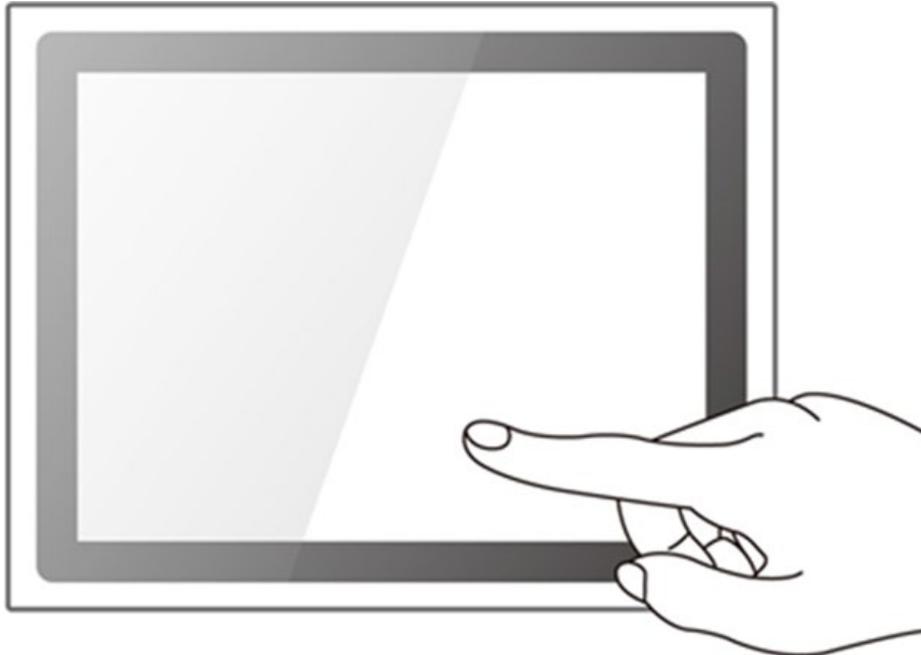


# **IP69K Stainless P-Cap**

## **15/ 19/ 21.5/ 23.8" Panel PC**

Intel® Core™ i5-7200U Kaby Lake



**Model No.:** R15IK3S-SPC369  
R19IK3S-SPM169  
W22IK3S-SPA369  
W24IK3S-SPA269

# **User Manual**

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## Preface

### Copyright Notice

No part of this document may be reproduced, copied, translated, or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the prior written permission of the original manufacturer.

### Trademark Acknowledgement

Brand and product names are trademarks or registered trademarks of their respective owners.

### 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 1W18Axxxxxxx means October of year 2018.

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

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



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

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



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

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



### Warning!/ Avertissement!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on.

Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Toujours débrancher le cordon d'alimentation du chassis lorsque vous travaillez sur celui-ci. Ne pas brancher de connexions lorsque l'alimentation est présente. Des 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 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 charge, ou dans un sac anti-statique lorsqu'elles ne sont pas dans le chassis.

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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or above  $60^{\circ}\text{C}$  ( $140^{\circ}\text{F}$ ). 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.
- 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

### Federal Communications Commission Radio Frequency Interface Statement



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 his own expense.

### EC Declaration of Conformity



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 EN 55022: 2010 Class B
  - IEC61000-4-2: 2009
  - IEC61000-4-3: 2006+A1: 2007+A2: 2010
  - IEC61000-4-4: 2012
  - IEC61000-4-5: 2014
  - IEC61000-4-6: 2013
  - IEC61000-4-8: 2010
  - IEC61000-4-11: 2004
- EN55022: 2010/AC:2011
- 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® IP69K Stainless P-Cap Panel PC with Intel® Core™ i5-7200U Kaby Lake processor. This User Manual applies to the IP69K Flat Stainless P-Cap Panel PC – R15IK3S-SPC369, R19IK3S-SPM169, W22IK3S-SPA369, and W24IK3S-SPA269.

The documentation set for the IP69K Flat Stainless P-Cap Panel PC provides information for specific user needs, and includes:

- **IP69K Stainless P-Cap Panel PC User Manual** – contains detailed description on how to use the Panel PC, its components and features.
- **IP69K Stainless P-Cap Panel PC Quick Start Guide** - 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.

## **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 Introduction

Congratulations on purchasing Winmate® IP69K Stainless P-Cap Panel PC.

Winmate flat stainless steel P-Cap panel PCs and display are designed for applications with high hygienic requirements. IP69K series is completely waterproof with IP69K level of protection allowing for easy cleaning and sterilization.

The IP69K stainless series work well in food, beverage industry, including food processing operations and packaging, chemical manufacturing and other industrial applications.

## 1.2 Product Features

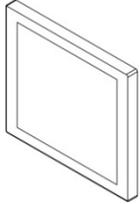
The IP69K Stainless P-Cap Panel PC features:

- Intel® Core™ i5-7200U Kaby Lake 2.5GHz (turbo to 3.1GHz)
- SUS316 stainless steel for food and chemical industries
- Full IP69K waterproof enclosure, good corrosion resistance
- A true flat, easy-to-clean front surface with edge-to-edge design
- Flat multi-touch panel pc with superior readability and P-CAP technology
- Various mounting solutions, support Yoke mount and VESA mount
- Plenty of I/O s including USB 2.0, RS-232 serial port and RJ45-10/100/1000 LAN ports
- Waterproof ports with adapter cables for external connectivity
- Supports VESA mount
- Supports Rain/ Glove mode (Optional)

### 1.3 Package Content

Carefully remove the box and unpack your 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 shipment list:**



- **Panel PC**

Varies by product specifications



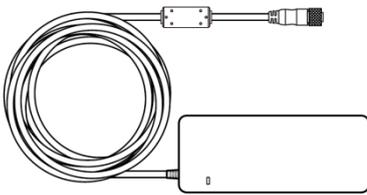
- **Quick Start Guide (Hardcopy)**

Part No. 91521110102U



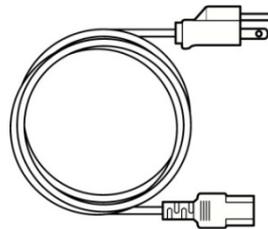
- **Driver CD & User Manual**

Part No. 9171111K102L



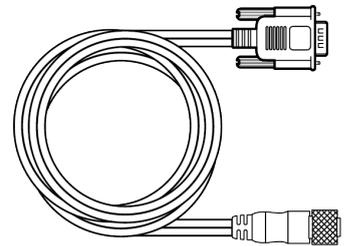
- **AC Adapter**

50W: 90PO12050006  
84W: 90PO12084000



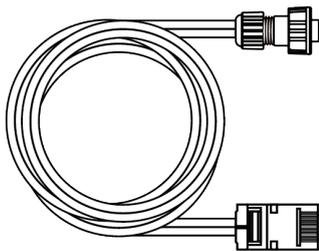
- **Power Cable\***

Varies by country



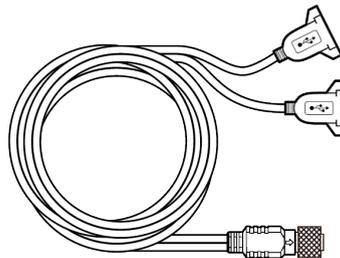
- **Serial Cable**

Part No.94G0123090Q0



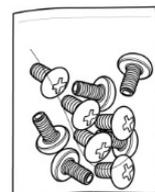
- **Ethernet Cable**

Part No. 94I0080080KF



- **USB Cable**

Part No. 9480128080K0

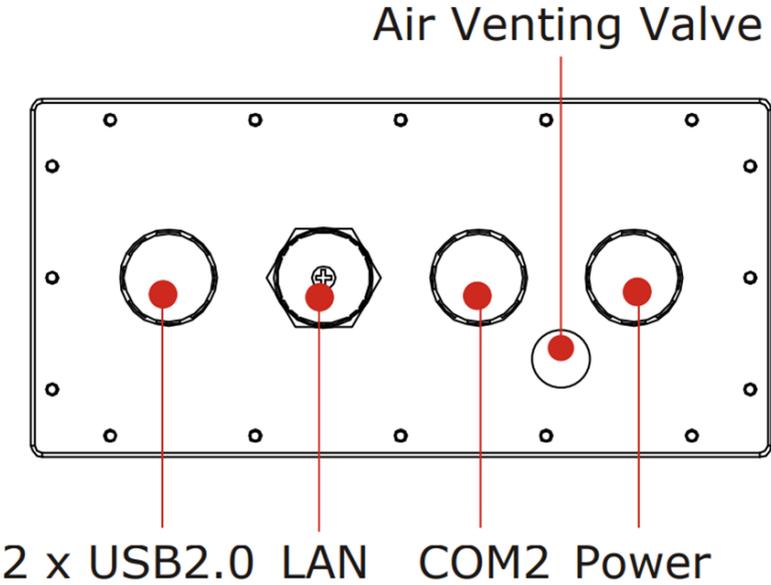


- **VESA Screws**

Part No. 913511101101

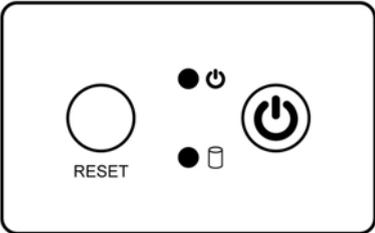
### 1.4 Connector Placement

IP69K Flat Stainless P-Cap Panel PC has M25 type connectors with protection cap and air venting valve. For cable specifications refer to the [Ch.2, "Cable Specifications"](#) of this user manual.

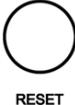


### 1.5 Physical Buttons and LED Indicators

Physical buttons and LED indicators located on the rear side of the Panel PC.



Physical Buttons

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

LED Indicators

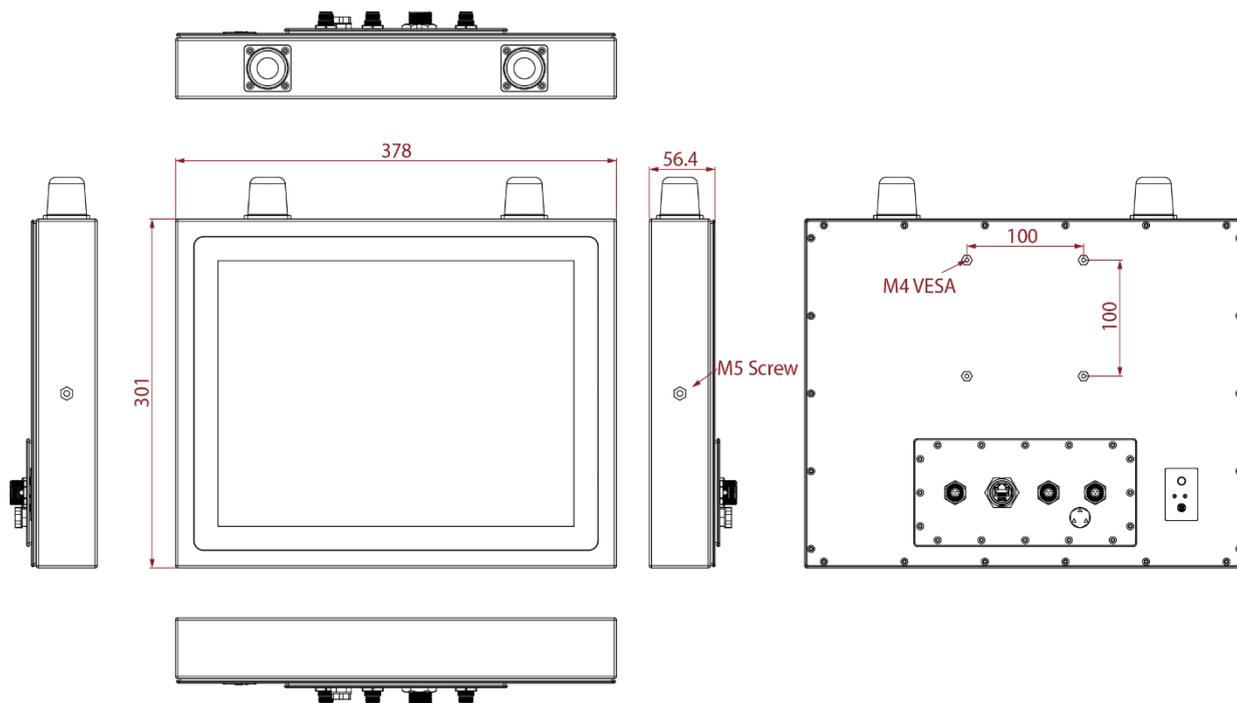
| LED Type  | Status   | Description                                      |
|---|----------|--|
|  | On       | Power is on                                      |
|   | Off      | Power is off                                     |
|  | Blinking | Storage activity (Data is being read or written) |
| 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

## 1.6 Schematics and Dimensions

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

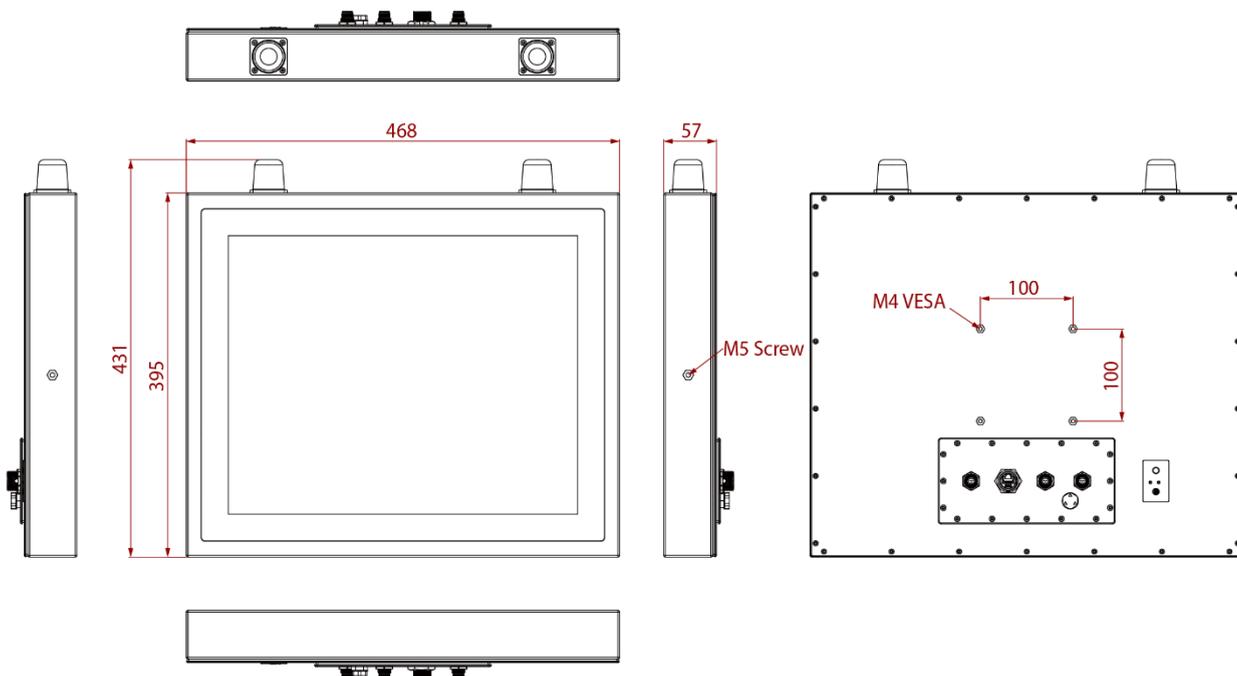
### 1.6.1 Dimensions 15"

Unit: mm



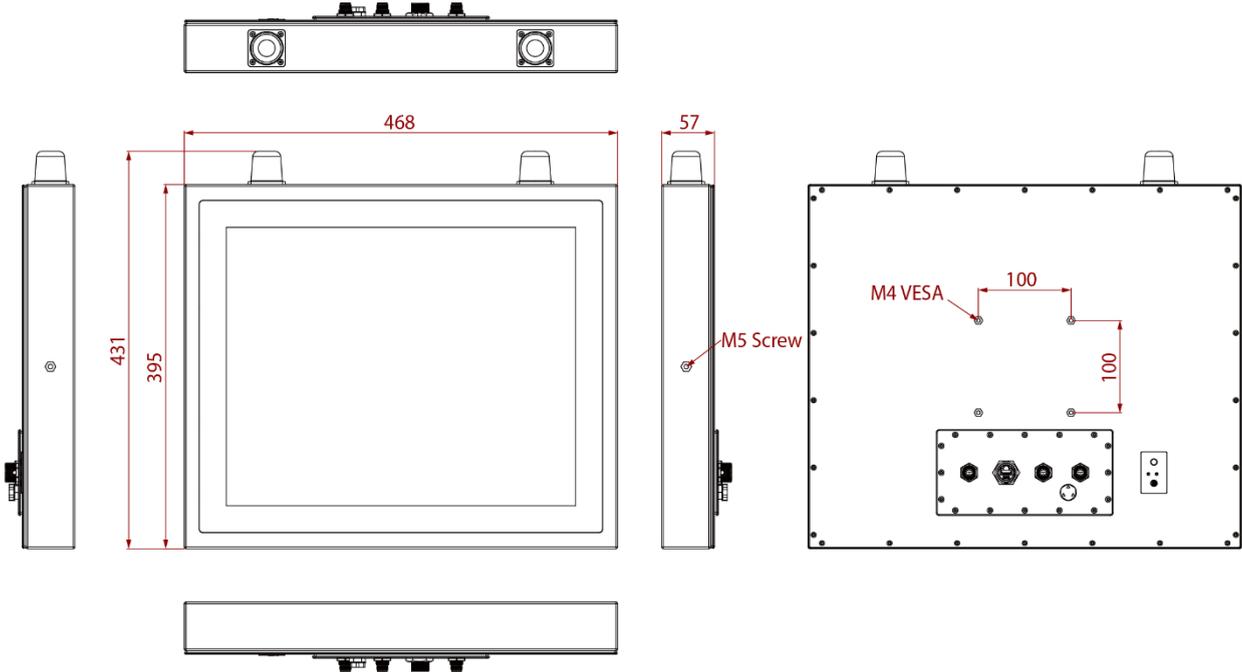
### 1.6.2 Dimensions 19"

Unit: mm



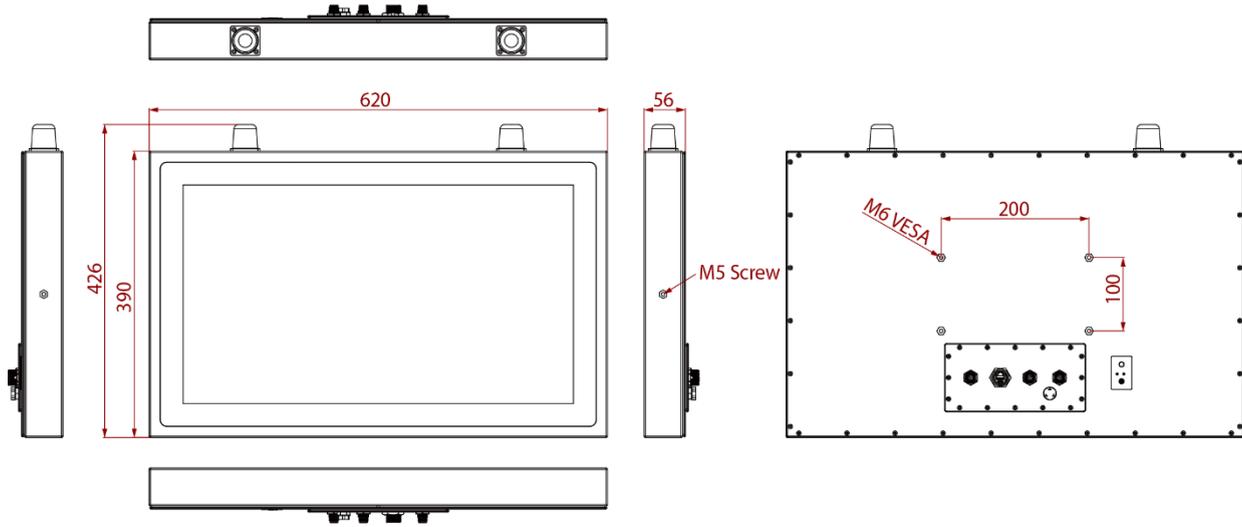
**1.6.3 Dimensions 21.5"**

Unit: mm



**1.6.4 Dimensions 23.8"**

Unit: mm



## **Chapter 2: Getting Started**

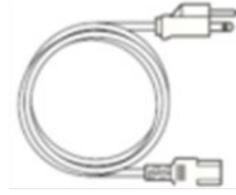
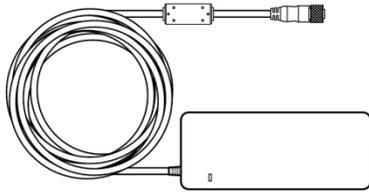
This chapter tells you important information on power supply, adapter and precautions tips. Pay attention to power considerations.



## 2.1 Powering On

### 2.1.1 AC Adapter Components

AC Adapter supplied with the power cord.



AC Adapter

Power Cord

AC Adapter specifications vary by panel size.

| Size       | 15"      | 19"      | 21.5"    | 23.8"    |
|------------|----------|----------|----------|----------|
| AC Adapter | 12V/ 80W | 12V/ 80W | 12V/ 80W | 12V/ 80W |

#### Safety Precautions:

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

#### While using the AC Adapter always:

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



#### **Alternating Current Mise à la terre !**

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

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

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

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

## 2.1.2 Power Considerations

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



### Caution/Attention

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

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

## 2.1.3 Power Consumption

The table below shows power consumption and AC adapter for the Flat Stainless P-CAP Panel PC.

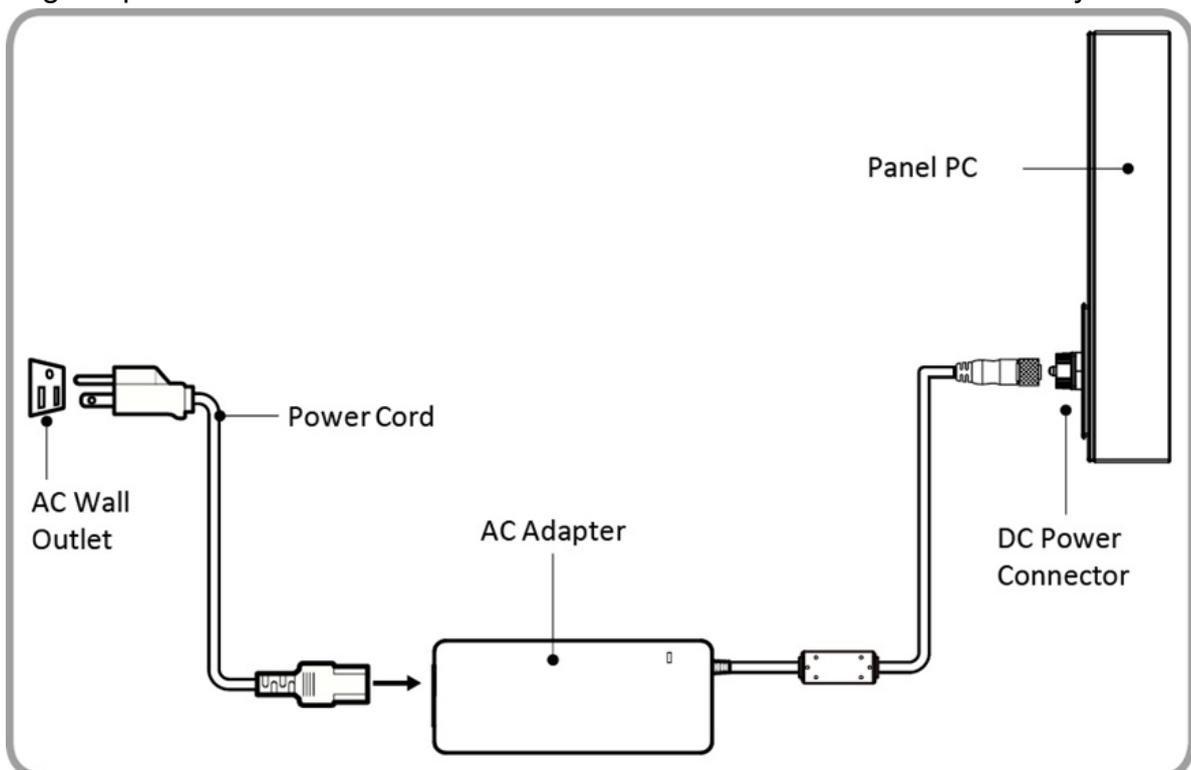
| Size               | 15"        | 19"        | 21.5"      | 23.8"      |
|--------------------|------------|------------|------------|------------|
| Power Consumption* | 52W (typ.) | 56W (typ.) | 66W (typ.) | 66W (typ.) |

\*With maximum backlight and high CPU load.

## 2.1.4 Turning On/ Off Your Device

### To turn on your device:

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



### To turn off your device:

To shut down your device, do the following: Tap Start (  ) > Shut down.

Wait for your Panel PC to completely turn off before disconnecting the power cord (if necessary).

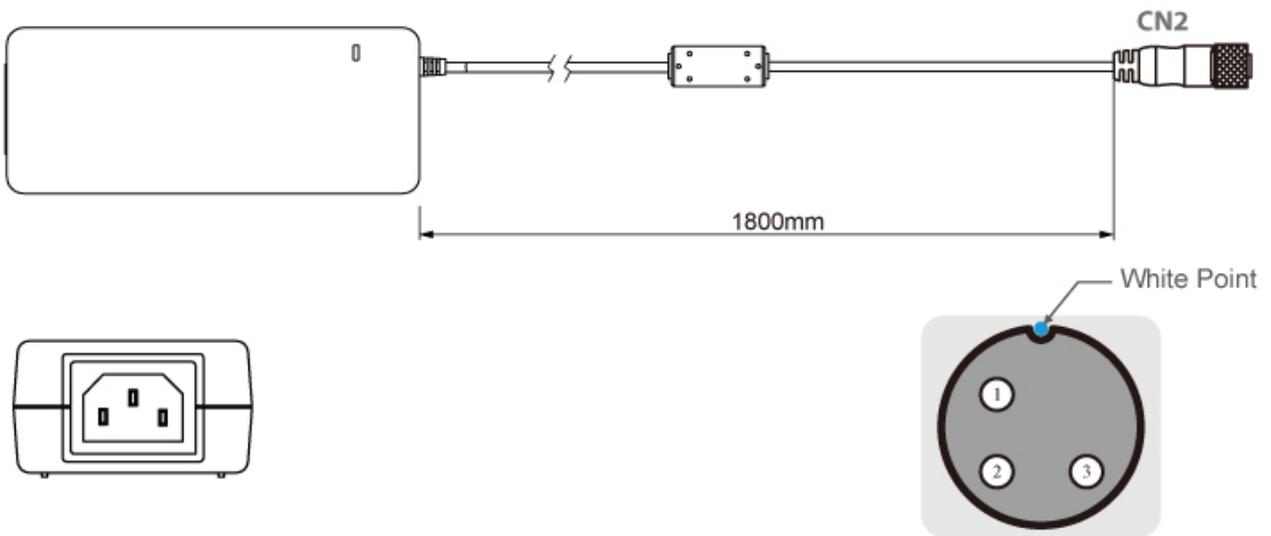
## 2.2 Connector Pin Assignments

This Panel PC is equipped with four waterproof connectors. Use only the cables that are included in the package. The pin assignments of the cables are as follows.

