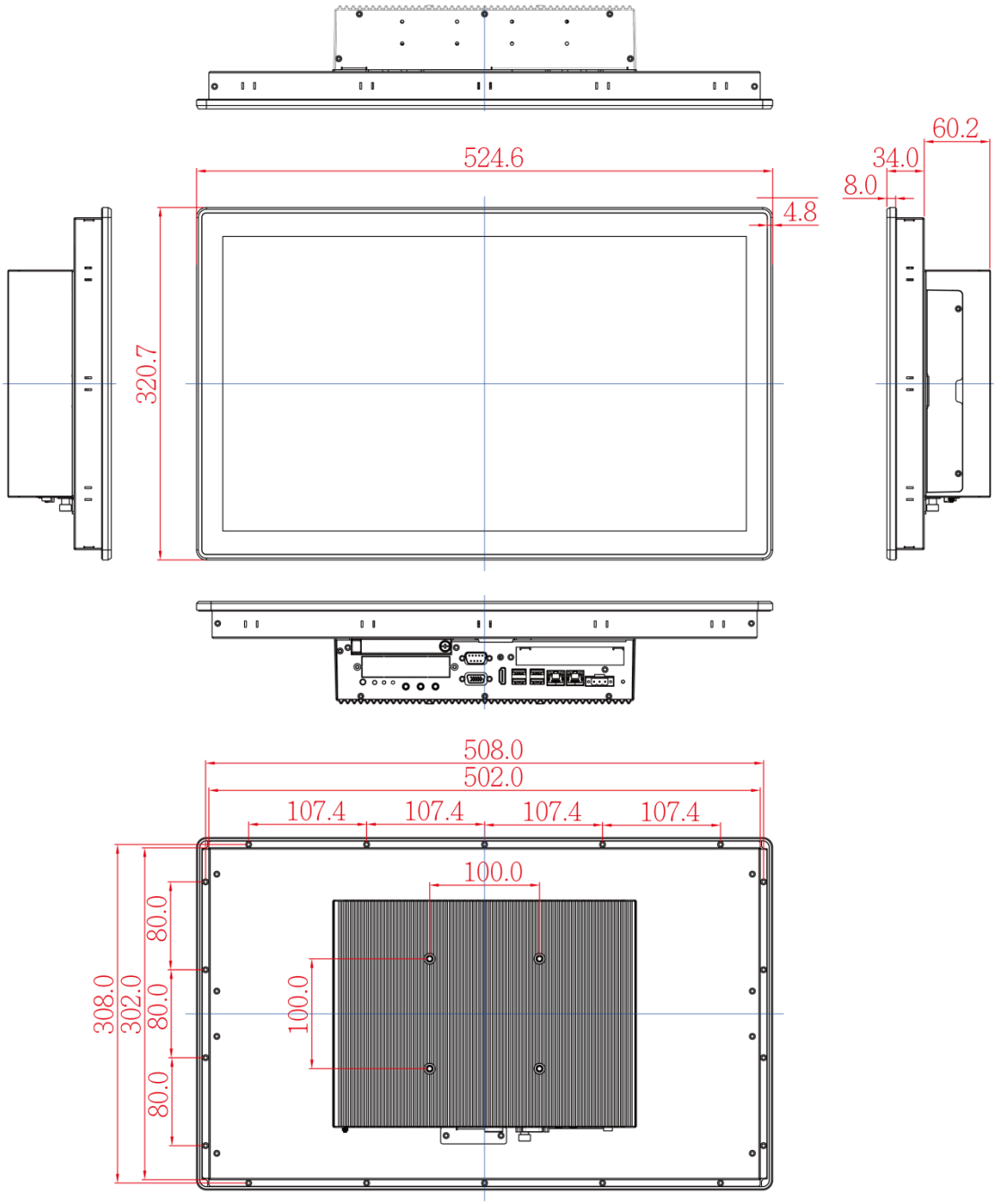
1.7.4 Dimensions 19”

Unit: mm



1.7.5 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.

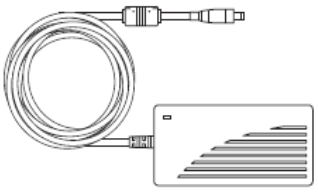
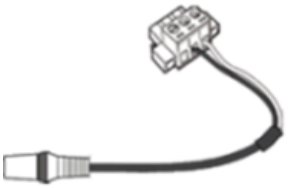
CHAPTER 2: GETTING STARTED

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

2.1 Powering On

This section explains how to power on the HMI device. Pay attention to the precautions

2.1.1 AC Adapter Components

		
AC Adapter (12V/80W)	**Power Cord**	**3-Pin Terminal Block to DC Jack**

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.
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.

2.1.2 Power Considerations

HMI device operates on external DC power. Use the AC adapter included in the package.

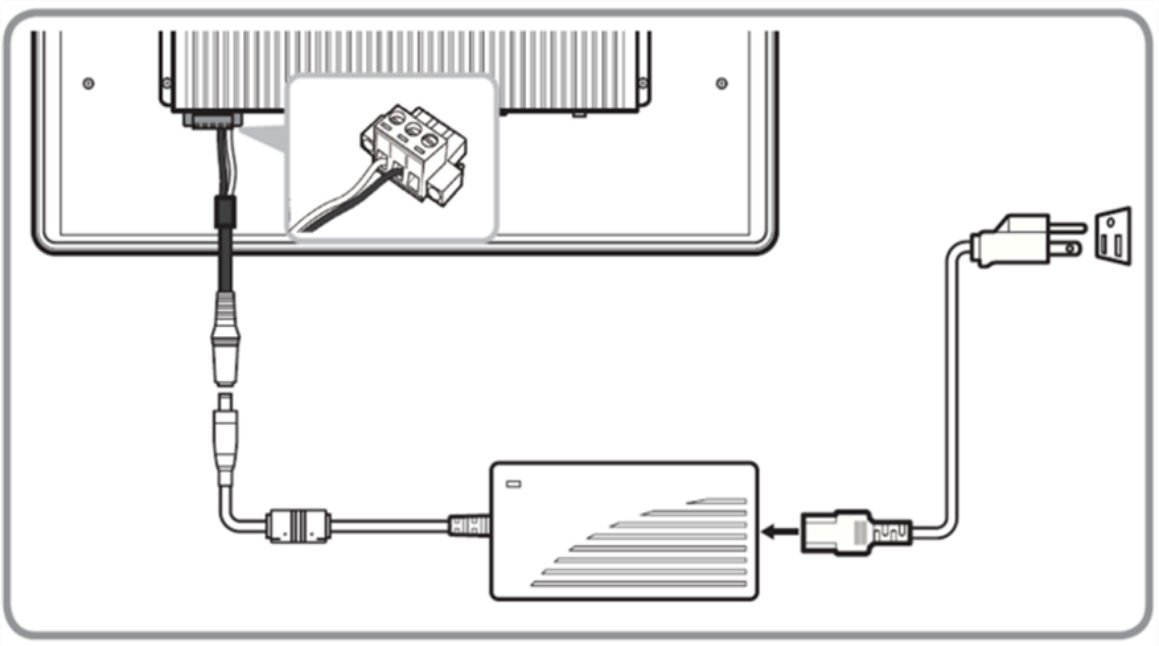
CAUTION/ATTENTION
Use only the AC adapter included in your package (Rating: Output 12V/6.6A). Using other AC adapters may damage the device.
Utiliser seulement le convertisseur AC inclu avec votre appareil (Puissance: Sortie 12V/6.6A). Utiliser d'autres convertisseurs pourraient endommager l'appareil.

2.1.3 Connecting the Power

2.1.3.1 Connecting to AC Power Source

To connect the HMI to AC power source:

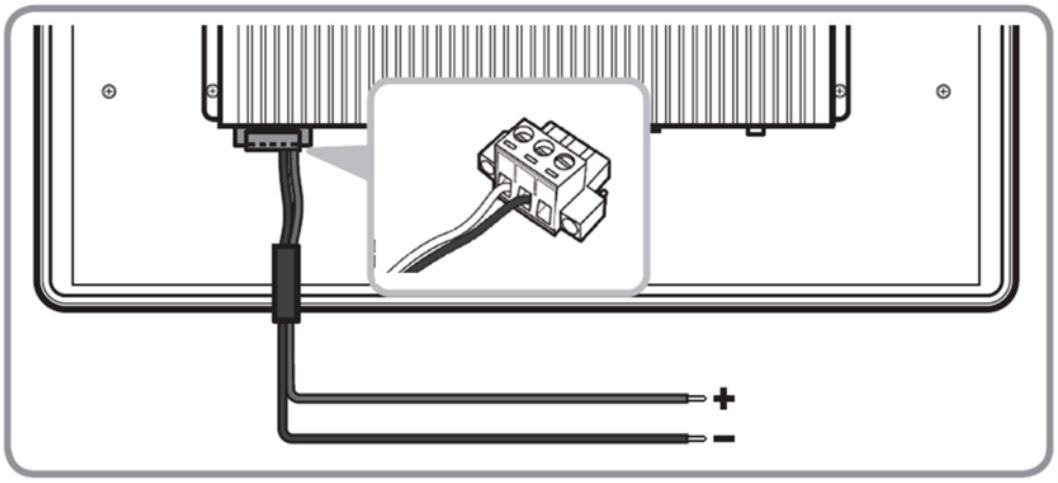
1. Plug one end of the terminal block cable firmly to the DC IN Jack.
2. Plug the other end of the terminal block plug to the AC adapter.
3. Connect the AC adapter to the power cord.
4. Plug the power cord to a working AC outlet. The device will boot automatically.



2.1.3.2 Connecting to DC Power Source

To connect the HMI to DC power source:

1. Insert the exposed wires of the DC Power Cable to the appropriate connectors on the terminal block plug.
2. Plug the terminal block plug firmly to the DC IN Jack.
3. Connect the other end of the DC power cable (wires with lug terminals that are labeled **"+"** and **"–"** to the terminals of the 9~29V DC Power Source. Ensure that the power connections maintain the proper polarity.



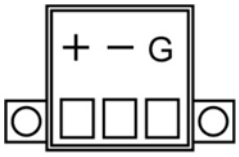
Note:
Power cords vary in appearance by region and country.

2.2 Connector Description

This section includes I/O side connectors and its pinouts.

2.2.1 Isolated DC in Connector

M-Series HMI has a 3pin terminal block that accepts 9~29V DC input.



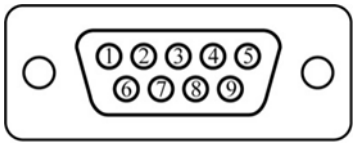
Voltage	Minimum Voltage 9V Maximum Voltage 29V

2.2.2 Mic In, Line In and Line Out

Color	Signal Name
Mic In	Mic in
Blue	Line in
Green	Line out

2.2.3 Serial Port Connector

The M-Series HMI uses D-SUB 9pin connector to connect serial interfaces.

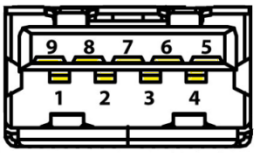


Pin №	RS-232 (Default)	RS-422	RS-485
1	DCD	TxD-	D-
2	RXD	TxD+	D+
3	TXD	RxD+	NC
4	DTR	RxD-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

Serial port settings can be configured for RS-232, RS-422 or RS-485 by jumpers. Refer to Ch.2, Configuring Serial Port Settings section of this user manual for the instruction on how to configure serial port settings.

2.2.4 USB 3.0 Connector

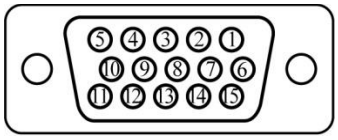
The I M-Series HMI has four USB 3.0 connectors. Use USB3.0 connectors to connect external devices such as mouse or keyboard to the device.



Pin №	Signal Name	Pin №	Signal 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+		

2.2.5 VGA Output Connector

The M-Series HMI has VGA connector (D-Sub 15pin Female). Use VGA cable to connect the display to the PC system.



Pin №	Signal Name	Pin №	Signal Name
1	RED	2	GREEN
3	BLUE	4	ID2/RES
5	GND	6	RED_RTN
7	GREEN_RTN	8	BLUE_RTN
9	KEY/PWR	10	GND
11	ID0/RES	12	ID1/SDA
13	HSync	14	VSync
15	ID3/SCL		

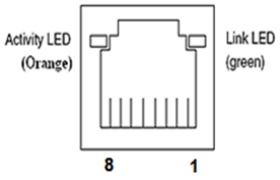
2.2.6 HDMI Output Connector

Use HDMI A Type19-pin female output connector to connect the HMI device to an 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		

2.2.7 Giga LAN Connector

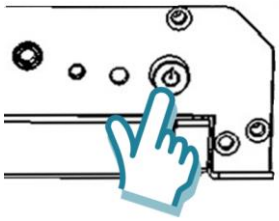
The M-Series HMI equipped with one RJ45 10/100/1000 Mbps Ethernet interface for connecting to the internet.



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

2.3 Turning On and Off

The unit is configured to **Power ON** when the HMI device is connected to the power source.



Press the **Power** button to restart the machine when the unit has been shut down.

If the system hangs, press the Reset button (beside the power button) to restart the device.

You can **Turn OFF** the HMI device with the Windows power settings:

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

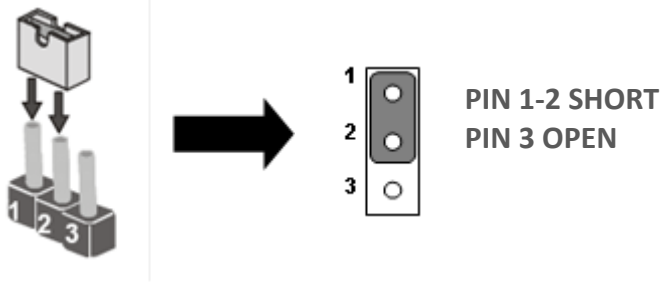
2.4 Configuring Serial Port Settings

Serial Port 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.

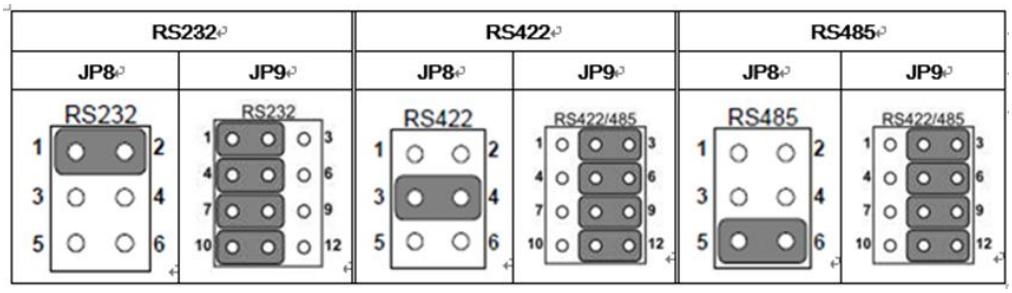
CAUTION/ ATTENTION
It is recommended to use factory jumper settings. Opening the housing when it is sealed may damage the device and its parts.
Il est recommandé d'utiliser la configuration d'usine de cavalier. Ouvrir le chassis lorsqu'il est scellé peut endommagé l'appareil et ses pièces.

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.



Both Jumper 8 and Jumper 9 allow setting the Serial Port COM1 configuration. Refer to the table below for PIN assignment.



Example: To make RS-232 Settings, set the Jumper 8 Pin 1-2 to the SHORT position, and Jumper 9 Pin1-2, 4-5, 7-8, 10-11 to the SHORT position.

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 use multi-touch on the Windows-based HMI device.

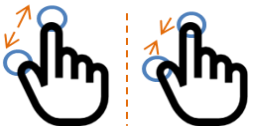
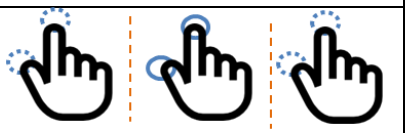
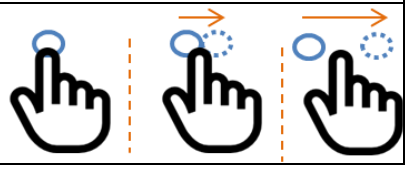
3.1 Operating System

M-series HMI support several versions of Windows OS: Windows 10 IoT Enterprise, Windows Embedded 8 Standard, 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 Multi-Touch

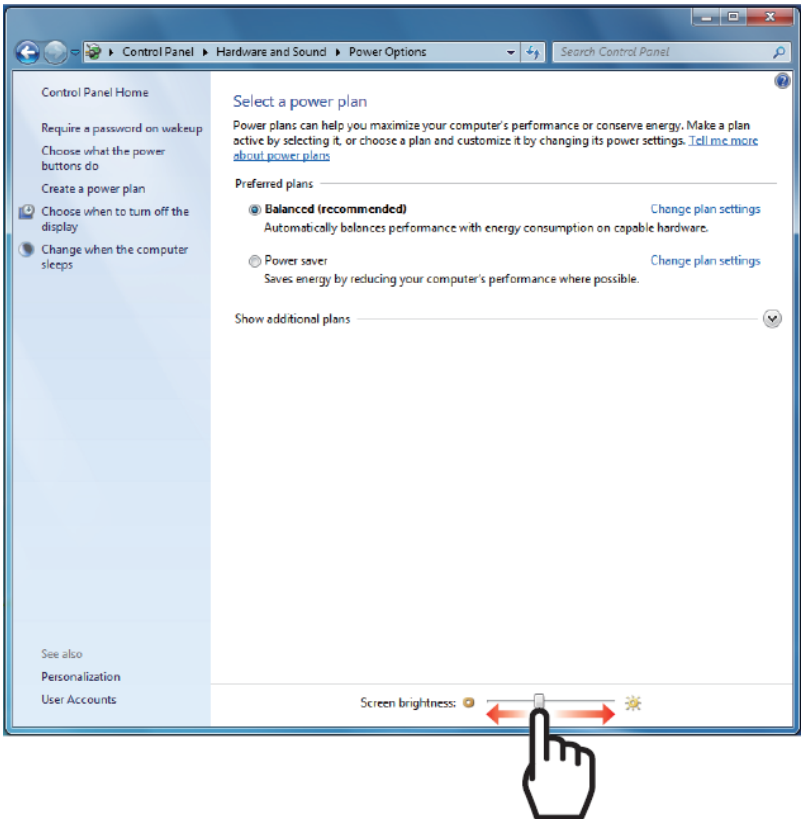
The touchpad supports the core gestures for Windows.

Gesture	Windows Usage	Gesture Action	Action
Tap/ Double-tap	Click / Double-click	Click or double-click	
Panning with Inertia	Scrolling	Drag one or two fingers up and down	
Selection/Drag *(left to right with one finger)*	Mouse-drag/ Selection	Drag one finger left/right	
Zoom	Zoom (default to CTRL key + scroll wheel)	Move two fingers apart/ toward each other	
Rotate	No system default unless handled by Application (using WM_Gesture API)	Move two fingers in opposite directions *or* Use one finger to pivot around another	
Two-Finger tap	N/A - Exposed through Gesture API, used by Application discretion	Tap two fingers at the same time (where the target is the midpoint between fingers)	
Press and Hold	Right-click	Press, wait for blue-ring animation to complete, then release	
Flicks	Default: Pan Up/ Down/ Back, and Forward	Make quick drag gestures in the described direction	

** Reference from Microsoft®*

3.3 Adjusting Display Brightness

1. Tap **Start** > **Control Panel** > **Hardware and Sound** > **Power Options.**
2. Drag the brightness bar to adjust the brightness level according to your preference.



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.

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 **<Del>** key when the prompt appears on the screen during start up. The prompt screen shows only few seconds, you need to press **<Del>** 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 ↑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.

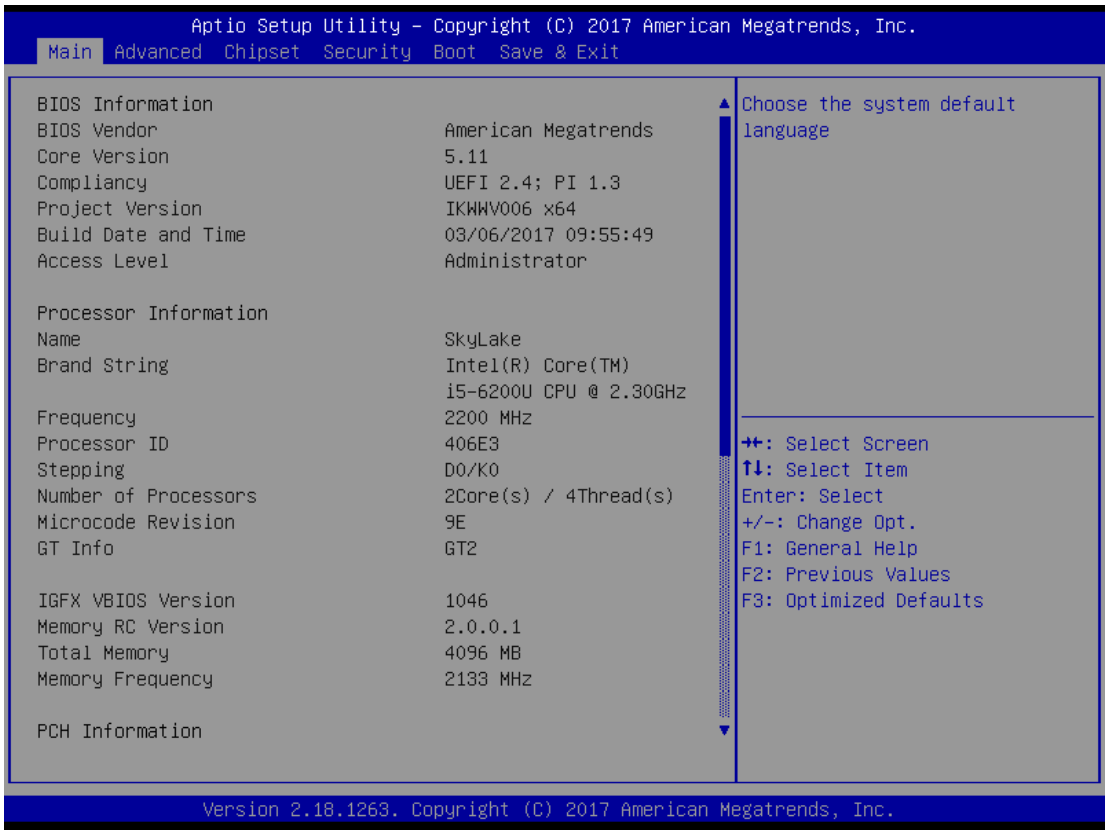
Key	Function
F1	General Help
F2	Previous Values
F3	Optimized Defaults
F4	Save & Exit
Esc	Exit
+/-	Change Opt.
Enter	Select or execute command
Cursor ↑	Moves to the previous item
Cursor ↓	Goes to the next item
Cursor ←	Moves to the previous item
Cursor →	Goes to the next item

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

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

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.

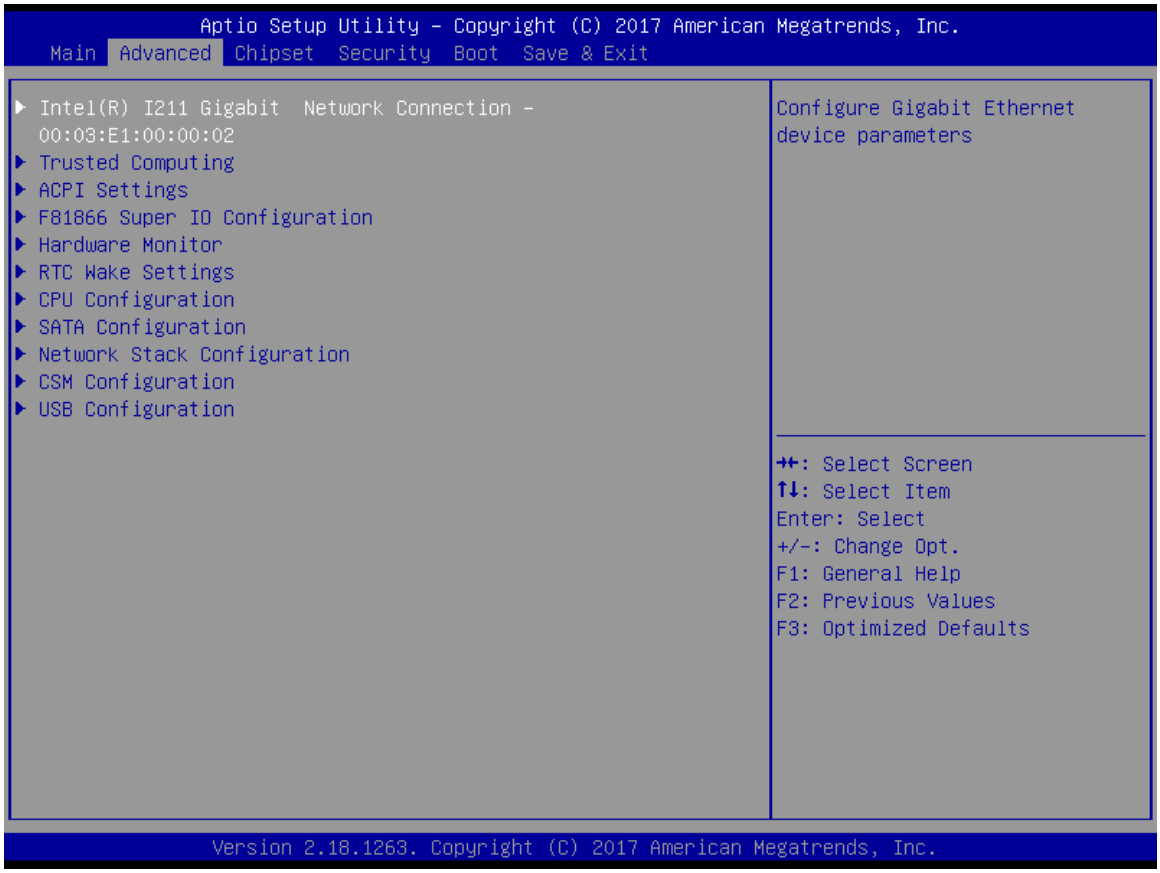


4.2.2 Advanced Menu

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.

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.

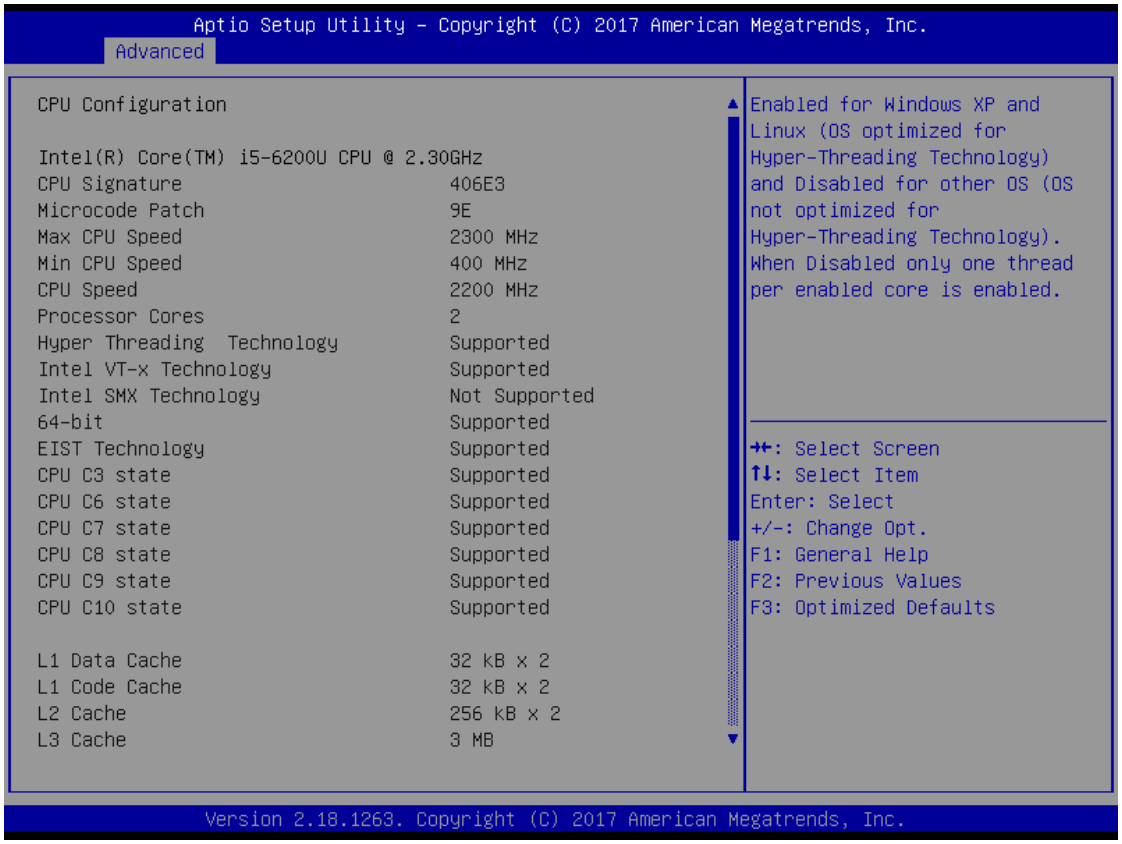


BIOS Setting	Description	Setting Option	Effect
Intel ® I211 Gigabit Network Connection	Configure Gigabit device parameters	Enter	Opens submenu
Trusted Computing	Configures Trusted Computing settings	Enter	Opens submenu
ACPI Settings	Configures ACPI Settings	Enter	Opens submenu
F81866 Super IO Configuration	Configures F81866 Super IO settings	Enter	Opens submenu
Hardware Monitor	Configures Hardware Monitor settings	Enter	Opens submenu
RTC Wake Settings	Configures RTC Wake parameters	Enter	Opens submenu
CPU Configuration	Configures CPU settings	Enter	Opens submenu
SATA Configuration	Configures SATA parameters	Enter	Opens submenu
Network Stack Configuration	Configures Network Stack Configuration parameters	Enter	Opens submenu
CSM Configuration	Configures CSM parameters	Enter	Opens submenu
USB Configuration	Configures USB Settings	Enter	Opens submenu

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

4.2.2.1 CPU Configuration

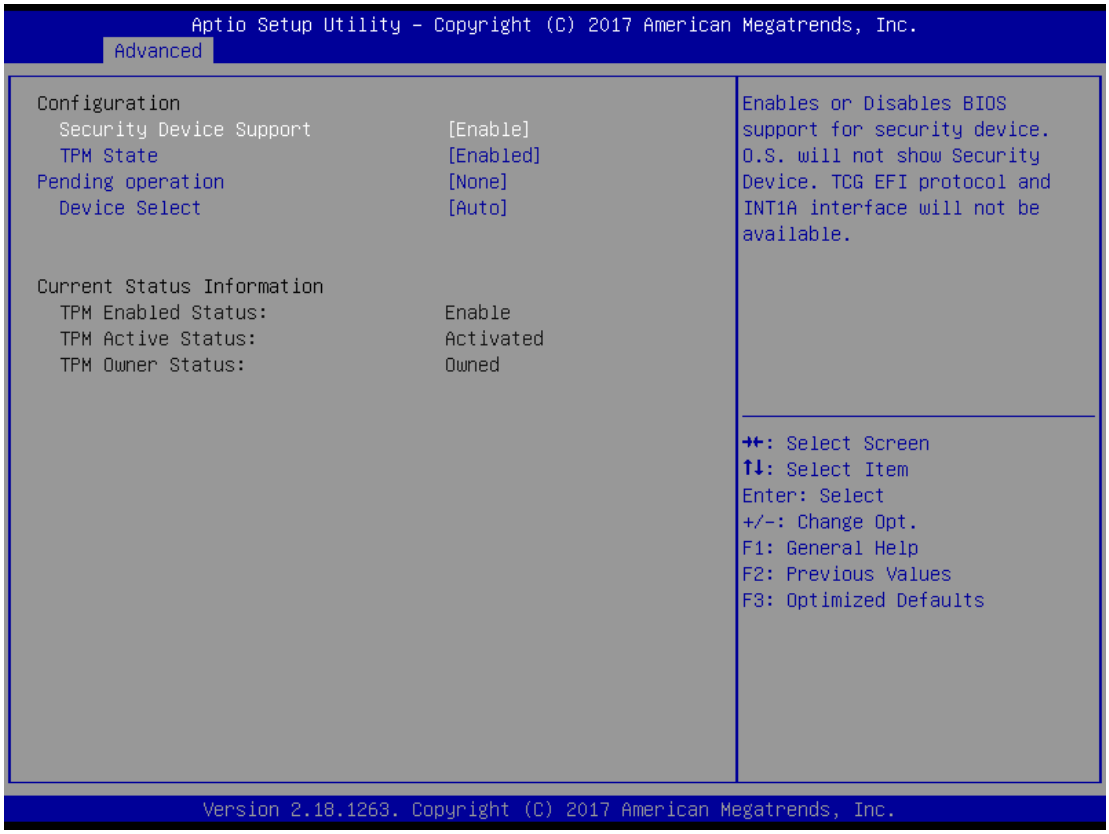
CPU Configuration allows you to change CPU settings. Use key arrows to navigate through the menu.



BIOS Setting	Description	Setting Option	Effect
Hyper-threading	Hyper-threading is a function in processors that speeds up computer performance.	Enable/ Disable	Enables or Disables this function
Execute Disabled Bit	EDB is a hardware-based security component used in the central processing unit (CPU) to separate areas of a memory as storage of processor instructions or as storage of data.	Enable	Reduces a computer system's, or a server's, vulnerability to viruses and malicious code attacks
		Disable	Increases the risk to be infected by viruses

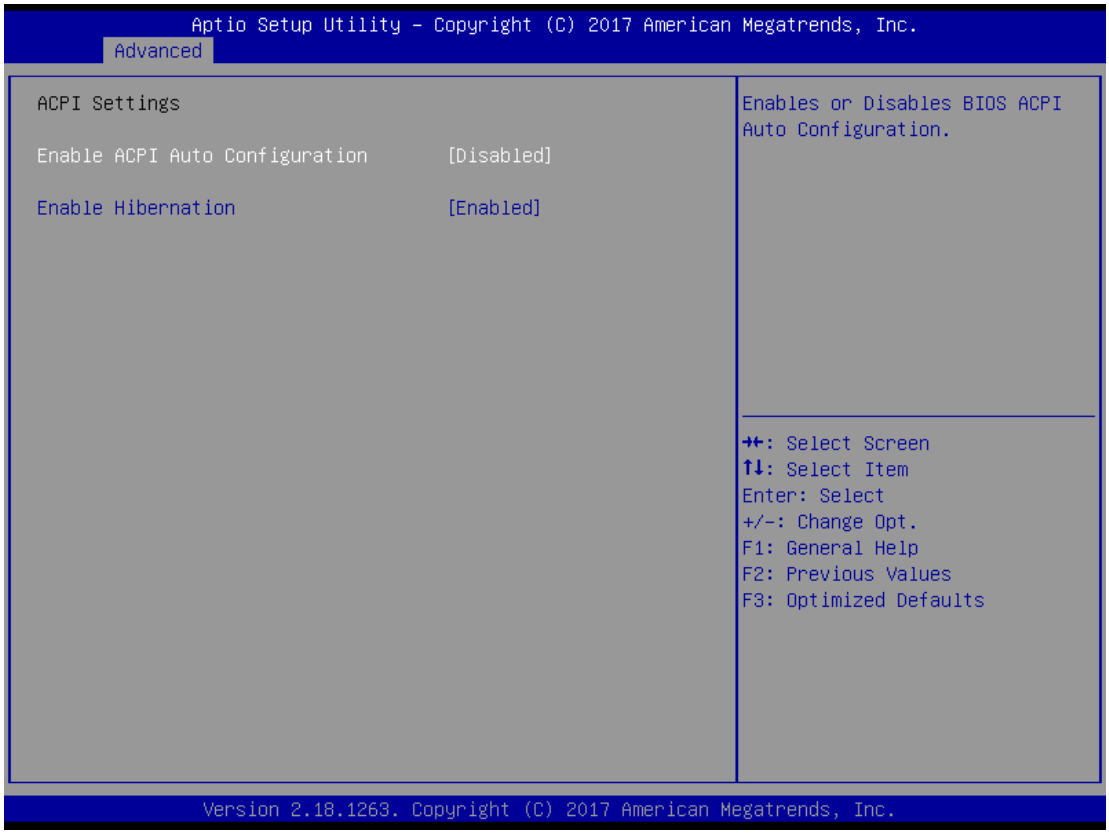
Intel Virtualization Technology	Enables a CPU to act as if you have several independent computers, in order to enable several operating systems to run at the same time on the same machine.	Enable/ Disable	Enable or disable this function
Boot Performance Mode	This feature selects the performance state the BIOS will set before the OS hand-off.	Auto	Auto mode
		Standard	Allows processor cores to run at the frequency recommended by the manufacturer.
		Turbo	Allows processor cores to run faster than the frequency recommended by the manufacturer.
EIST	Enhanced Intel SpeedStep Technology gives your OS the ability to switch the processor's speed and voltage up and down, to preserve power when not much is being computed.	Enabled/ Disabled	Enable or disable this function
Turbo Mode	Adjusts the power and clock speed of processor cores as needed to better match processor power to your needs.	Enabled/ Disabled	Enable or disable this function
CPU C states	Configure CPU C states parameters	Enabled/ Disabled	Enable or disable this function
CPU DTS	Digital Thermal Sensors (DTS) parameters.	Enabled/ Disabled	Enable or disable this function

4.2.2.2 Trusted Computing



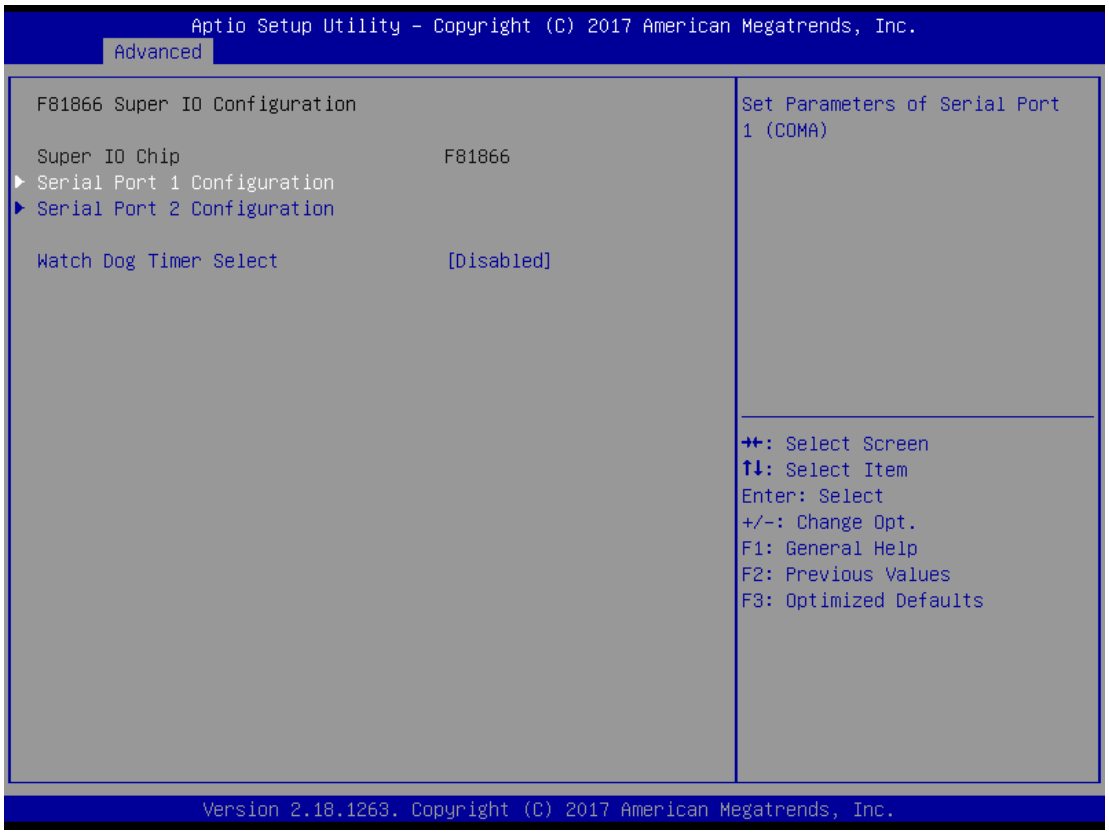
BIOS Setting	Description	Setting Option	Effect
Security Device Support	Enable or disable BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available	Enabled/ Disabled	Enable or disable this function.
TPM State	Trusted Platform Module (TPM) parameters.	Enabled/ Disabled	Enable or disable this function.
Pending operation	Pending operation parameters	None	Shows the number of pending operations
Device Select	Selects the device	Auto	

4.2.2.3 ACPI Settings



BIOS Setting	Description	Setting Option	Effect
Enable ACPI Auto Configuration	Enable or disable BIOS ACPI Auto Configuration	Enabled/ Disabled	Enable or disable this function
Enable Hibernation	To enable or disable hibernation	Enabled/ Disabled	Enable or disable this function

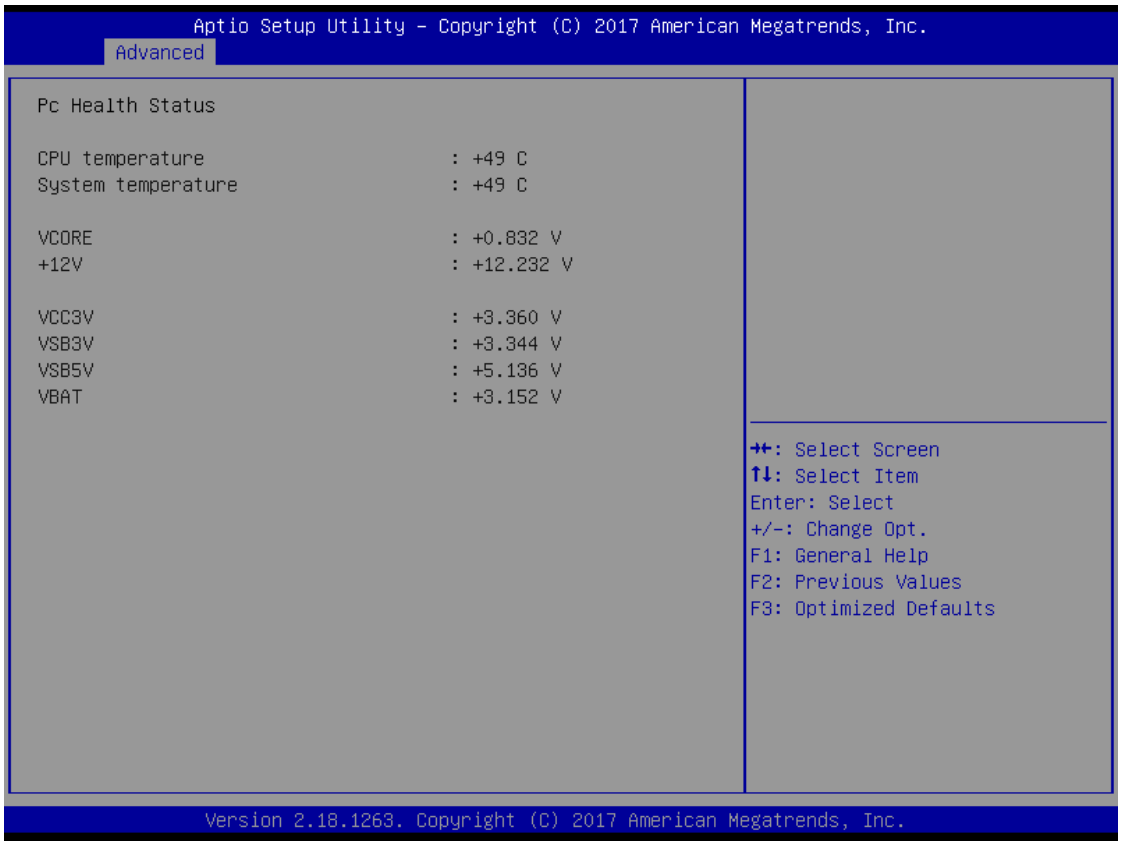
4.2.2.4 F81866 Super IO Configuration



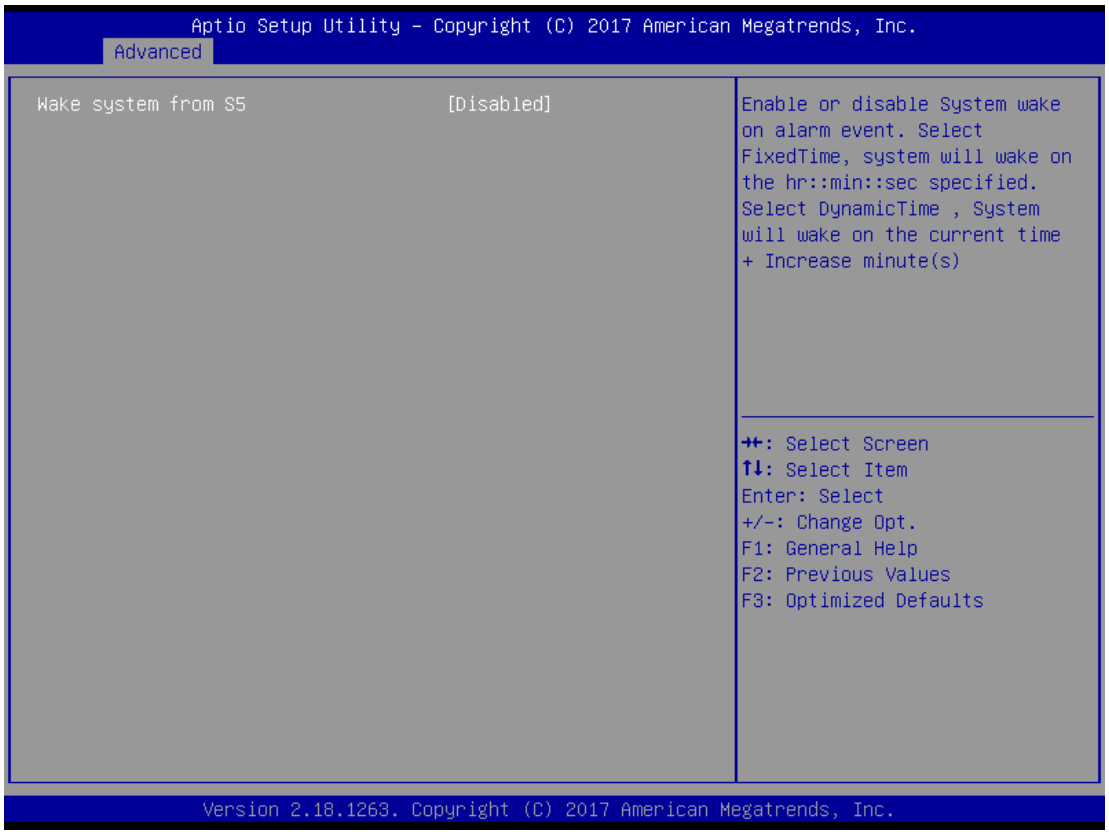
BIOS Setting	Description	Setting Option	Effect
Serial Port 1,2 Configuration	Set Parameters of Serial Ports. User can Enable/Disable the serial port and select optimal settings for the super IO Device.	Enabled/ Disabled **Default:** Enable	Enable or disable Serial Port (COM)
Watch Dog Timer Select	This watchdog timer can be used to monitor system software operation and take corrective action if the software fails to function after the programmed period.	Enabled/ Disabled	Enable or disable this function

4.2.2.5 Hardware Monitor

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

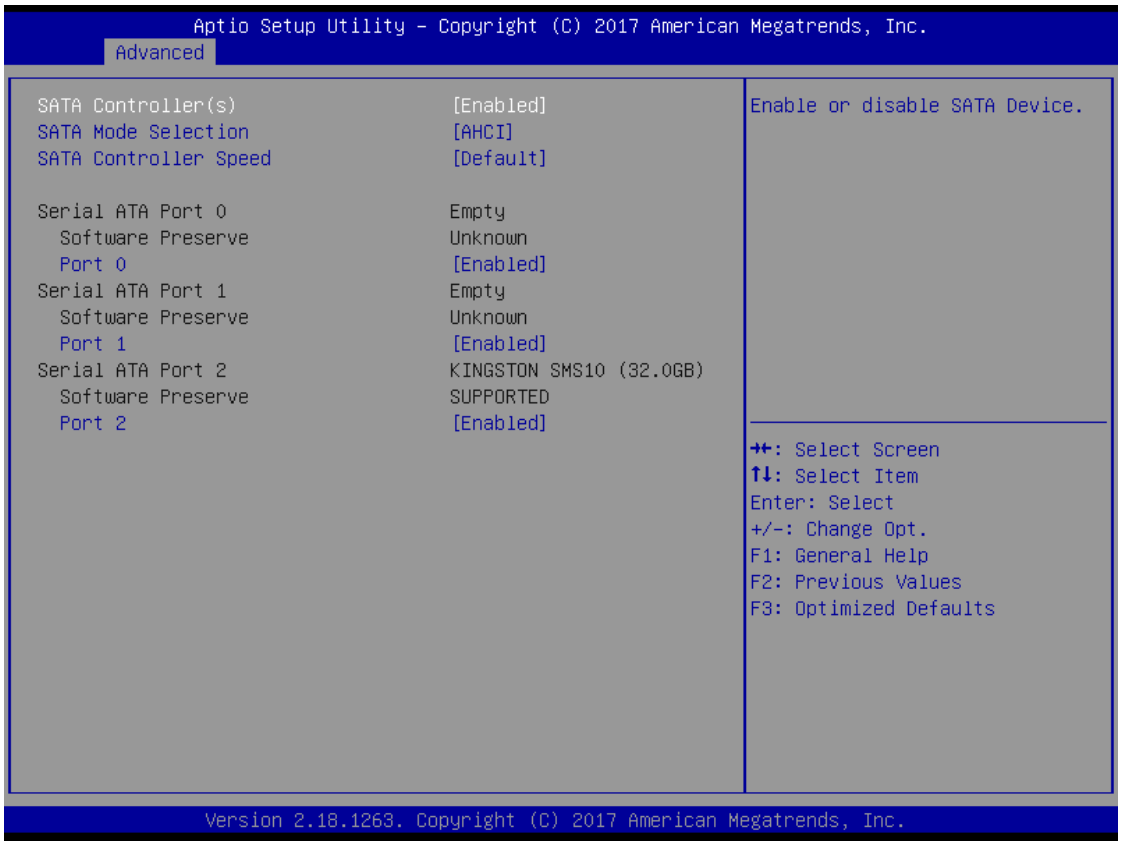


4.2.2.6 RTC Wake Settings



BIOS Setting	Description	Setting Option	Effect
Wake system from S5	Configure wake from full shutdown and boot mode (S5) system setting	Enabled/ Disabled	Enable or disable this function. When enabled, the system will wake on full shutdown and boot mode.

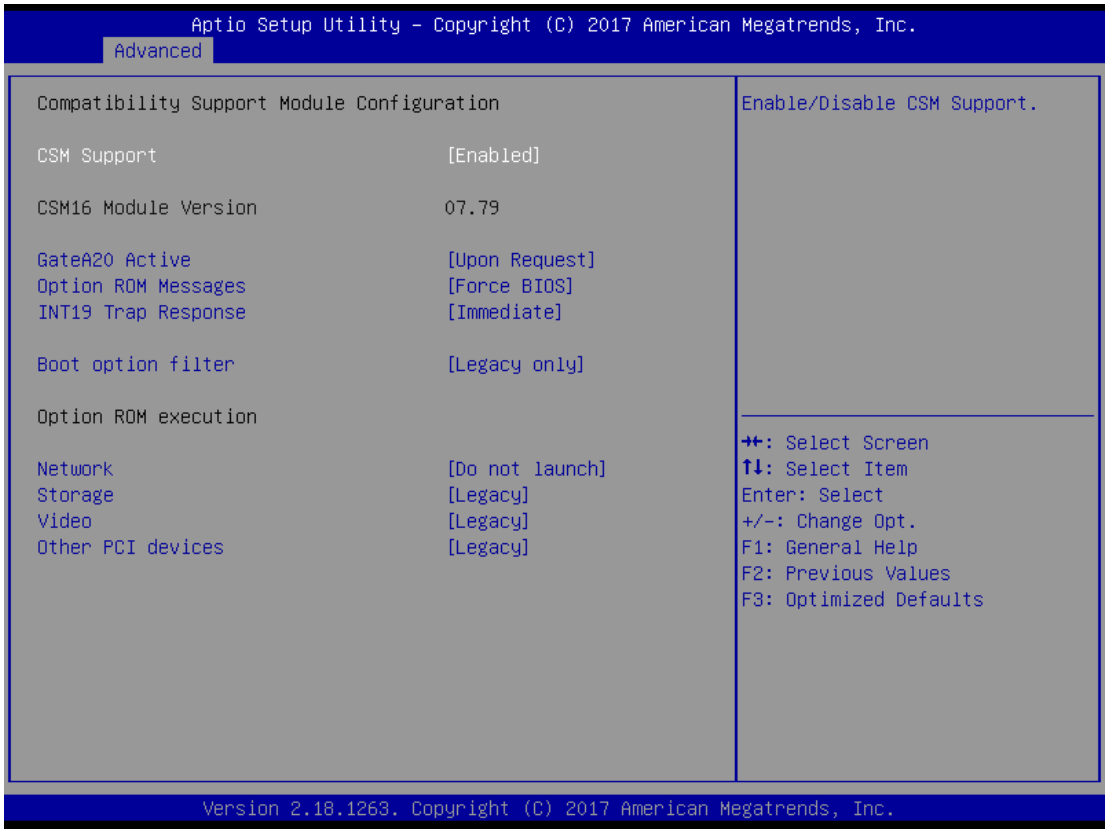
4.2.2.7 SATA Configuration



BIOS Setting	Description	Setting Option	Effect
SATA Controller(s)	Allows users to enable or disable the SATA controller(s).	Enabled/ Disabled	Enable or disable this function
SATA Mode Selection	Allows users to select mode of SATA controller(s).	AHCI	Work in AHCI mode of SATA controller(s)
SATA Controller Speed	Allows users to select mode of SATA Controller Speed.	Default	SATA Controller Speed default settings
Serial ATA Port 0/1/2	Allows users to enable or disable the SATA Port.	Enabled/ Disabled	Enable or disable this function