### 2.2.1 Power Cable

The IP69K Stainless P-Cap Panel PC has waterproof power input connector. Use power cable to connect Panel PC to the source of power.

IP69K Stainless P-Cap Panel PC support 12V DC power input.



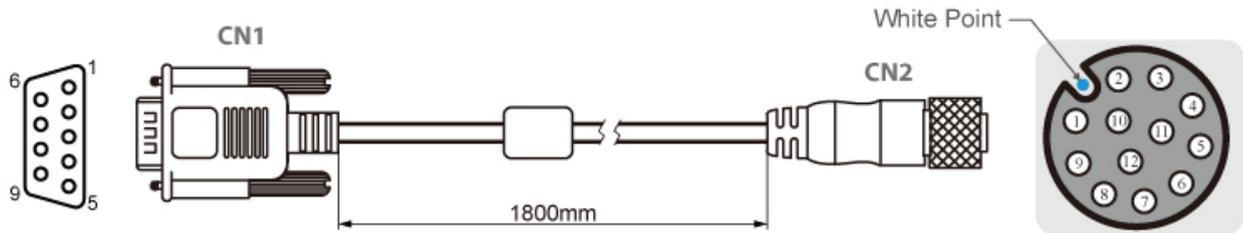
| Pin No. | Symbols | Color     |
|---------|---------|-----------|
| CN1-1   | V+      | NO ASSIGN |
| CN1-2   | GND     | NO ASSIGN |



| Pin No. | Symbols | Color     |
|---------|---------|-----------|
| CN2-1   | V+      | NO ASSIGN |
| CN2-2   | GND     | NO ASSIGN |
| CN2-3   | V-      | NO ASSIGN |

### 2.2.2 Serial Cable

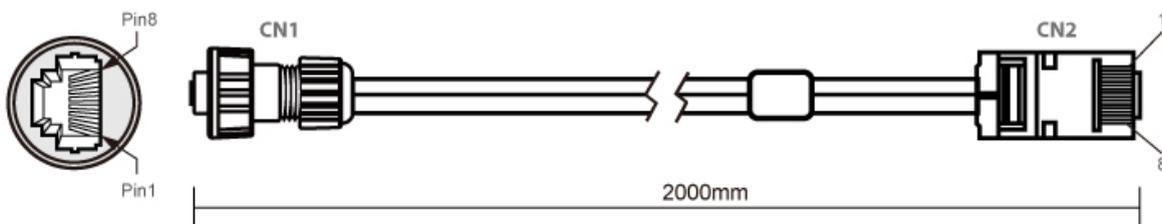
The IP69K Stainless P-Cap Panel PC has waterproof serial port connector. Use serial cable to connect serial interfaces.



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

### 2.2.3 Ethernet Cable

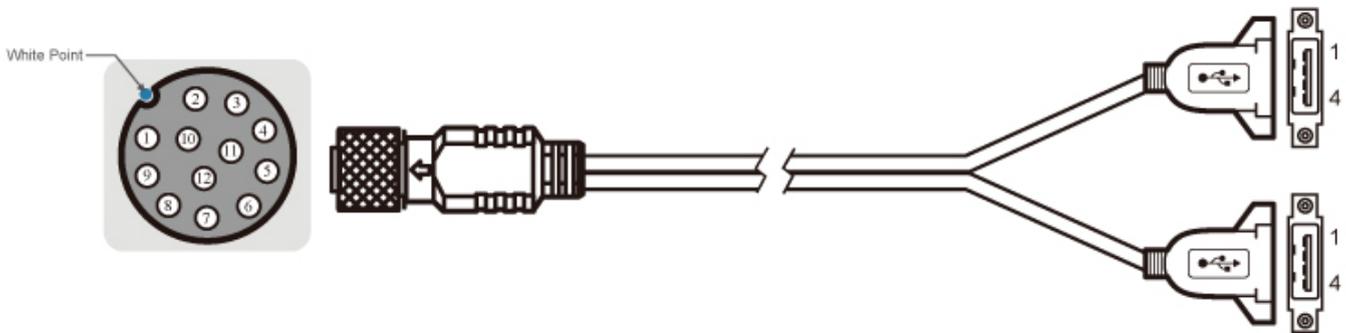
The IP69K Stainless P-Cap Panel PC has waterproof Ethernet connector. Use Ethernet cable to connect the Panel PC to the Internet.



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

## 2.2.4 USB 2.0 Cable

The IP69K Stainless P-Cap Panel PC has one waterproof USB2.0 connector. Use USB2.0 cable to connect external devices such as mouse or keyboard to the Panel PC.



| Pin No. | Symbols | Color |   | Pin No.   | Symbols | Color |              |
|---------|---------|-------|---|-----------|---------|-------|--------------|
| CN1-2   | VCC     | RED   | ↔ | CN2-1     | VCC     | RED   | twisted pair |
| CN1-3   | D-      | WHITE | ↔ | CN2-2     | D-      | WHITE |              |
| CN1-4   | D+      | GREEN | ↔ | CN2-3     | D+      | GREEN |              |
| CN1-5   | GND     | BLACK | ↔ | CN2-4     | GND     | BLACK |              |
| CN1-6   | VCC     | RED   | ↔ | CN3-1     | VCC     | RED   | twisted pair |
| CN1-7   | D-      | WHITE | ↔ | CN3-2     | D-      | WHITE |              |
| CN1-8   | D+      | GREEN | ↔ | CN3-3     | D+      | GREEN |              |
| CN1-9   | GND     | BLACK | ↔ | CN3-4     | GND     | BLACK |              |
| CN1-1   | GND     | Braid | ↔ | Braid 接鐵殼 |         |       |              |

## 2.3 Cleaning the Monitor



### Note:

The IP69K Stainless Panel PCs withstand regular intense cleaning and could hold up against steam and high-pressure water. The devices are able to sustain water temperatures up to 80°C and a water jet operating at 99.97 bar.

### Before cleaning:

- Make sure the device is turned off.
- Disconnect the power cable from any AC outlet.

### When cleaning:

- Use water up to 80°C to clean the housing.
- Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles.
- The display area is highly prone to scratching. Do not use ketene type material (ex. Acetone), Ethyl alcohol, toluene, ethyl acid or Methyl chloride to clear the panel. It may permanently damage the panel and void the warranty.
- If it is still not clean enough, apply a small amount of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, lint-free cloth, and wipe the screen.
- Don not use oil directly on the display screen. If droplets are allowed to drop on the screen, permanent staining or discoloration may occur.

## 2.4 Touch Mode

IP69K Stainless P-Cap Panel PC has three types touch modes pre-installed with Windows OS.



The icon is on the bottom right corner of the toolbar.

The screenshot shows the Windows Control Panel 'Programs and Features' window. The 'TouchModeSelect' program is listed in the table below and is highlighted with a red box. To the right, the 'TouchModeSelect' dialog box is open, showing the 'FW Version' as '00\_M00' and 'Hand Mode' selected as the touch mode.

| Name                                    | Publisher                   |
|---|-----------------------------|
| Intel(R) Network Connections 22.3.108.0 | Intel                       |
| Intel(R) Sideband Fabric Device Driver  | Intel Corporation           |
| Intel® Graphics Driver                  | Intel Corporation           |
| Intel® Trusted Execution Engine         | Intel Corporation           |
| Realtek High Definition Audio Driver    | Realtek Semiconductor Corp. |
| <b>TouchModeSelect</b>                  | TouchModeSelect             |
| WatchDog_AP                             | WatchDog_AP                 |

TouchModeSelect dialog box content:

- Touch Mode
- FW Version: 00\_M00
- Touch Mode
- Hand Mode
- Rain Mode
- Glove Mode

## **Chapter 3: Mounting**

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



## 3.1 Cable Mounting Considerations

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

## 3.2 Safety Precautions

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

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

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



### **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.

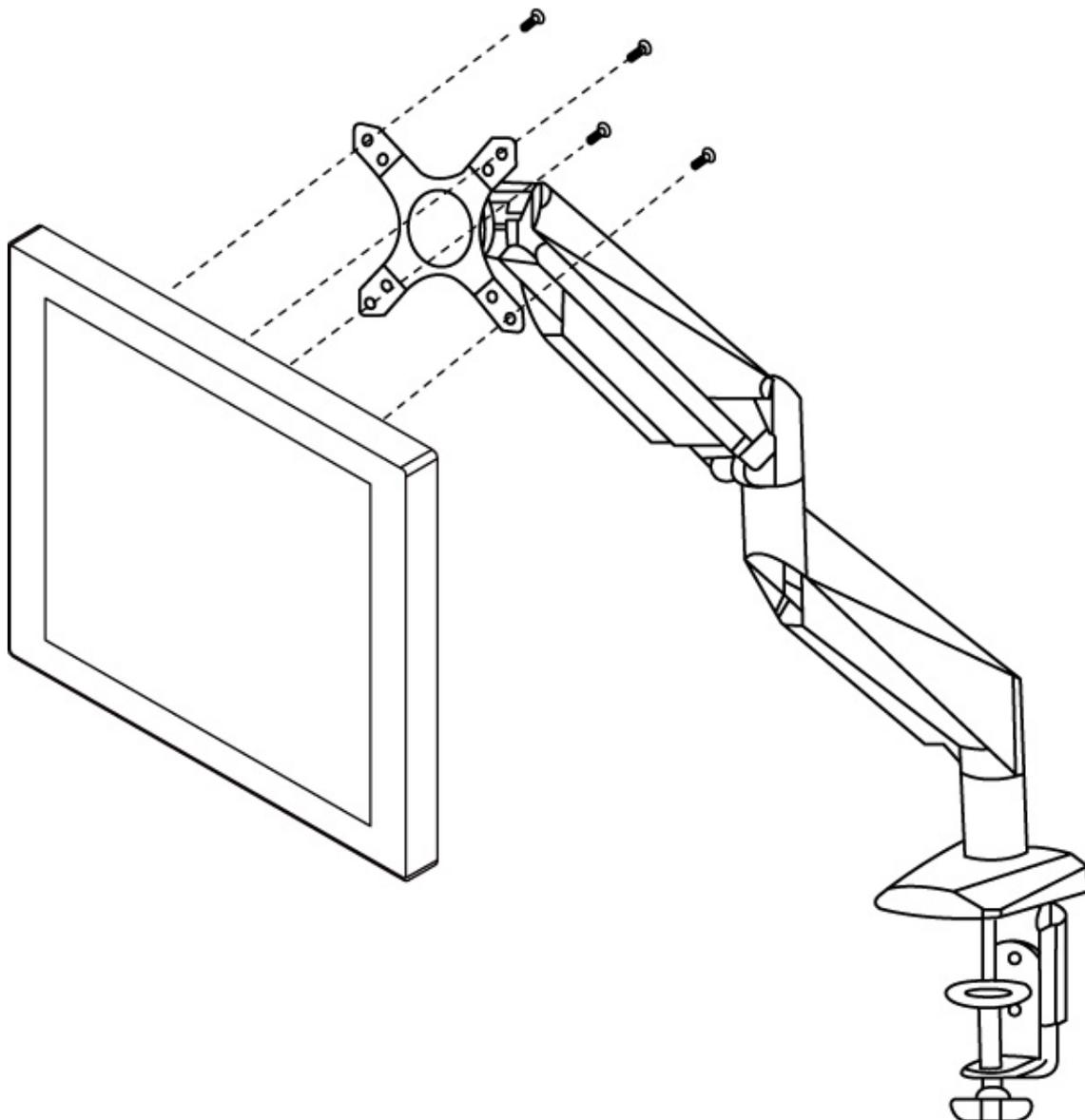
### 3.3 VESA Mount

Flat Stainless P-CAP Panel PC has VESA mount holes on the rear side. Follow instructions below to mount the unit with VESA Mount bracket (not supplied by Winmate).

| Size    | VESA Plate Dimensions | Screw hole diameter |
|---------|-----------------------|---------------------|
| 15",19" | 100 x 100 mm          | VESA M4x5 mm        |
| 21.5"   | 100 x 200 mm          | VESA M4x5 mm        |
| 23.8"   | 100 x 200 mm          | VESA M6x8 mm        |

#### Mounting Instruction:

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



#### Note:

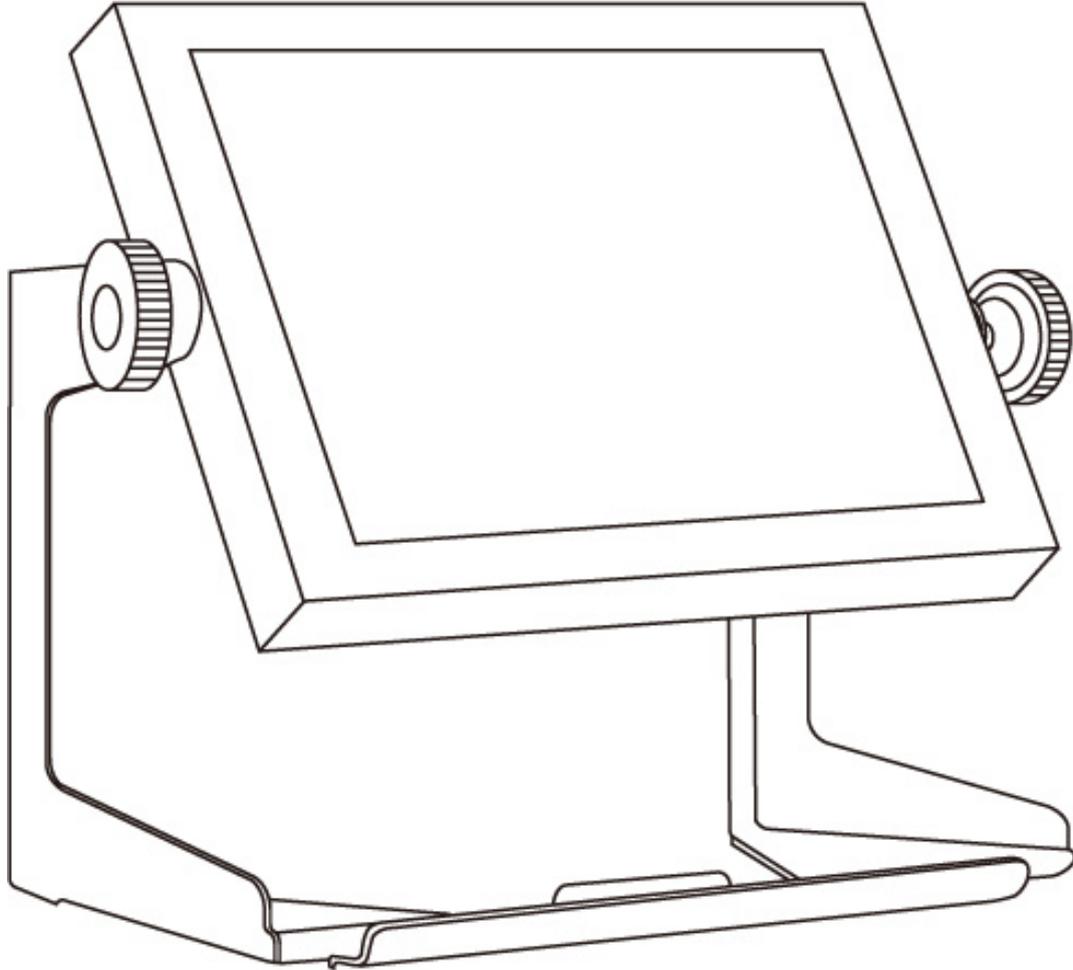
Notice that both hooks on bracket should lock the notches on the back cover of the device.

### 3.4 Yoke Mount

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

**Mounting instruction:**

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



## **Chapter 4: Operating the Device**

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

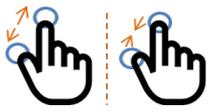


## 4.1 Operating System

The Panel PCs supports Windows 10 IoT Enterprise operating system.

## 4.2 Multi-Touch

The touchpad supports the core gestures for Windows.

| Gesture  | Windows Usage  | Gesture Action   | Action  |
|--|--|--|---|
| Tap/<br>Double-tap   | Click / Double-click   | Click or double-click  |    |
| Panning with<br>Inertia  | Scrolling  | Drag one or two fingers<br>up and down   |    |
| Selection/Dr<br>ag<br><i>(left to right<br/>with one<br/>finger)</i> | Mouse-drag/<br>Selection   | Drag one finger<br>left/right  |   |
| Zoom   | Zoom (default to<br>CTRL key + scroll<br>wheel)                                    | Move two fingers apart/<br>toward each other   |  |
| Rotate   | No system default<br>unless handled by<br>Application<br>(using WM_Gesture<br>API) | Move two fingers in<br>opposite directions<br><i>or</i><br>Use one finger to pivot<br>around another |  |
| Press and<br>Hold  | Right-click  | Press, wait for blue-ring<br>animation to complete,<br>then release                                  |  |
| Flicks   | Default: Pan Up/<br>Down/ Back, and<br>Forward                                     | Make quick drag<br>gestures in the<br>described direction  |  |

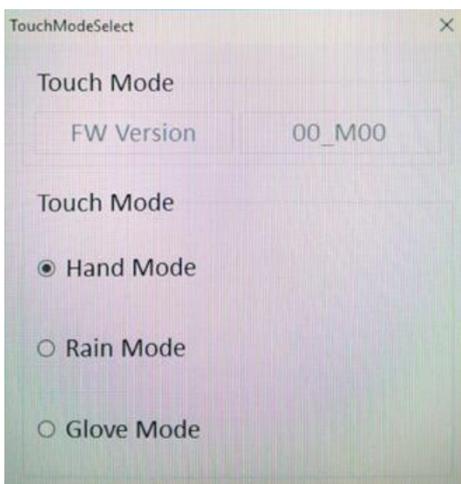
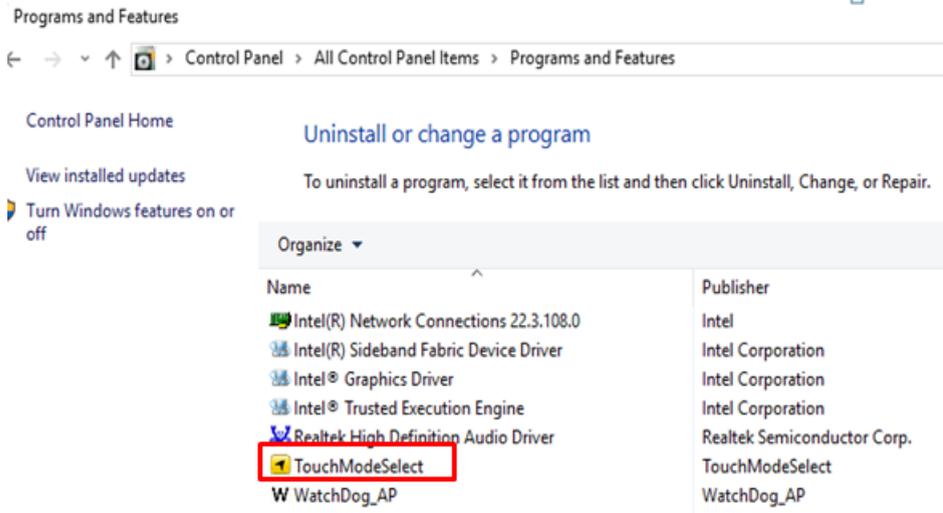
\*Reference from Microsoft®

## 4.3 Touch Mode

IP69K Stainless P-Cap Panel PC has three types touch modes pre-installed with Windows OS.



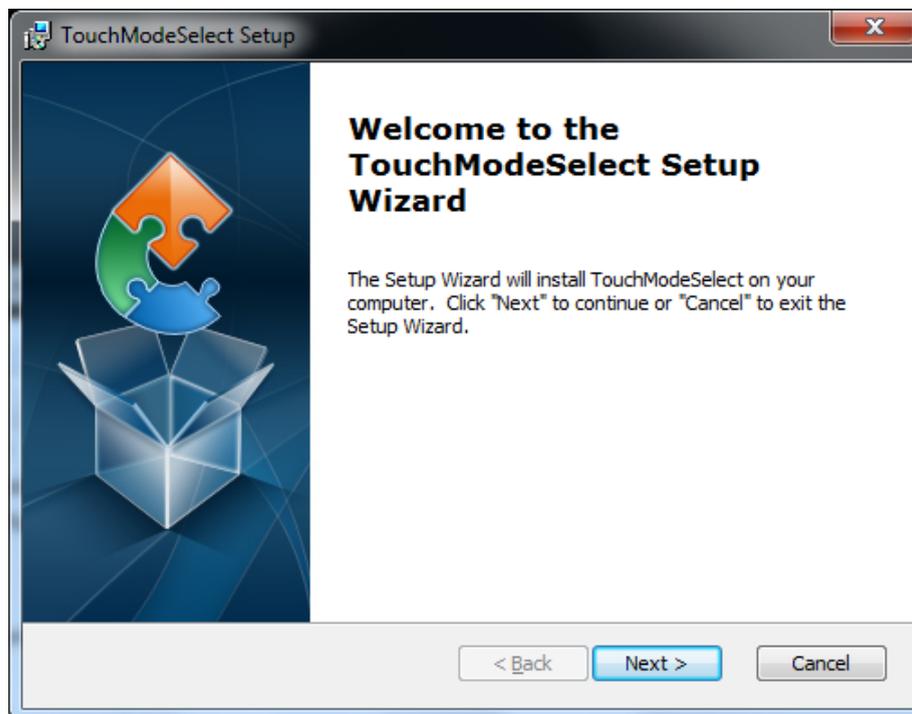
The icon is on the bottom right corner of the toolbar.



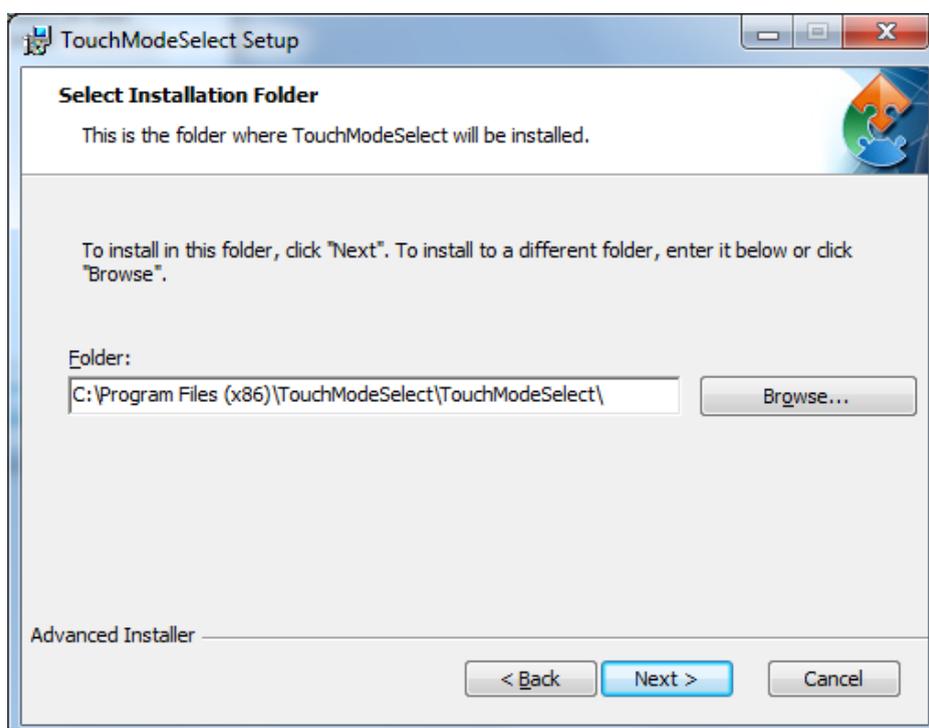
If the OS is not installed, please download the application on our website for switching the touch modes. If you cannot find it, please download it from Winmate Download Center or contact Winmate sales representative.

Follow the instructions below to install the *TouchModeSelect* Utility.

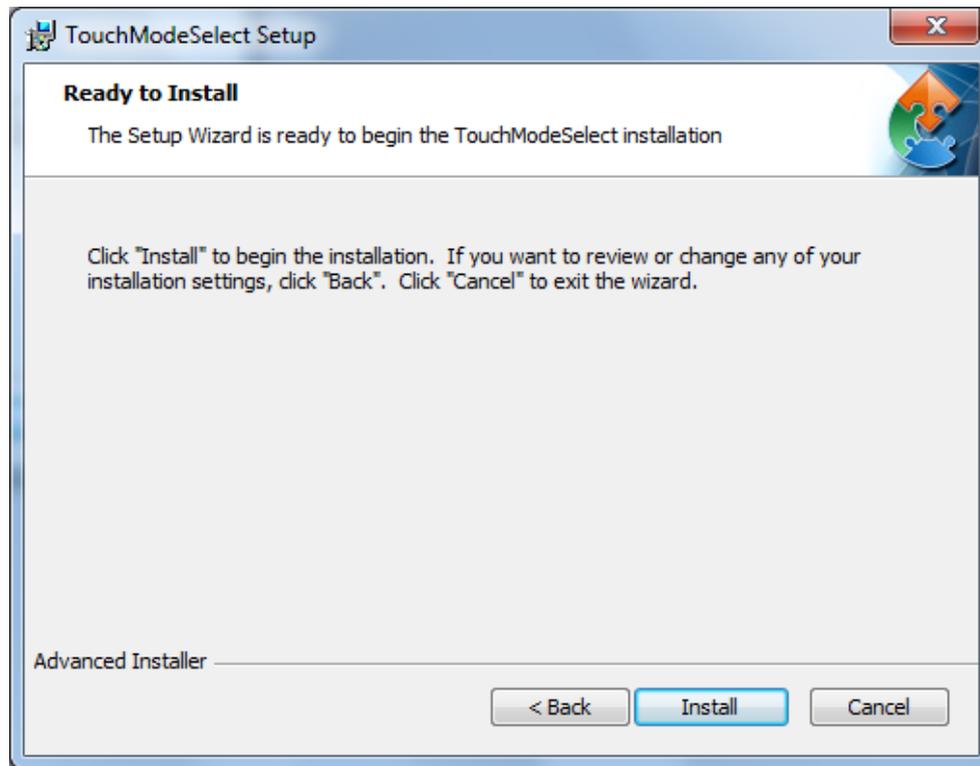
1. Download, install and execute **TouchModeSelect\_1.2.3** setup wizard.
2. Click **Next** to continue.