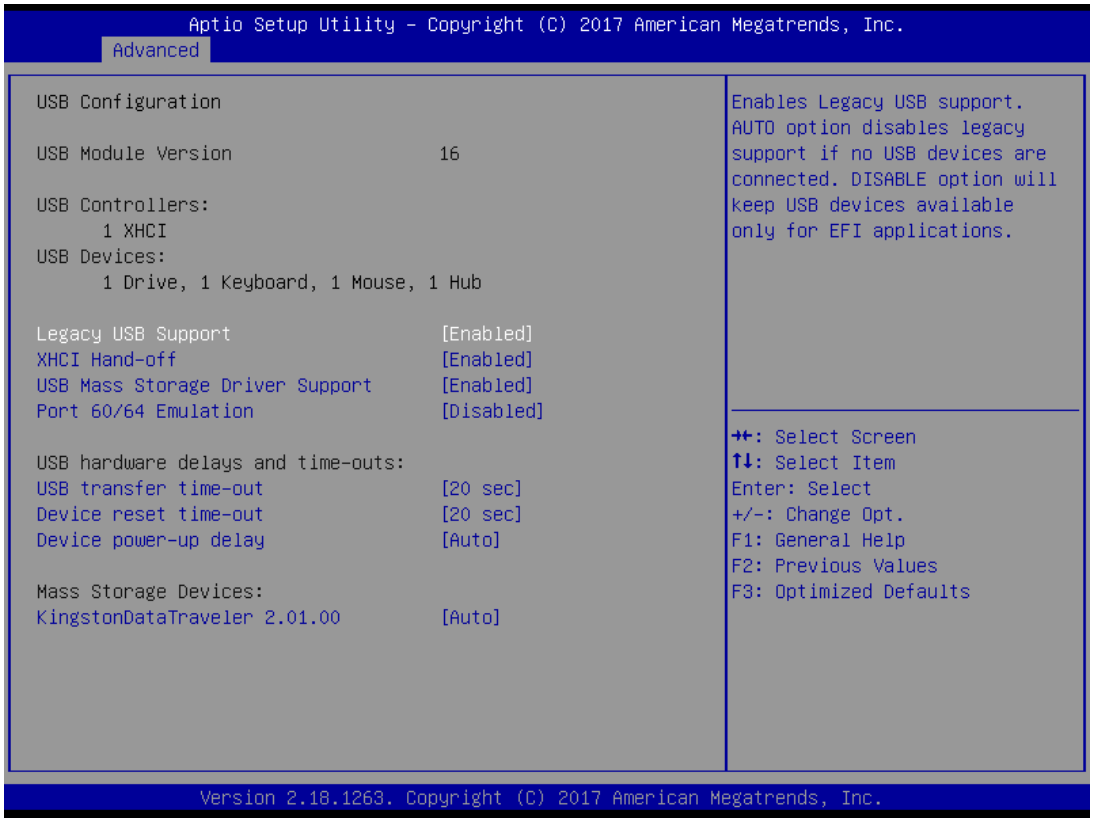
4.2.2.8 CSM Configuration

Compatability Support Module 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	Only Legacy option ROMs are booted

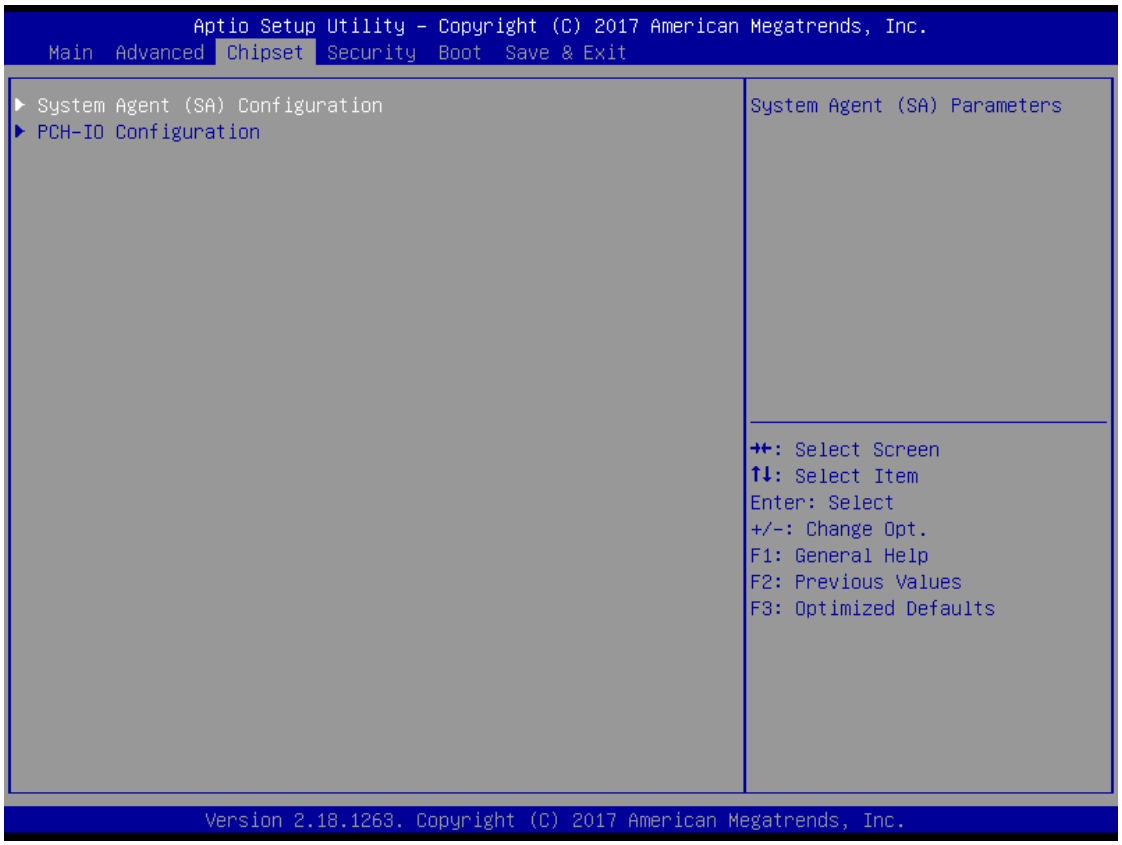
3.2.2.9 USB Configuration



BIOS Setting	Description	Setting Option	Effect
Legacy USB Support	User can enable or disable USB port.	Auto	Disable legacy support if no USB devices are connected
		Disable	Will keep USB devices available only for EFI applications.
		Enable	Enable all the USB devices
XHCI Hand-off	This is a workaround for OSs without XHCI hand- off support. The XHCI ownership Change should claim by XHCI driver.	Disable	Disables this function
		Enable	Enables this function
EHCI Hand-off	This is a workaround for OSs without ECHI	*Disabled	Disables this function
		Enable	Enables this

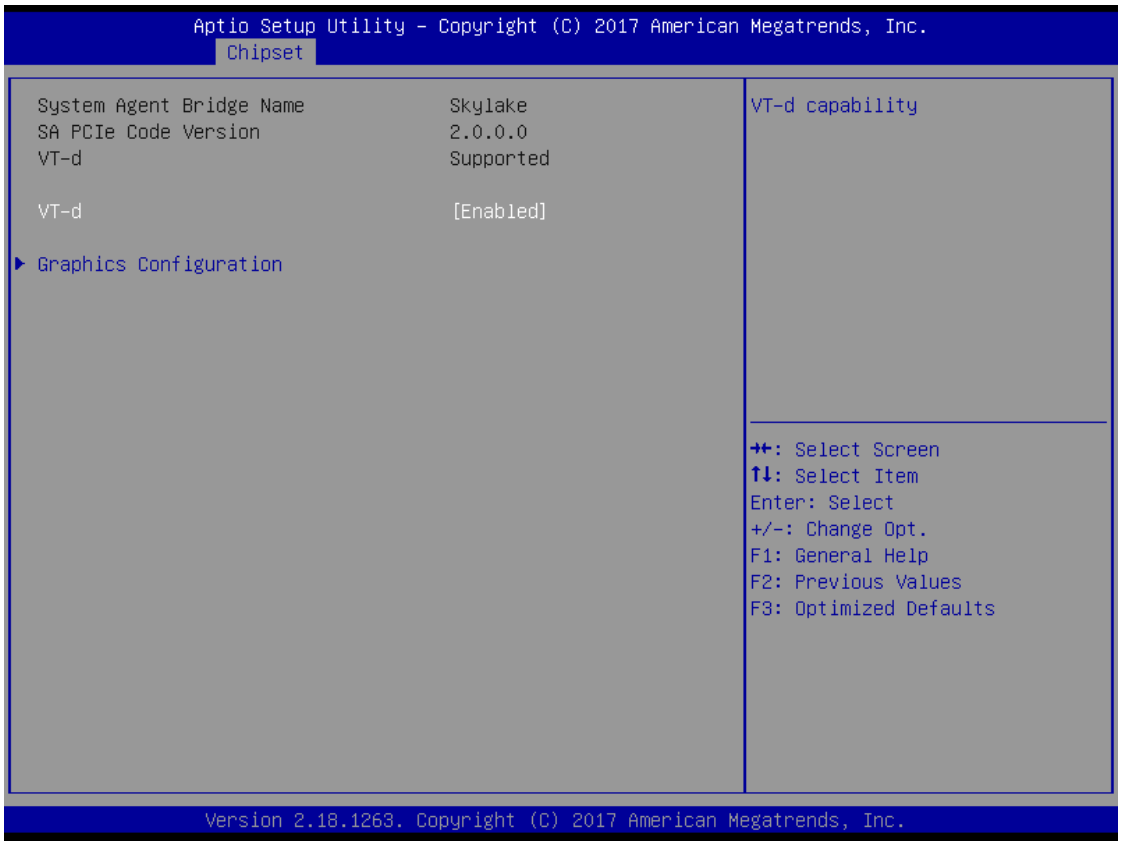
	hand- off support. The EHCI ownership change should be claimed by EHCI driver.		function
USB Mass Storage Driver Support	User can Enable or disable USB mass storage driver support.	Disable	Disables this function
		Enable	Enables this function
USB Transfer time-out	The time-out value for control, bulk, 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

4.2.3 Chipset Menu



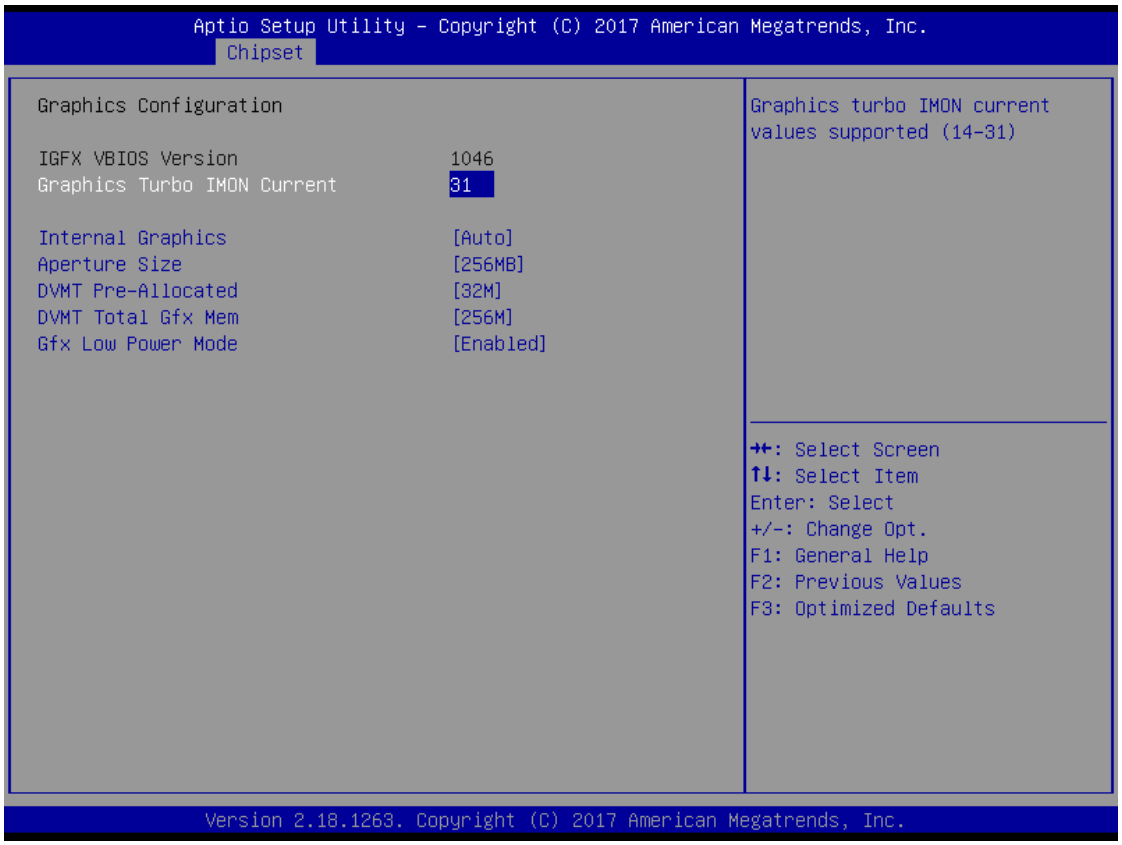
BIOS Setting	Description	Setting Option	Effect
System Agent (SA) Configuration	System Agent (SA) Parameters	Enter	Opens submenu
PCH-IO Configuration	PCH Parameters	Enter	Opens submenu

4.2.3.1 System Agent (SA) Configuration



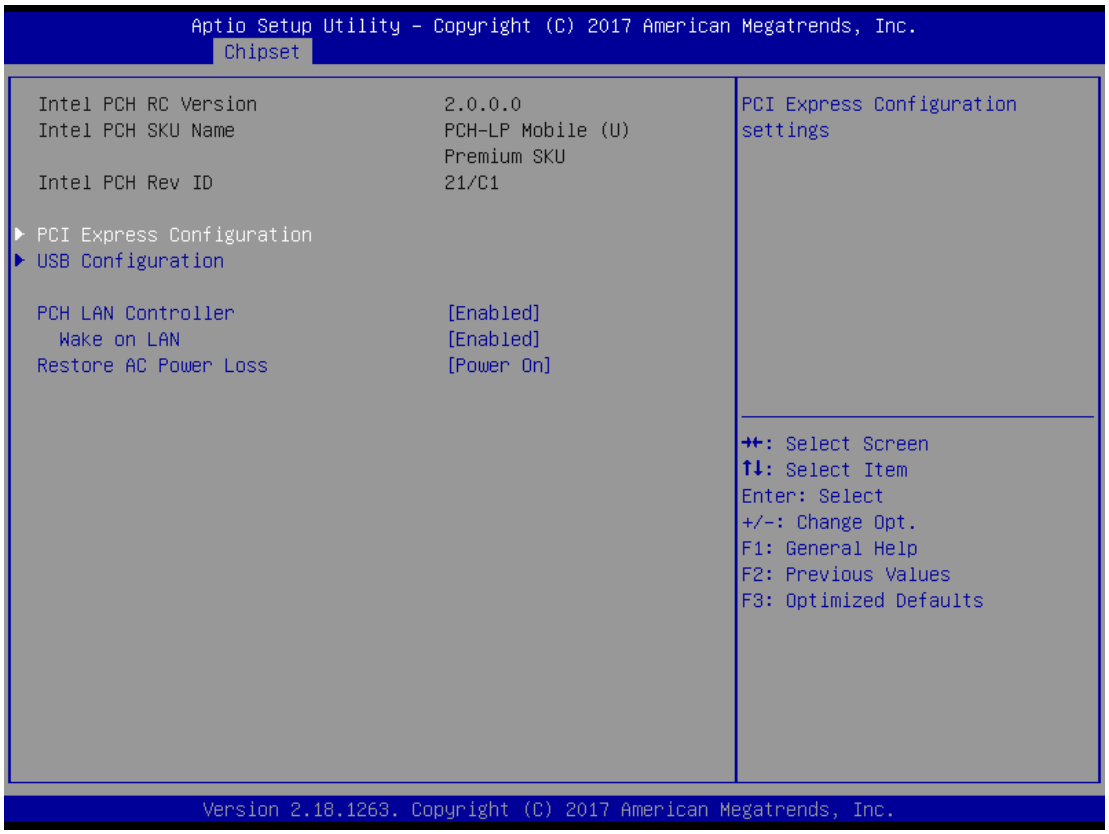
BIOS Setting	Description	Setting Option	Effect
VT-d	VT-d can help end users improve security and reliability of the systems and also improve performance of I/O devices in virtualized environment.	Enable/Disable	Enables or disables this function
Graphics Configuration	Configures Graphics parameters	Enter	Opens submenu

4.2.3.1.1 Graphics Configuration



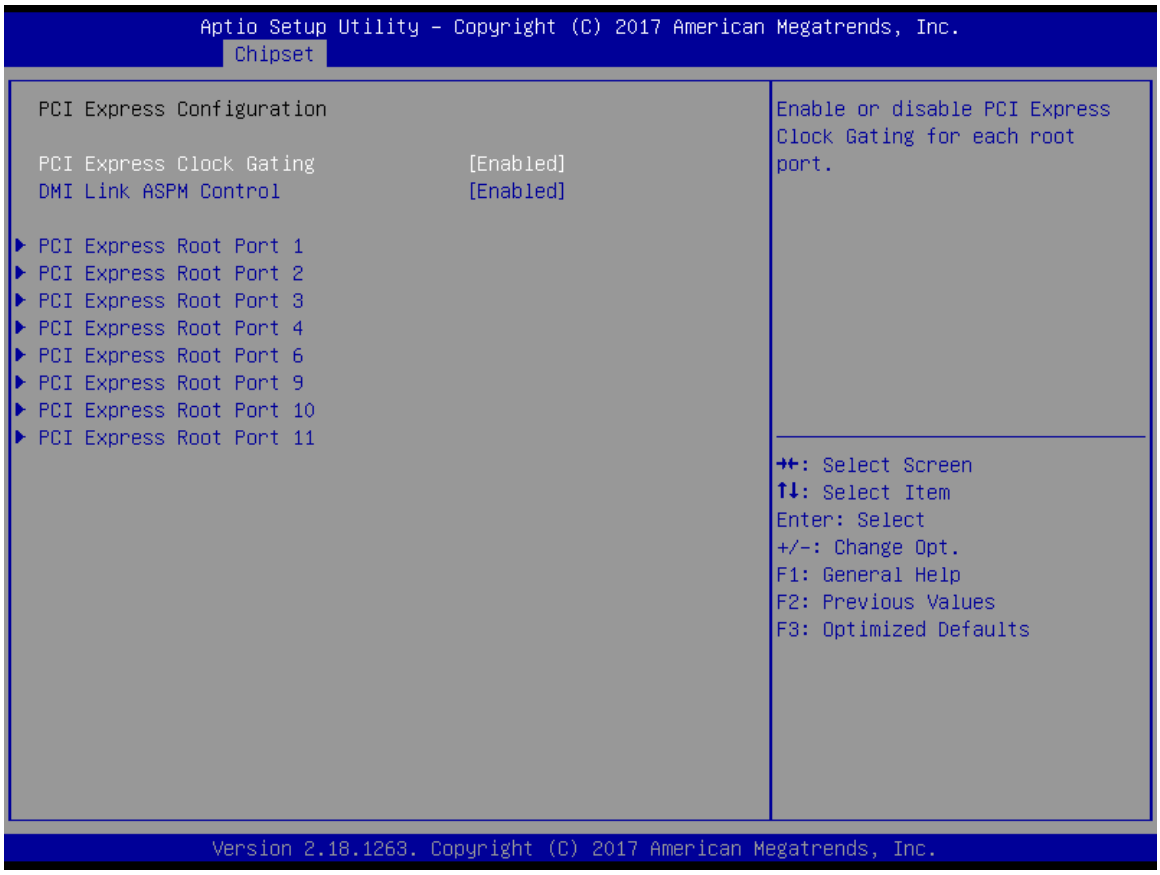
BIOS Setting	Description	Setting Option	Effect
Graphics Turbo IMON Current	Graphics turbo IMON current values supported 14~31	14~31	Set up the value of Graphics turbo IMON current
Internal Graphics	Configures Internal Graphics parameters	Auto	Set up internal graphics parameters
Aperture Size	Configures aperture size settings	256MB	Set up aperture size parameters
DVMT Pre-Allocation	Configures DVMT Pre-Allocation parameters	32M	Set up DVMT Pre-Allocation parameters
DVMT Total Gfx Mem	Configures DVMT Total Gfx Mem parameters	256M	Set up DVMT Total Gfx Mem parameters
Gfx Low Power Mode	Configures Gfx Low Power Mode settings	Enable/Disable	Enables or disables this function

4.2.3.2 PCI Configuration



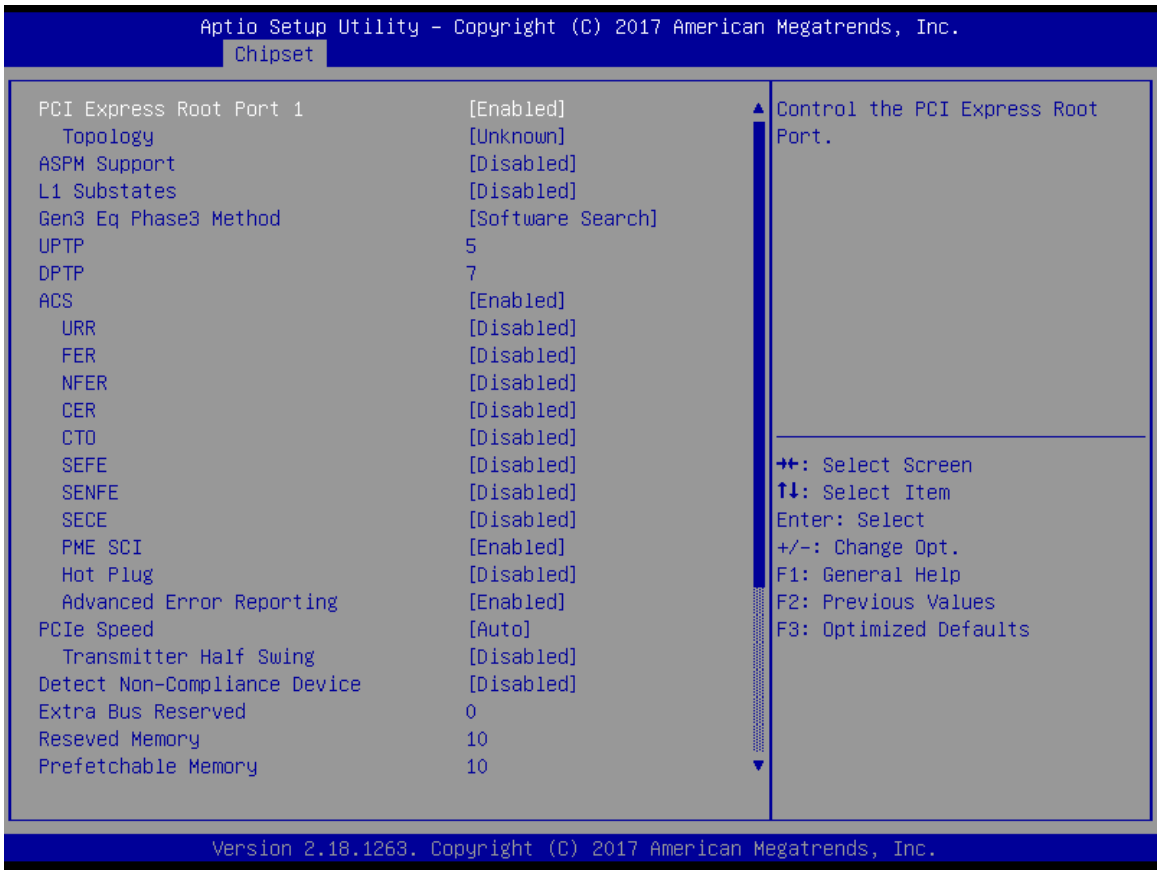
BIOS Setting	Description	Setting Option	Effect
PCI Express Configuration	Configures PCI Express parameters	Enter	Opens submenu
USB Configuration	Configures USB parameters	Enter	Opens submenu
PCH LAN Controller	Configures PCH LAN Controller parameters	Enable/Disable	Enables or disables this function
Wake on LAN	Set up wake on LAN function	Enable/Disable	Enables or disables this function
SLP_A4 Assertion Width	Configures SLP_A4 Assertion Width parameters	4-5 seconds	Set up SLP_A4 Assertion Width parameters
Restore AC Power Loss	Enabling this will allow the computer to power up once house hold power is established.	Power On	Set Restore AC Power Loss parameters

4.2.3.2.1 PCI Express Configuration



BIOS Setting	Description	Setting Option	Effect
DMI Link ASPM Control	The control of Active State Power Management on both NB side and SB side of the DMI Link.	Enable/ Disable	Enables or disables this function
DMI Link Extended Synch Control	The control of DMI Link Extended Synch parameters	Enable/ Disable	Enables or disables this function
PCI Express Root Port 1~6	PCI Express Root Port 1~6 parameters	Enter	Opens sub-menu (see next section)

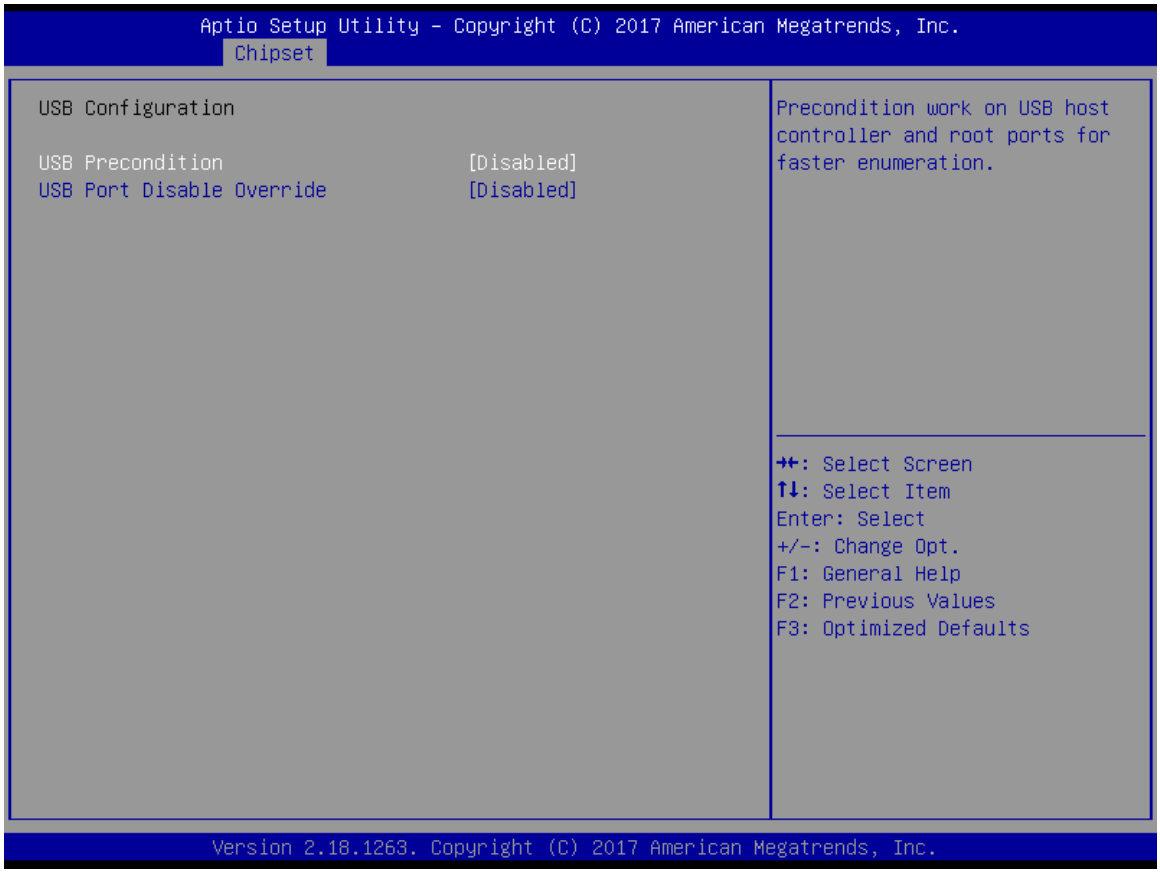
PCI Express Root



BIOS Setting	Description	Setting Option	Effect
PCI Express Root Port 1	The control of PCI Express Root Port	Enable/ Disable	Enables or disables this function
ASPM Support	Configures ASPM Support parameters	Enable/ Disable	Enables or disables this function
L1 Substates	Configures L1 Substates parameters	L1.1 & L1.2	Setting up L1 Substates parameters
Gen3 Eq Phase3 Method	Configures Gen3 Eq Phase3 Method	Software Search	Setting up Gen3 Eq Phase3 Method parameters
PCI Speed	Configures PCI Speed parameters	Auto	Setting up PCI Speed
Detect Non-Compliance Device	Detect the device that is not compliant to the system settings	Enable/ Disable	Enables or disables this function
Extra Bus Reserved	Configures Extra Bus Reserved parameters	Set the value	Setting up the value

Reserved Memory	Configures Reserved Memory parameters	Set the value	Setting up the value
Prefetchable Memory	Configures Prefetchable Memory parameters	Set the value	Setting up the value

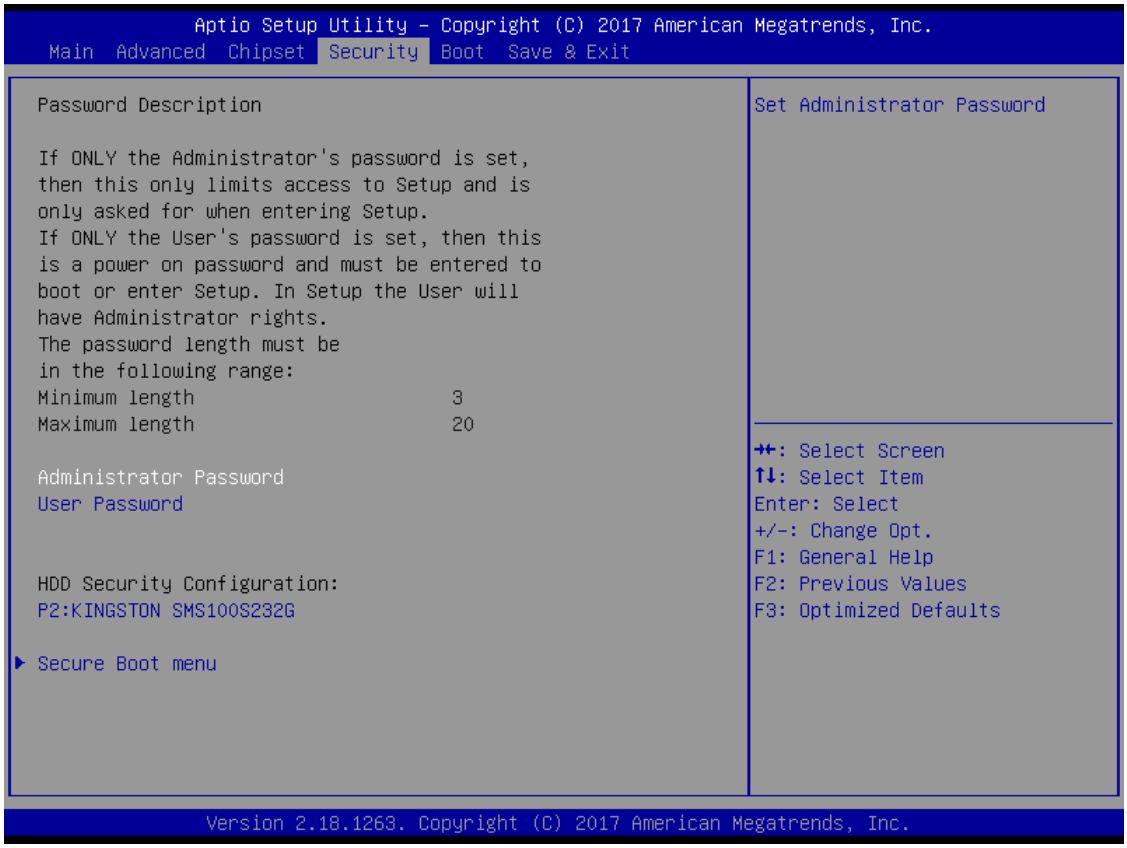
USB Configuration



BIOS Setting	Description	Setting Option	Effect
USB Precondition	Allows user to enable or disable USB Precondition	Enable/ Disable	Enables or disables this function
USB Ports Per-Port Disable Control	Control each of the USB ports (0~XX) disabling	Enable/ Disable	Enables or disables this function

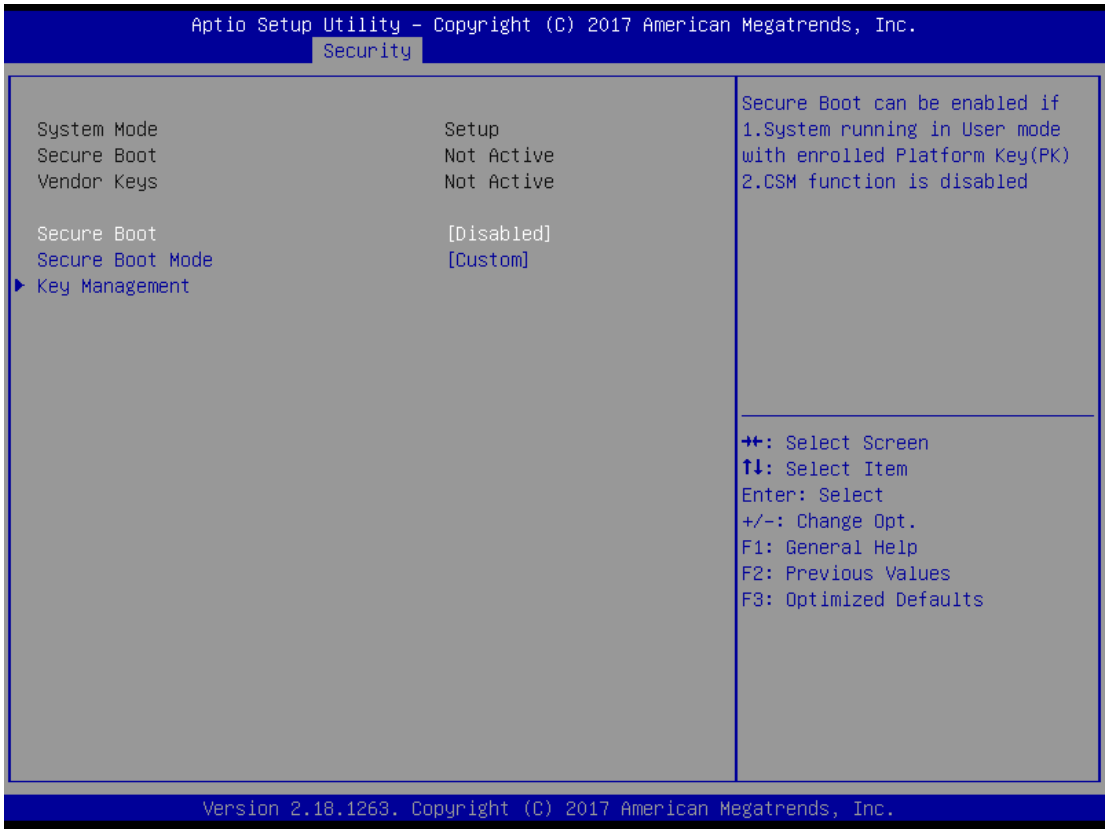
4.2.4 Security Menu

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



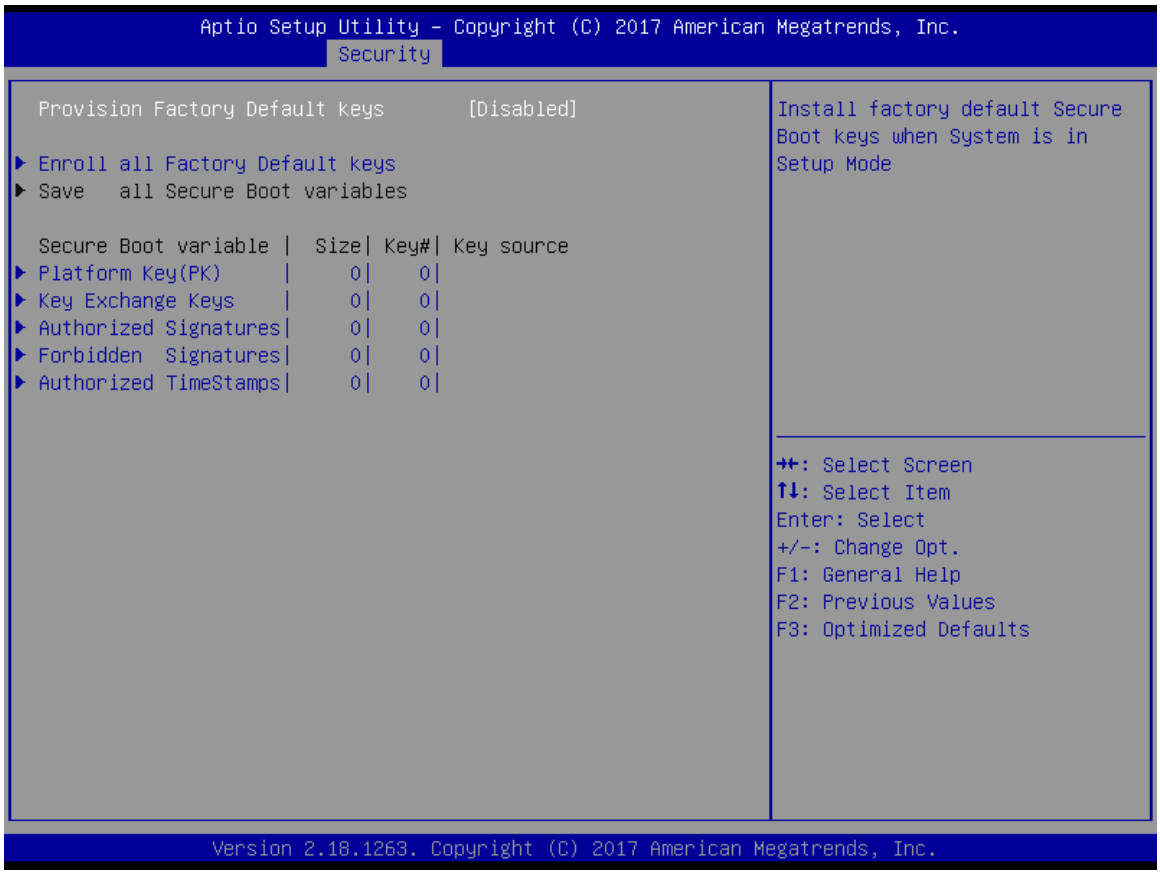
BIOS Setting	Description	Setting Option	Effect
Administrator Password	Displays whether or not an administrator password has been set.	Enter	Enter password
User Password	Display whether or not a user Password has been set.	Enter	Enter password
Secure Boot Menu	This feature designed to prevent malicious software and unauthorized media from loading during the boot process.	Enter	Opens sub-menu

4.2.4.1 Security Boot Menu

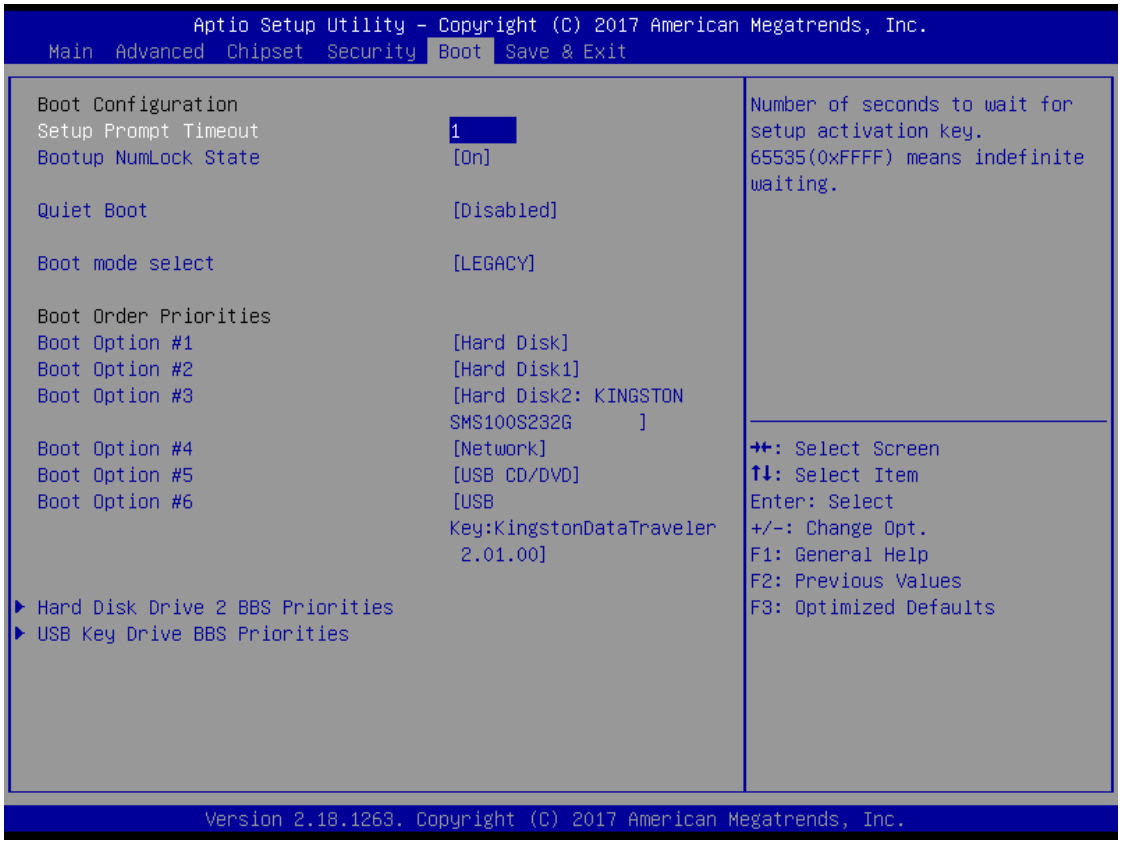


BIOS Setting	Description	Setting Option	Effect
Secure Boot	Secure Boot is a feature designed to prevent malicious software and unauthorized media from loading during the boot process.	Enable/ Disable	Enables or disables this function
Secure Boot Management	Manage Secure Boot settings	Custom	Configure Secure Boot parameters
Key Management	Setting Key Management parameters	Enter	Opens sub-menu

Key Management



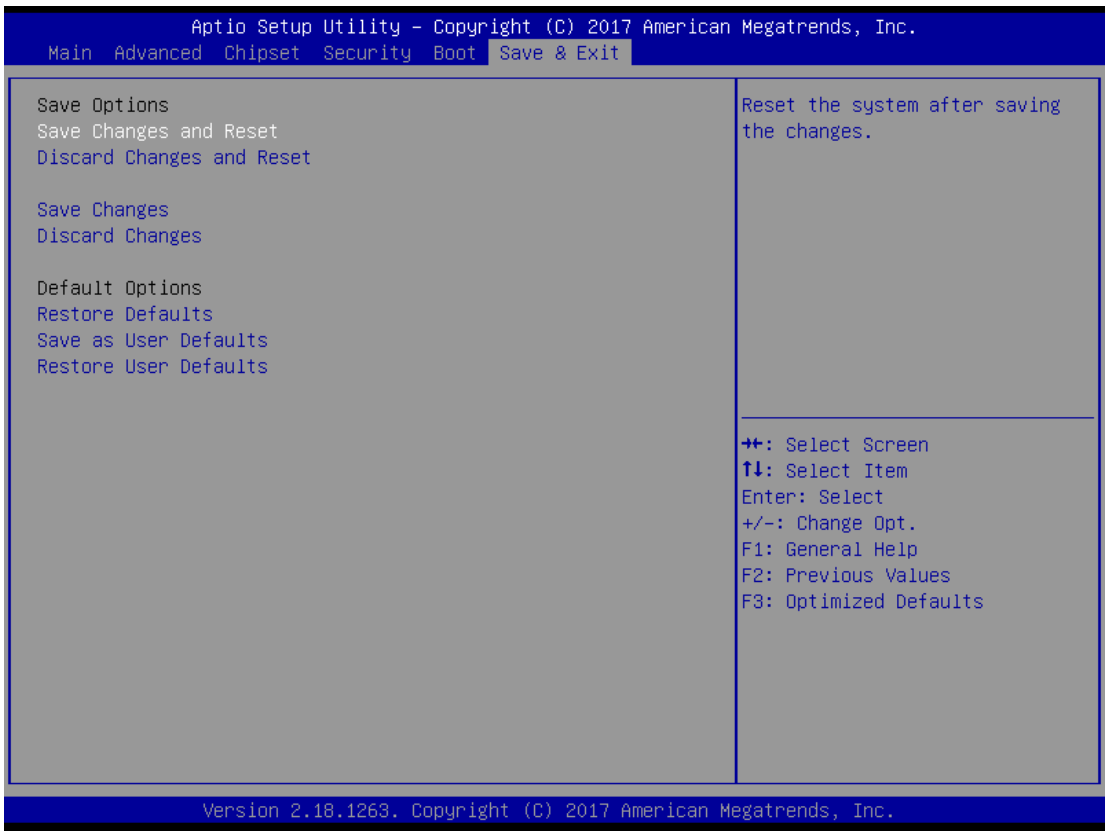
4.2.5 Boot Menu



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
Boot Mode Select	Select boot mode	LEGACY/ UEFI	Select LEGACY or UEFI boot mode.

Boot Option Priorities	Specifies the overall boot order from the available devices	**Ex:** Boot Option#1 (network); **Options:** #1~#7	**Ex.:** Set Network as the first priority
Hard Drive 2 BBS Priorities	Specifies the boot order for Hard Drive BBS parameters	Enter	Enter the submenu
USB Key Drive Priorities	Specifies the boot order for USB Key Drive	Enter	Enter the submenu

4.2.6 Save&Exit



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

	changes	<NO>	Return to the BIOS Setup Main Menu
Save Changes	Save changes done so far to any of the setup options.	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu
Discard Changes	Discard changes done so far to any of the setup options.	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu
Restore Defaults	Restore/load default values for all the setup options.	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu
Save as User Defaults	Save the changes done so far as User defaults.	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu
Restore User Defaults	Restore the User Defaults to all the setup options.	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu
Launch EFI Shell	Launch Extensible Firmware Interface menu	<YES>	Saves the changes
		<NO>	Return to the BIOS Setup Main Menu

4.3 Using Recovery Wizard to Restore Computer

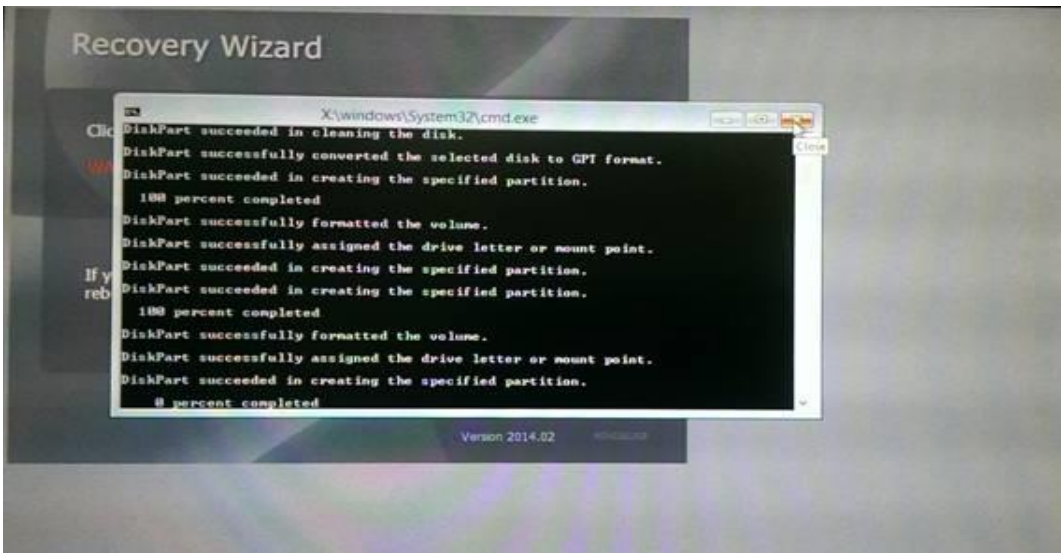
Note:
Before starting the recovery process, make sure to backup all user data. The data will be lost after the recovery process.

To enable quick one-key recovery procedure:

- Plug-in the AC adapter to the 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.



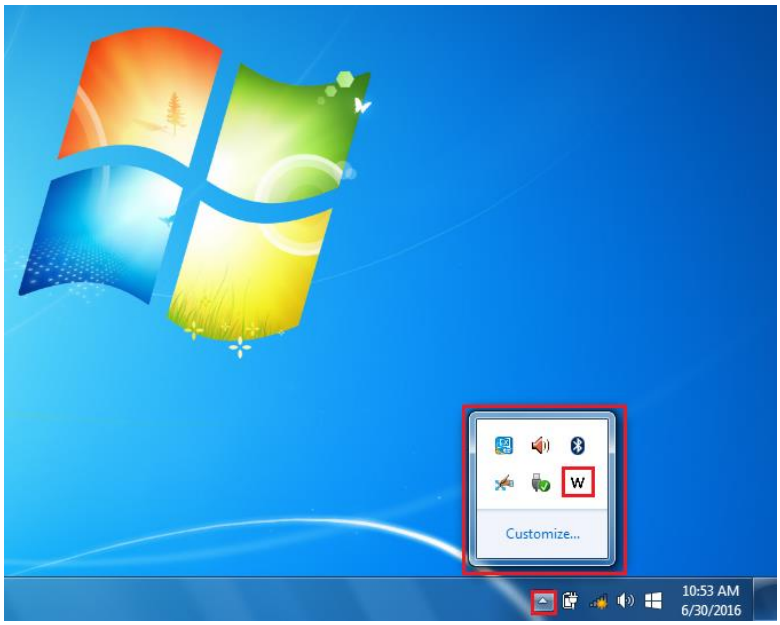
4.4 How to Enable Watchdog

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 or File Share. Refer to the User Manual for more details.

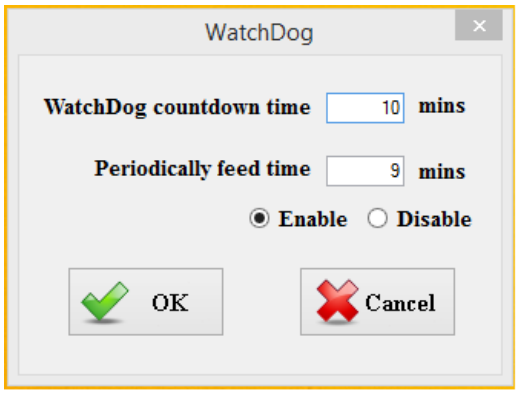
To enable watchdog in Watchdog AP follow the instructions below:

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.

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

DRIVER INSTALLATION

This chapter provides driver installation instructions.

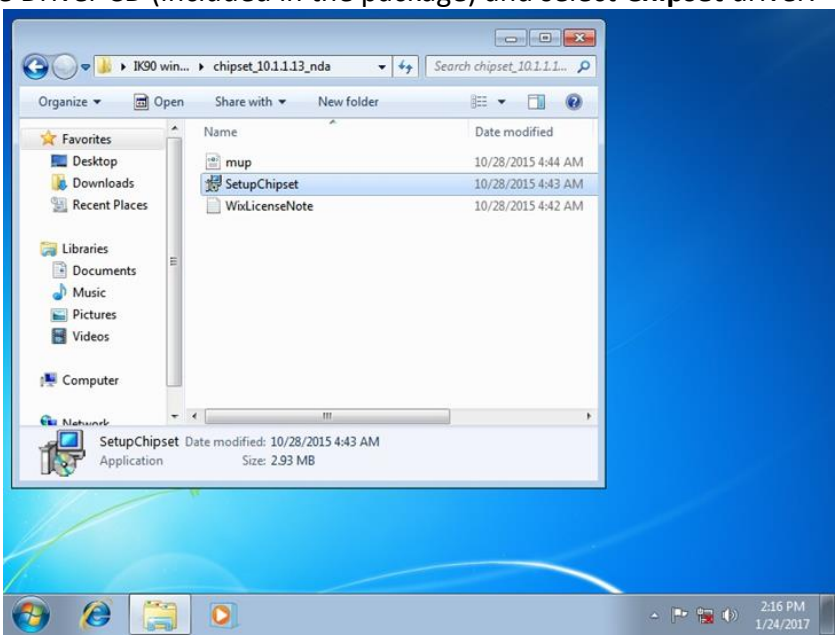
CHAPTER 5: DRIVER INSTALLATION

This chapter provides instructions on how to install drivers on the IKHM100 M-Series Box PC.

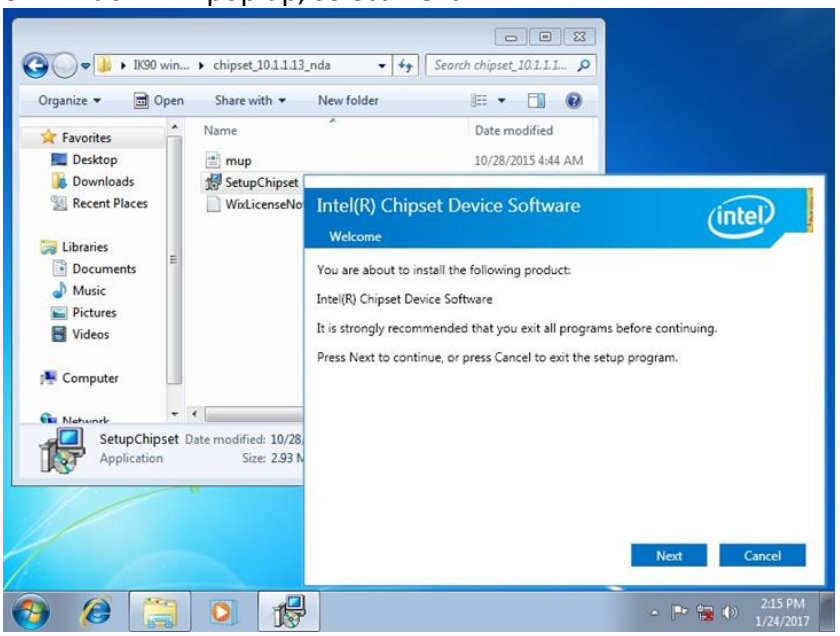
5.1 Chipset Driver Installation

Follow instructions below to install Chipset driver.

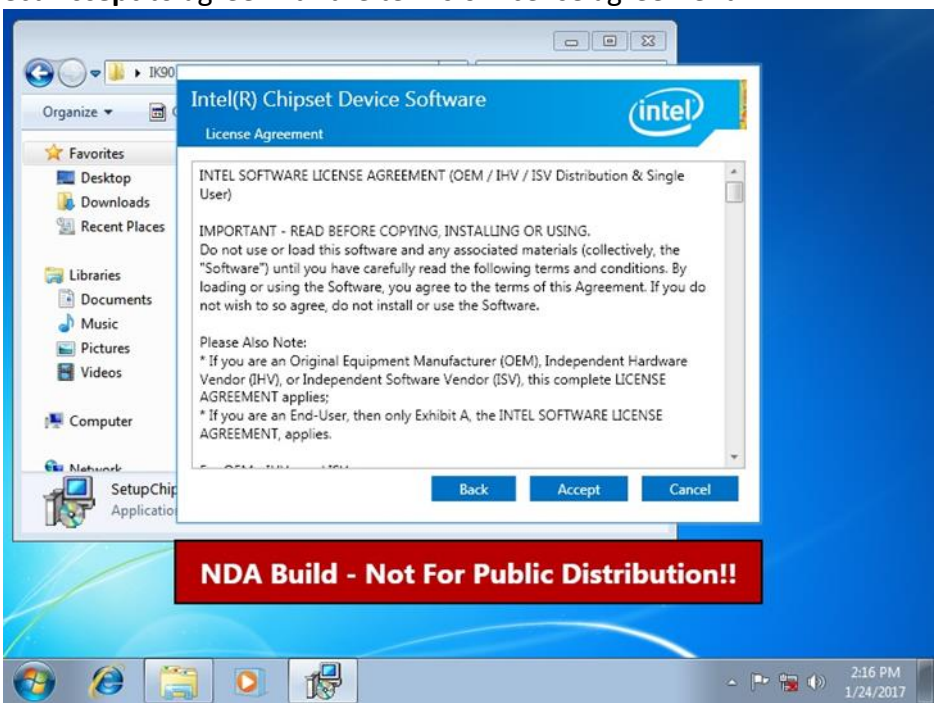
1. Open the Driver CD (included in the package) and select **Chipset** driver.