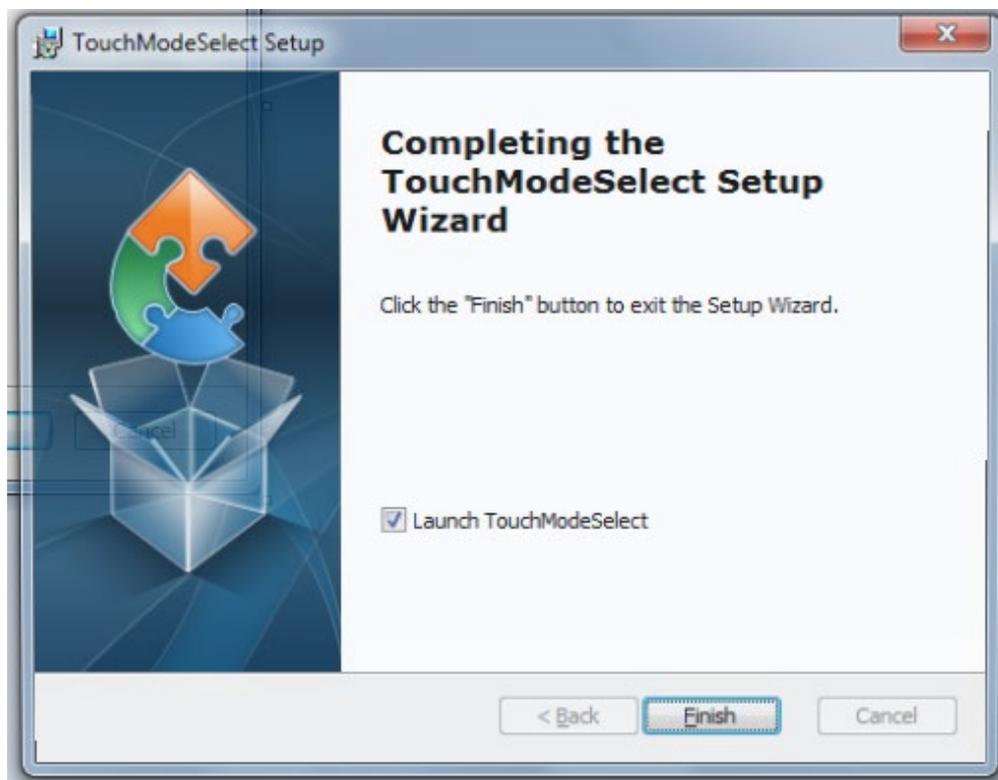
3. Select the installation folder, and click **Next** to continue.



4. The Setup Wizard is ready to begin the **TouchModeSelect** installation. Click **Install** to proceed.



5. When installation is complete, click **Finish** button to exit the Setup Wizard.

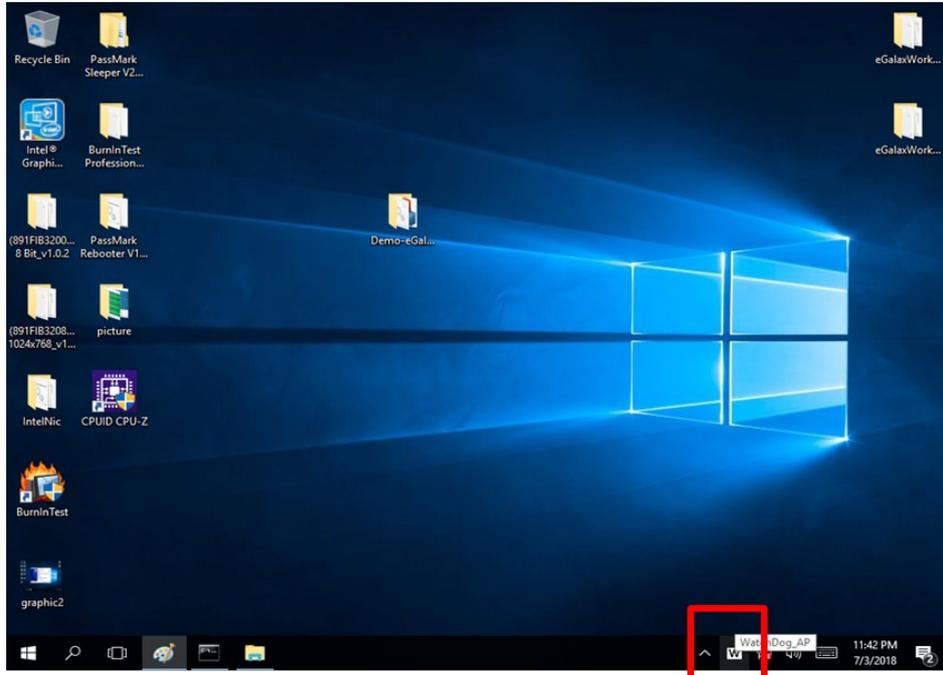


## 4.4 How to Enable Watchdog

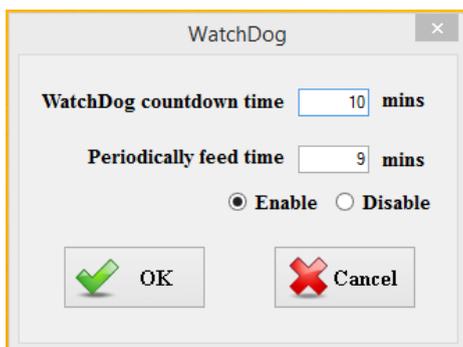
To enable Watchdog, you need to download Winmate Watchdog utility. Find more information on Watchdog in “Watchdog Guide” that you can download from Winmate Download Center or File Share. Refer to the User Manual for more details.

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

## **Chapter 5: Insyde 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     | Help           |
| F5/ F6 | Change Values  |
| F9     | Setup Defaults |
| F10    | Save & Exit    |
| Esc    | Exit           |
| Enter  | Select SubMenu |
| ↑ / ↓  | Select Item    |
| ← / →  | Select Item    |



### Note:

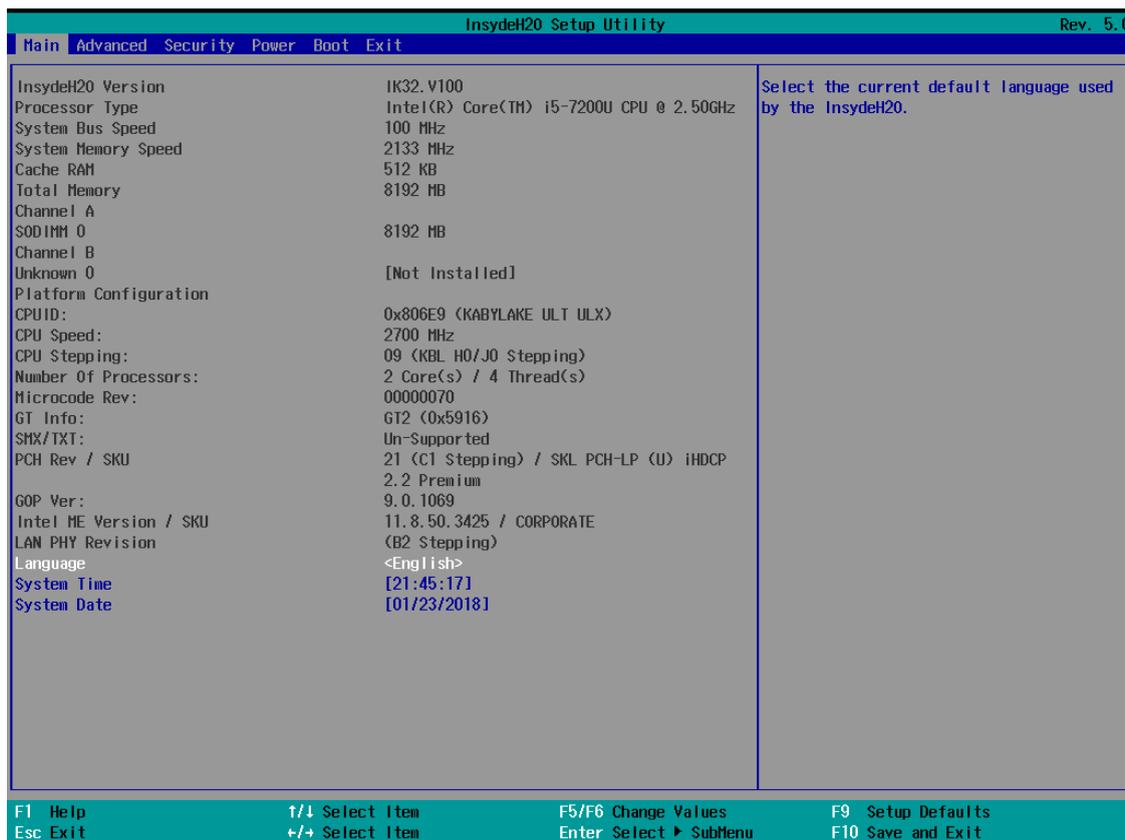
You can press the F1, F2, F3, F4, -/+ , and Esc keys by connecting a USB keyboard to your computer.

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 Setting       | Description  | Setting Option             | Effect  |
|--------------------|--|----------------------------|---|
| <b>Language</b>    | Displays the system language. [English] is set up by default.                                      | Adjustment of the language | Set the language in other language. The language in this device is English. |
| <b>System Time</b> | This is current time setting. The time is maintained by the battery when the device is turned off. | Date and time changes.     | Set the time in the format:<br>[hh/mm/ss]                                   |
| <b>System Date</b> | This is current date setting.  | Date and time changes.     | Set the date in the format [mm/dd/yyyy];                                    |

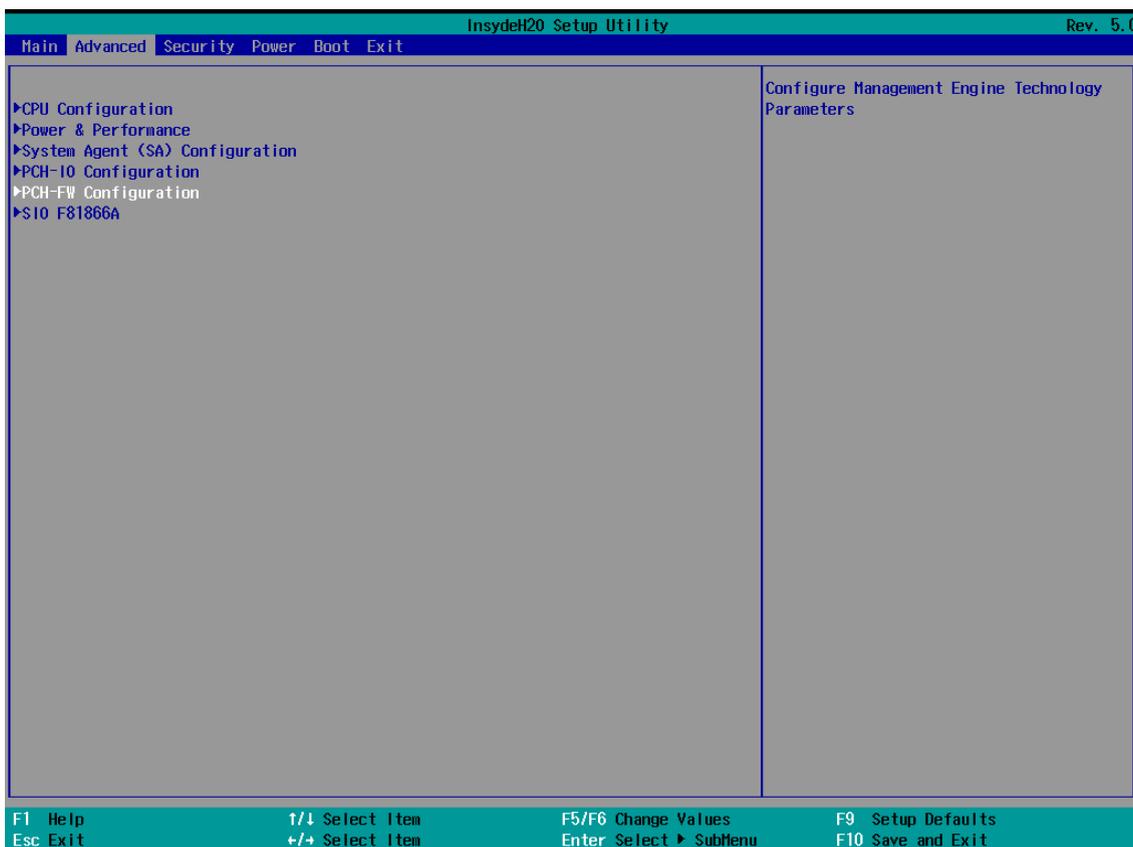
## 5.2.2 Advanced

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.



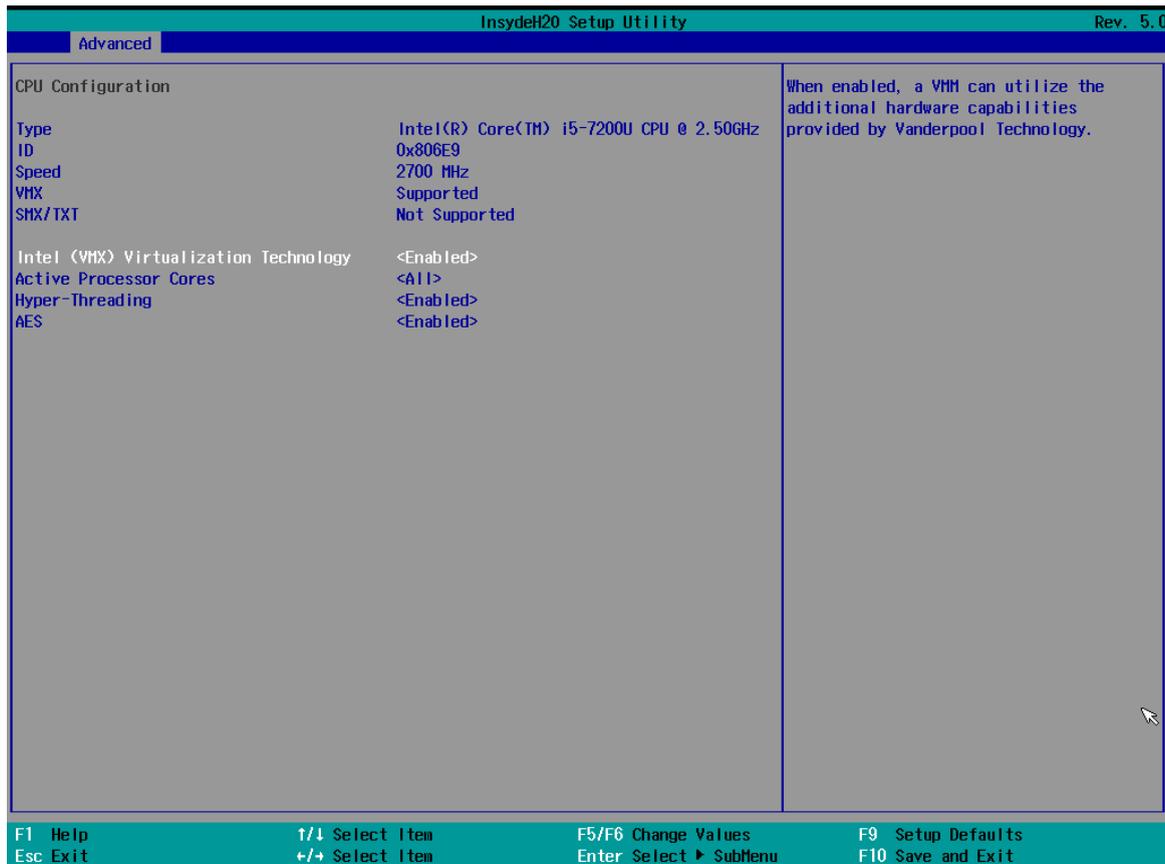
### Caution

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



| BIOS Setting               | Description                                      | Setting Option | Effect        |
|----------------------------|--|----------------|---------------|
| CPU Configuration          | Configures Trusted Computing parameters          | Enter          | Opens submenu |
| Power & Performance        | Configures Power & Performance parameters        | Enter          | Opens submenu |
| System Agent Configuration | Configures System Agent Configuration parameters | Enter          | Opens submenu |
| PCH-IO Configuration       | Configures PCH-IO parameters                     | Enter          | Opens submenu |
| PCH-FM Configuration       | Configures PCH-FM parameters                     | Enter          | Opens submenu |
| SIO F81866A                | Configures SIO F81866A parameters                | Enter          | Opens submenu |

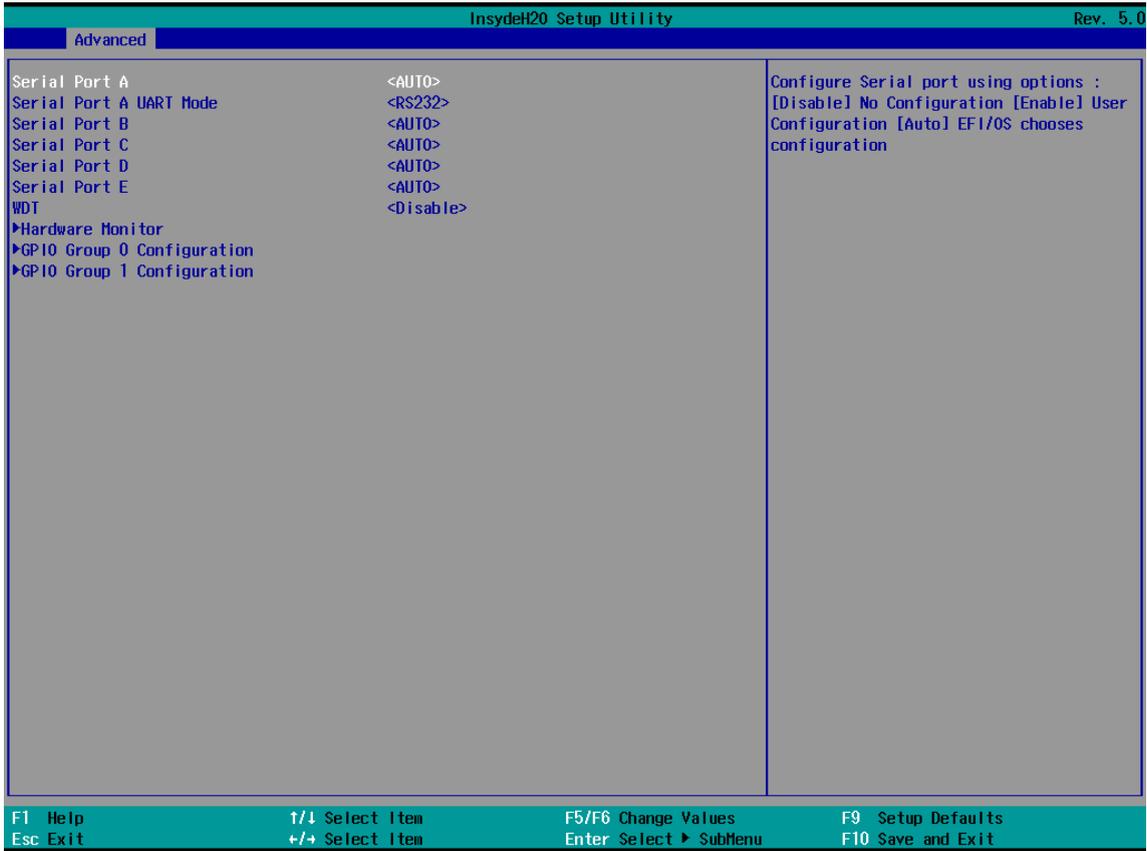
### 5.2.2.1 CPU Configuration



| BIOS Setting                          | Description  | Setting Option   | Effect  |
|---------------------------------------|--|------------------|---|
| Intel (VMM) Virtualization Technology | Enable or disable Intel Virtualization Technology.   | Enable/Disable   | When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology. |
| Active Processor Cores                | Number of core to enable in each processor package   | All / 1 / 2 / 3  | Select number of core to enable in each processor package   |
| Hyper Threading                       | Intel Hyper-Threading Technology allows a single processor to execute two or more separate threads concurrently. | Enable / Disable | Enable or disable Hyper Threading   |
| AES                                   | Enable or disable AES (Advanced Encryption Standard)   | Enable/Disable   | Enable or disable AES   |