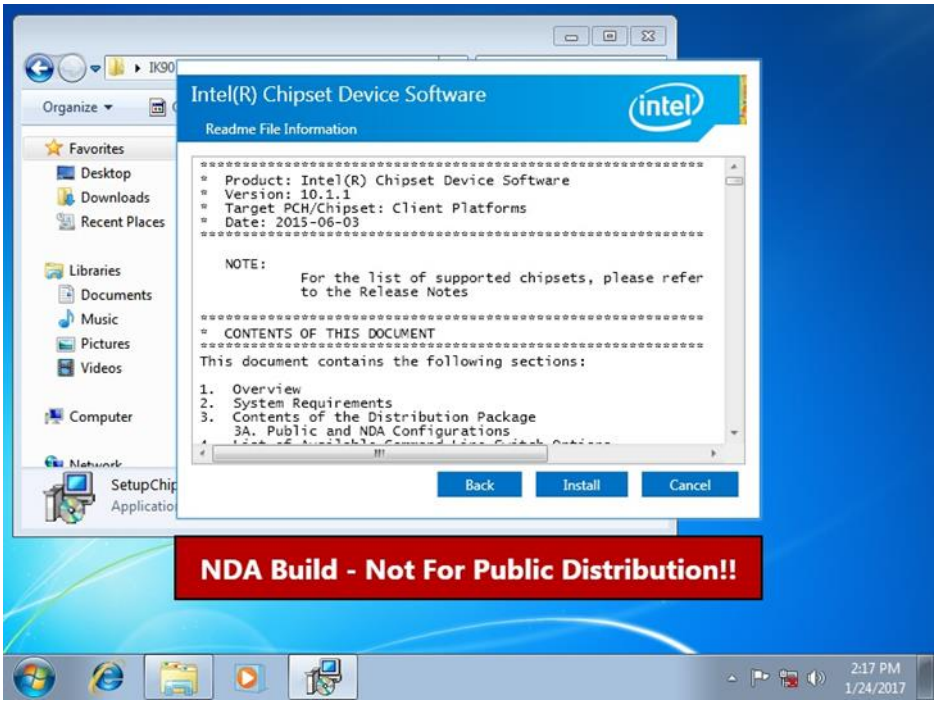
2. Installation window will pop up, select **Next**.



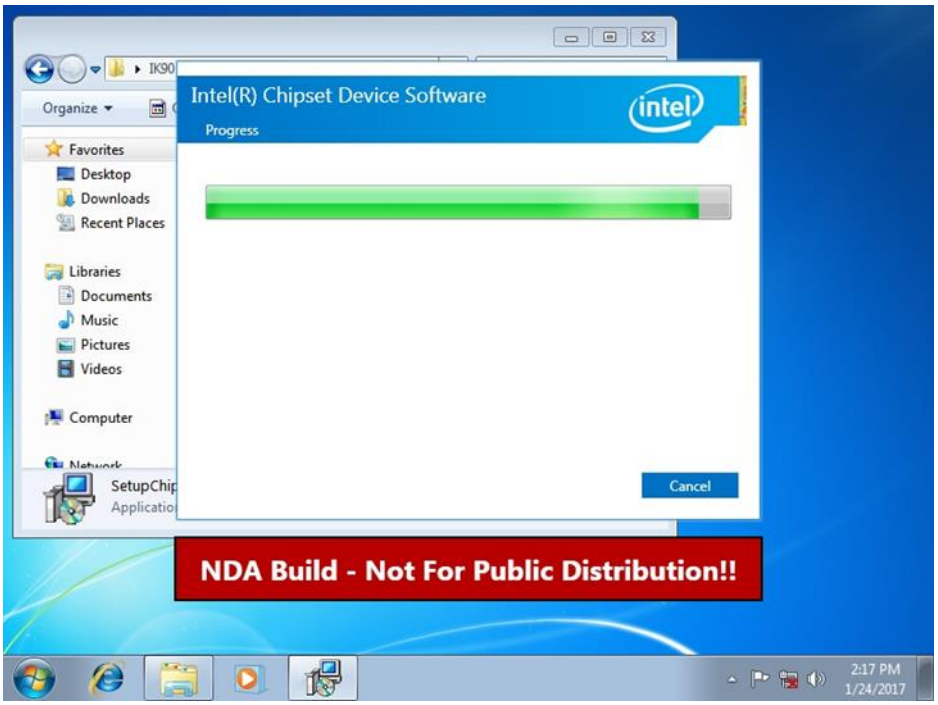
3. Select **Accept** to agree with the terms of license agreement.



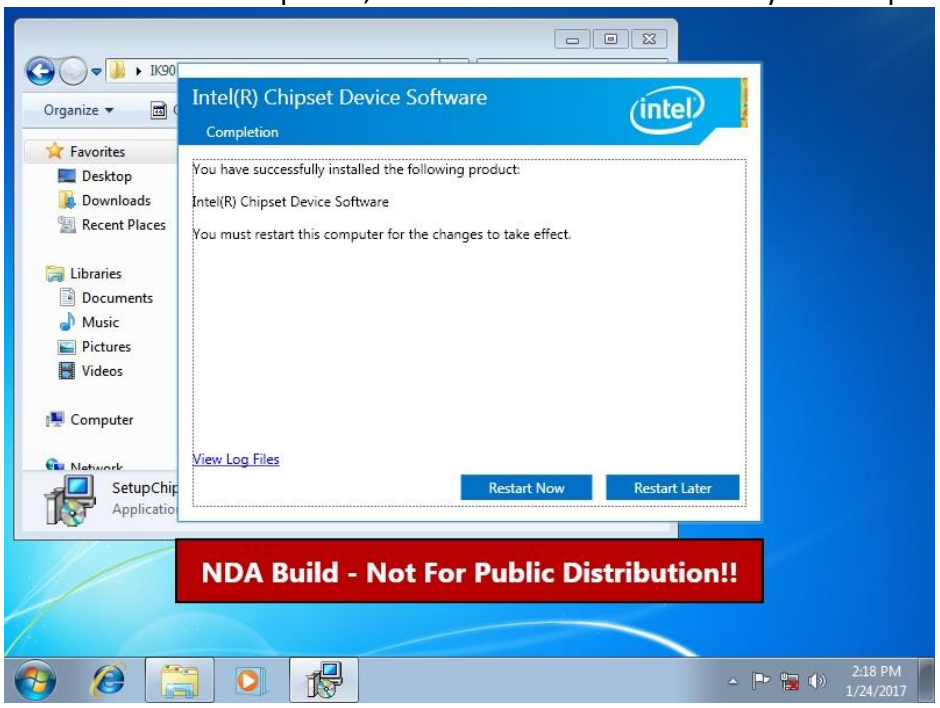
4. Check the ReadMe file information, select **Install** to continue.



5. Wait for the driver to be installed.



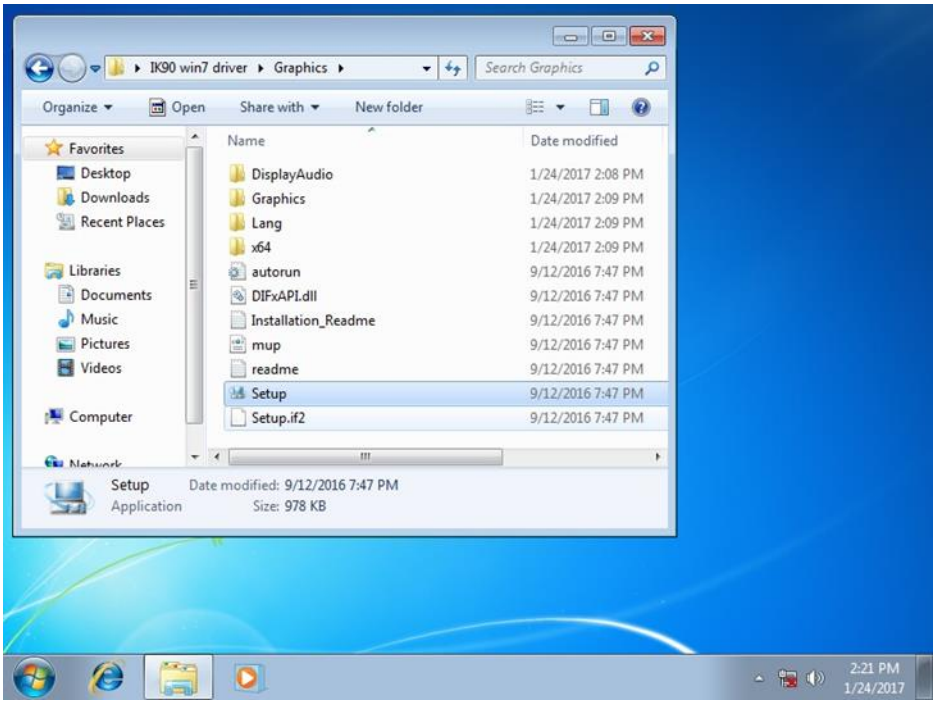
6. When installation completed, select **Restart Now** to restart your computer.



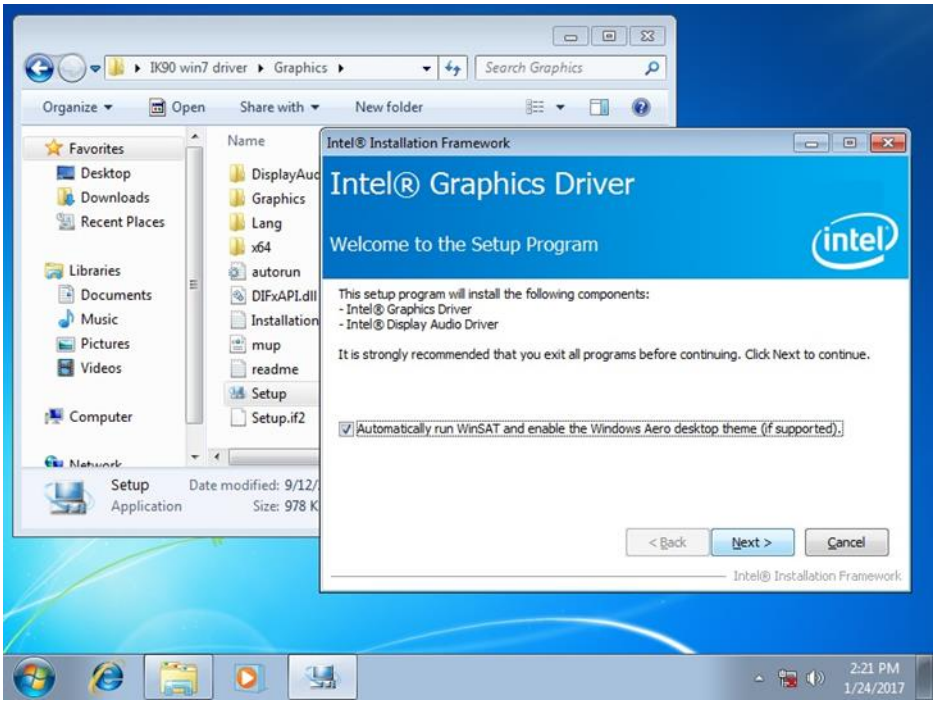
5.2 Graphic Driver Installation

Follow instructions below to install Graphic driver.

1. Open the Driver CD (included in the package) and select **Graphic** driver.

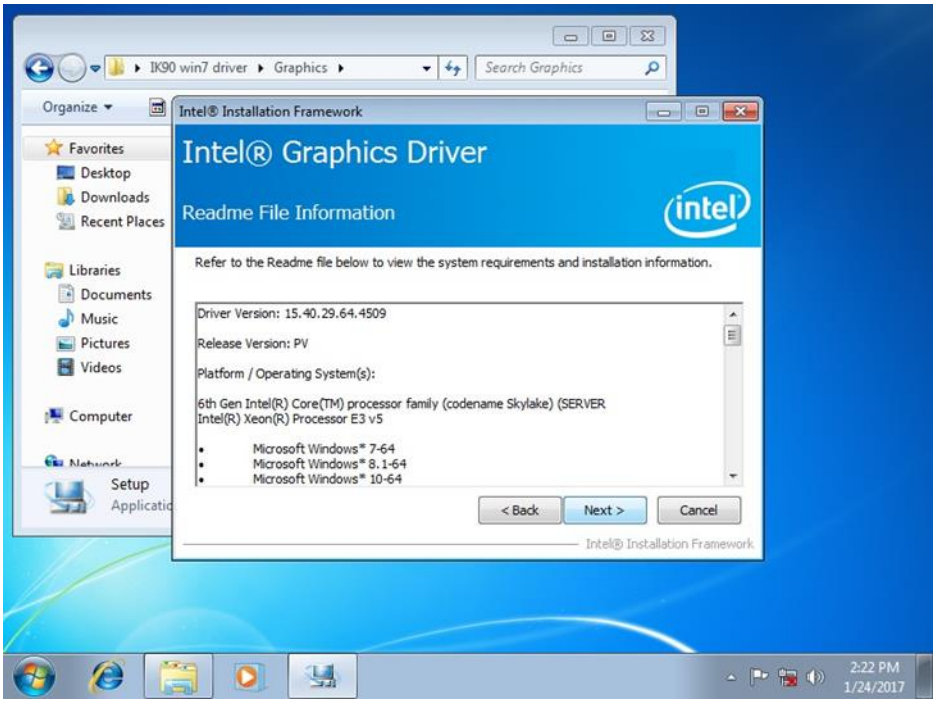


2. Installation window will pop up, select **Next**.

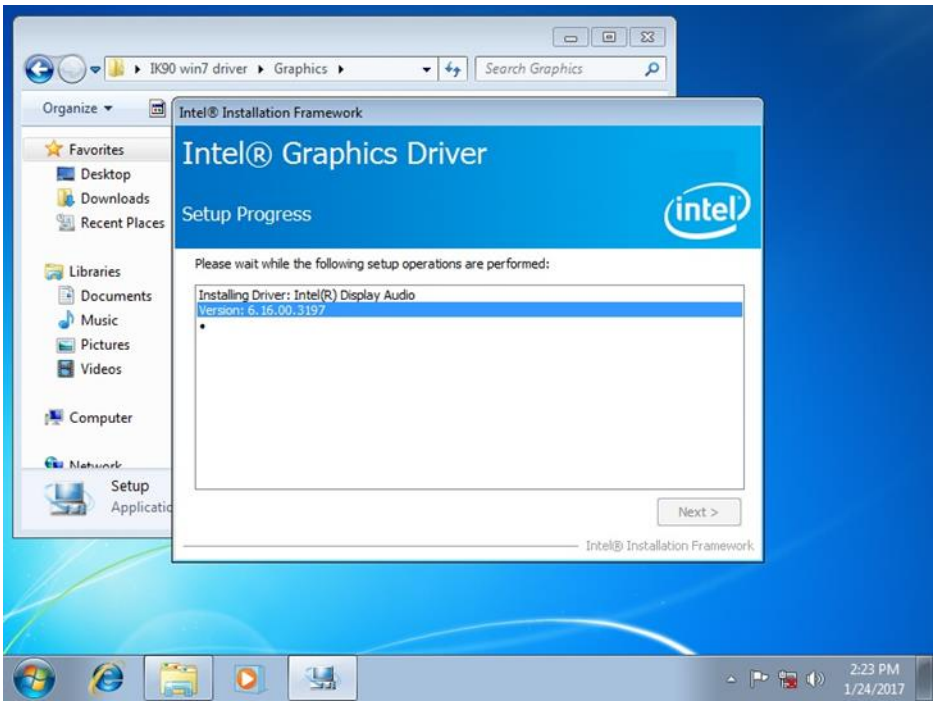


3. Select **Yes** to agree with the terms of license agreement.

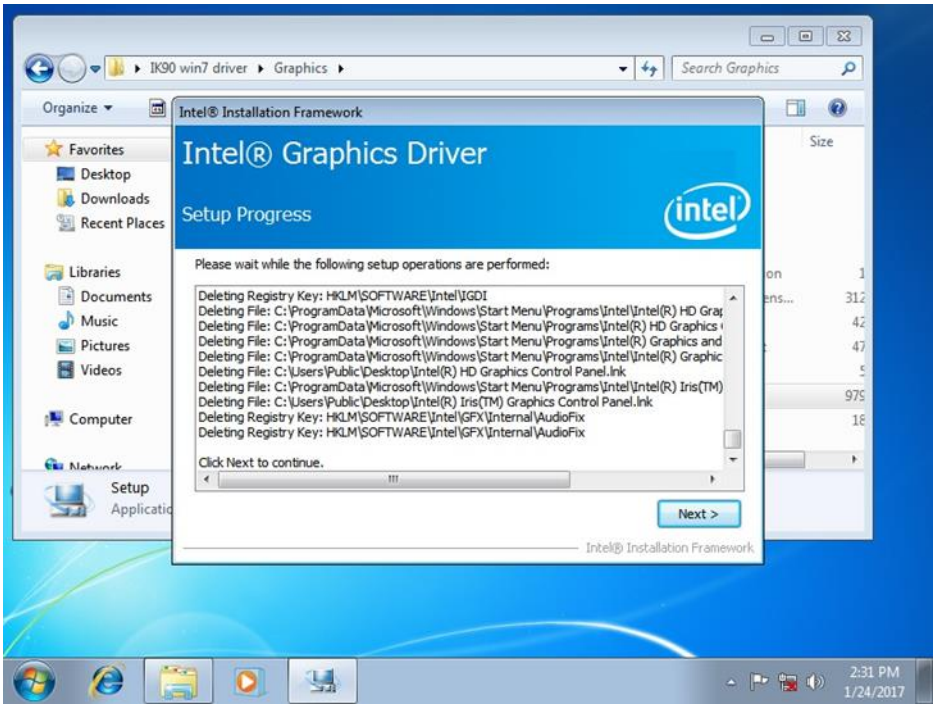
4. Check the ReadMe file information, select **Next** to continue.



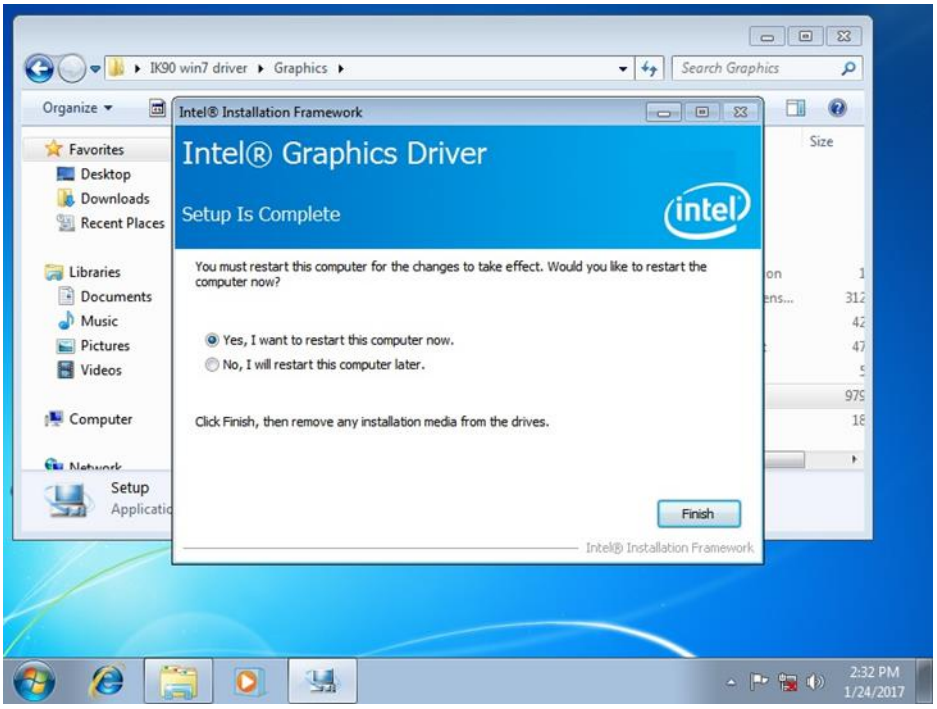
5. Wait for the driver to be installed.



6. Select **Next** to continue.



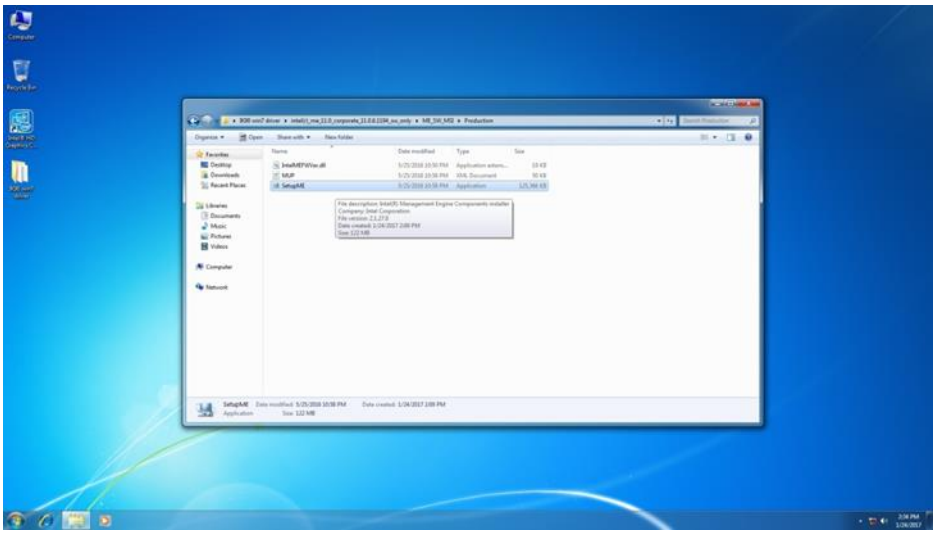
7. After installation is completed, select "**Yes, I want to restart this computer now**", and click **Finish**.



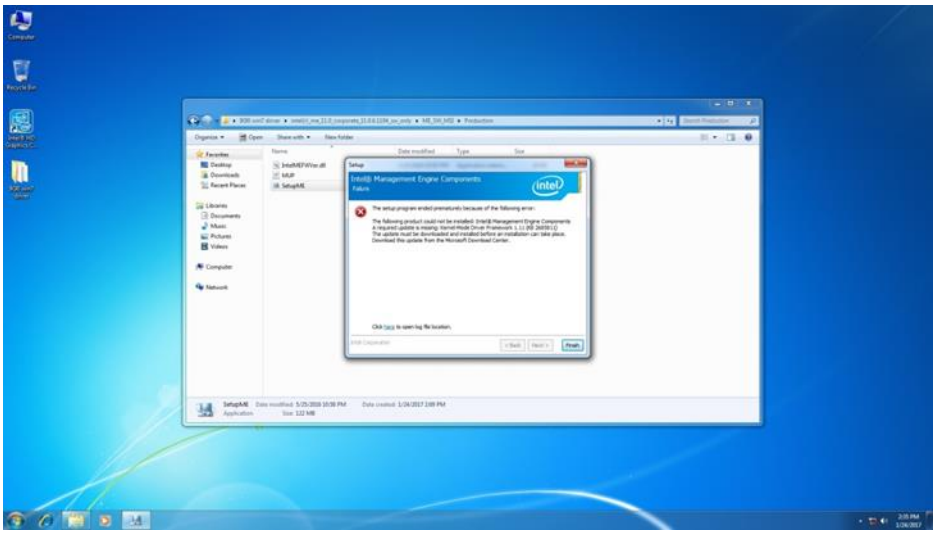
5.3 ME and NET Framework 1.1 Driver Installation

Follow instructions below to install Management Engine (ME) and .NET Framework 1.1 driver.

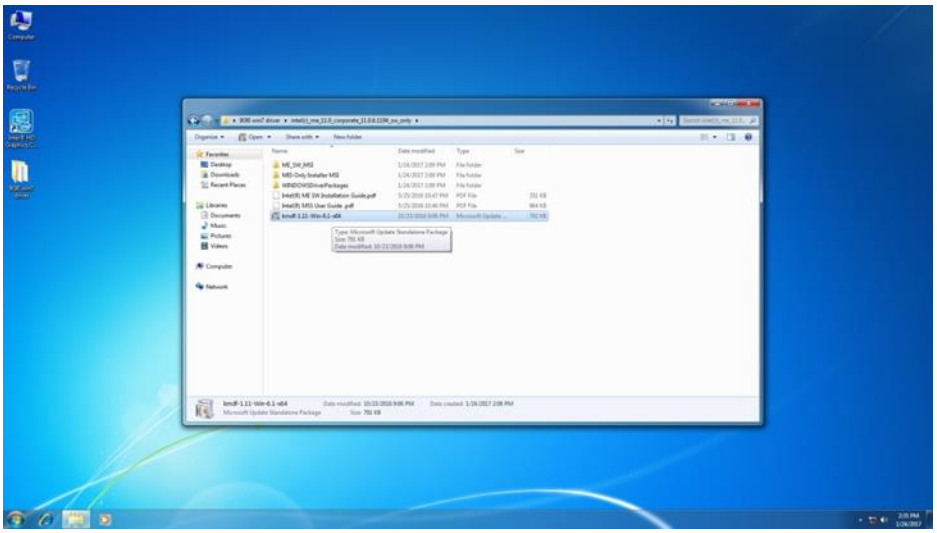
1. Open the Driver CD (included in the package) and select **ME** driver.



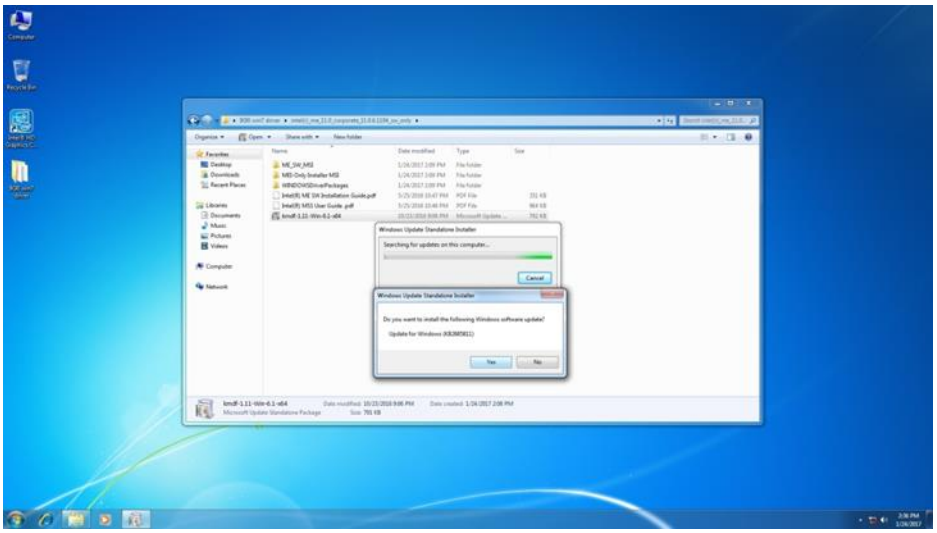
2. Error message will pop up, select **Finish**.