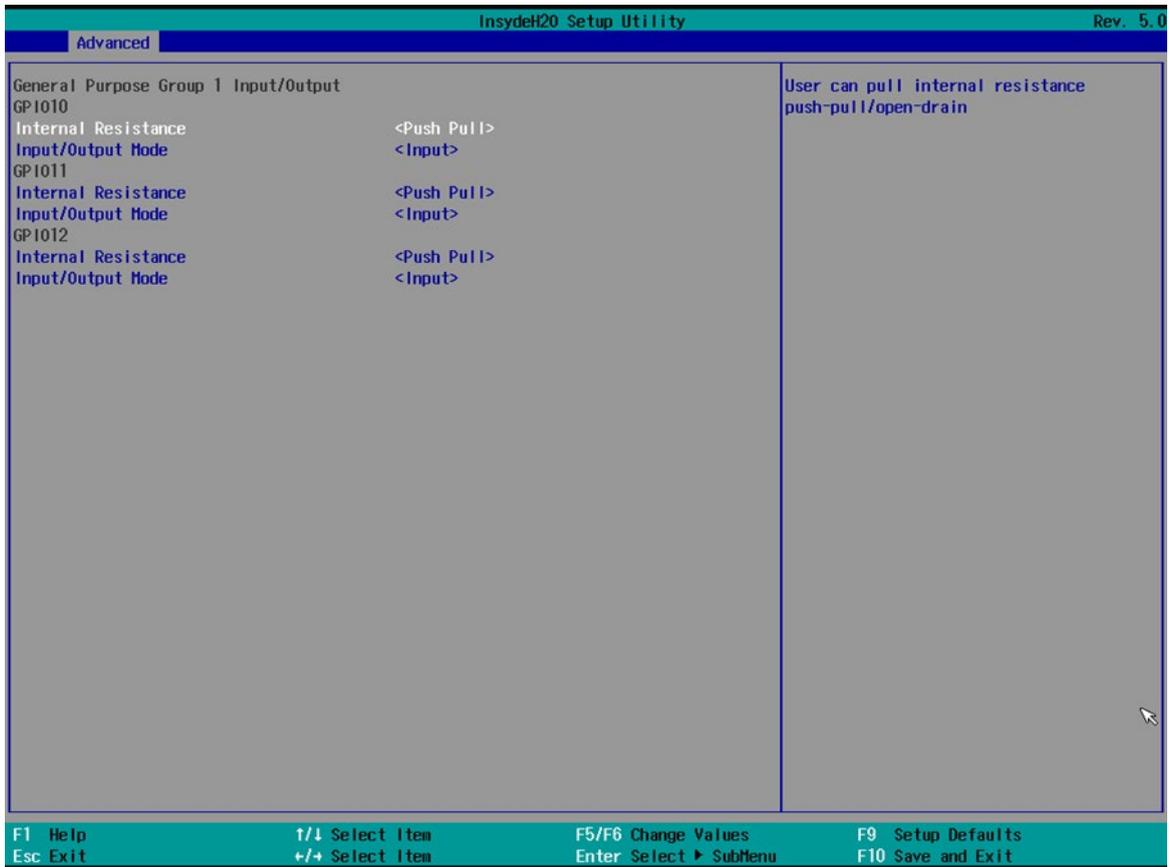
### 5.2.2.2 F81886A Configuration

#### BMP

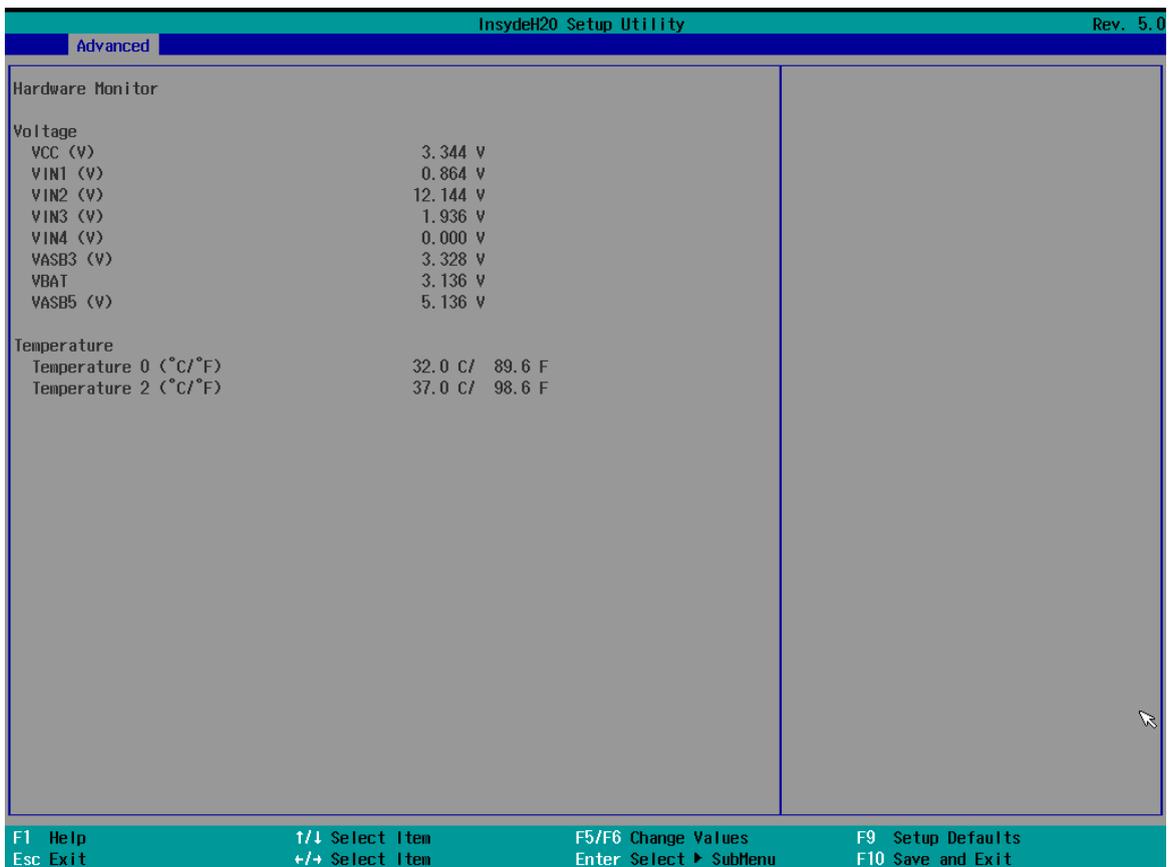


### 5.2.2.3 GPIO Configuration

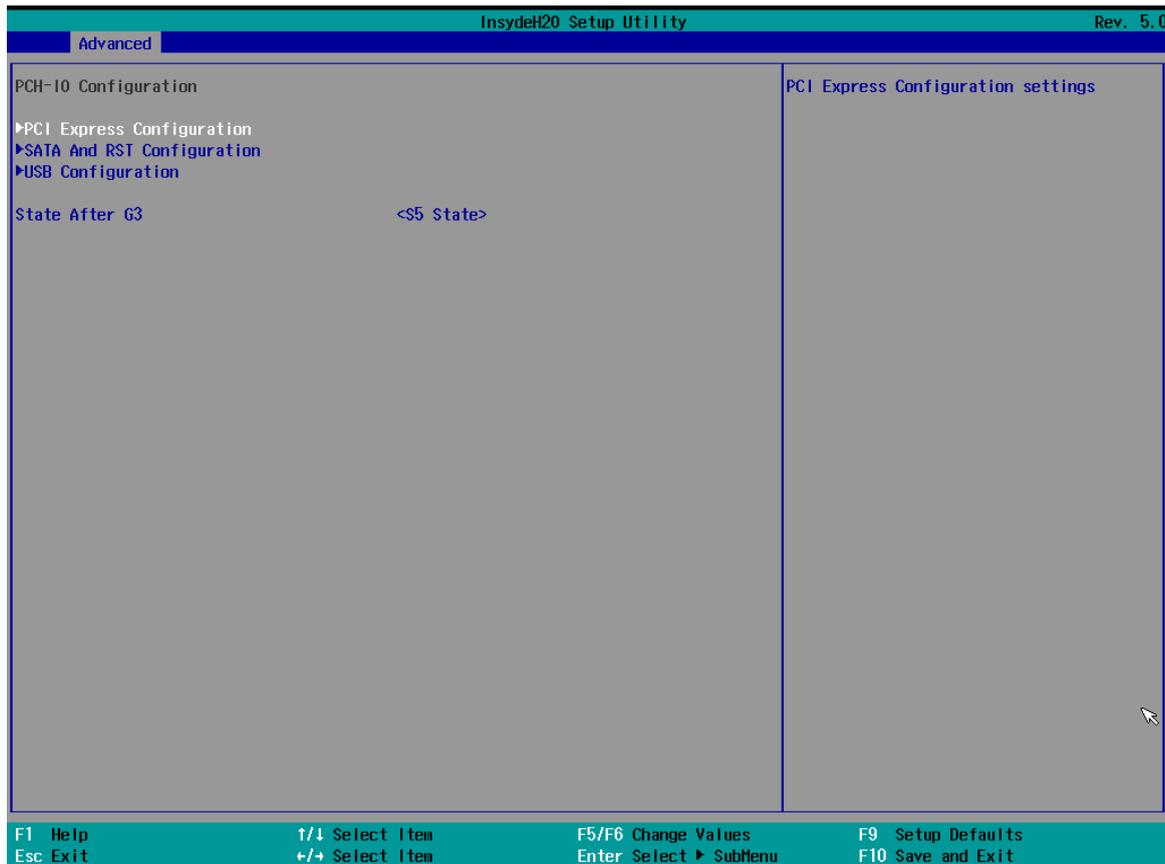




### 5.2.2.4 Hardware Monitor



### 5.2.2.5 PCH-IO Configuration



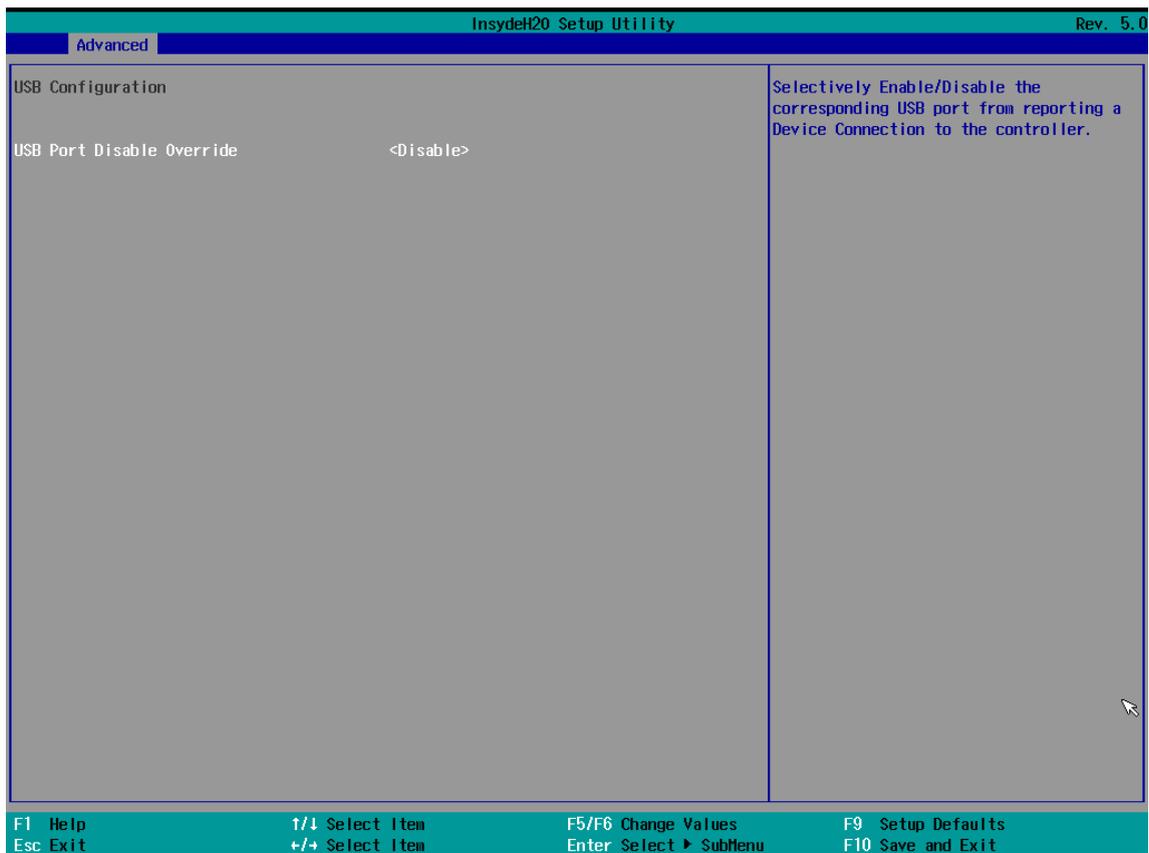
| BIOS Setting                | Description   | Setting Option       | Effect         |
|-----------------------------|---|----------------------|----------------|
| PCI Express Configuration   | PCI Express clock gating enable/disable for each root port.   | Enter                | Opens sub-menu |
| SATA And RST Configuratuion | Enable/ Disable SATA device   | Enter                | Opens sub-menu |
| USB Configuration           | Selectively enable/disable the corresponding USB port from reporting a Device Connection to the controller. | Enter                | Opens sub-menu |
| State After G3              | System power state setting  | S0 State<br>S5 State |                |



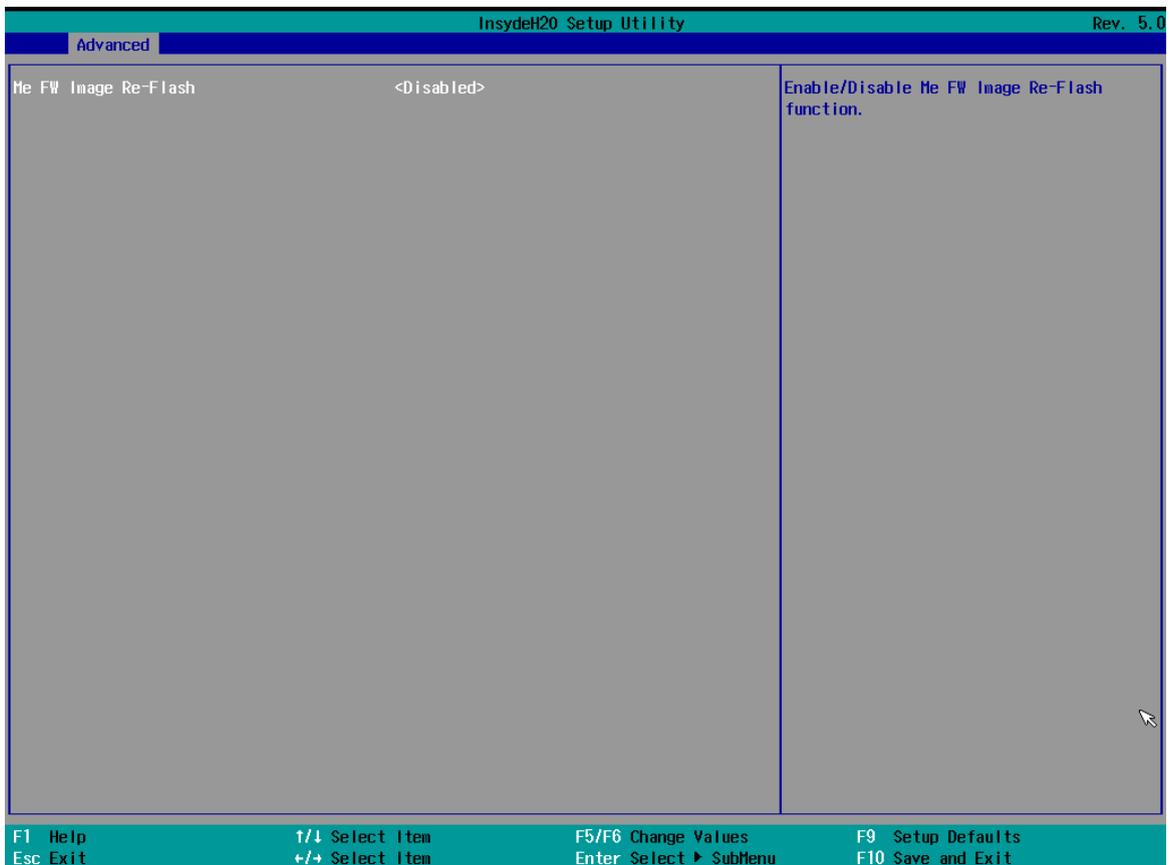
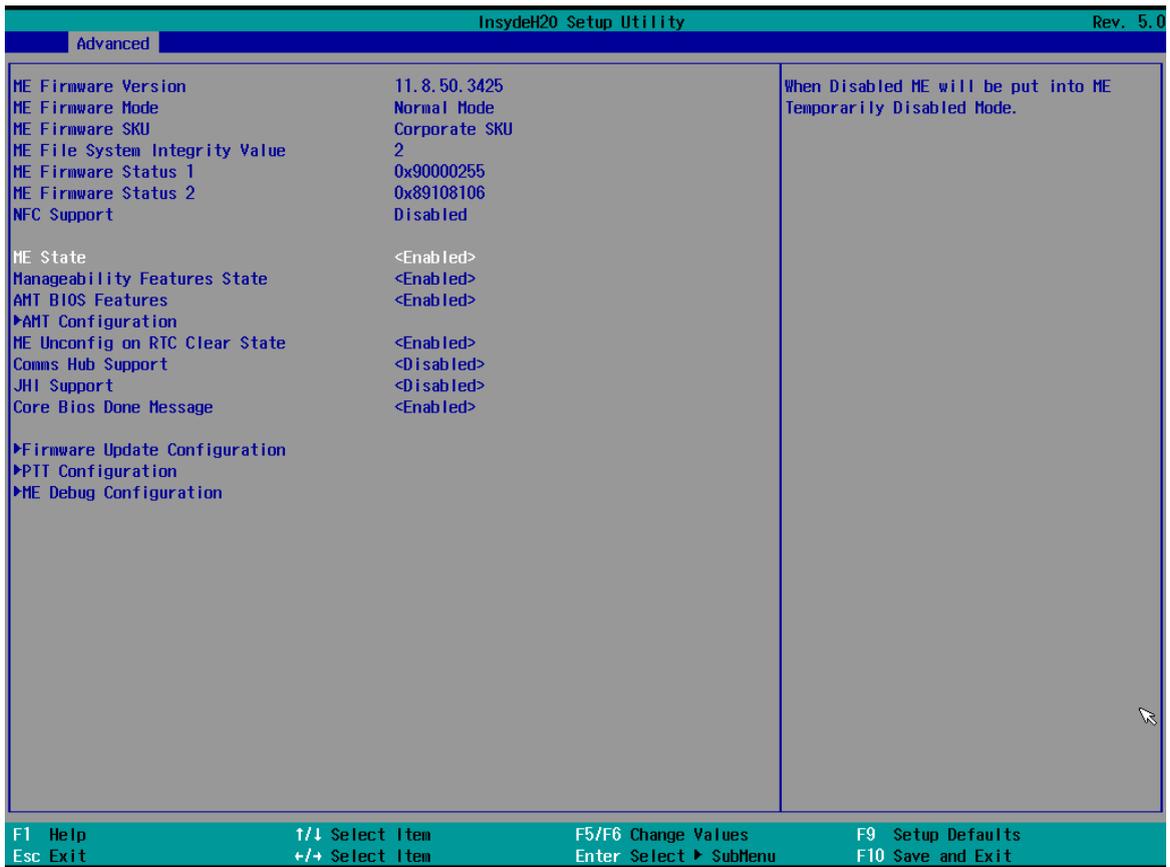
### 5.2.2.7 SATA and RST Configuration

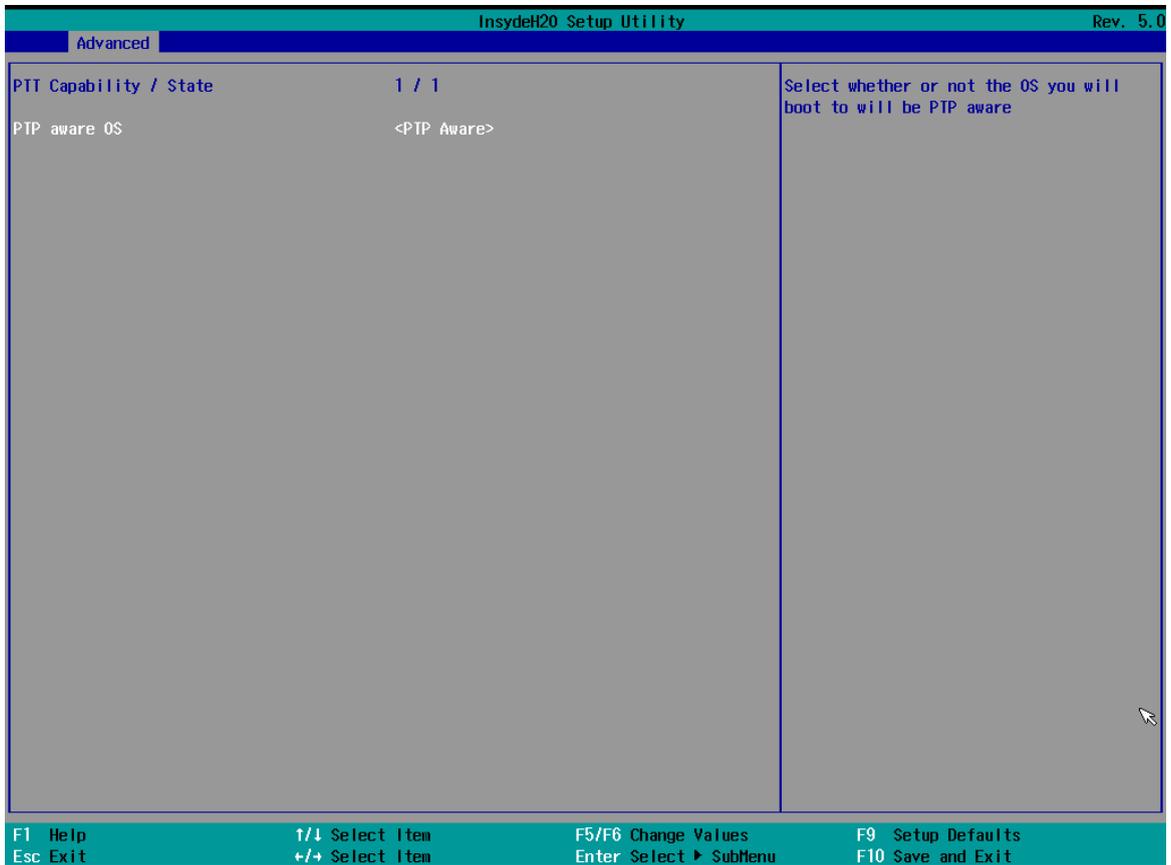
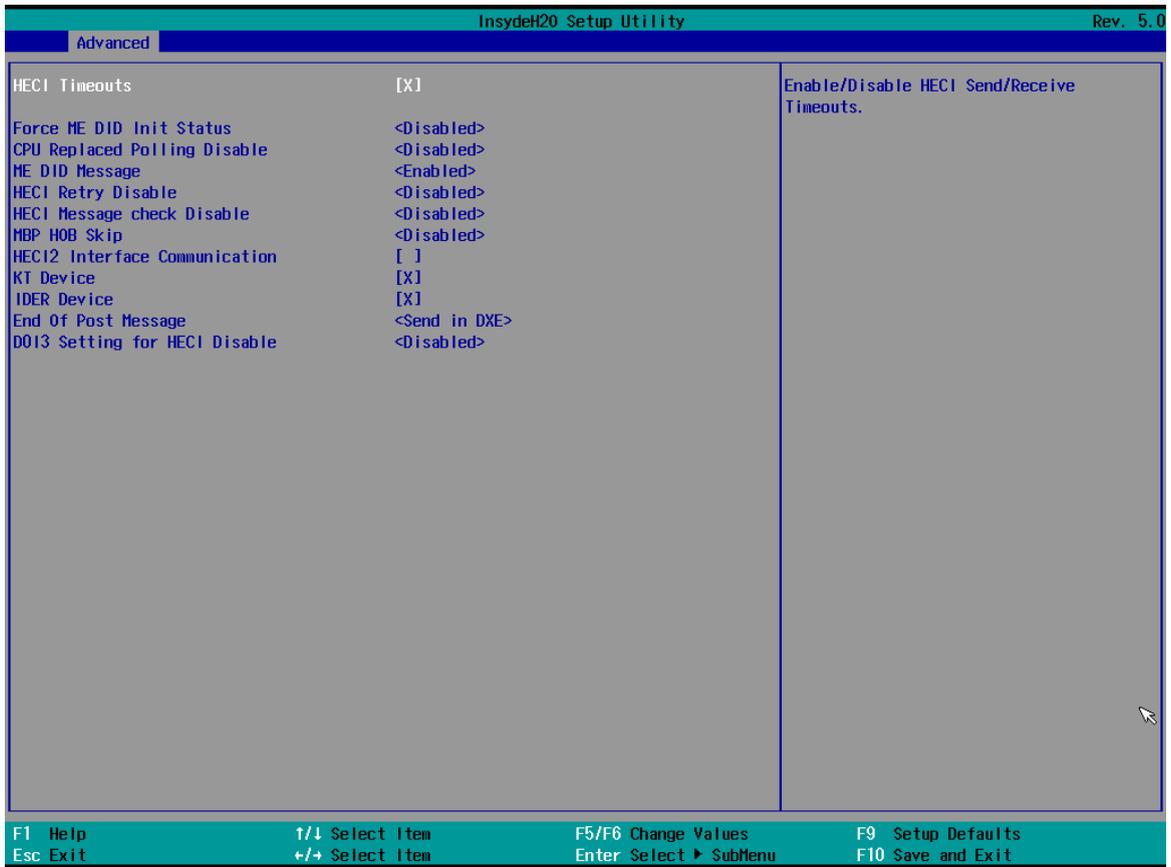


### 5.2.2.8 USB Configuration

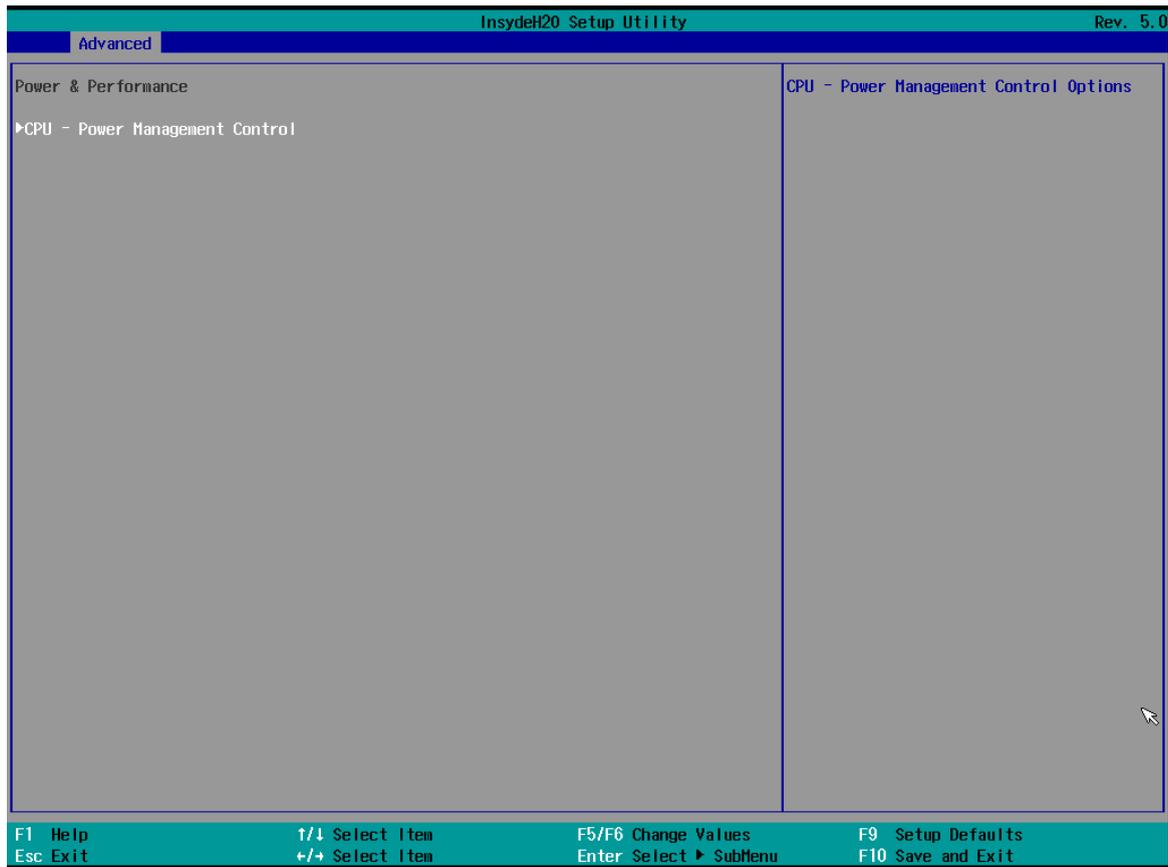


## 5.2.2.9 ME Firmware Configuration

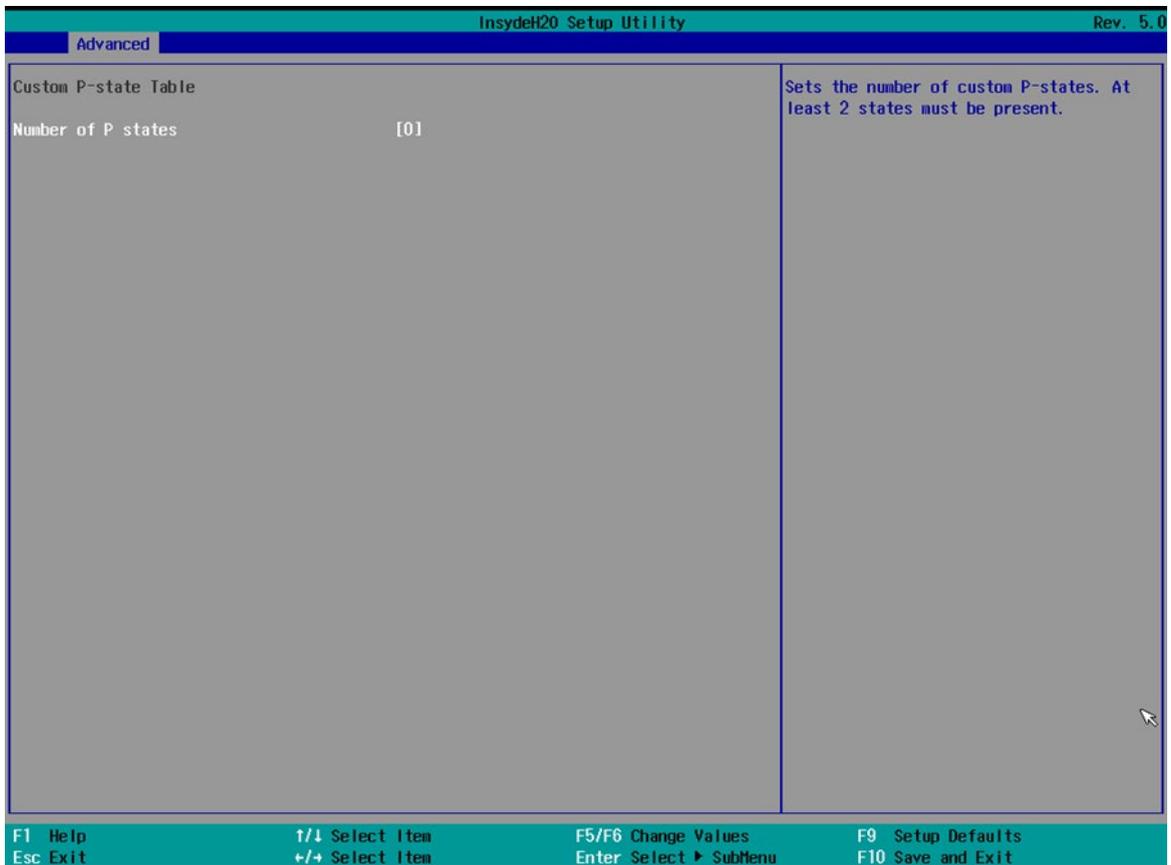
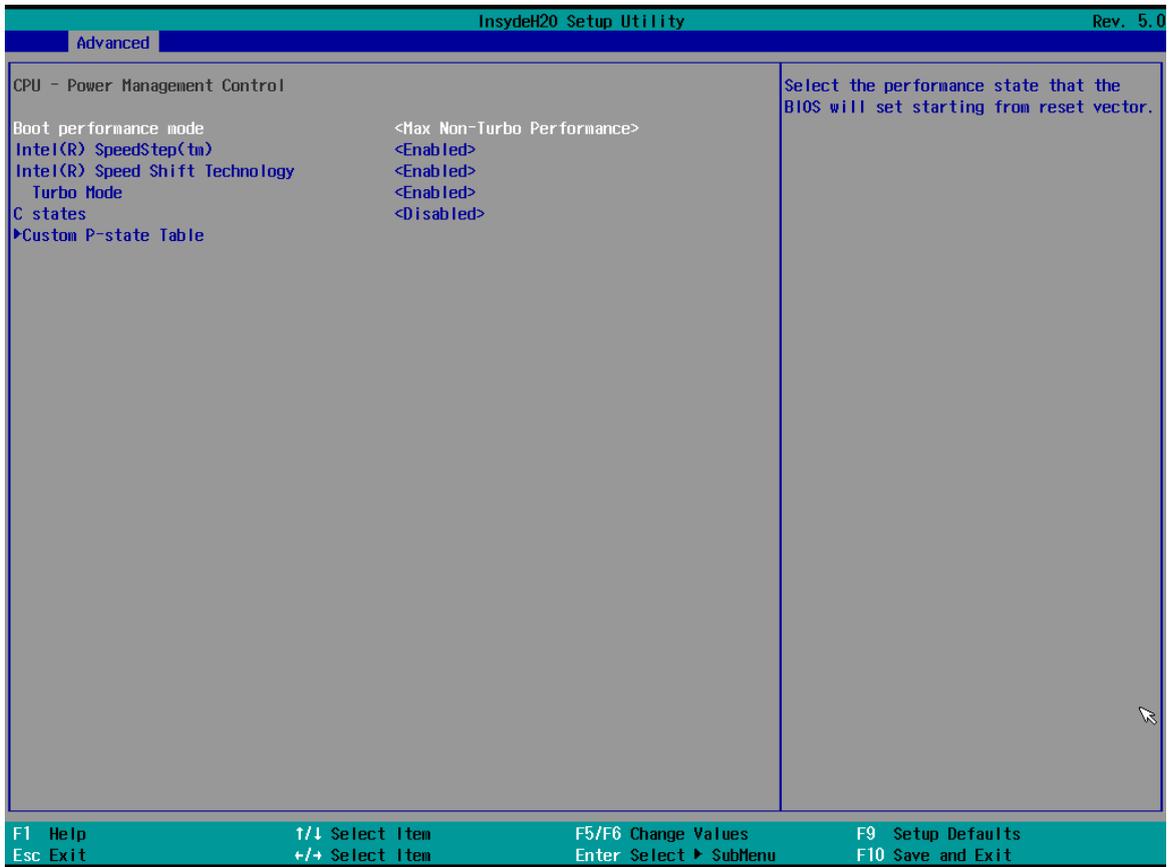




### 5.2.2.10 Power & Performance

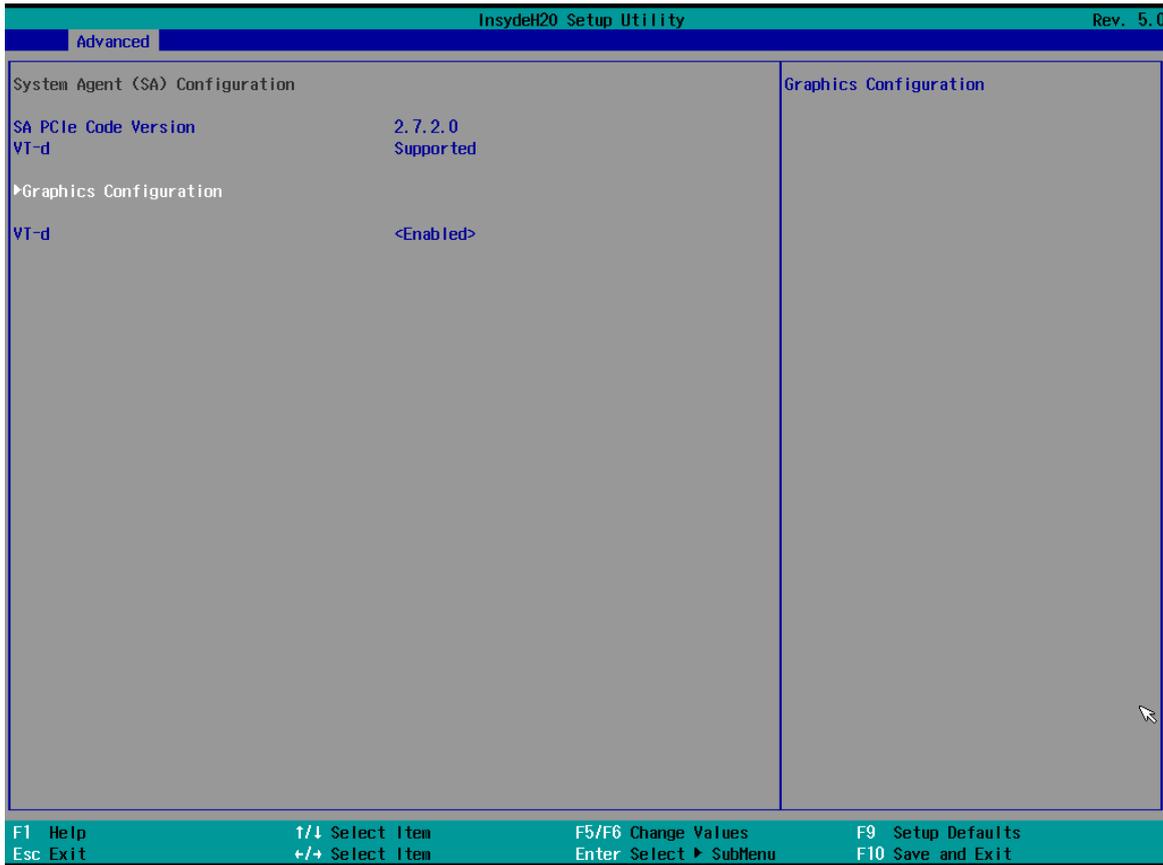


| BIOS Setting                   | Description                                 | Setting Option | Effect         |
|--------------------------------|---|----------------|----------------|
| CPU – Power Management Control | Configure CPU – Power Management parameters | Enter          | Opens sub-menu |



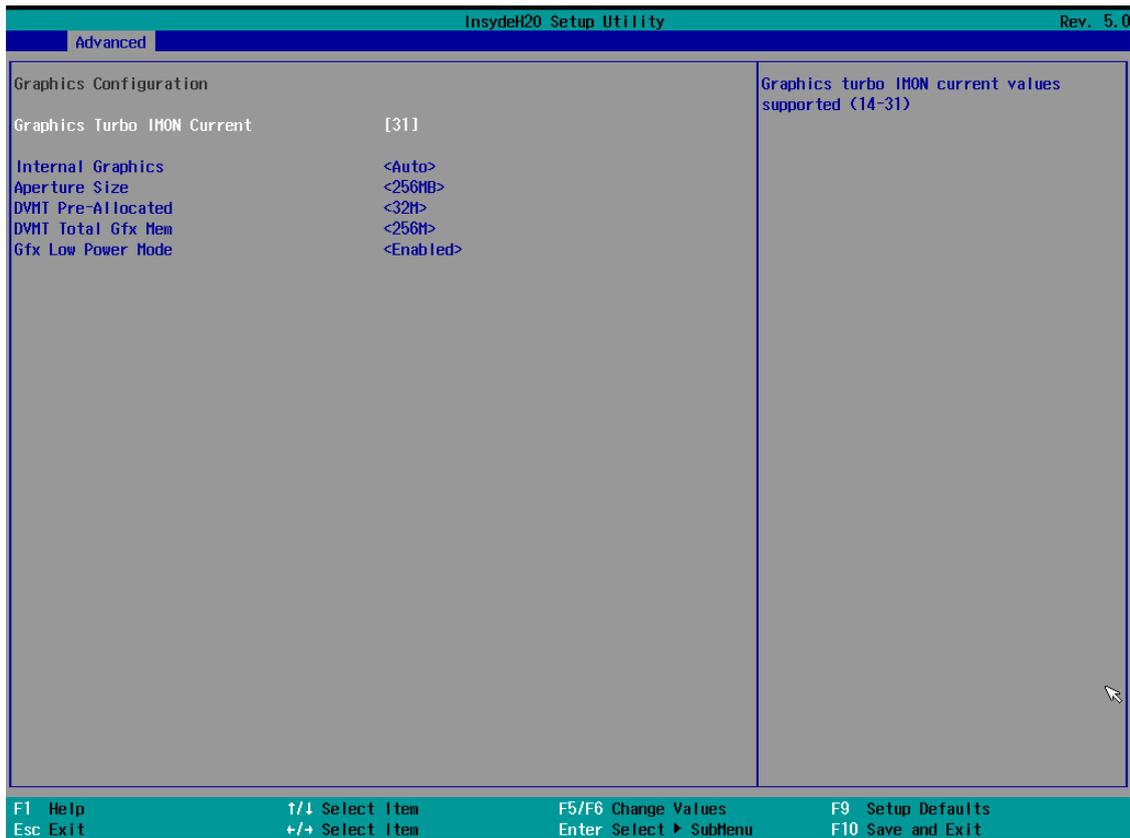
| BIOS Setting                 | Description                                       | Setting Option   | Effect  |
|------------------------------|---|--|---|
| Boot Performance Mode        | Configure Boot Performance Mode parameters        | -Max non-turbo performance<br>-Max battery<br>-Turbo Performance | Select the performance state that the BIOS will set starting from reset vector  |
| Intel SpeedStep (ta)         | Configure Intel SpeedStep (ta) parameters         | Enabled/ Disabled  | Allows more than two frequency ranges to be supported   |
| Intel Speed Shift Technology | Configure Intel Speed Shift Technology parameters | Enabled/ Disabled  | Enable/ Disable Intel Speed Shift Technology support. Enabling will expose the CPP v2 interface to allow for hardware controlled P-states           |
| <i>-Turbo Mode</i>           | <i>Enable or disable Turbo Mode</i>               | <i>Enabled/ Disabled</i>   | <i>Enable/ Disable processor Turbo Mode (requires EMTTM enabled too). Auto means enabled, unless max turbo ratio is bigger than 16 – SKL AO W/A</i> |
| C states                     | Enable or disable C states                        | Enabled/ Disabled  | Enable/ Disable CPU Power Management. Allows COU to go to C states when it is not 100% utilized   |
| Custom P-state Table         | Configure Custom P-state Table parameters         | Enter  | Enters sub-menu   |
| <i>-Number of P-states</i>   | <i>Select the number of custom P-states.</i>      | <i>[Number]</i>  | <i>Set the number of custom P-states. At least 2 states must be present</i>   |

### 5.2.2.11 System Agent (SA) Configuration



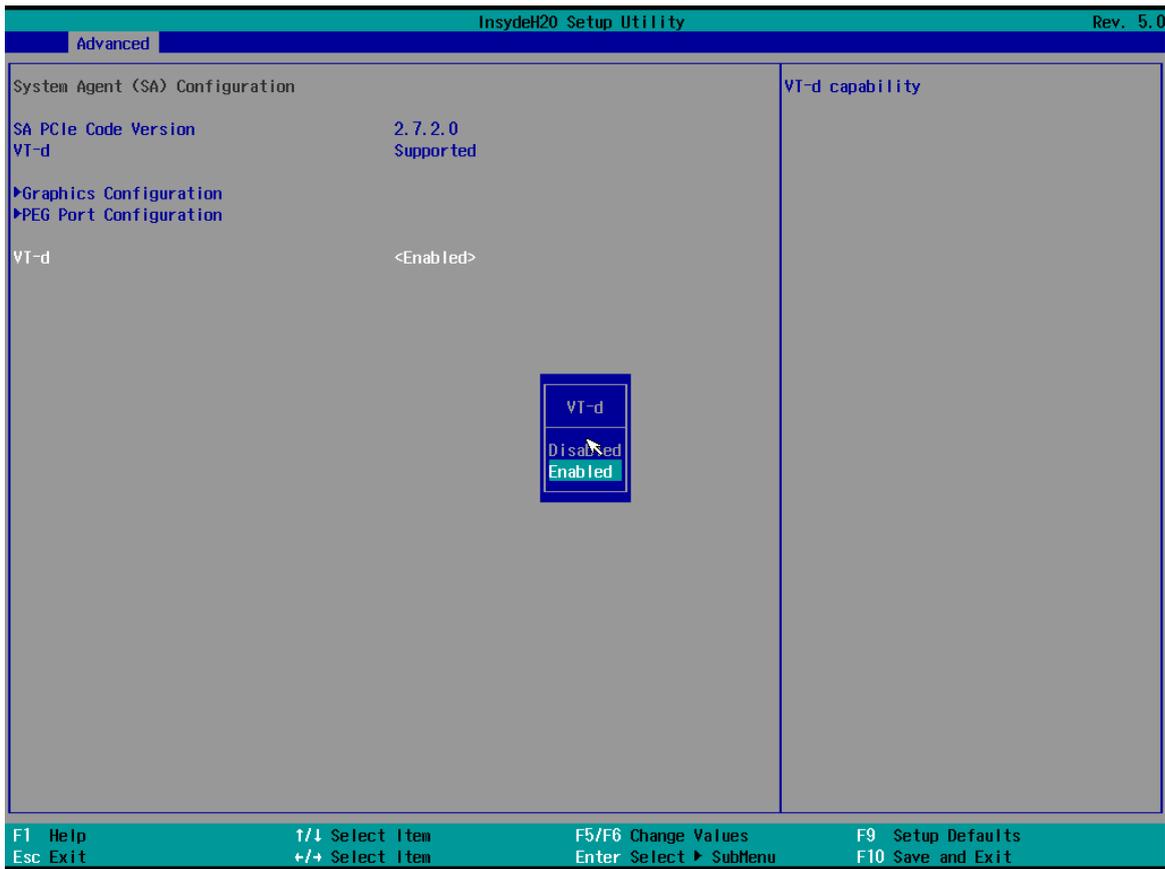
| BIOS Setting           | Description                                       | Setting Option      | Effect          |
|------------------------|---|---------------------|-----------------|
| Graphics Configuration | Configure Graphics Configuration parameters       | Enter               | Opens sub-menu  |
| Vt-d                   | Intel® Virtualization Technology for Directed I/O | Enabled<br>Disabled | Vt-d capability |

### 5.2.2.11.1 Graphics Configuration



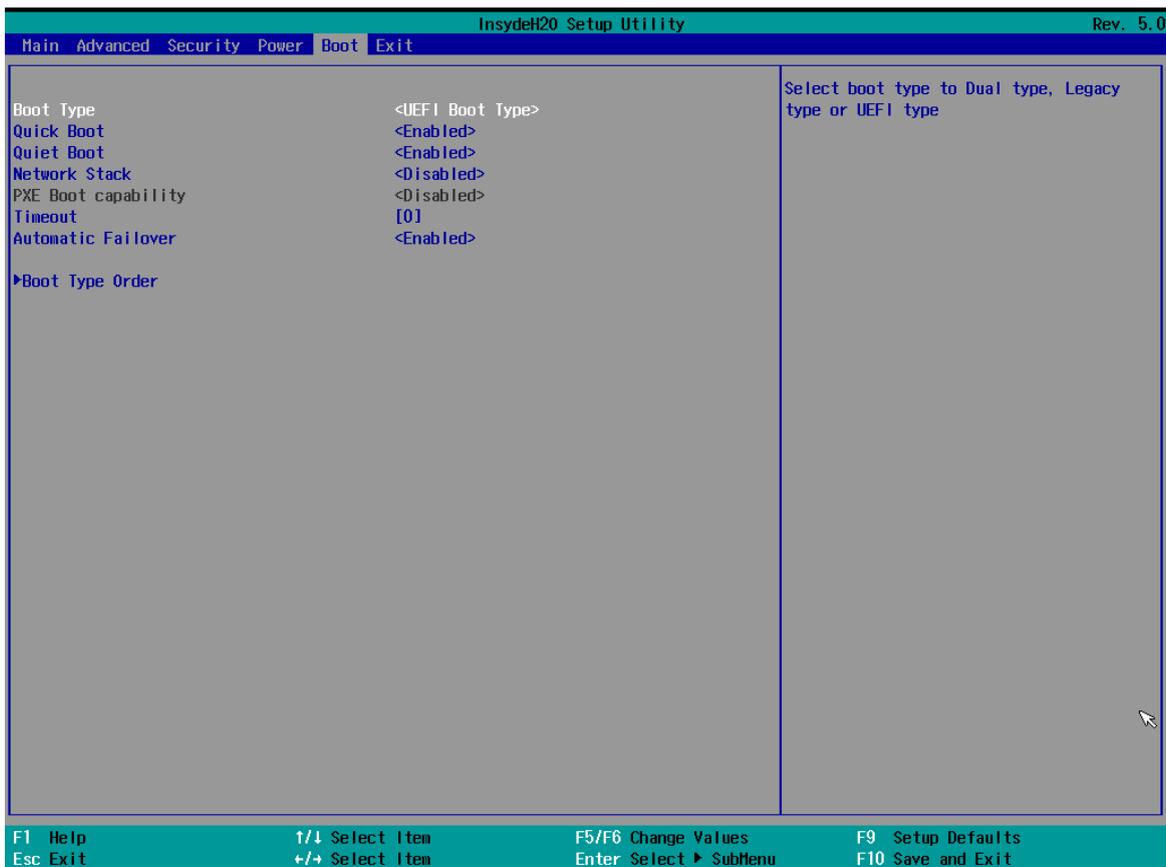
| BIOS Setting       | Description                | Setting Option                               | Effect   |
|--------------------|----------------------------|--|--|
| Internal Graphics  | Internal Graphics settings | Auto<br>Enabled<br>Disabled                  | Keep IGFX enabled based on the setup options   |
| Aperture Size      | Select the aperture size   | 128MB<br>256MB<br>512MB<br>1024MB<br>2048 MB | Select the aperture size<br><i>Note: Above 4MB MMIO BIOS assignment is automatically enabled when selecting 2048MB aperture. To use this feature please disable CSM port</i> |
| DVMT Pre-Allocated | Select DVMT Pre-Allocated  | 0M~60M                                       | Select DVMT 5.0 Pre-Allocated (Fixed) Graphic Memory size used by Internal Graphic Device  |
| DVMT Total Gfx Mem | Select DVMT Total Gfx Mem  | 256M<br>128M<br>MAX                          | Select DVMT 5.0 Total Graphic Memory size used by the Internal Graphic Device  |
| Gfx Low Power Mode | Select Gfx Low Power Mode  | Enabled/ Disabled                            | This option is applicable for SFF only   |

5.2.2.11.2 Vt-d



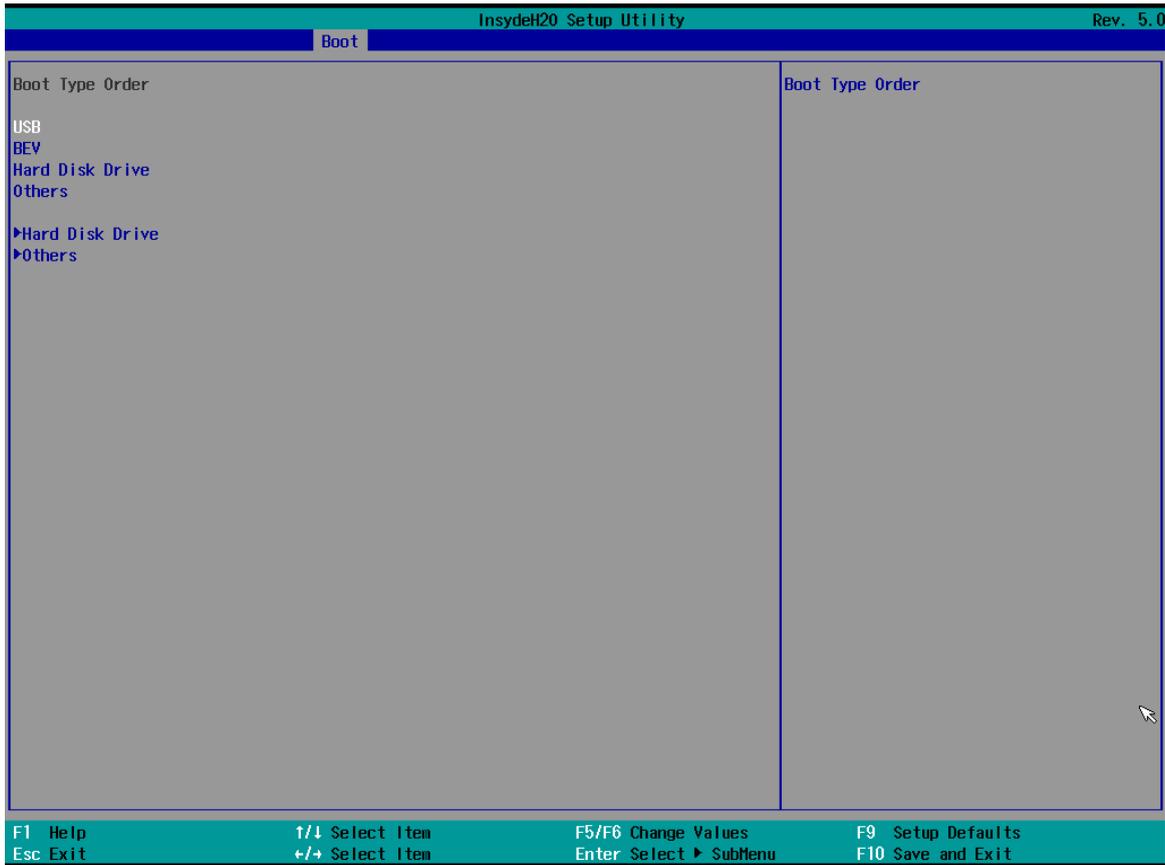
| BIOS Setting | Description                                       | Setting Option      | Effect          |
|--------------|---|---------------------|-----------------|
| Vt-d         | Intel® Virtualization Technology for Directed I/O | Enabled<br>Disabled | Vt-d capability |

## 5.2.3 Boot



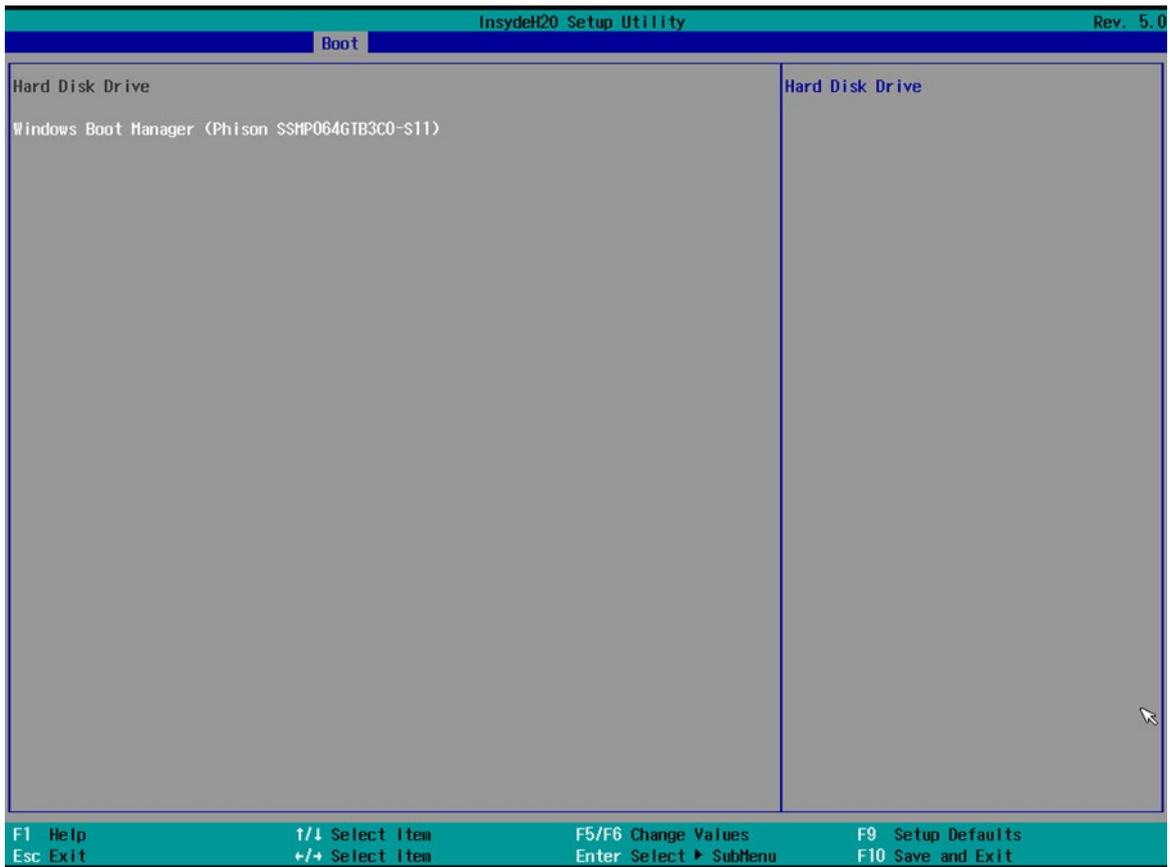
| BIOS Setting       | Description              | Setting Option      | Effect  |
|--------------------|--------------------------|---------------------|---|
| Boot Type          | Boot Type configuration  | UEFI Boot Type      | Select boot type to Dual type, Legacy type or UEFI type   |
| Quick Boot         | Quick Boot configuration | Enabled<br>Disabled | Allows InsydeH20 to skip certain tests while booting. This will decrease the time needed to boot the system |
| Quiet Boot         | Quiet Boot configuration | Enabled<br>Disabled | Disable or enable booting in text Mode.   |
| Timeout            | Timeout                  | [Value]             | Timeout settings  |
| Automatic Failover |                          | Enable              | If boot to default device fail, it will directly try to boot next device                                    |
|                    |                          | Disable             | If boot to default device fail, it will pop warning message then go to firmware UI                          |
| Boot Type Order    | Boot Type Order          | Enter               | Opens sub-menu  |

### 5.2.3.1 Boot Type Order

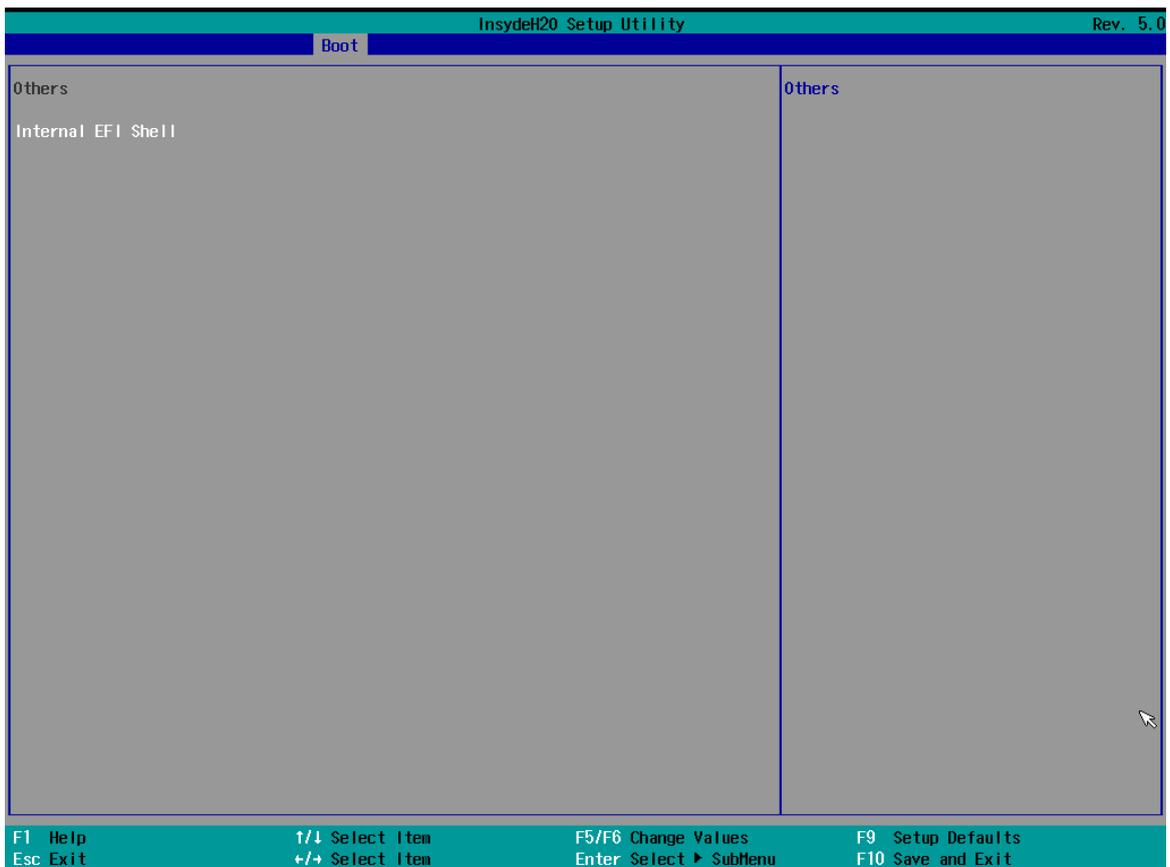


| BIOS Setting   | Description                  | Setting Option | Effect         |
|----------------|------------------------------|----------------|----------------|
| Hard Disk Type | Hard Disk Type configuration | Enter          | Opens Sub-menu |
| Others         | Other configuration          | Enter          | Opens Sub-menu |