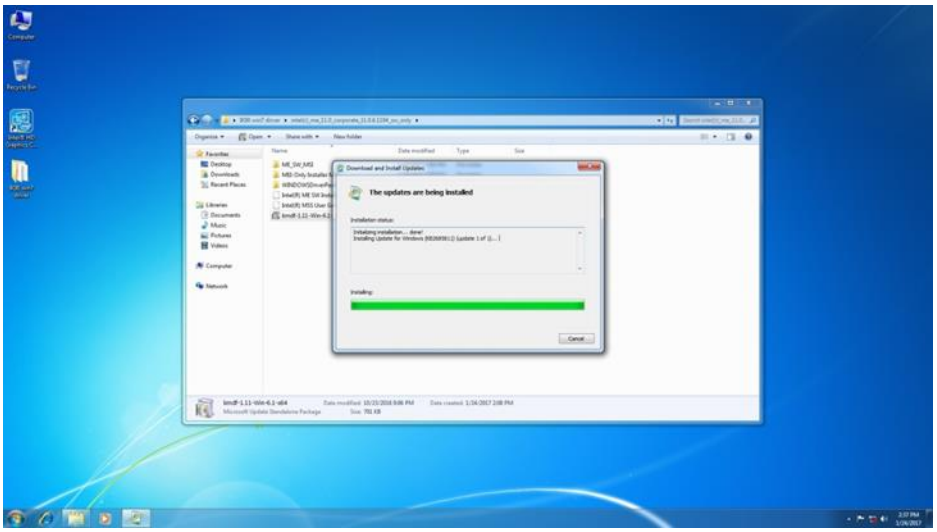
3. Select **.NET Framework 1.1**.



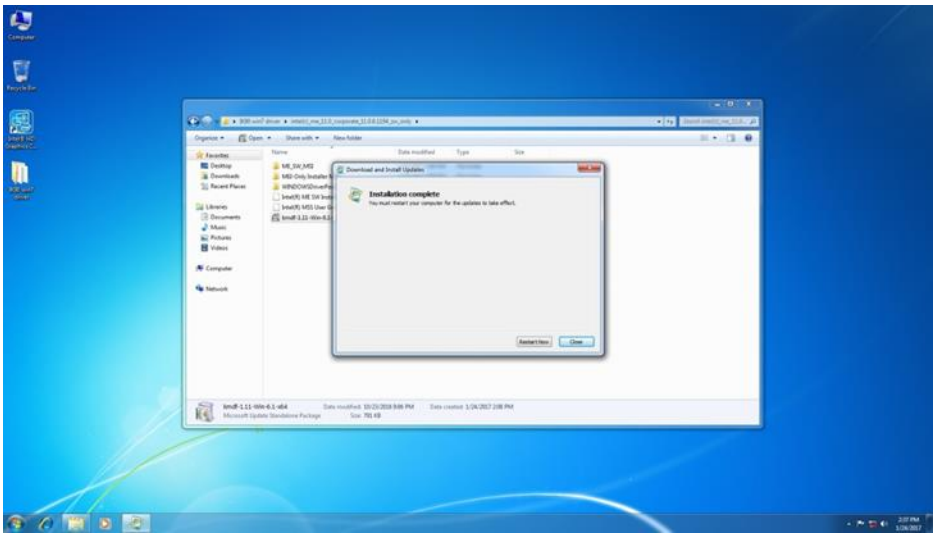
4. Select **Yes** to start the installation.



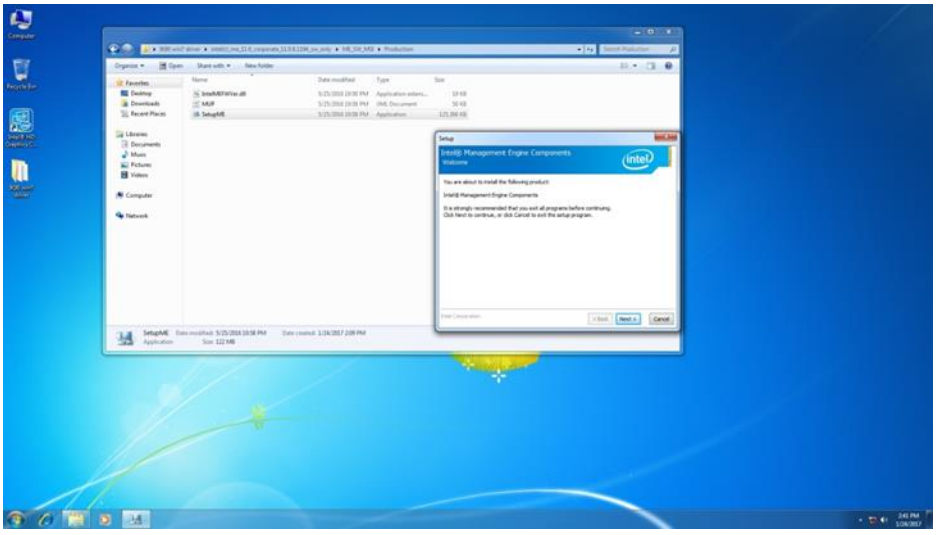
5. Wait for the driver to be installed.



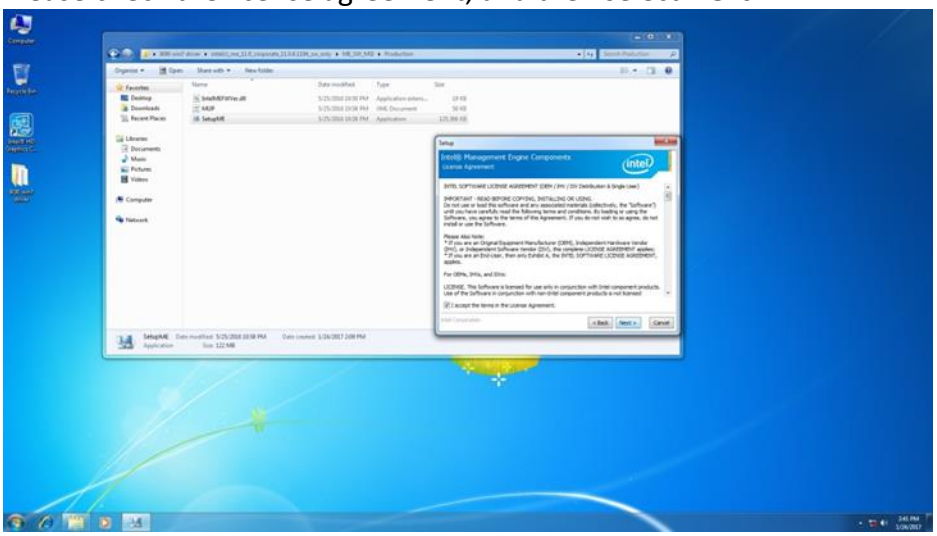
6. When installation completed, select **Restart Now** to restart your computer.



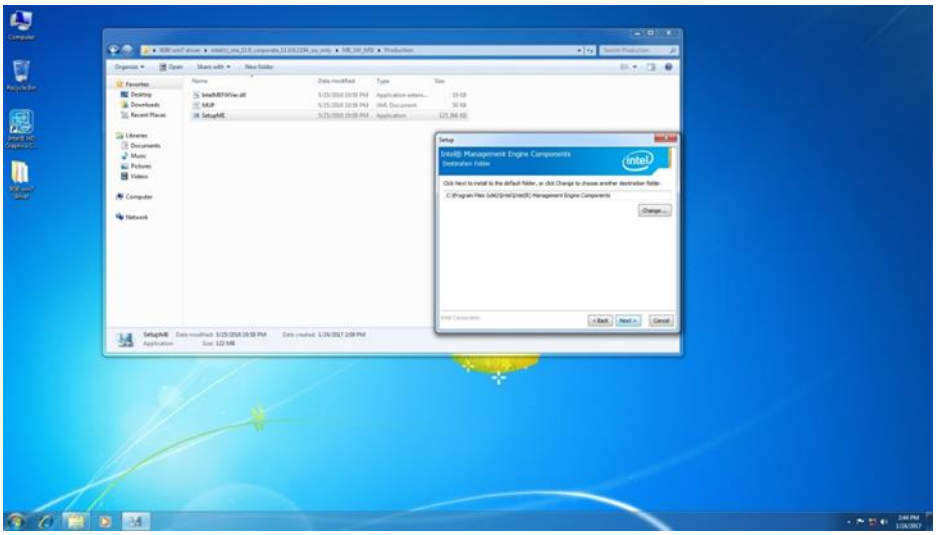
7. Again select the **ME** to continue installation. Select **Next.**



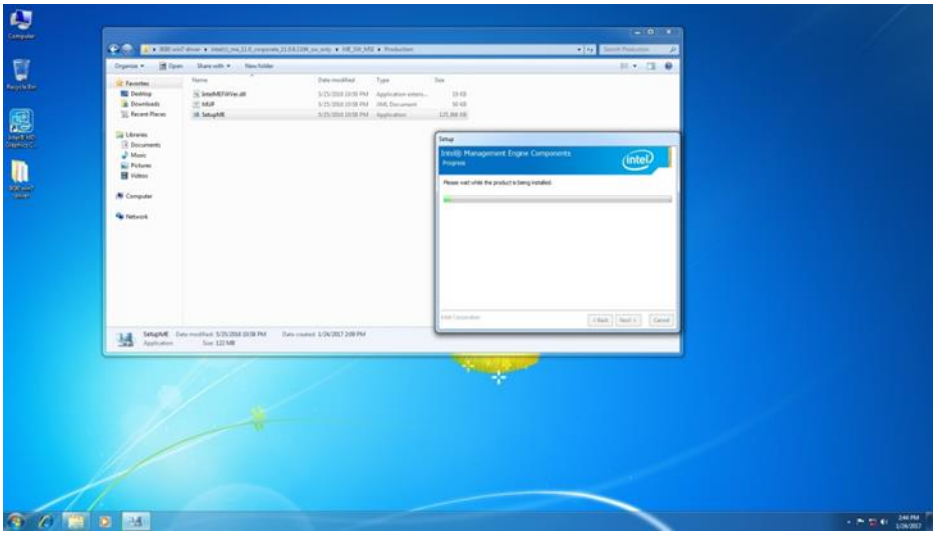
8. Please check the license agreement, and then select **Next**.



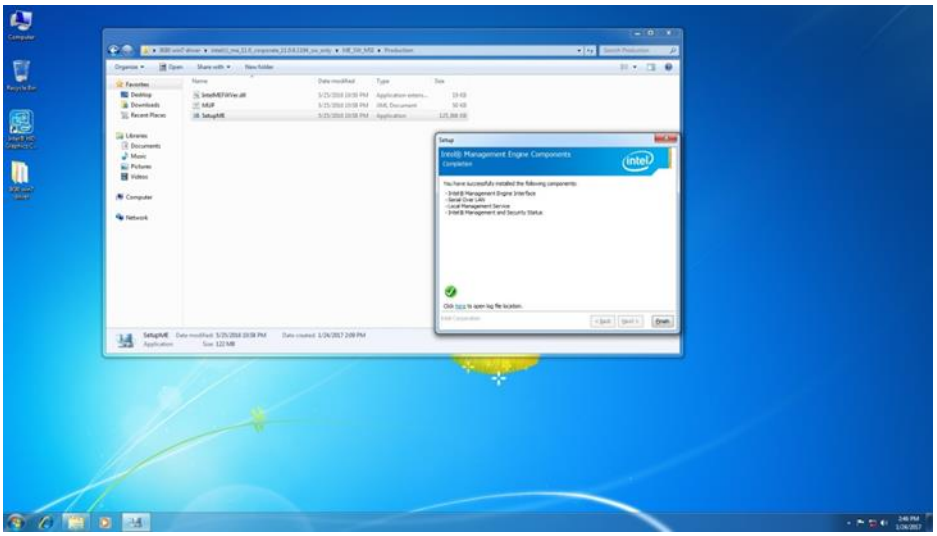
9. Select **Next** to start the installation.



10. Wait for the driver to be installed.



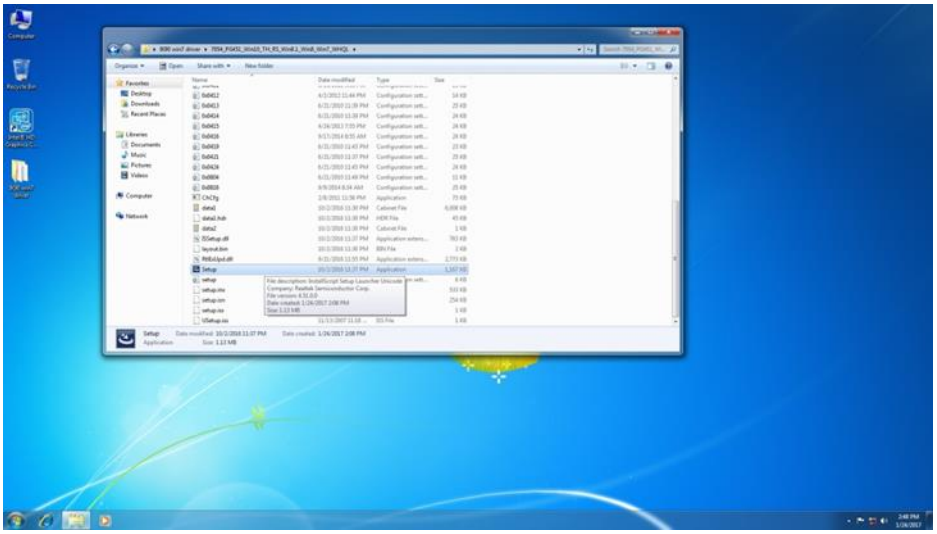
11. When installation completed, select **Finish** complete installation.



5.4 Audio Driver Installation

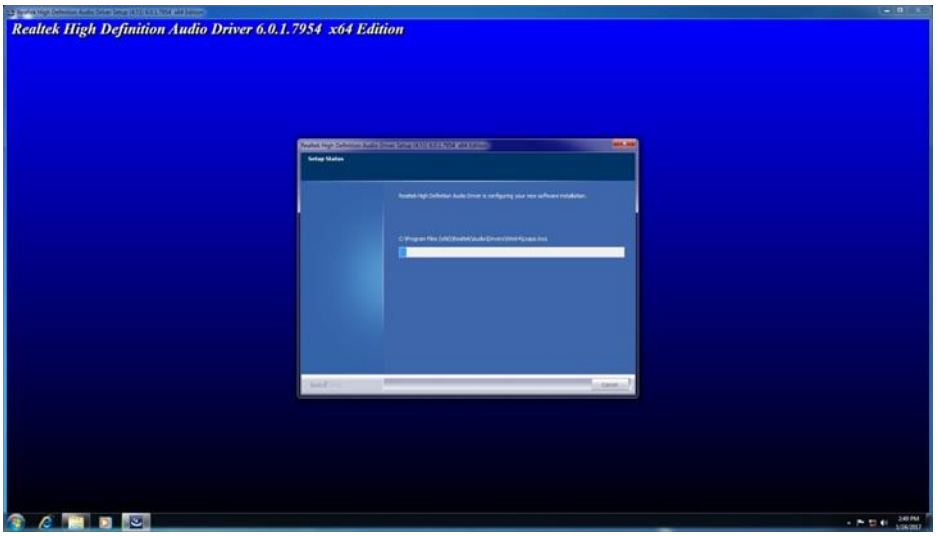
Follow instructions below to install Audio driver.

1. Open the Driver CD (included in the package) and select **Audio** driver.



2. Select **Next** to continue.

3. Wait for the driver to be installed.

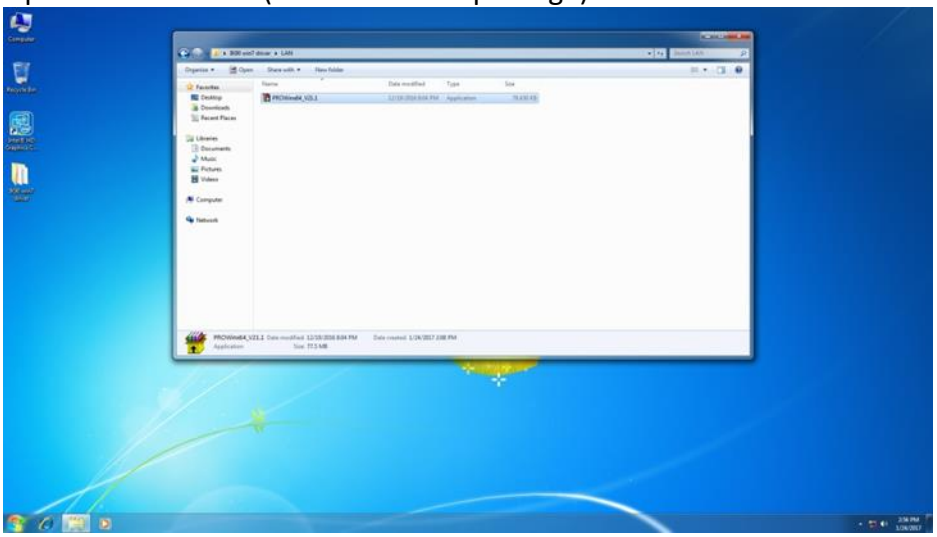


4. When installation completed, select **Finish** complete installation.

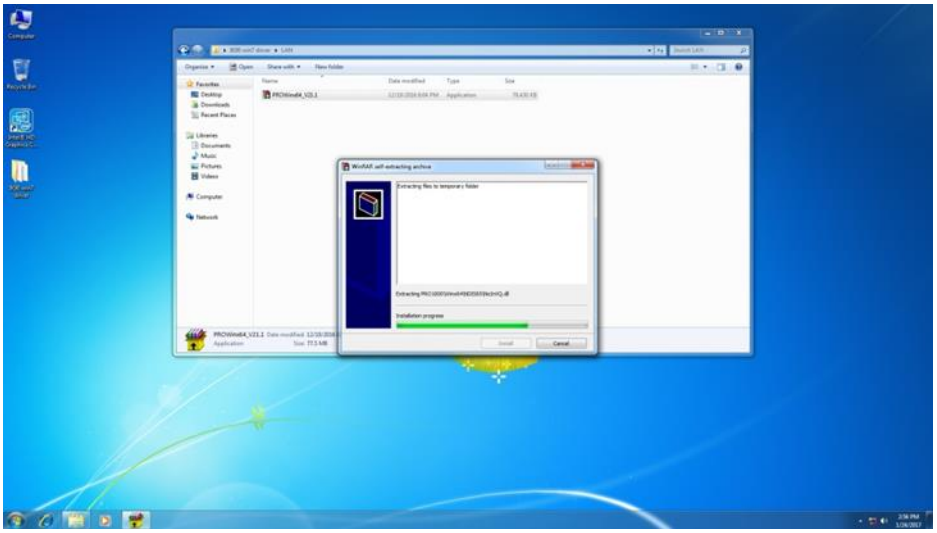
5.5 LAN Driver Installation

Follow instructions below to install LAN driver.

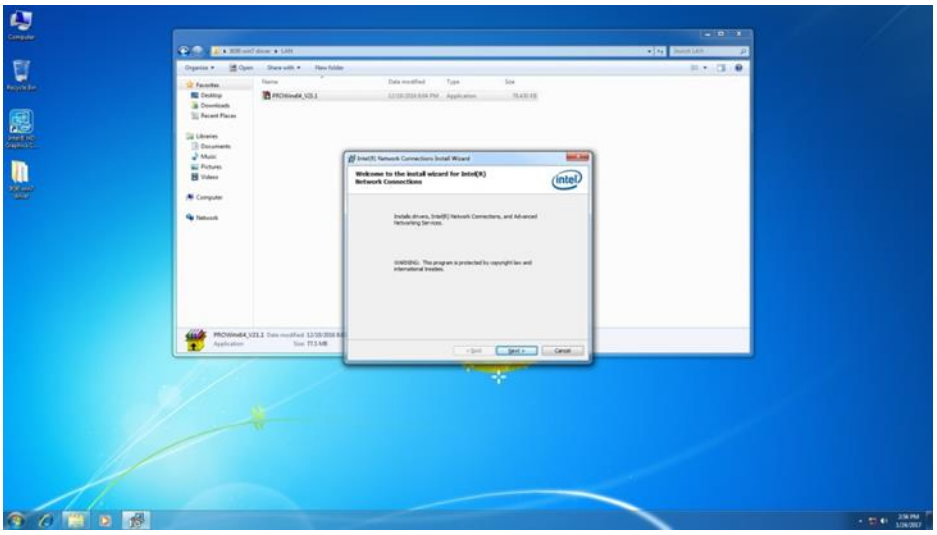
1. Open the Driver CD (included in the package) and select **LAN** driver.



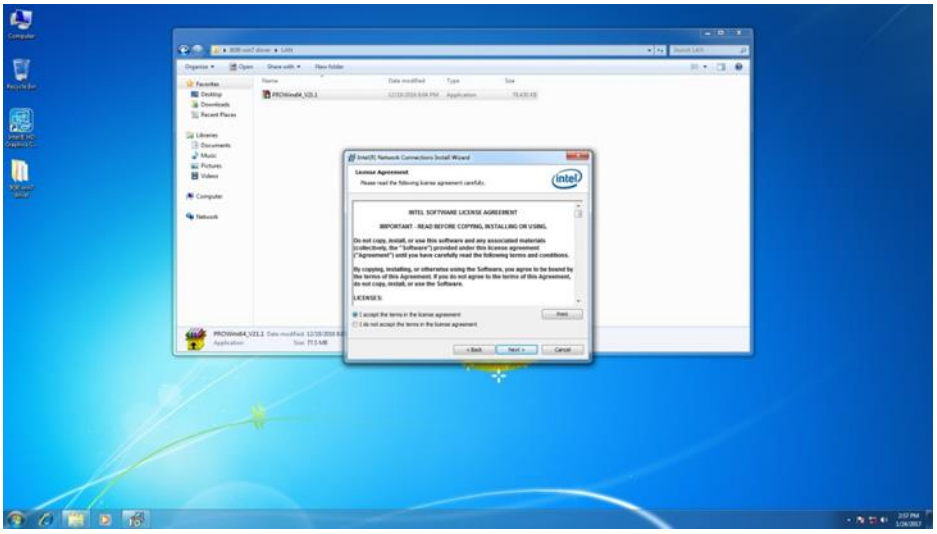
2. Compression has started.



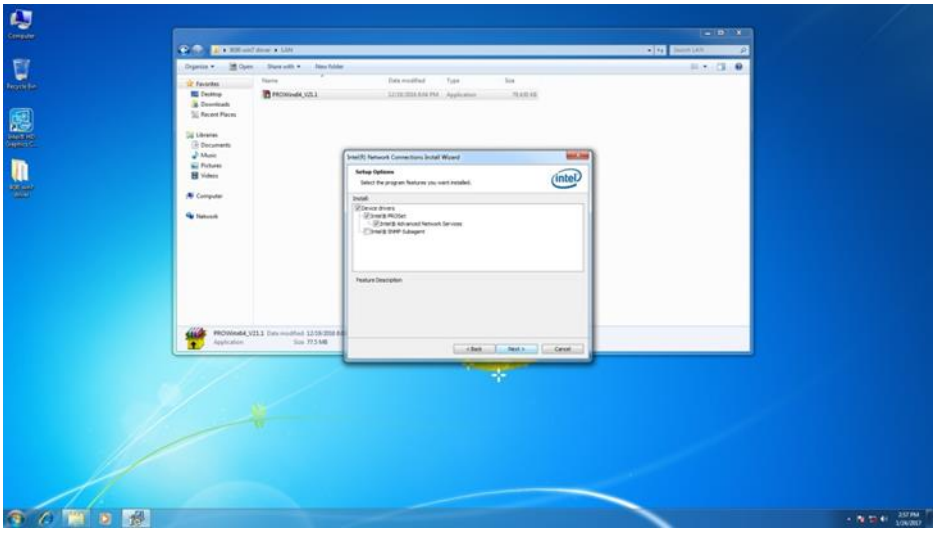
3. When compression is complete, select **Next**.



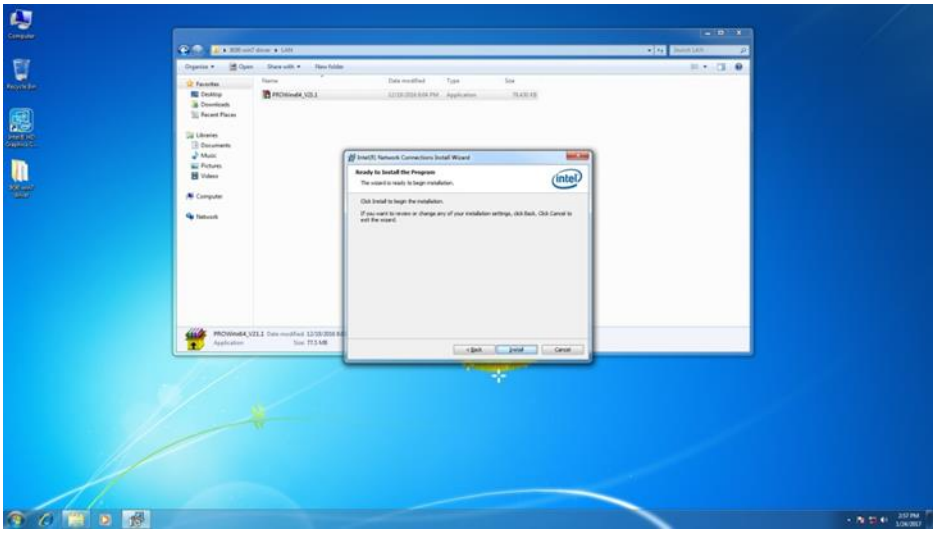
4. Read the license agreement, and then select **Next**.



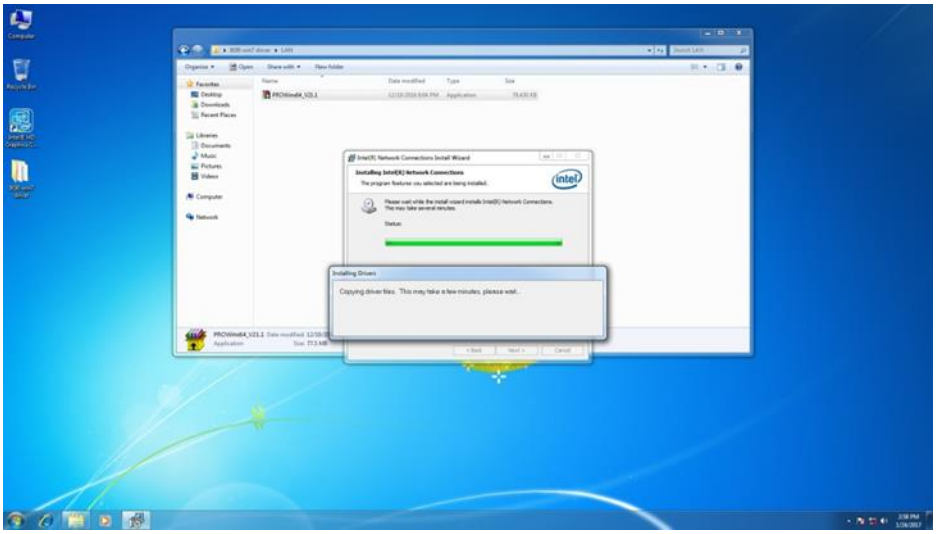
5. System displays the installed packages, select **Next**.