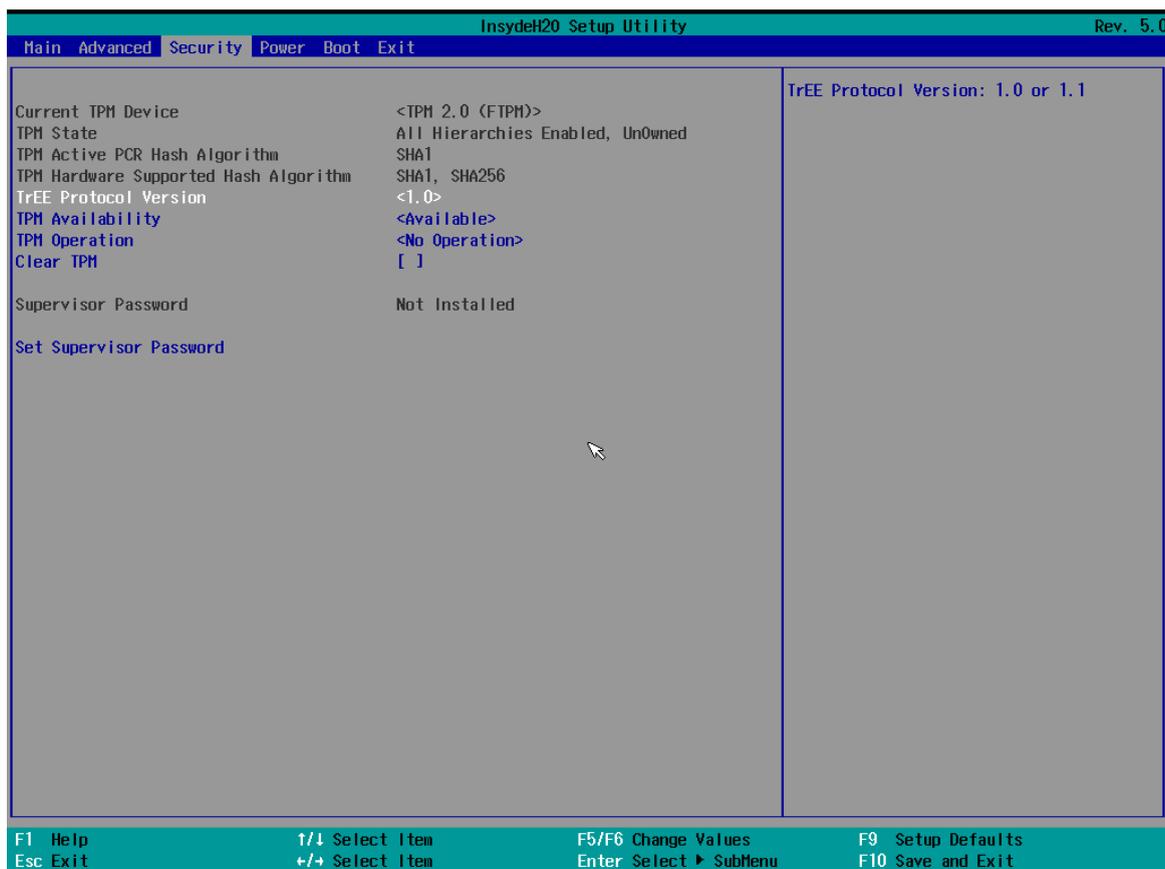
### 5.2.3.1.1 Hard Disk Type



### 5.2.3.1.2 Others

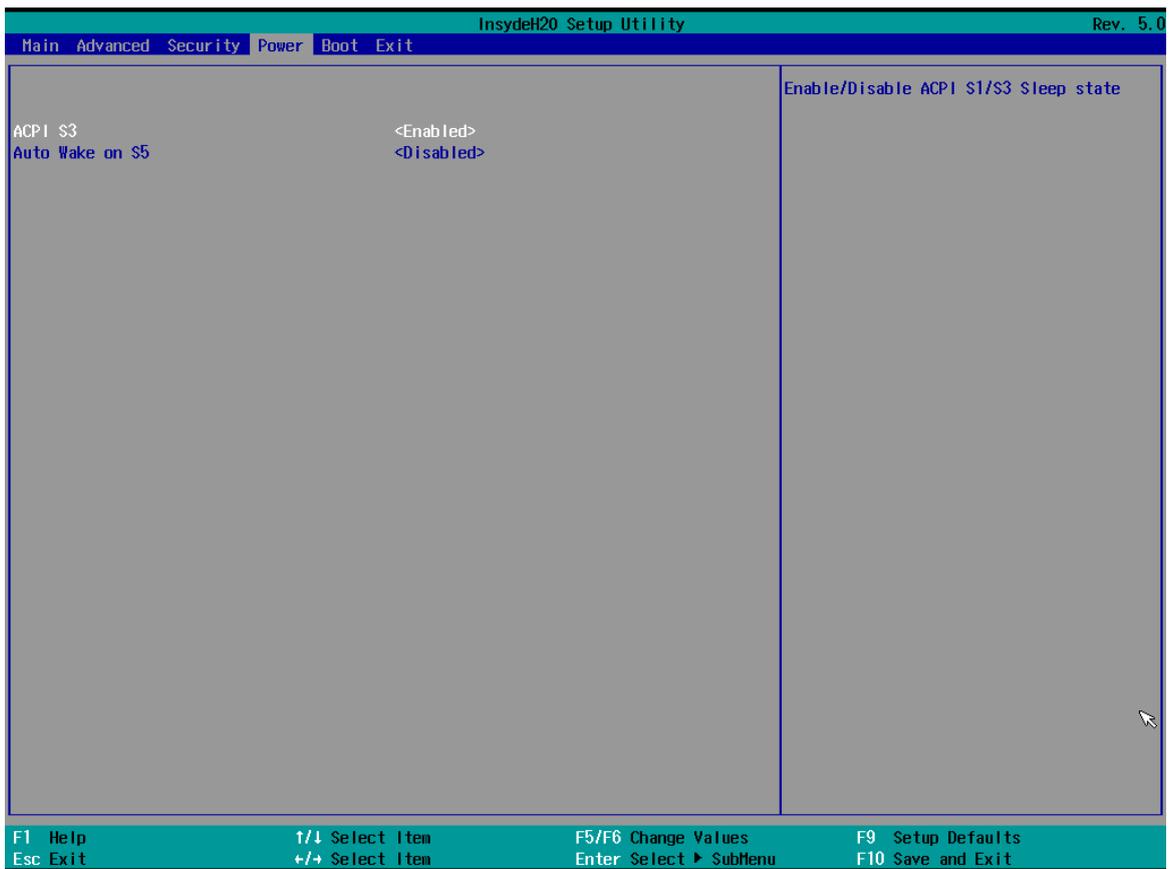


## 5.2.3 Security



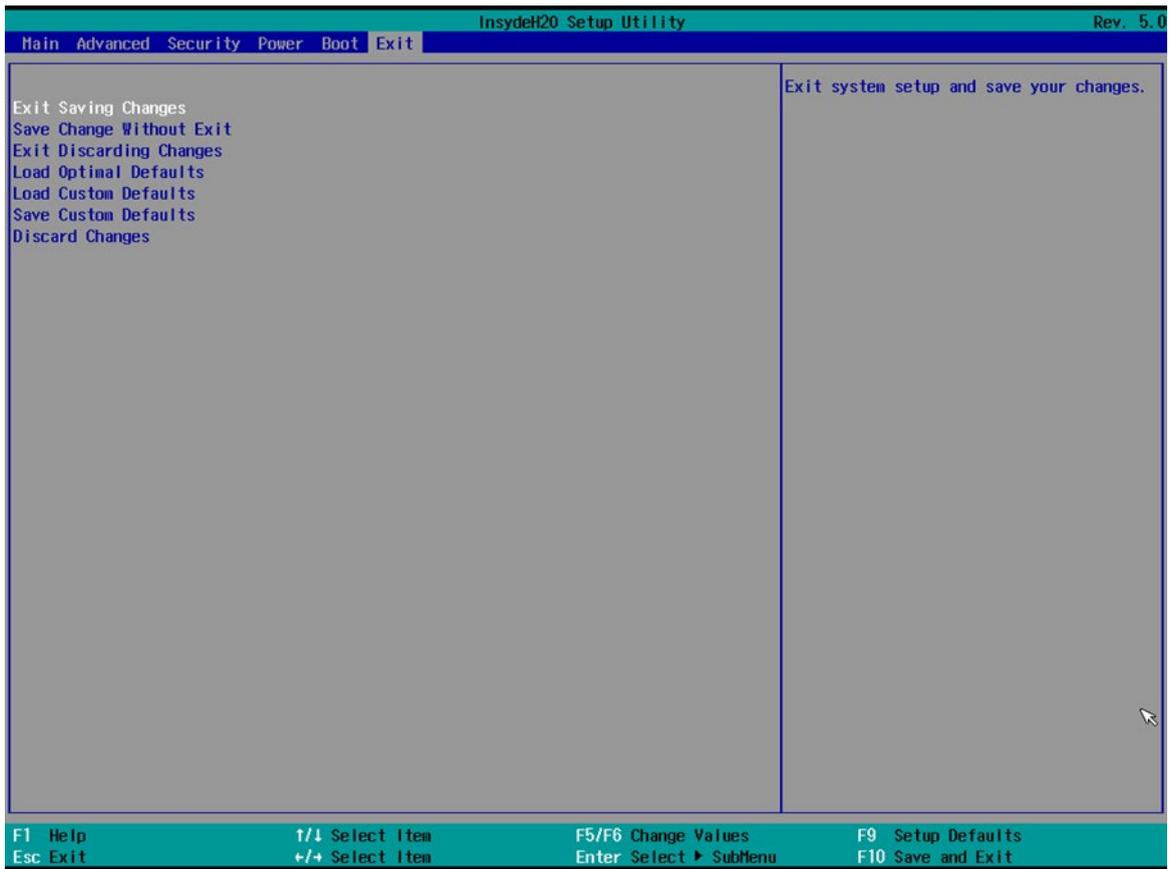
| BIOS Setting            | Description                    | Setting Option      | Effect   |
|-------------------------|--------------------------------|---------------------|--|
| TrEE Protocol Version   | Choose TrEE Protocol Version   | 1.0<br>1.1          | TrEE Protocol Version: 1.0 or 1.1  |
| TPM Availability        | TPM Availability configuration | Available<br>Hidden | When hidden don't exposes TPM to 0   |
| TPM Operation           | TPM Operation configuration    | [ ]                 | Select one of the supported operation to change TPM2state                                    |
| Clear TPM               | Clear TPM configuration        | [ ]                 | Select to Clear TPM  |
| Set Supervisor Password | Set Supervisor Password        | Enter New password  | Install or Change the password and the length of password must be greater than one character |

## 5.2.4 Power



| BIOS Setting    | Description                   | Setting Option                             | Effect   |
|-----------------|-------------------------------|--|--|
| ACPI S3         | ACPI S3 configuration         | Disabled<br>Enabled                        | Enable/ Disable<br>ACPI S1/S3<br>Sleep state                         |
| Auto Wake on S5 | Auto Wake on S5 configuration | Disabled<br>By Every Day<br>By Every Month | Auto Wake on S5,<br>by Day or Month<br>or fixed time of<br>every day |

### 5.2.5 Exit



## 5.3 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.



### Important:

Before starting the recovery process, remove the PCI/ PCIe card and CFast card.

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 6: Driver Installation**

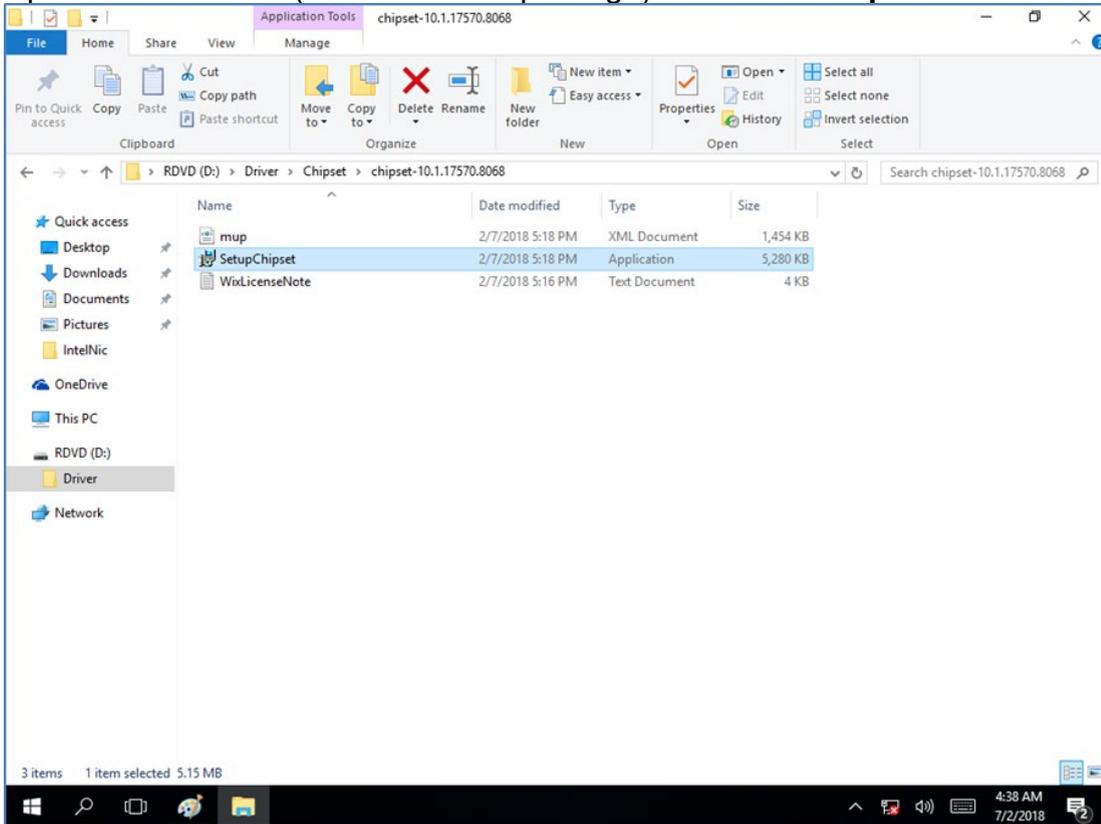
This chapter provides guideline to driver installations.



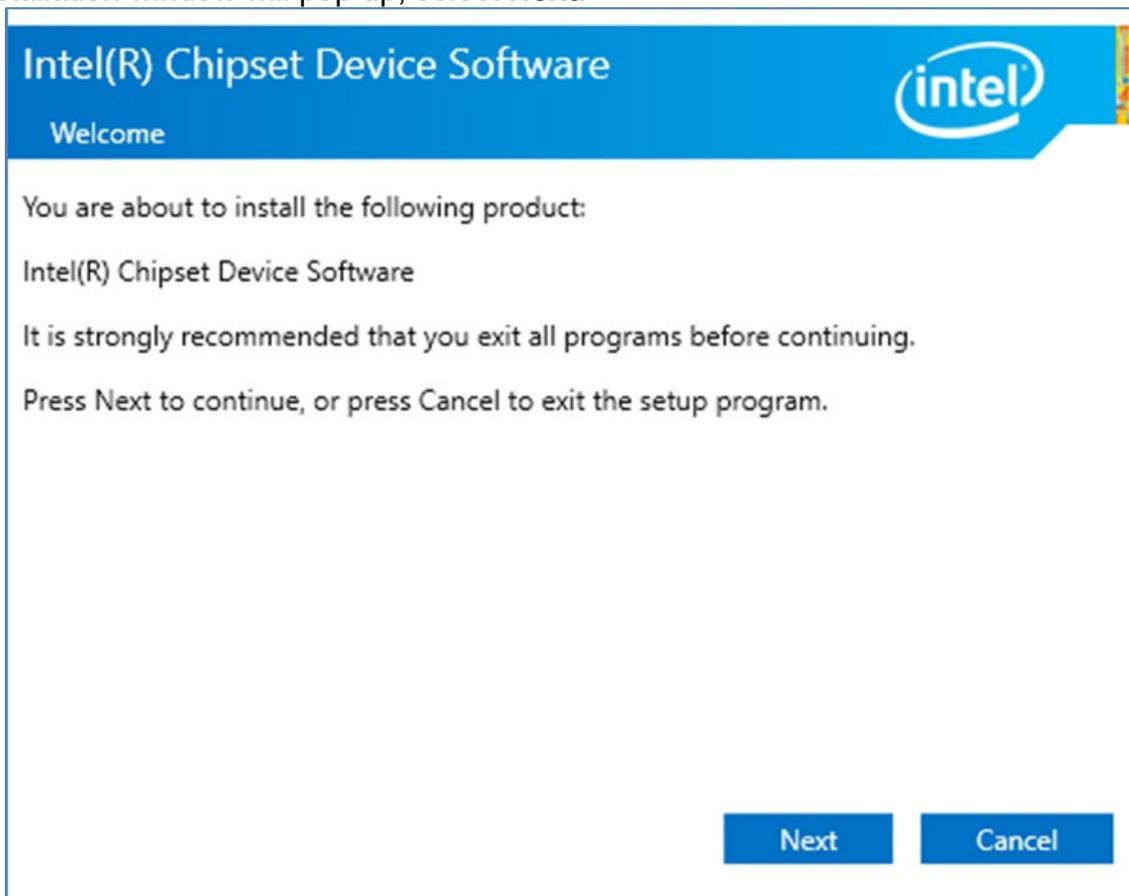
## 6.1 Chipset Driver

Follow instructions below to install Chipset driver.

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



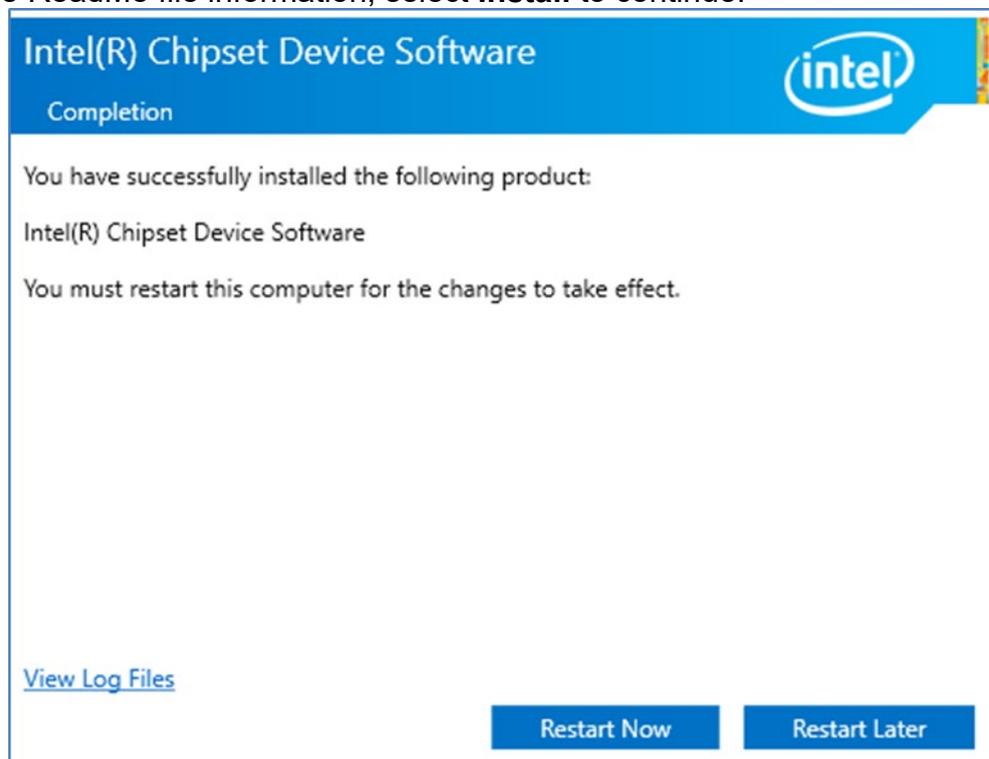
2. Installation window will pop up, select **Next**.



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



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



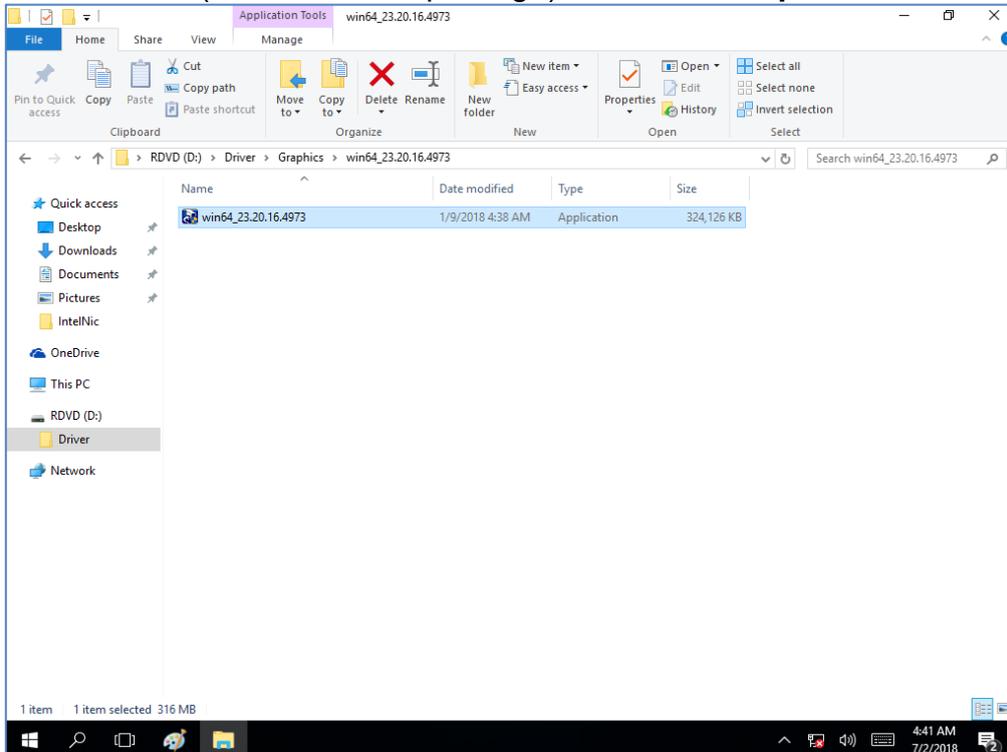
- Wait for the driver to be installed. When installation completed, select **Restart Now** to restart your computer.



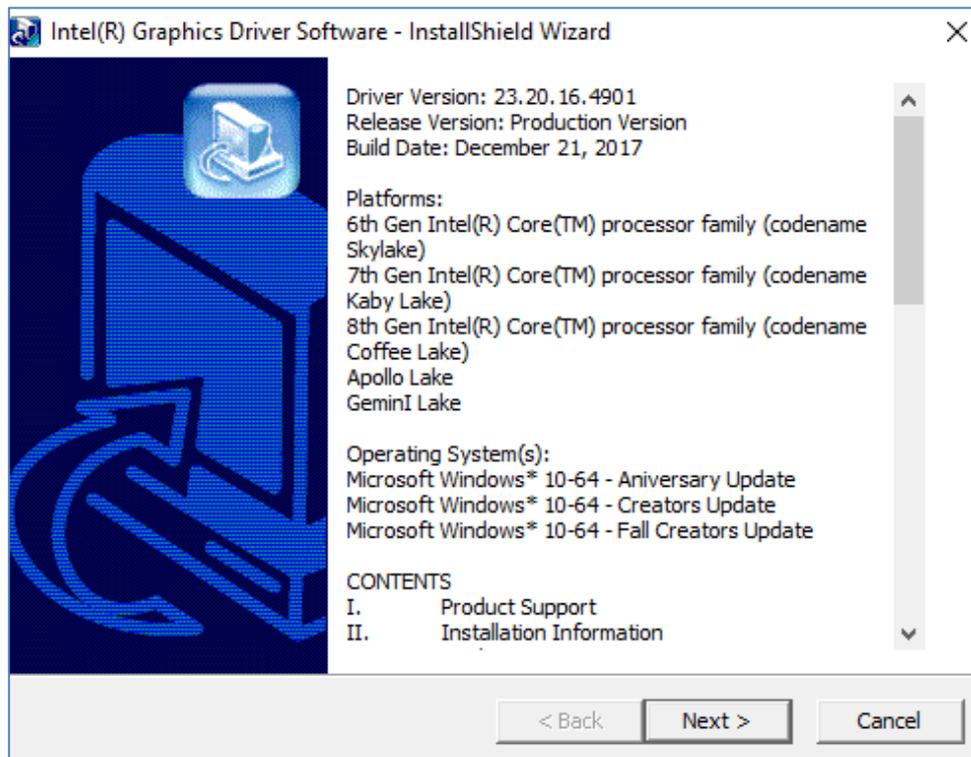
## 6.2 Graphic Driver

Follow instructions below to install Graphic driver.

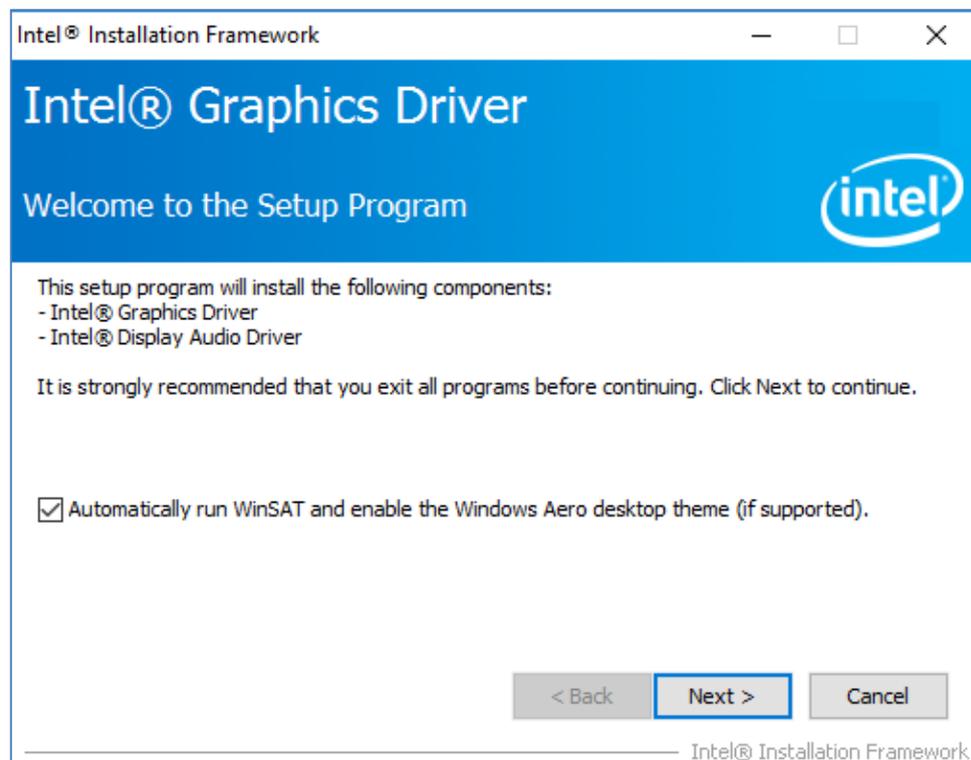
- Open the Driver CD (included in the package) and select **Graphic** driver.

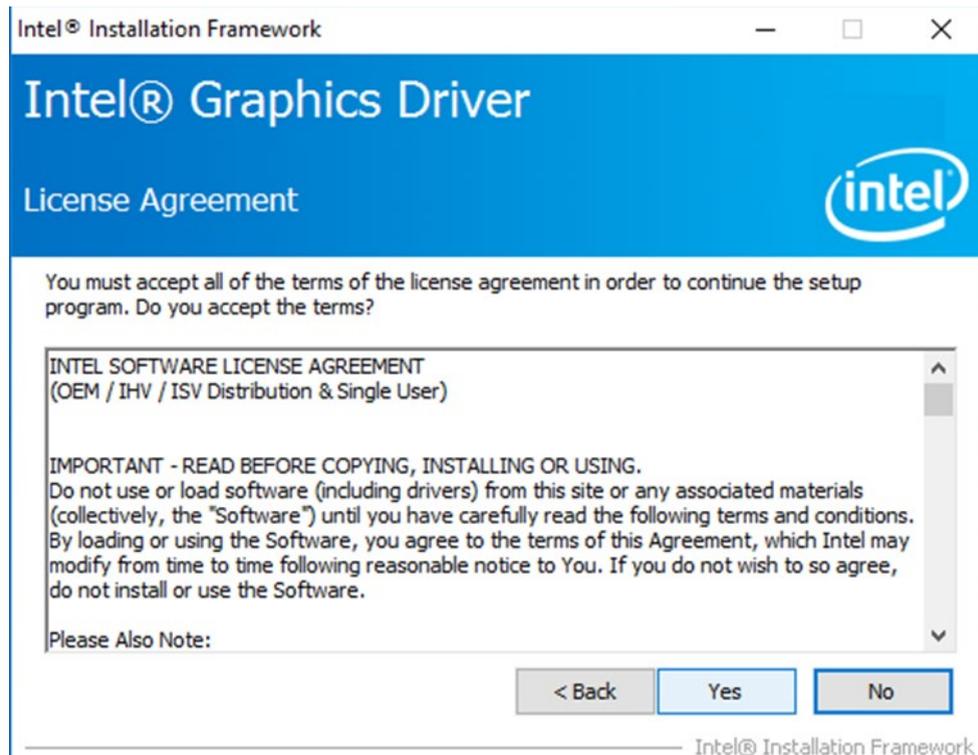


2. Installation window will pop up, select **Next**.

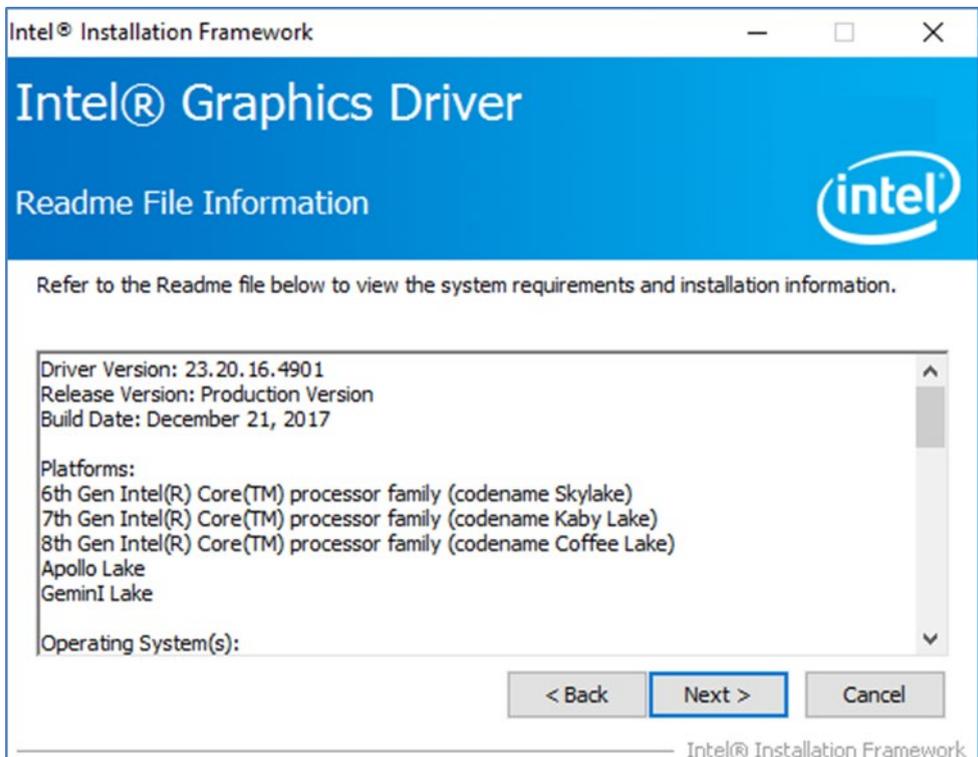


3. Select Accept to agree with the terms of license agreement.

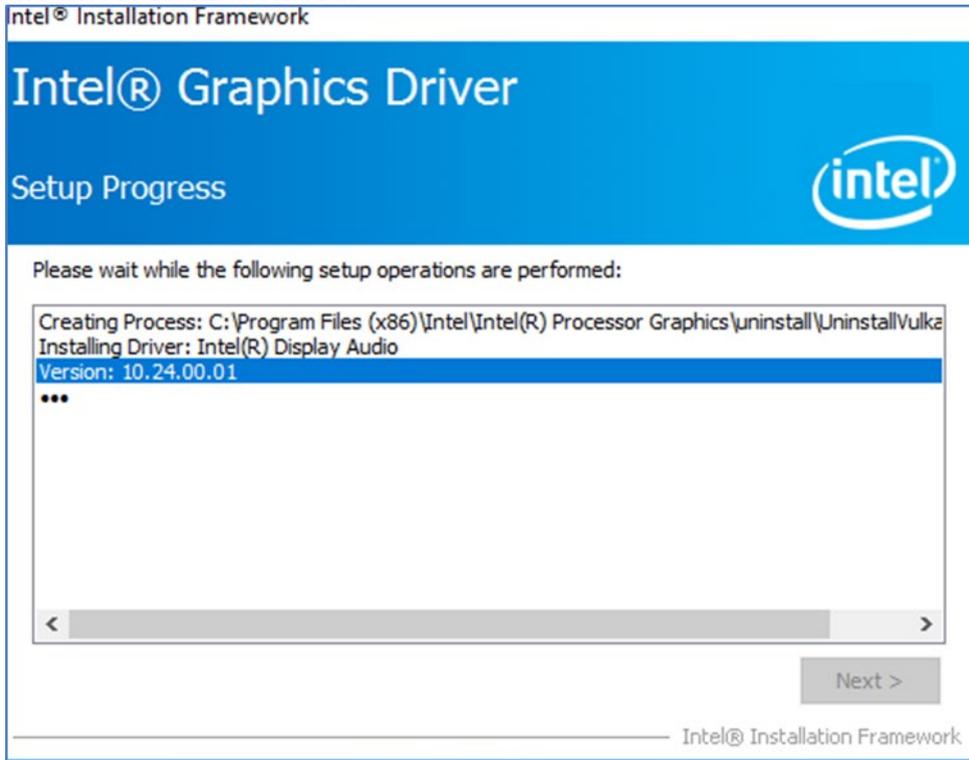




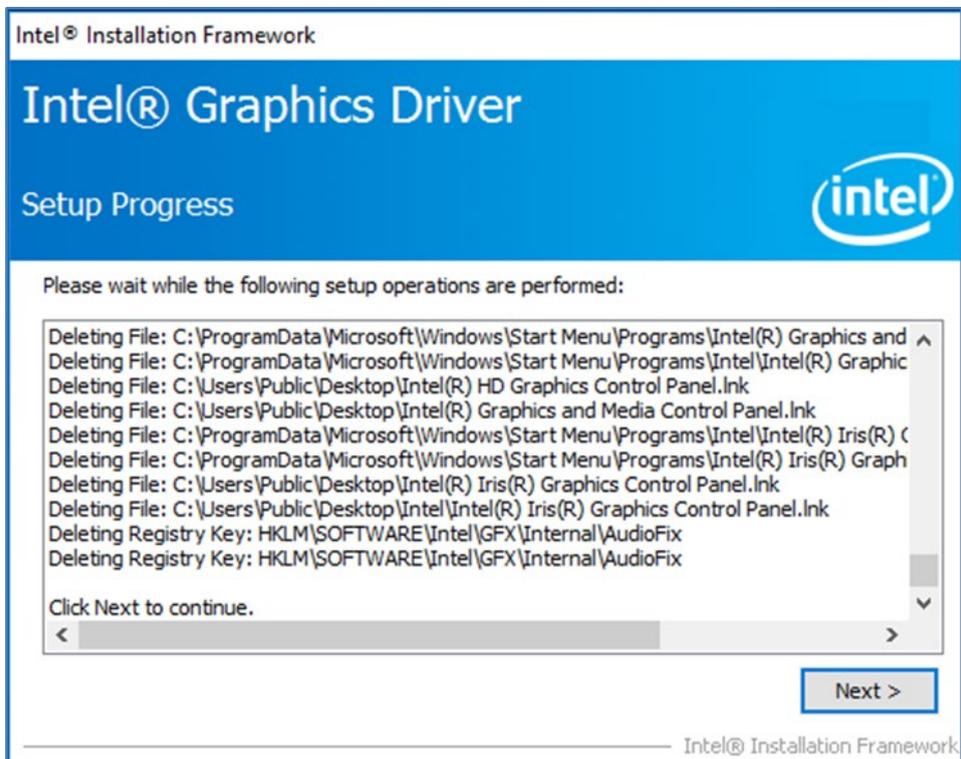
4. Check the ReadMe file information, select **Next** to continue.



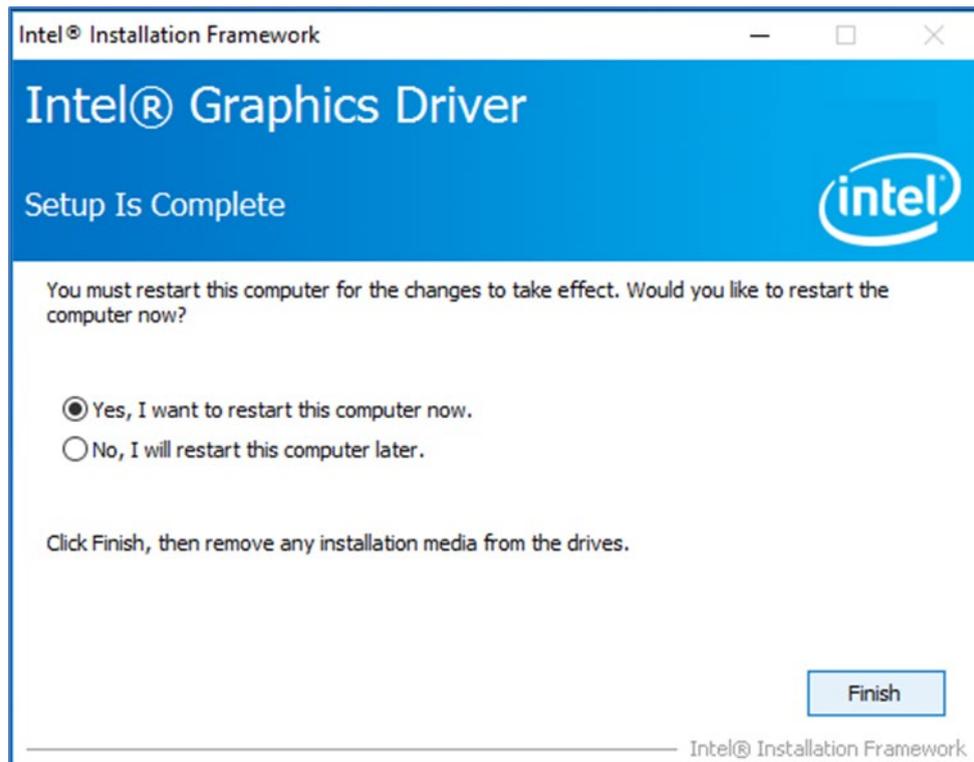
5. Wait for the driver to be installed.



6. Select **Next** to continue.



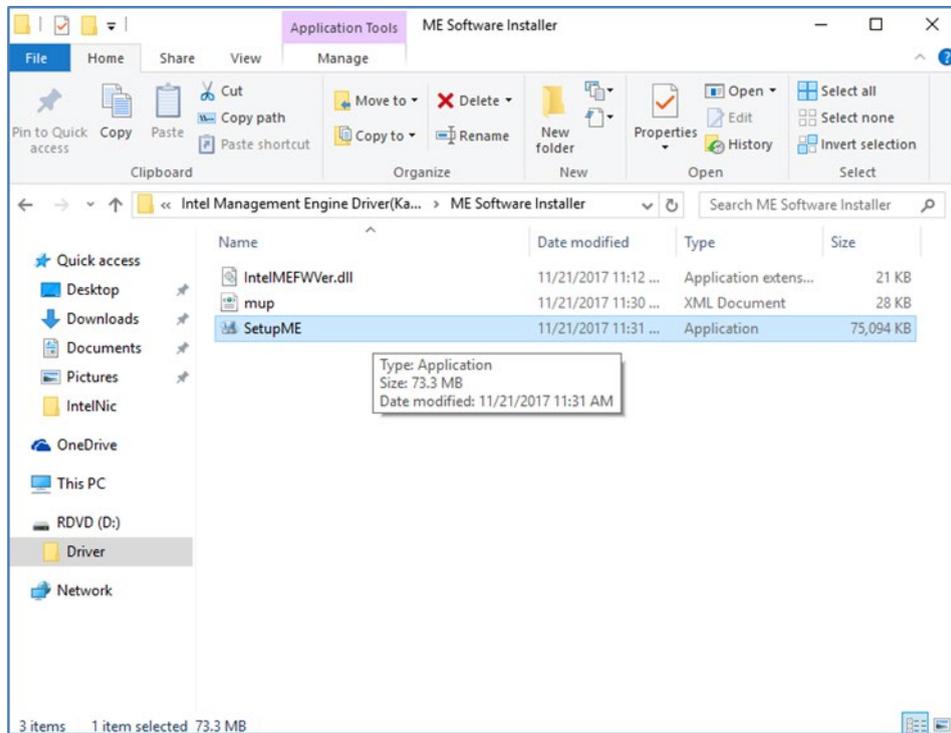
7. After installation is completed, select **“Yes, I want to restart this computer now”**, and click **Finish**.



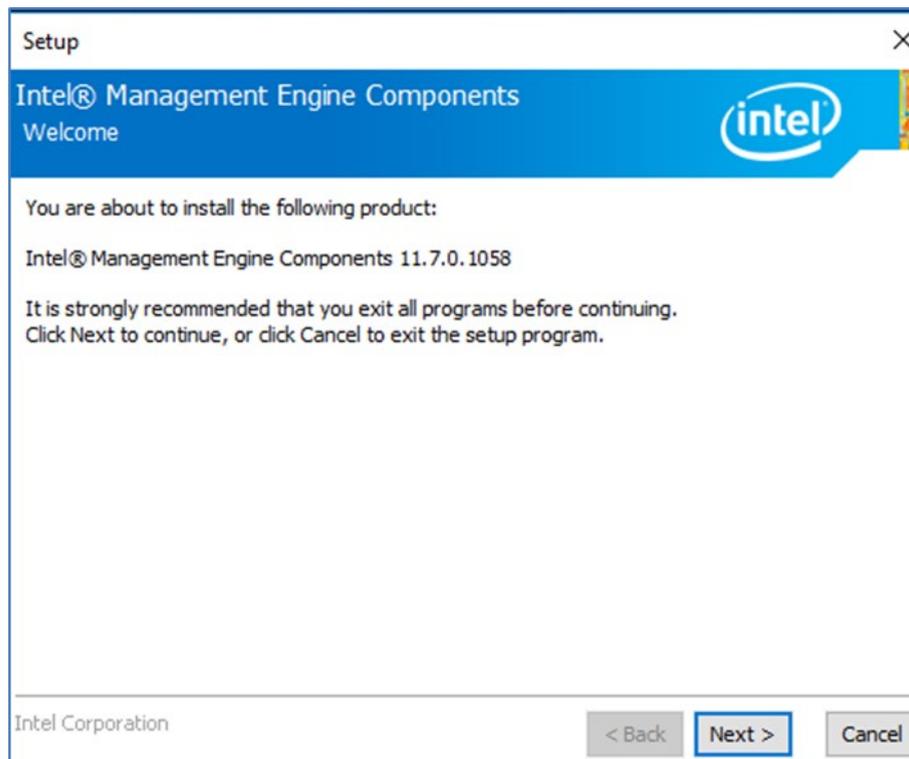
## 6.3 Management Engine (ME)

Follow instructions below to install Management Engine (ME) .

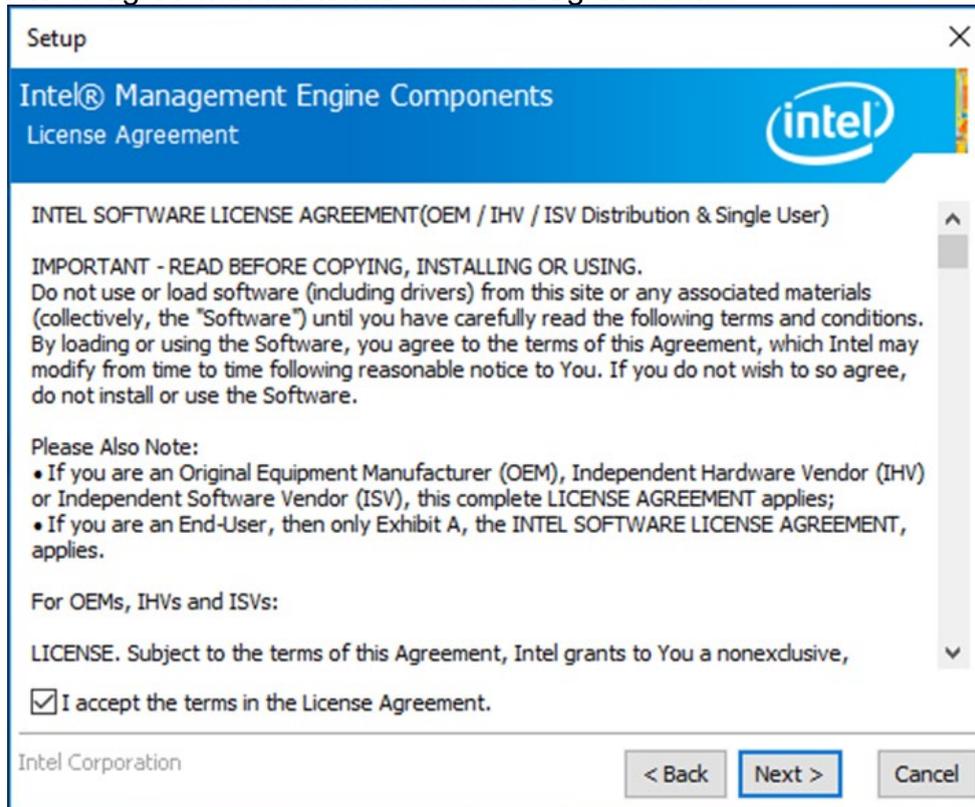
1. Open the Driver CD (included in the package) and select **ME** driver.



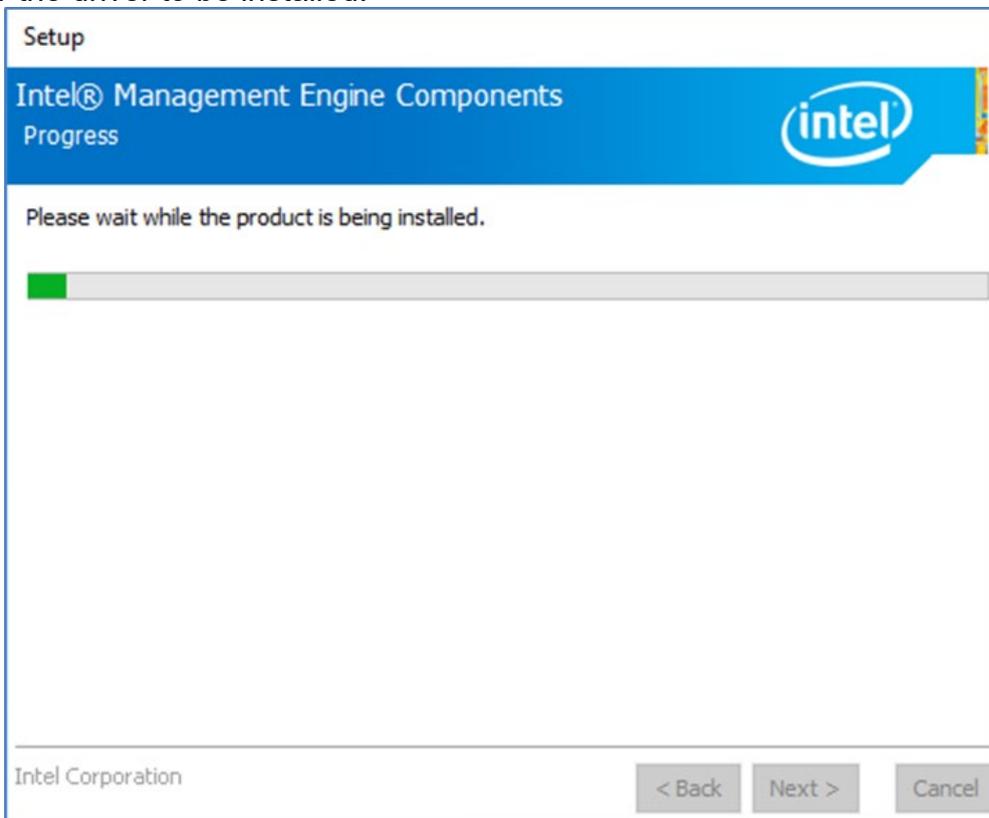
2. Select **Next** to start the installation.



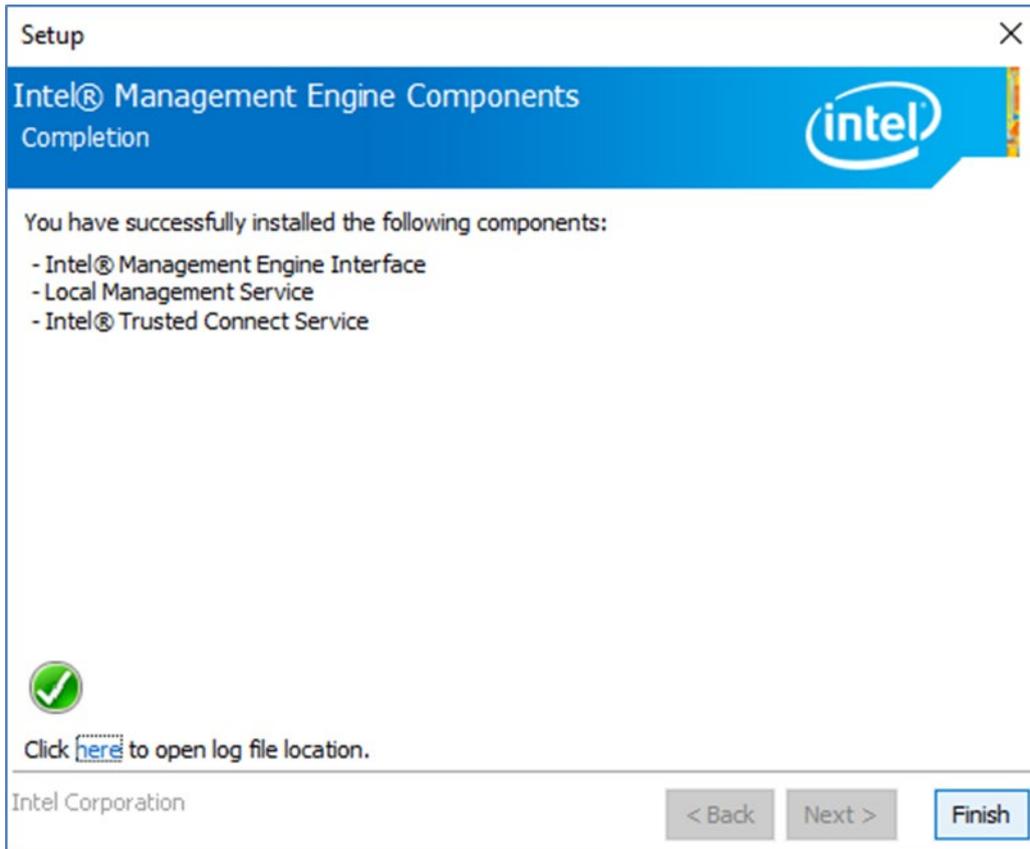
3. Select **Next** to agree with the terms of license agreement.



4. Wait for the driver to be installed.



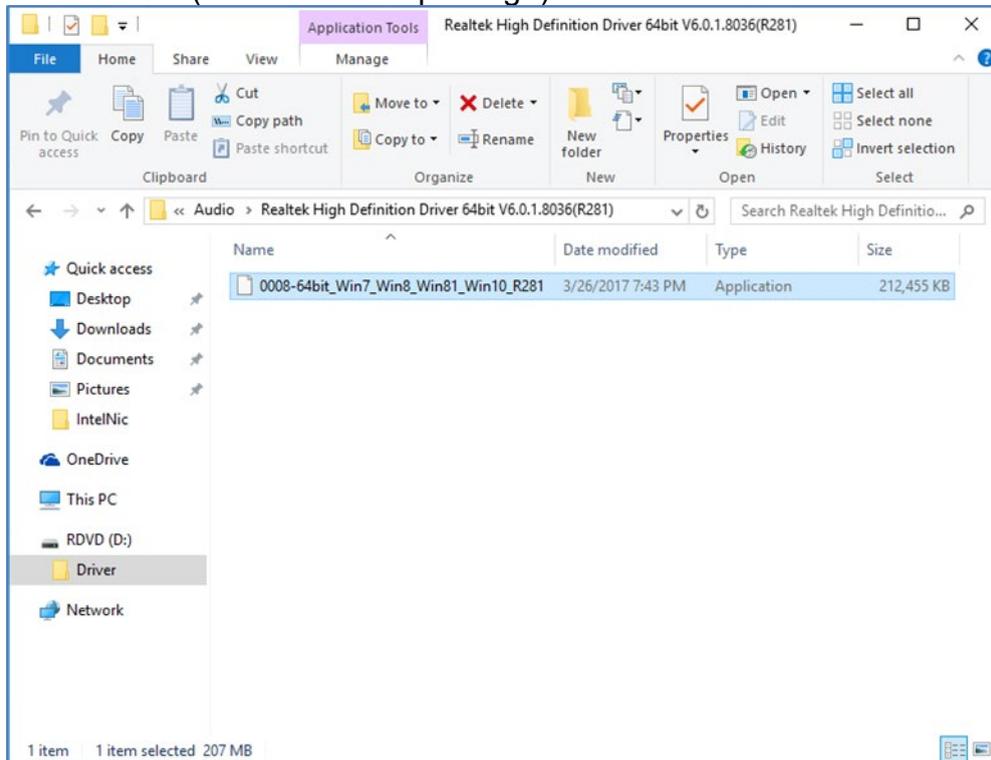
5. When installation completed, select **Finish** complete installation.



## 6.4 Audio Driver

Follow instructions below to install Audio driver.