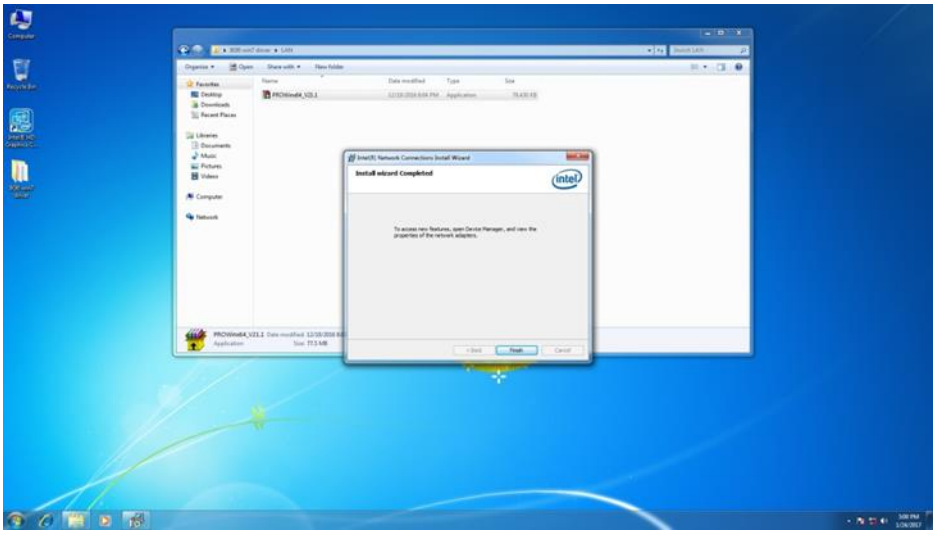
6. Confirm the installation, select **Install** to start the installation.



7. Wait for installation to complete.



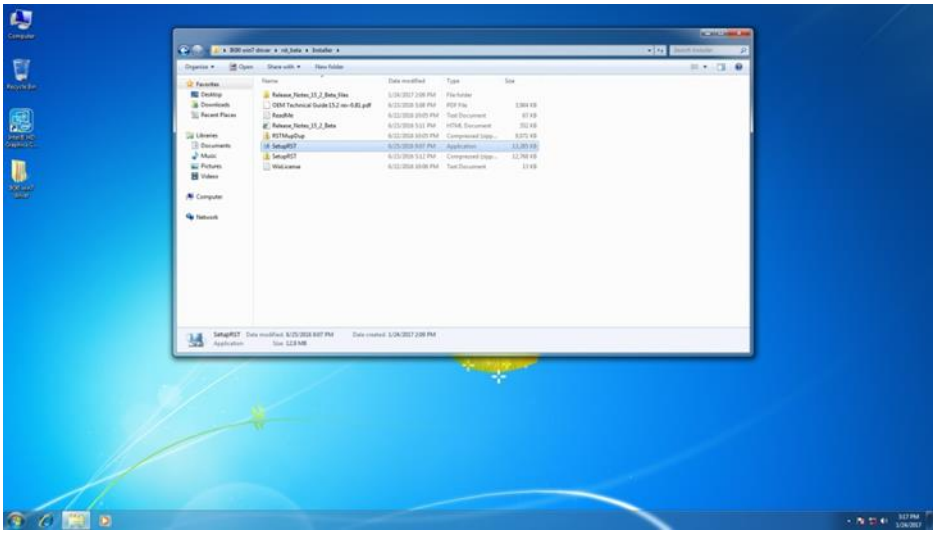
8. When installation is completed, select **Finish** to close the window.



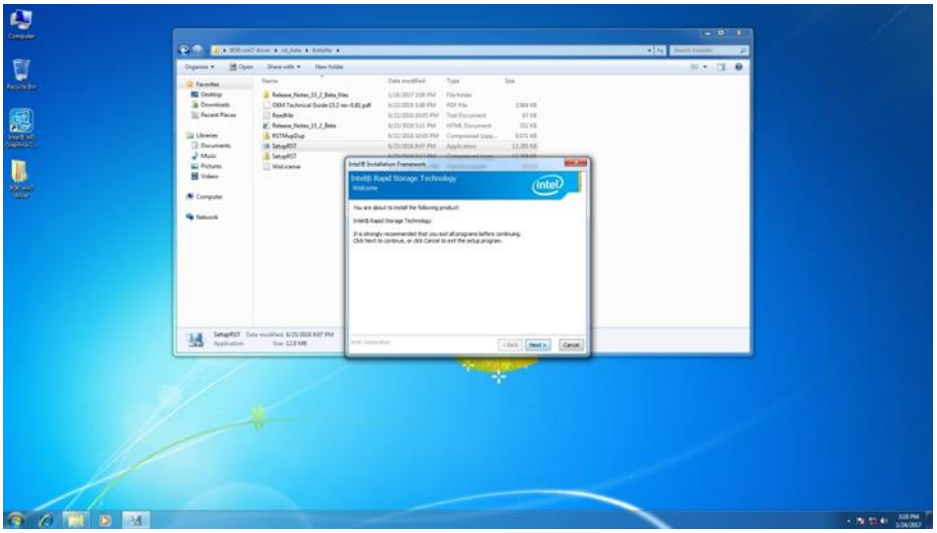
5.6 RST Driver Installation

Follow instructions below to install **RTS** driver.

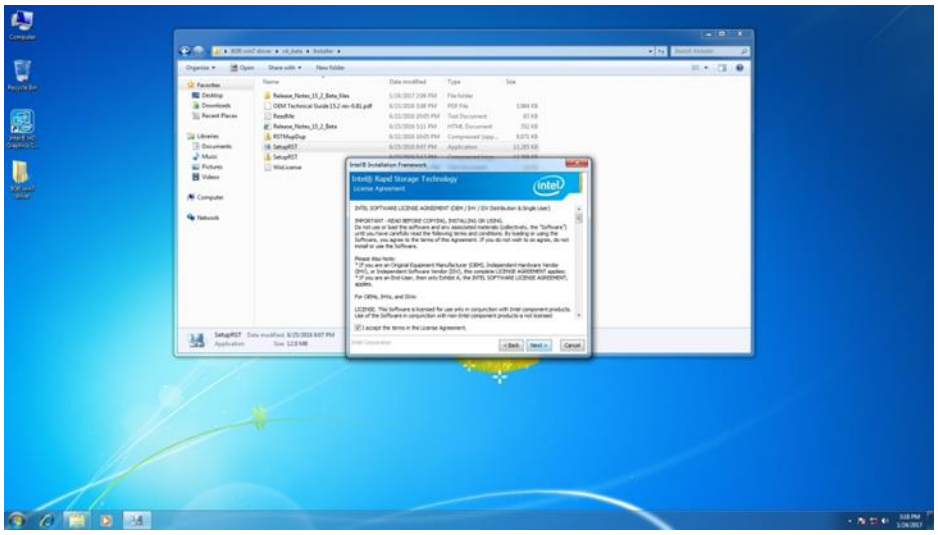
1. Open the Driver CD (included in the package) and select **RTS** driver.



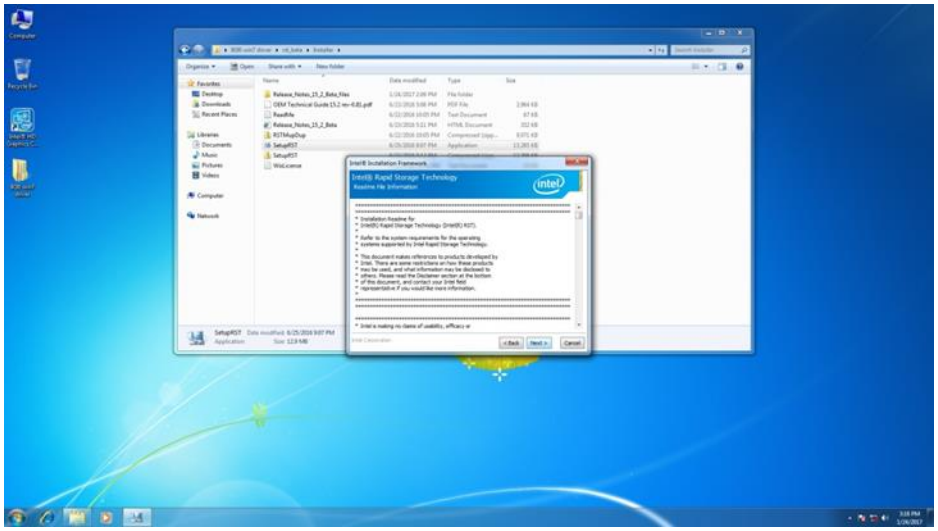
2. Select **Next** to continue.



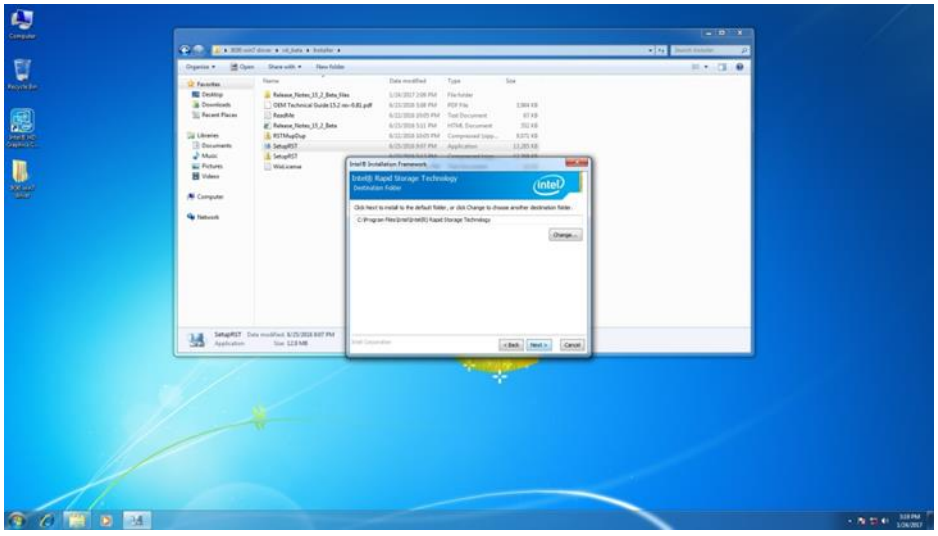
3. Read the license agreement, and then select **Next**.



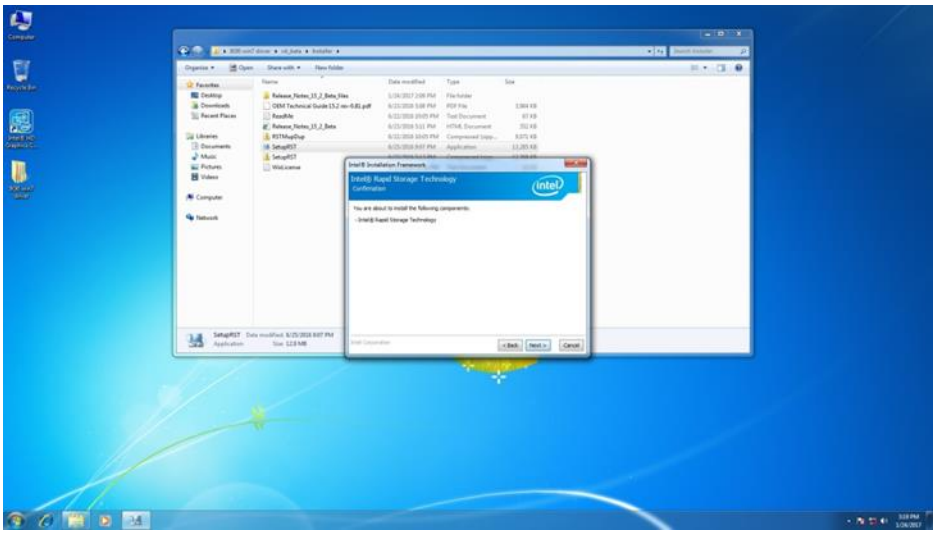
4. Confirm the installation, select **Install** to start the installation.



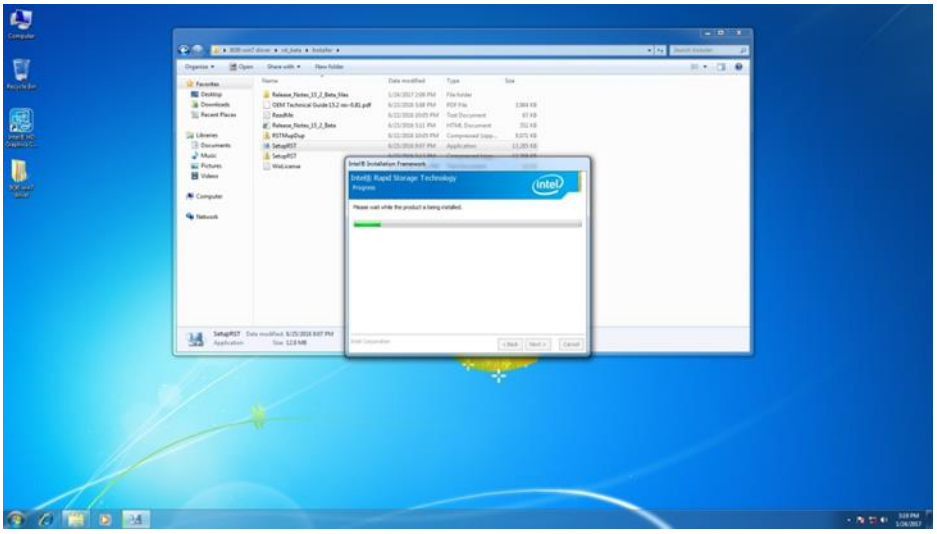
5. Select **Next** to continue.



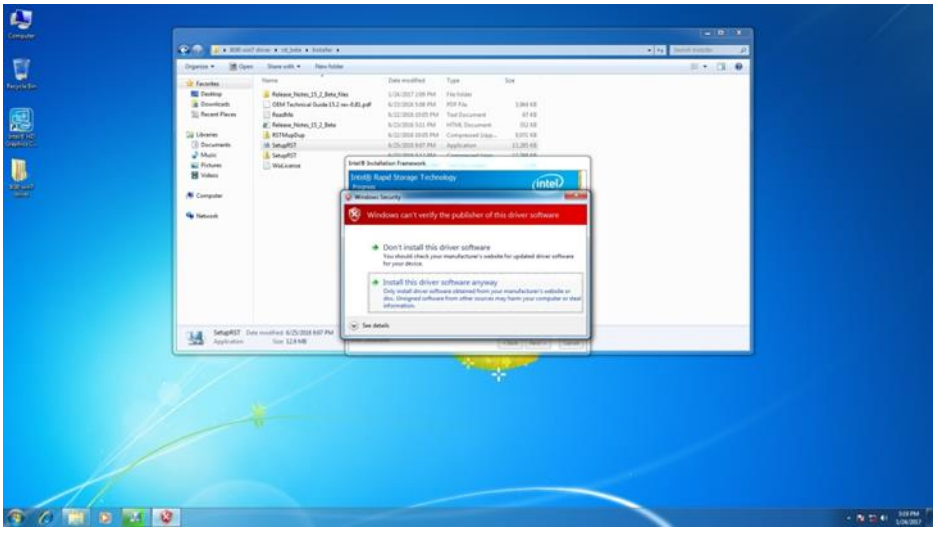
6. Select **Next** to start the installation.



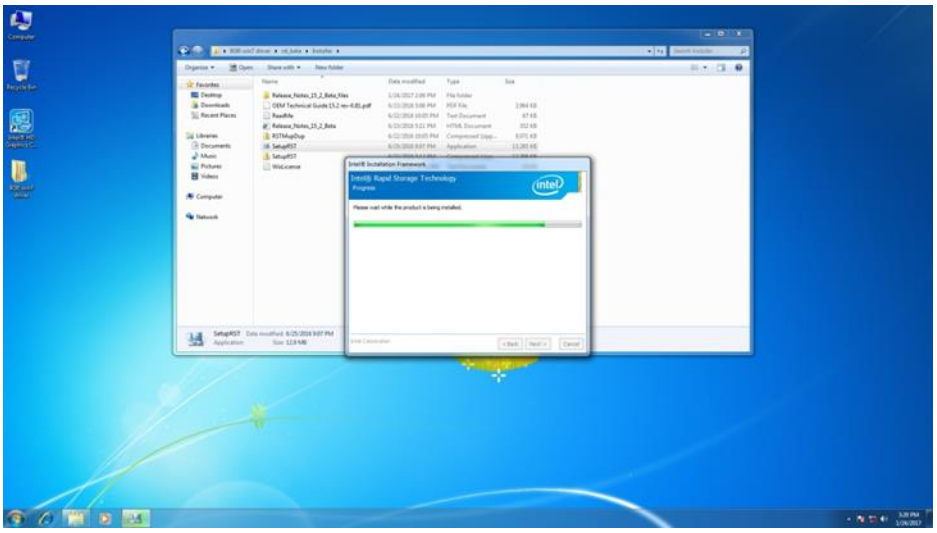
7. Wait for installation to complete.



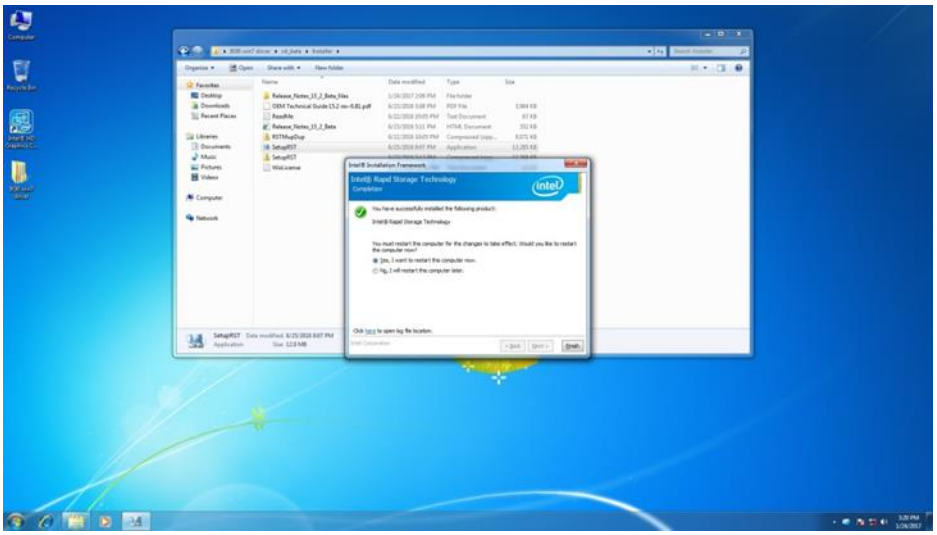
8. Warning message will pop up, select **Install**.



9. Installation continues.



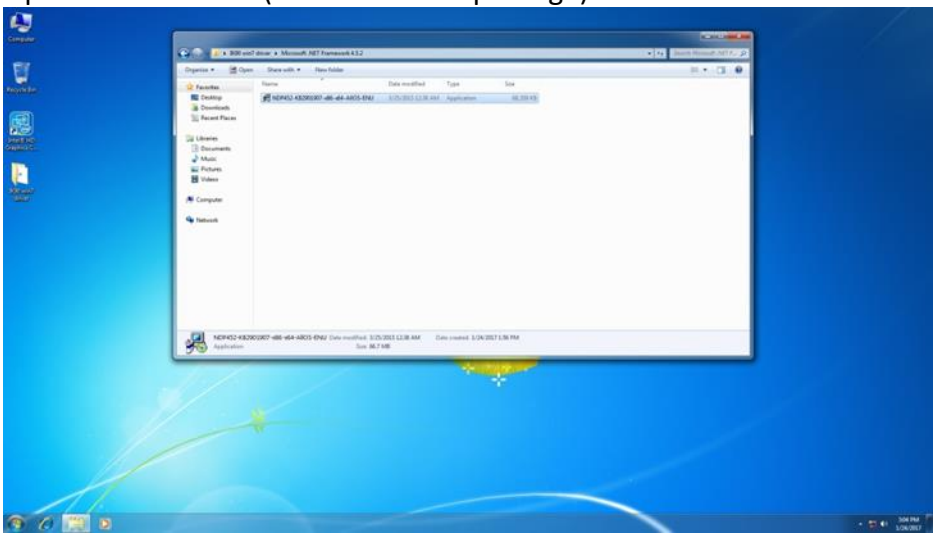
10. When installation is completed, select **Finish** to close the window.



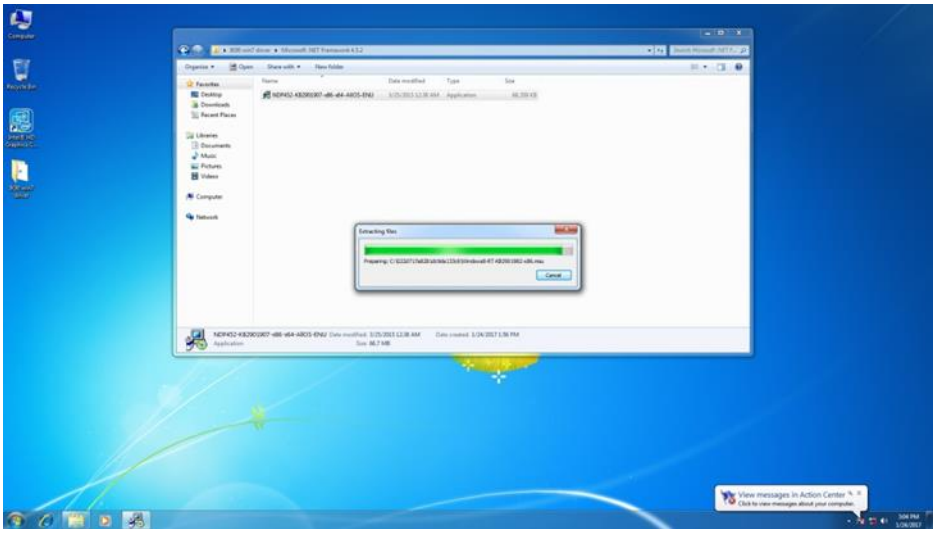
5.7 Microsoft .NET Framework Driver Installation

Follow instructions below to install **Microsoft .NET Framework**.

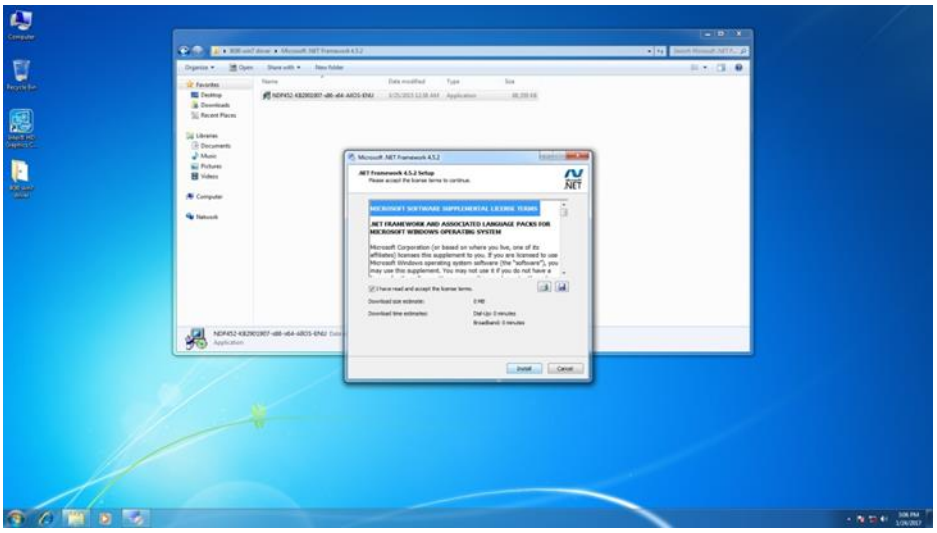
1. Open the Driver CD (included in the package) and select **.NET Framework**.



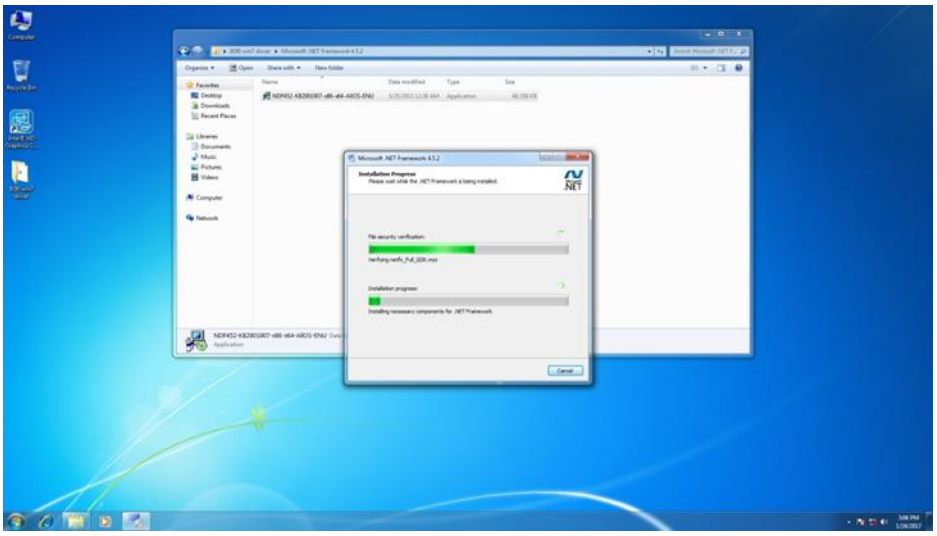
2. Wait for system to Import the file.



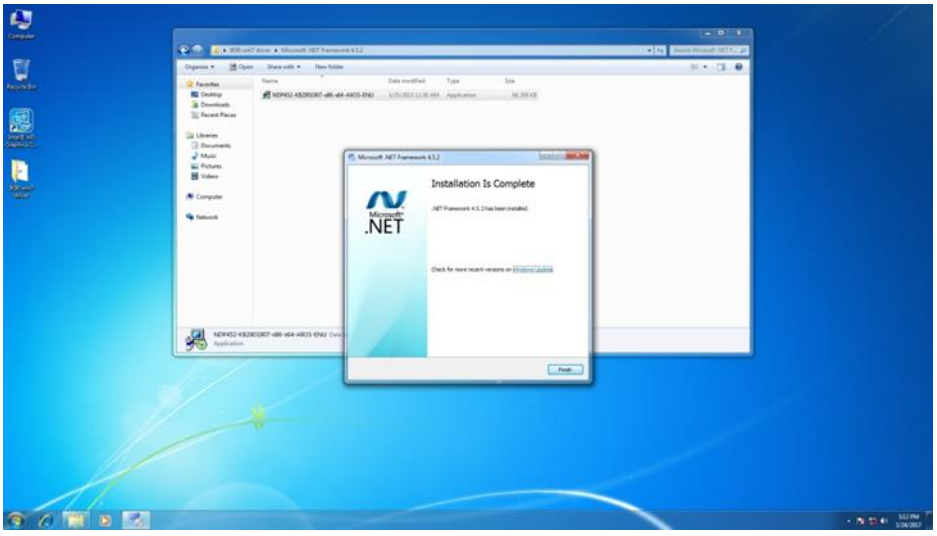
3. Read the license agreement, and then select **“I agree”**.



4. Wait for installation to complete.



5. When installation is completed, select **Finish** to close the window.

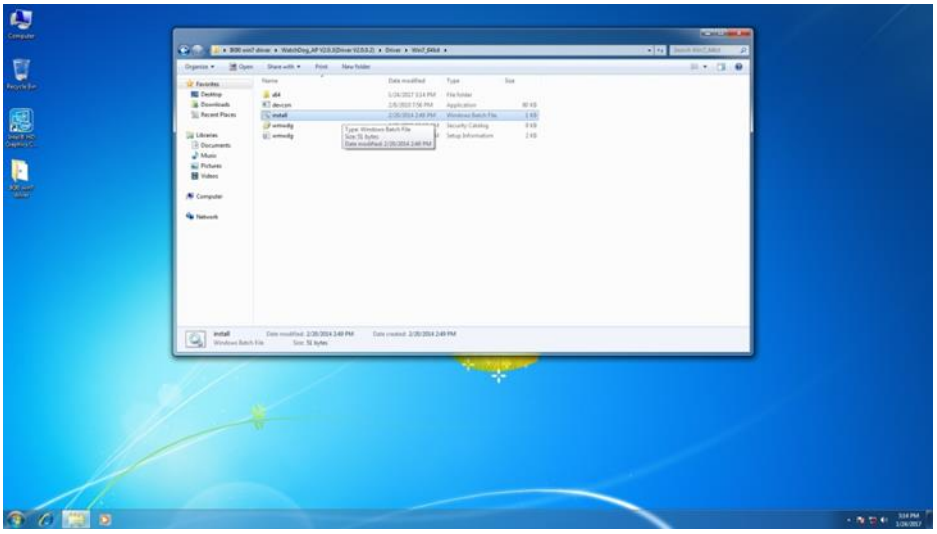


5.8 WatchDog Driver Installation

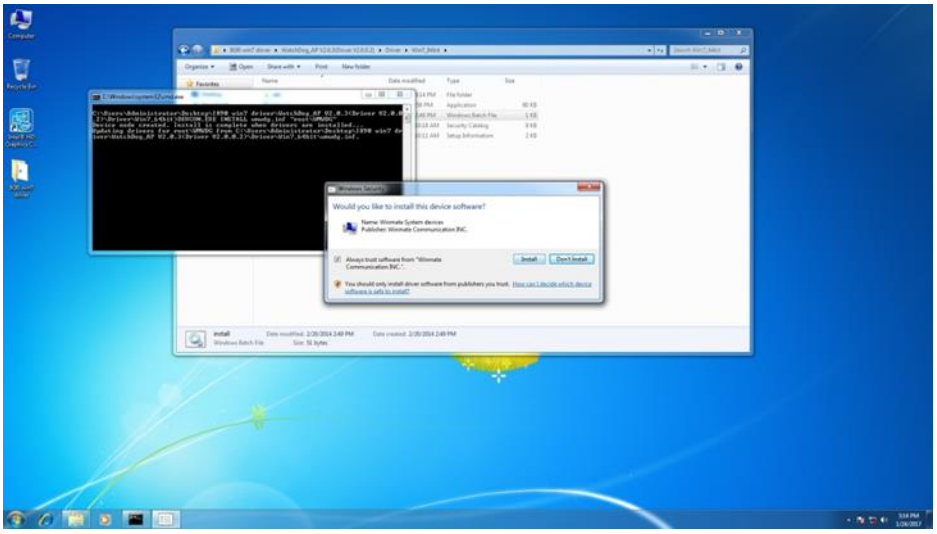
For more details about Winmate Watchdog, please download Watchdog Guide from Winmate Downloads Center:
http://dc.winmate.com.tw/_downloadCenter/2017/Embedded%20Computing/Watchdog%20Guide_IB_IH_IV_IK.pdf

Follow instructions below to install **Watchdog** driver.

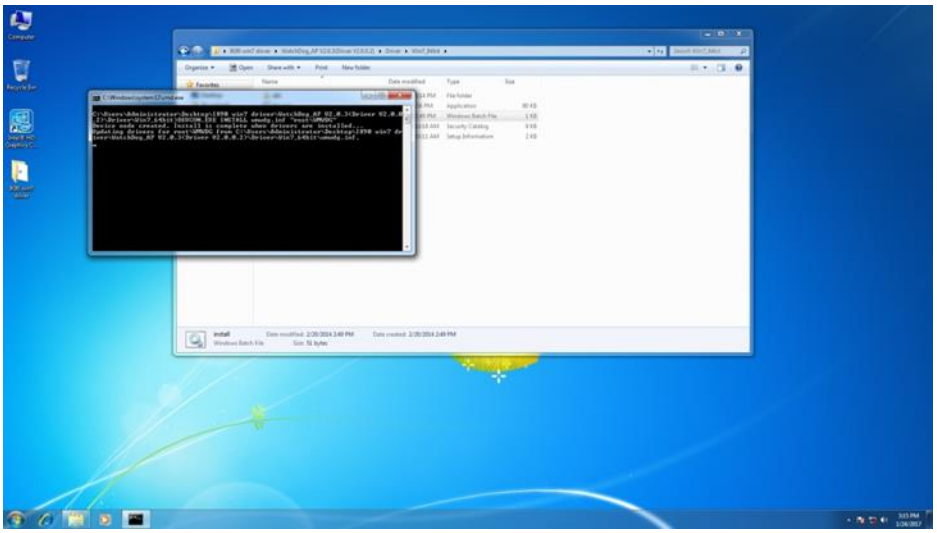
1. Open the Driver CD (included in the package) and select **Watchdog** driver.



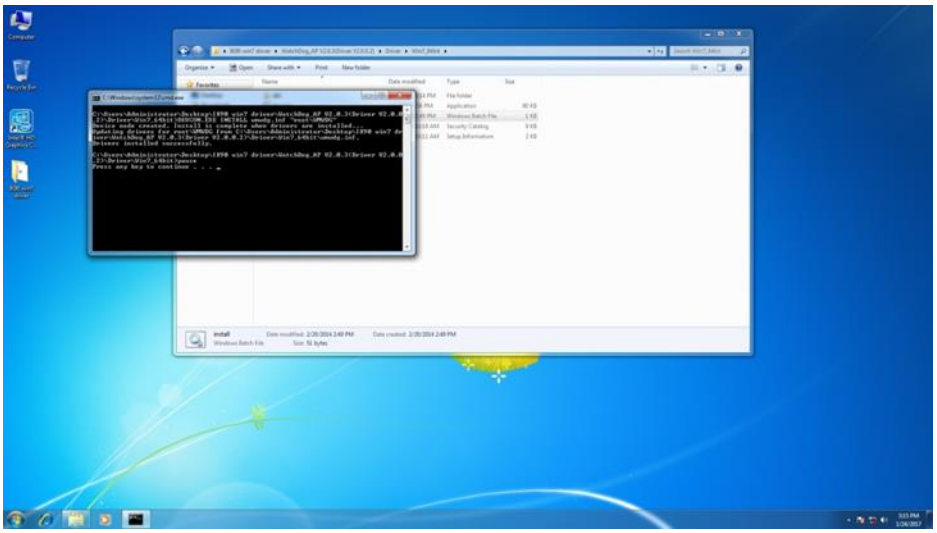
2. Check message and select **Install** to begin the installation.



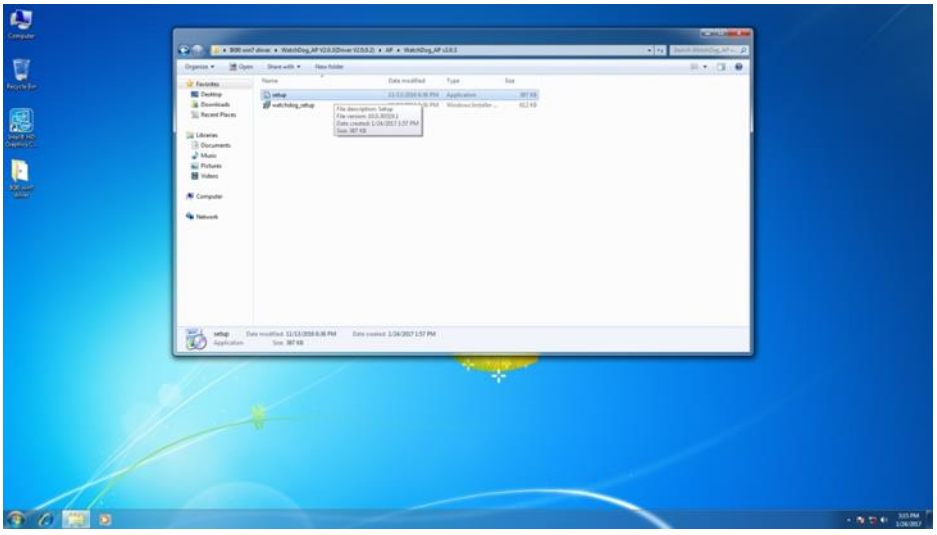
3. Wait for installation to complete.



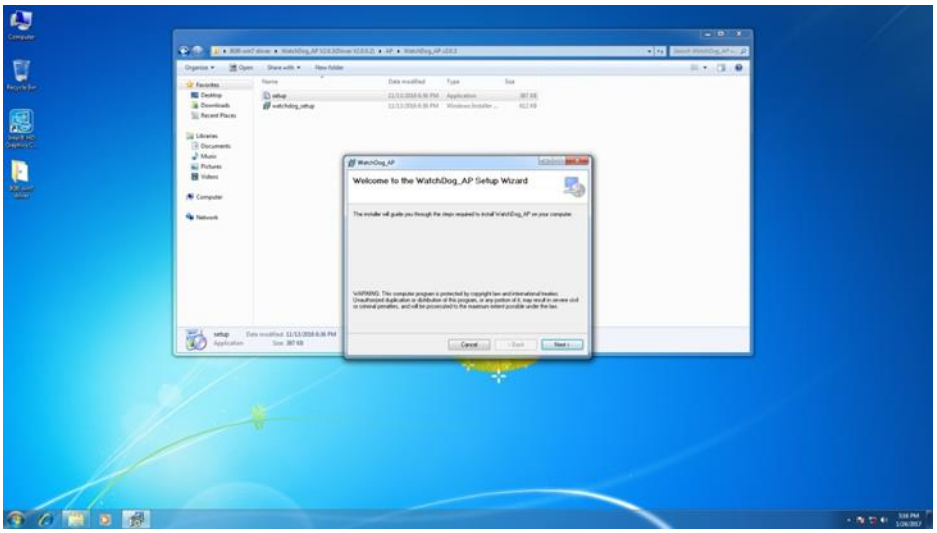
4. When installation is complete, press any key to close.



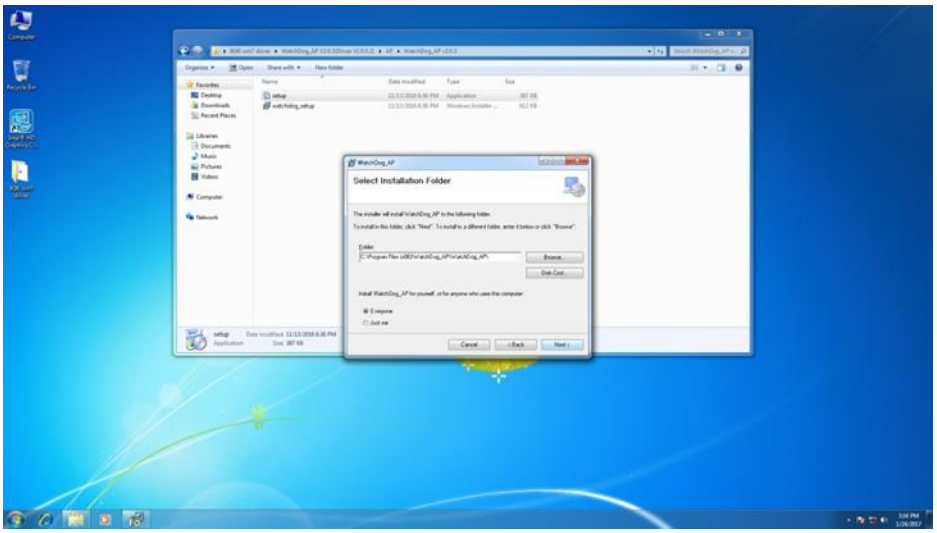
5. Open the Driver CD (included in the package) and select **Watchdog AP**.



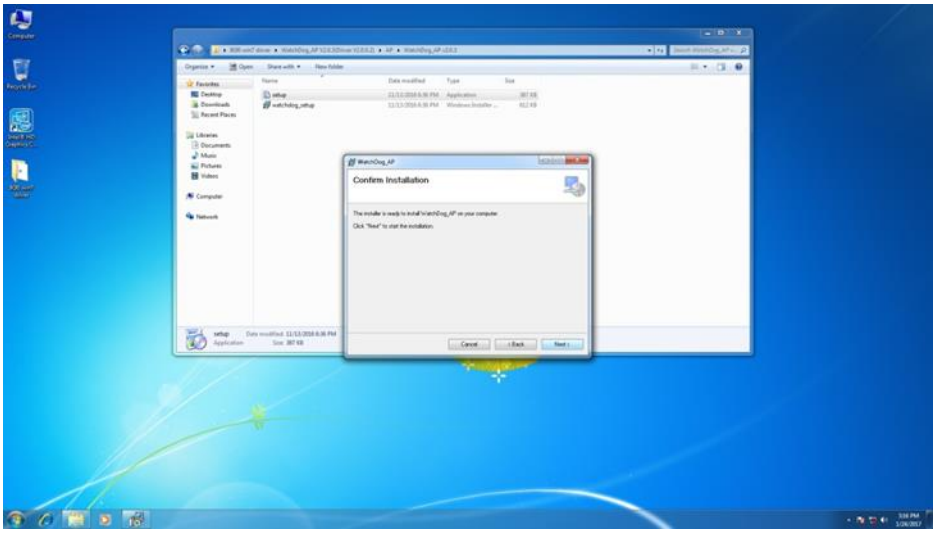
6. Select **Next**.



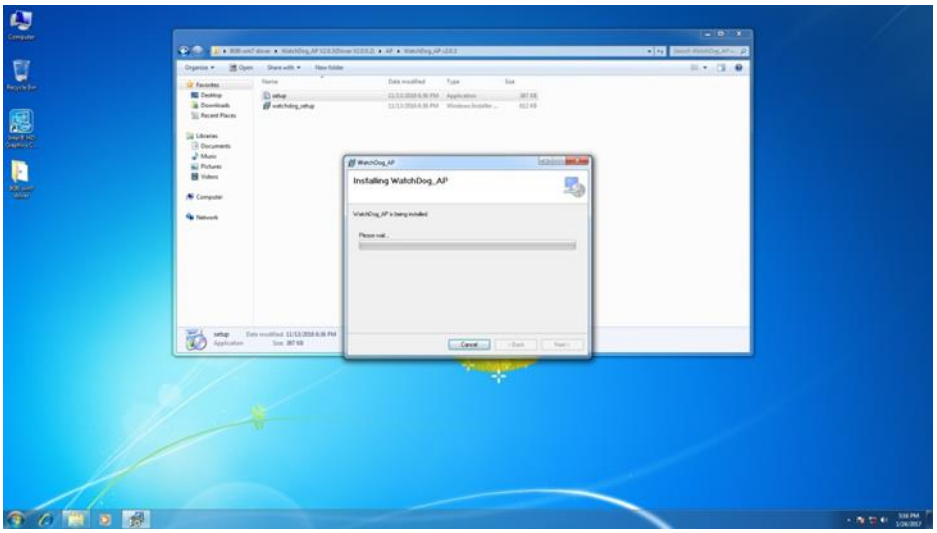
7. The installed storage location is displayed, select **Next** to continue.



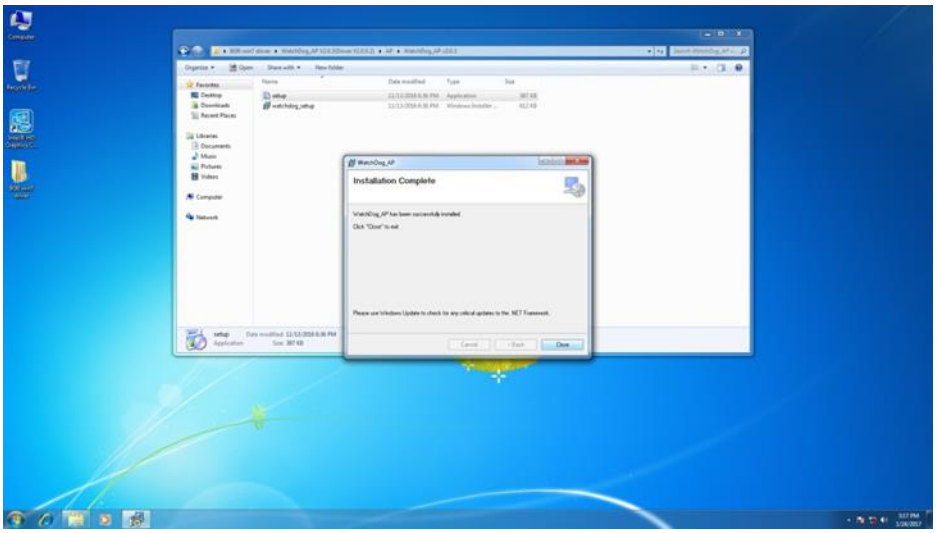
8. Select **Next** to start the installation.



9. Wait for installation to complete.



10. When installation is completed, select **Close** to close the window.



MOUNTING

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

CHAPTER 6: MOUNTING

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 the HMI 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.

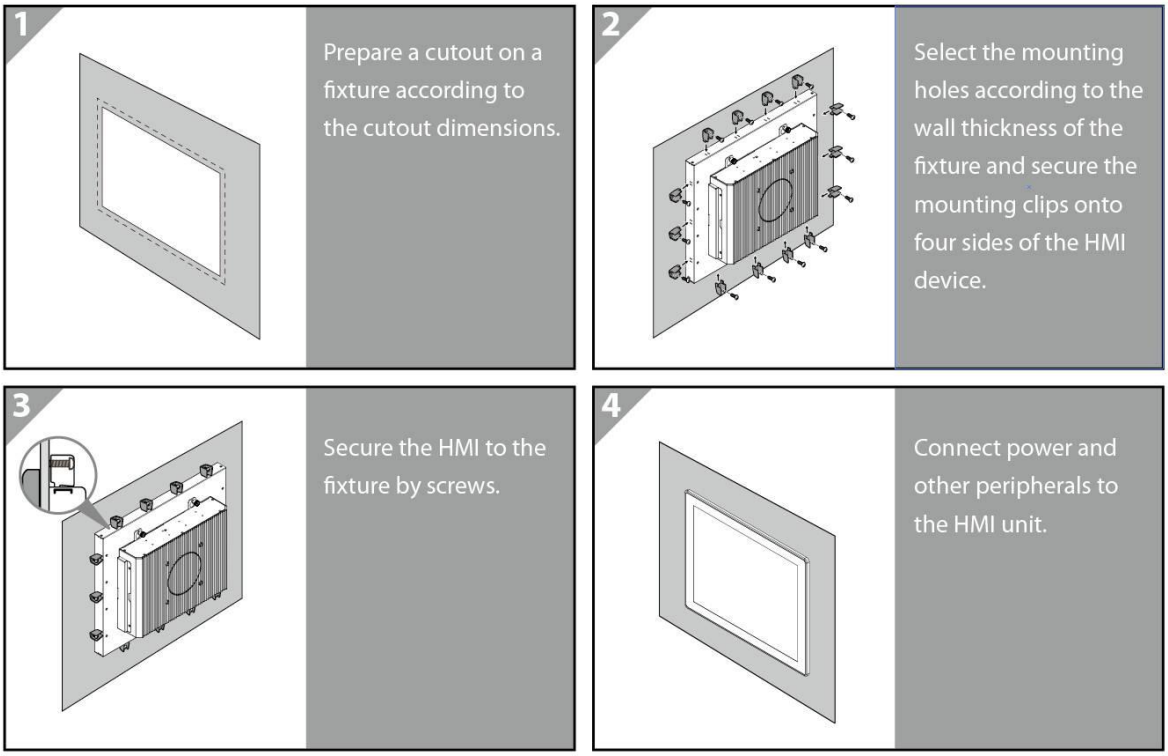
When necessary, it is strongly advised that you label wiring to all devices in the system.

M-series HMI devices come with different mounting options suitable for most of the industrial and commercial applications.

6.3.1 Panel Mounting

Panel mounting solution allows installing the HMI device onto the wall.

Cutout dimension (W x D in mm)				
12”	**15”**	**17”**	**19”**	**21.5”**
301 x 237	342 x 261	373 x 311	412 x 338	504 x 304
Mounting Clips				
8 pcs	12 pcs	12 pcs	14 pcs	16 pcs
Screws				
Short screws: 15mm M4 Long screws: 30mm M4				

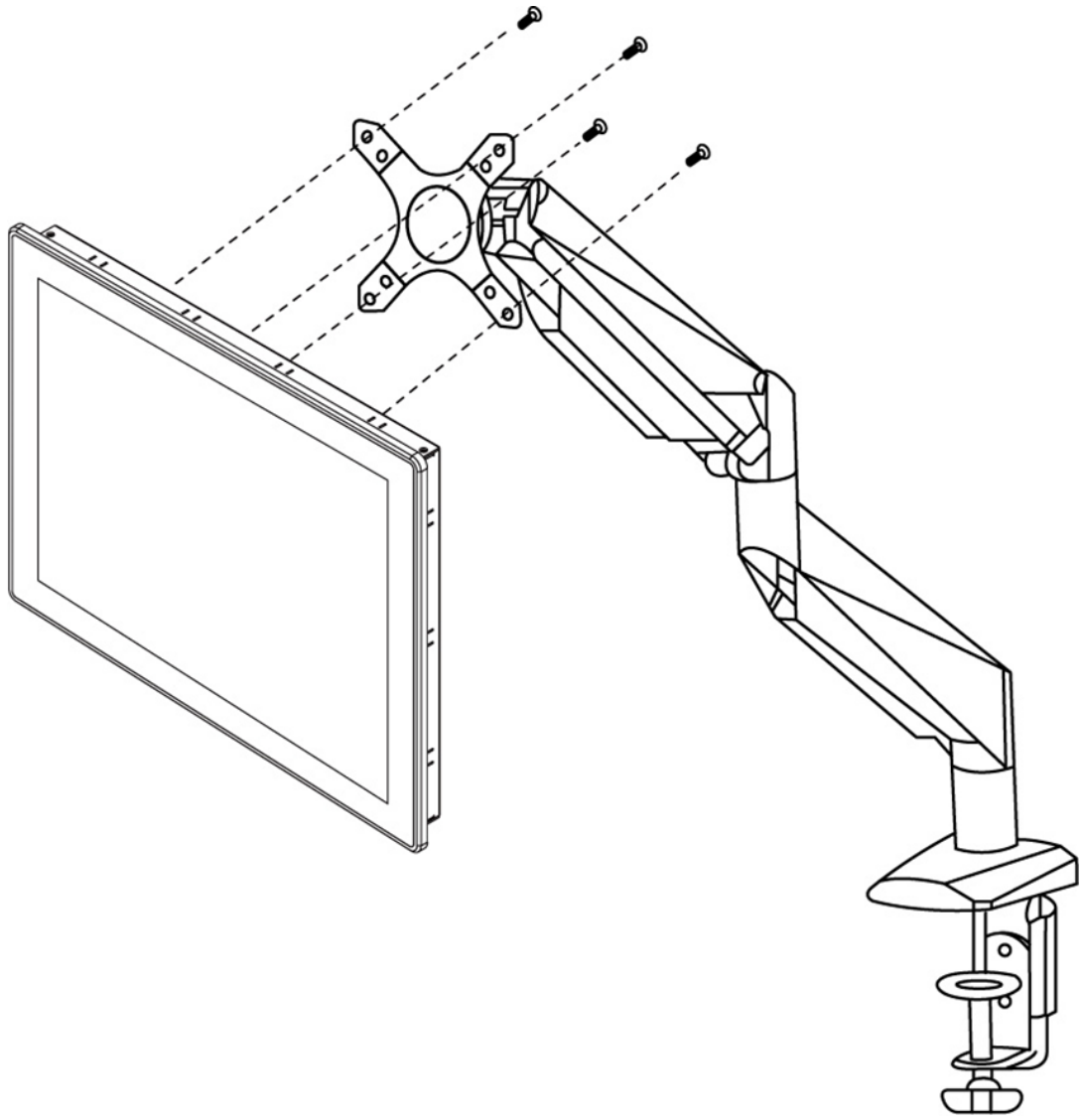


NOTE:
Use either short (15mm) or long (30mm) screws based on the thickness of the wall.

6.3.2 VESA Mounting

M-Series HMI comes with VESA mount holes on the rear side. Follow instructions below to mount the unit with VESA Mount bracket (not supplied by Winmate).

VESA Plate Dimensions	Screw Hole Diameter	Compatibility
100 x 100 mm	VESA M4 x 5 mm	Swingarms mountingkits



Mounting Instruction:

1. Screw VESA Bracket to the fixture (ex. wall) with M4 VESA screws.
2. Place the device on VESA bracket (not supplied by Winmate).

TECHNICAL SUPPORT

This chapter includes directory to technical support.

CHAPTER 7: TECHNICAL SUPPORT

This chapter includes directory to technical support and Software Developing Kit (SDK). If any problem occurs fill in problem report form enclosed and immediately contact us.

7.1 Software Developer Support

Winmate provides the following development kits (SDK) for M-Series HMI with Intel® Core i5-5200U Broadwell processor:

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

You can find SDK in the driver CD that comes in the package with the HMI device. Also, you can download SDK and Drivers from Winmate Download Center or Winmate File Share.

Winmate Download Center
www.winmate.com > Support > Download Center > Multi-Touch PPC > M-Series HMI Core i5 6200U

Or follow the link below:
http://www.winmate.com/DownCenter/DownLoadCenter.asp?DownType=3020&OnlyContent

Winmate File Share
www.winmate.com> Support > Download Center >Public Documents > Panel PC > Multi-Touch HMI > M-Series HMI > Core i5 6200U (Skylake)

Or follow the link below: https://winmate.box.com/v/M-Series-HMI-Skylake

7.2 Problem Report Form

M-Series HMI (Multifunctional Design)

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.

PRODUCT SPECIFICATIONS

This section includes product specifications.

APPENDIX A: PRODUCT SPECIFICATIONS

	Model Name				
	R12IKWS-MHM2	R15IKWS-MHC3	R17IKWS-MHM1	R19IKWS-MHA1	W22IKWS-MHA3
Display					
Size	12”	15”	17”	19”	21.5”
Active Display Area (H x V)	245.76 x 184.32	304.1 x 228.1	337.9 x 270.3	376.32 x 301.06	476.64 x 268.11
Pixel Pitch (H x V)	0.240 x 0.240	0.297x 0.297	0.264 x 0.264	0.294 x 0.294	0.248 x 0.248
Display Colors	262k / 16.2M				
Resolution	1024 x 768	1024 x 768	1280 x 1024	1280 x 1024	1920 x 1080
Brightness	500 nits	250 nits	350 nits	350 nits	250 nits
Contrast Ratio	700:1 (Typ.)	700:1 (typ.)	1000:1 (typ.)	1000:1 (typ.)	3000:1 (typ.)
Viewing Angle	80/80/70/70	80/80/70/70	85/85/80/80	85/85/80/80	89/89/89/89
System					
Processor	Intel® Core™ i5-6200U 2.3 GHz, up to 2.8 GHz				
BIOS	AMI UEFI BIOS				
System Memory	SODIMM DDR4L-2133 4GB, option up to 8GB (2 slots)				
Graphic Chipset	Intel® HD graphics 5500				
Main Storage	Default 2.5" 64GB SSD				
Second Storage (Optional)	Internal mSATA 64-256 GB SSD				
Ethernet	1000 Base-Tx Gigabit Ethernet Compatible				
Audio	Realtek ALC886 codec				
Expansion Slot	1 x PCIe x4 / Expansion module (Preliminary)				
Operating System					
Optional OS	Windows 10 IoT Enterprise Windows Embedded 8 Standard Windows Embedded Standard 7				
Input/ Output					
Input/ Output Connectors	1 x DC in 9-29V with isolation (Terminal Block 3pin) 2 x Giga LAN 4 x USB3.0 1 x HDMI Output 1 x D-Sub15 (VGA) Output 1 x RS232/422/485 selectable serial port 1 x Audio in Jack 1 x Audio out Jack				
User Interface	1 x Reset Key 1 x Power Button 2 x SSD Indicators				

Mechanical Specification	
Cooling System	Fanless design
Mounting	Wall mount/ VESA mount
Environmental Consideration	
Operating Temperature	0 to +50°C
Operating Humidity	30%~95% at 40°C (non-condensing, RH)
IP Rating	Front: IP65 Full: IP20
Power Specifications	
Power Input	9-29V isolation DC in with protection Fuse
Power Adapter	110-240 AC to 12V DC out 80W

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