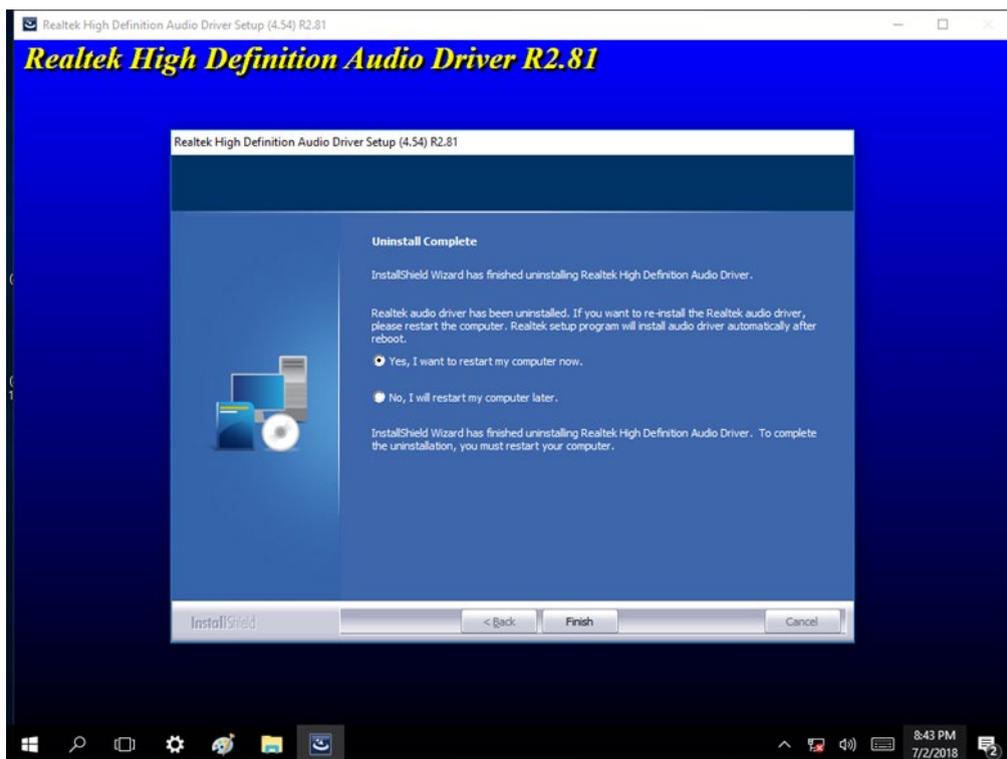
1. Open the Driver CD (included in the package) and select **Audio** driver.



2. Select **Next** to continue.



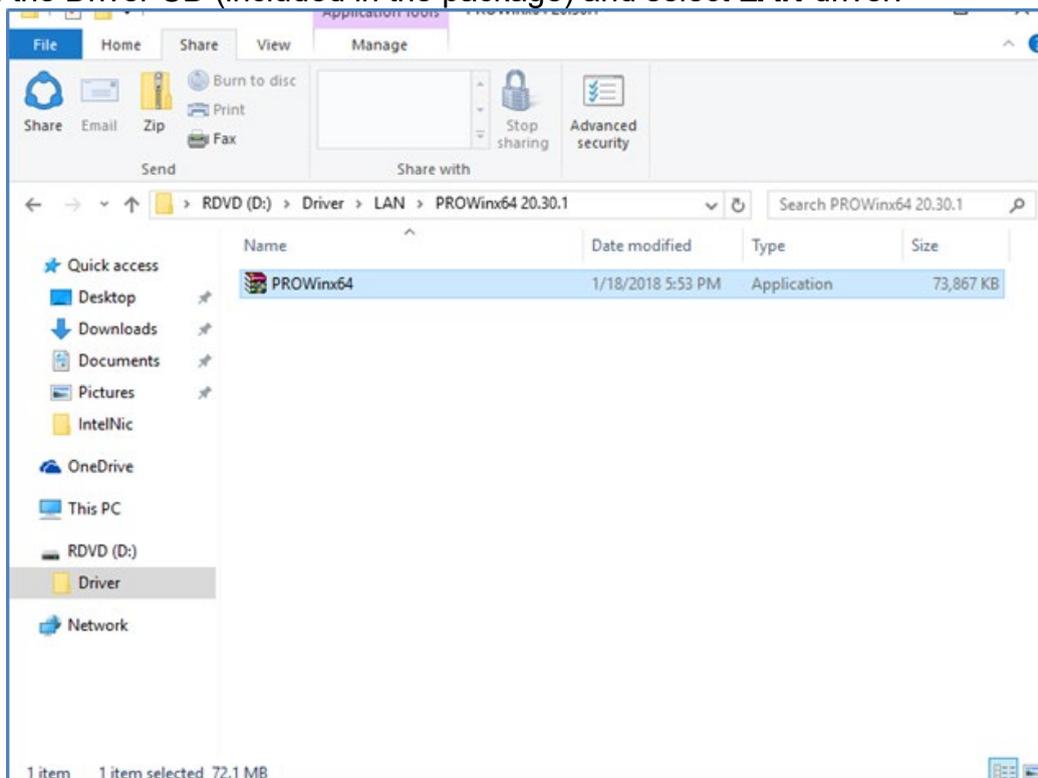
- When installation completed, select **Finish** complete installation.



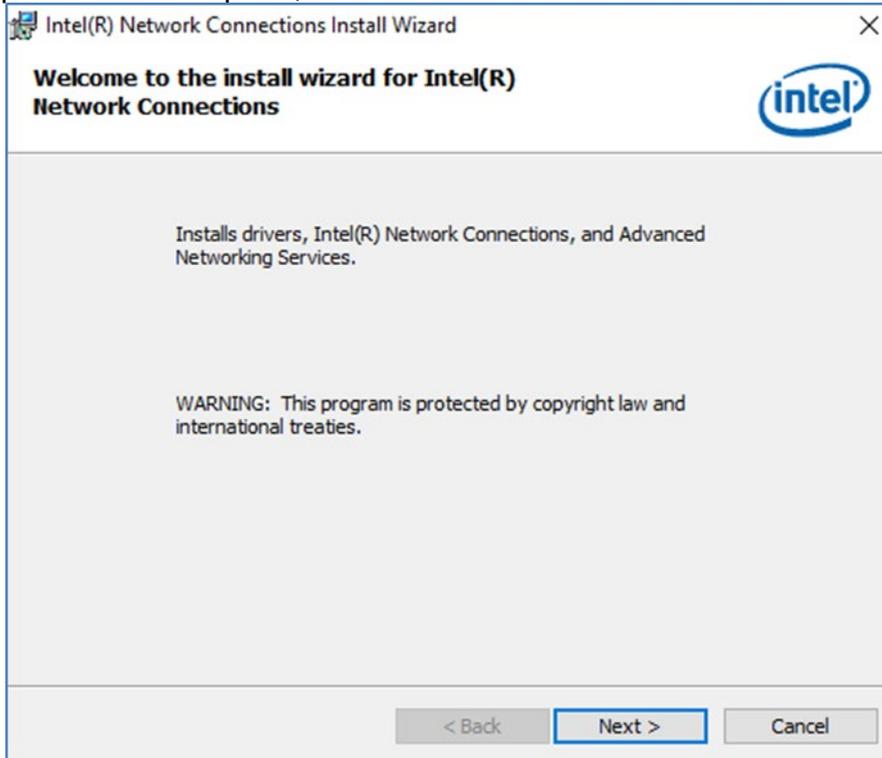
## 6.5 Ethernet Driver

Follow instructions below to install LAN driver.

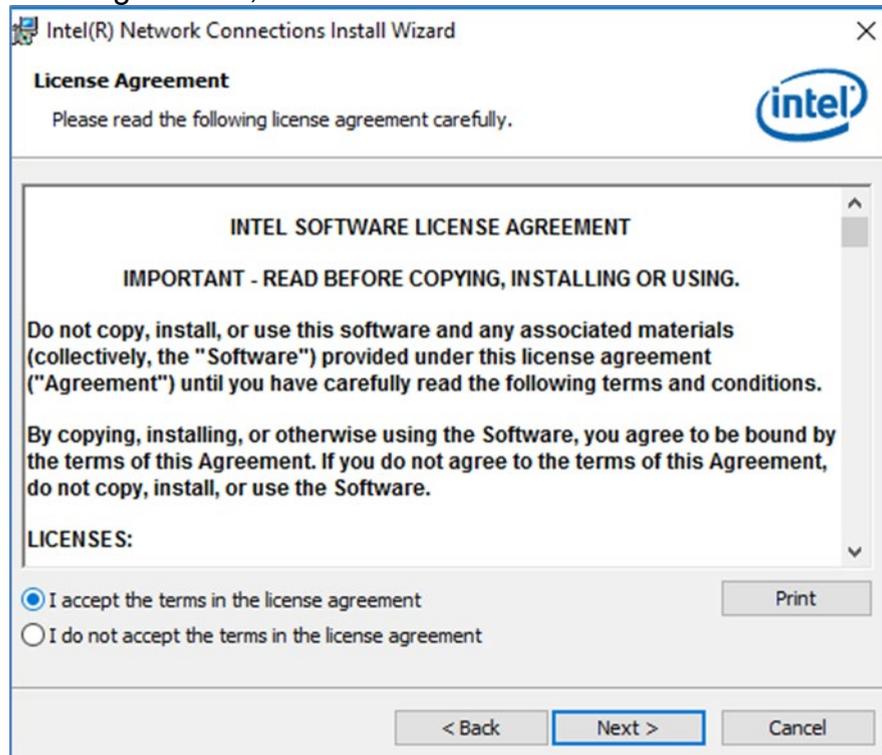
- Open the Driver CD (included in the package) and select **LAN** driver.



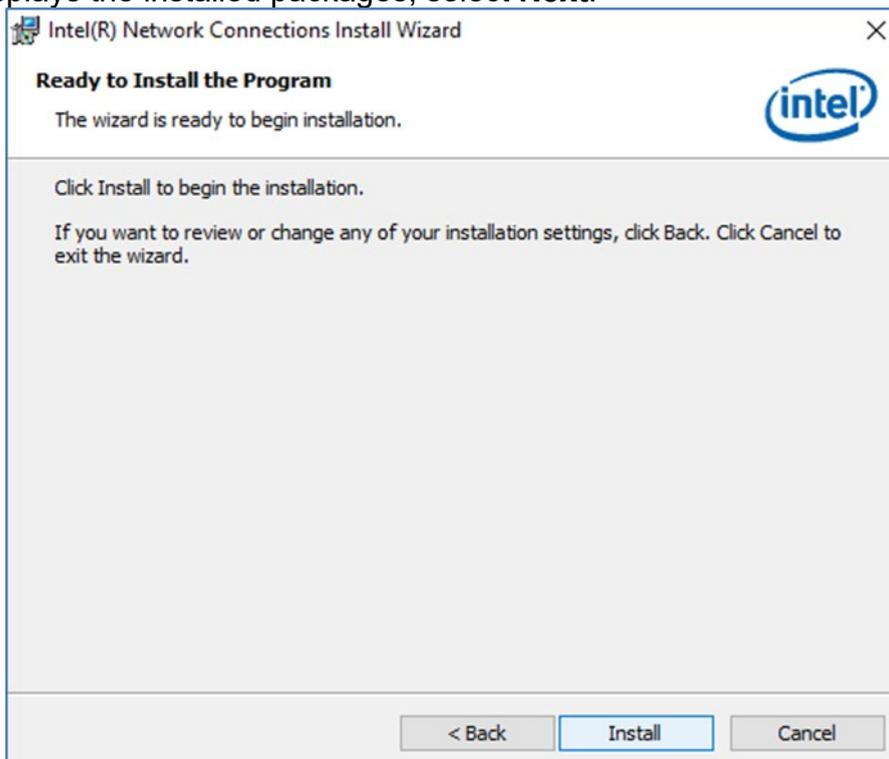
2. When compression is complete, select **Next**.



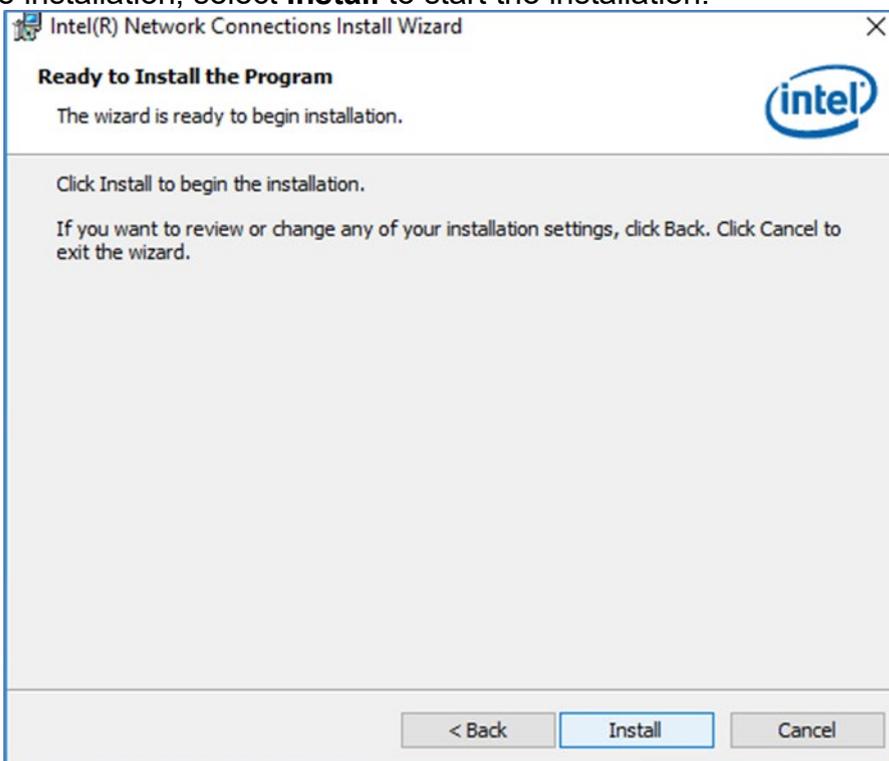
3. Read the license agreement, and then select **Next**.



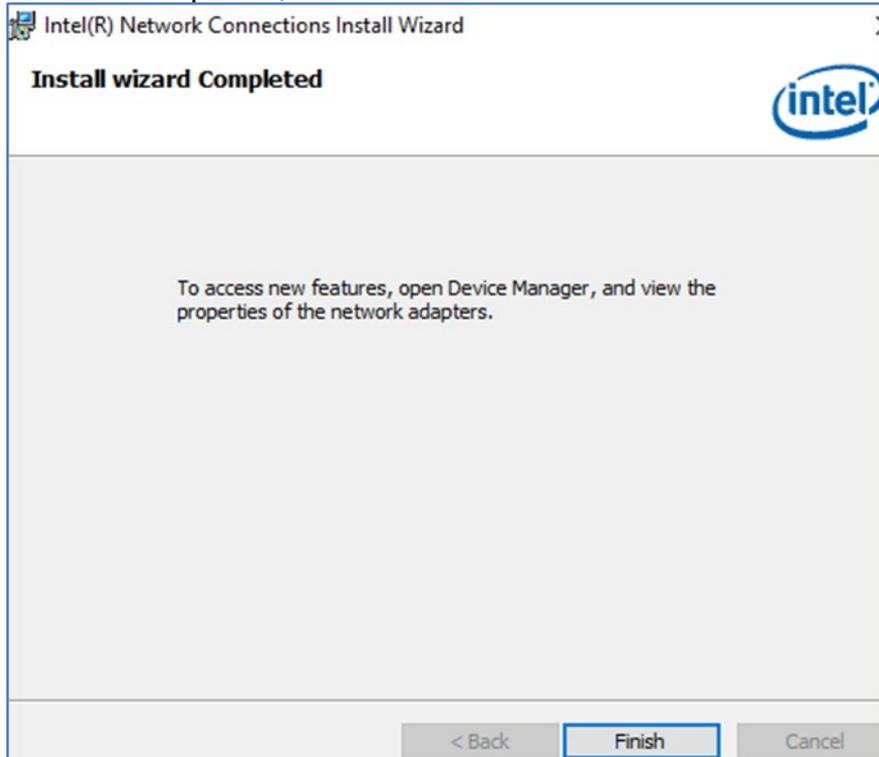
4. System displays the installed packages, select **Next**.



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



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



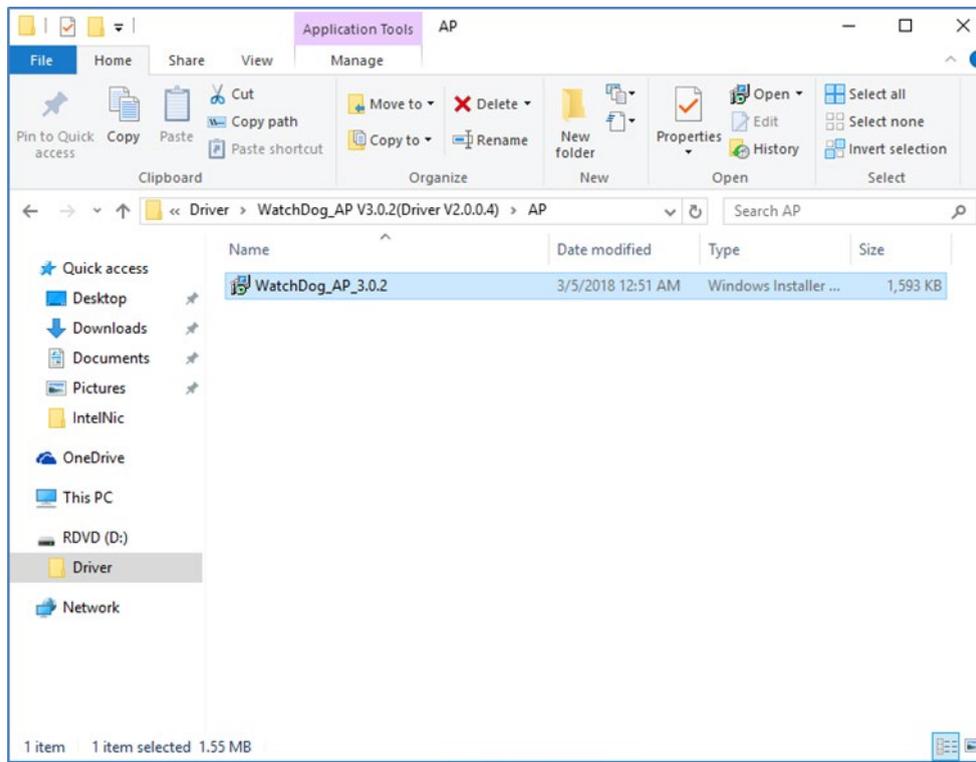
## 6.6 Watchdog Driver Installation

For more details about Winmate Watchdog, please download Watchdog Guide from Winmate Downloads Center:

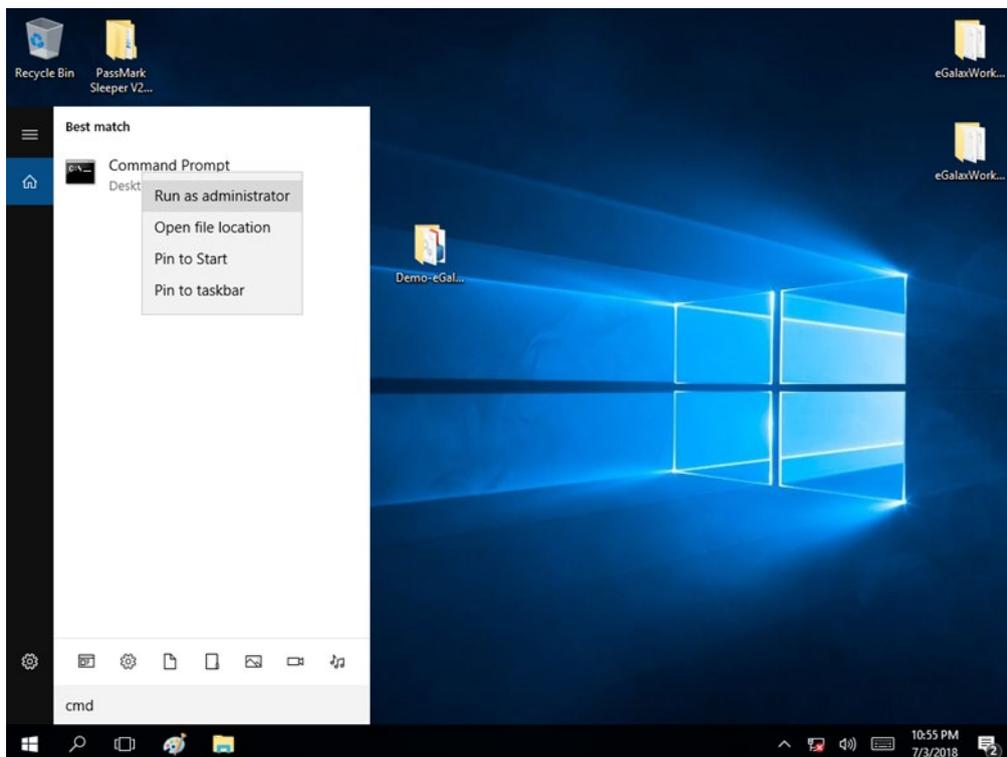
[http://dc.winmate.com.tw/downloadCenter/2017/Embedded%20Computing/Watchdog%20Guide/IB\\_IH\\_IV\\_IK.pdf](http://dc.winmate.com.tw/downloadCenter/2017/Embedded%20Computing/Watchdog%20Guide/IB_IH_IV_IK.pdf)

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

1. Type "cmd" in the run box then the cmd.exe will appear in programs.
2. Right click on the cmd.exe and click on "Run as administrator" to start
3. Open the Driver CD (included in the package) and select Watchdog driver.



4. When Windows Security dialog appear, select **install** to continue the Installation.



5. Wait for installation to complete. When installation is complete, press any key to close.

```

Administrator: Command Prompt - install
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>dir/w
The system cannot find the file specified.
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>dir/w
The system cannot find the file specified.
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>cd WMWDG Driver for Win7_64bit
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>dir/w
Volume in drive D is RDVD
Volume Serial Number is 6834-E6A5

Directory of D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit

.           [..]          devcon.exe  install.bat  wmwmdg.cat   wmwmdg.inf   [x64]
4 File(s)          91,617 bytes
3 Dir(s)  60,737,892,352 bytes free

D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>install
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>DEVCON.EXE INSTALL wmwmdg.inf "root\WMWDG
Device node created. Install is complete when drivers are installed...
Updating drivers for root\WMWDG from D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit\wmw

```

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

```

Administrator: Command Prompt - install
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>dir
The system cannot find the file specified.

D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>dir/w
The system cannot find the file specified.

D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver>cd WMWDG Driver for Win7_64bit
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>dir/w
Volume in drive D is RDVD
Volume Serial Number is 6834-E6A5

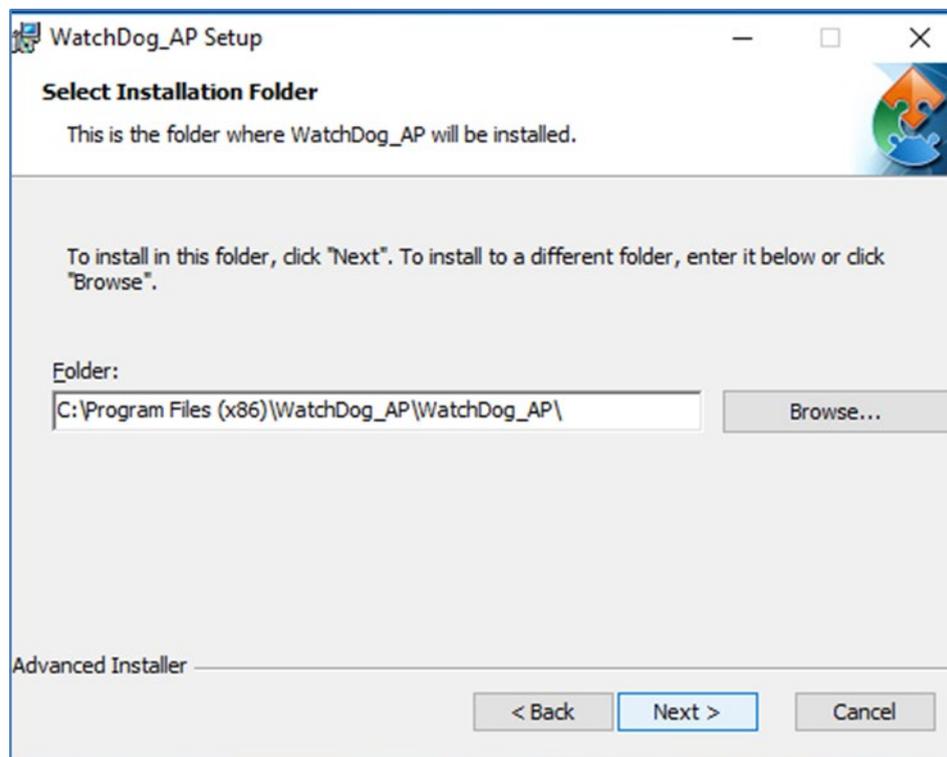
Directory of D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit

.           [..]          devcon.exe  install.bat  wmwmdg.cat   wmwmdg.inf   [x64]
4 File(s)          91,617 bytes
3 Dir(s)  60,737,892,352 bytes free

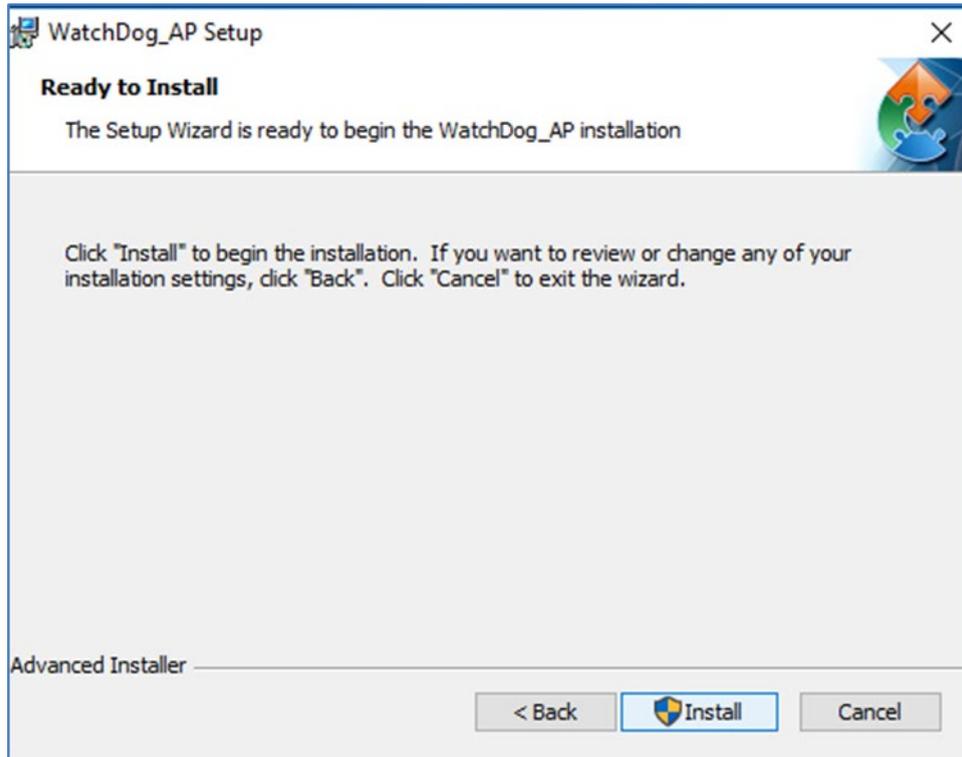
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>install
D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>DEVCON.EXE INSTALL wmwmdg.inf "root\WMWDG
Device node created. Install is complete when drivers are installed...
Updating drivers for root\WMWDG from D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit\wmw
Drivers installed successfully.

D:\Driver\WatchDog_AP V3.0.2(Driver V2.0.0.4)\Driver\WMWDG Driver for Win7_64bit>pause

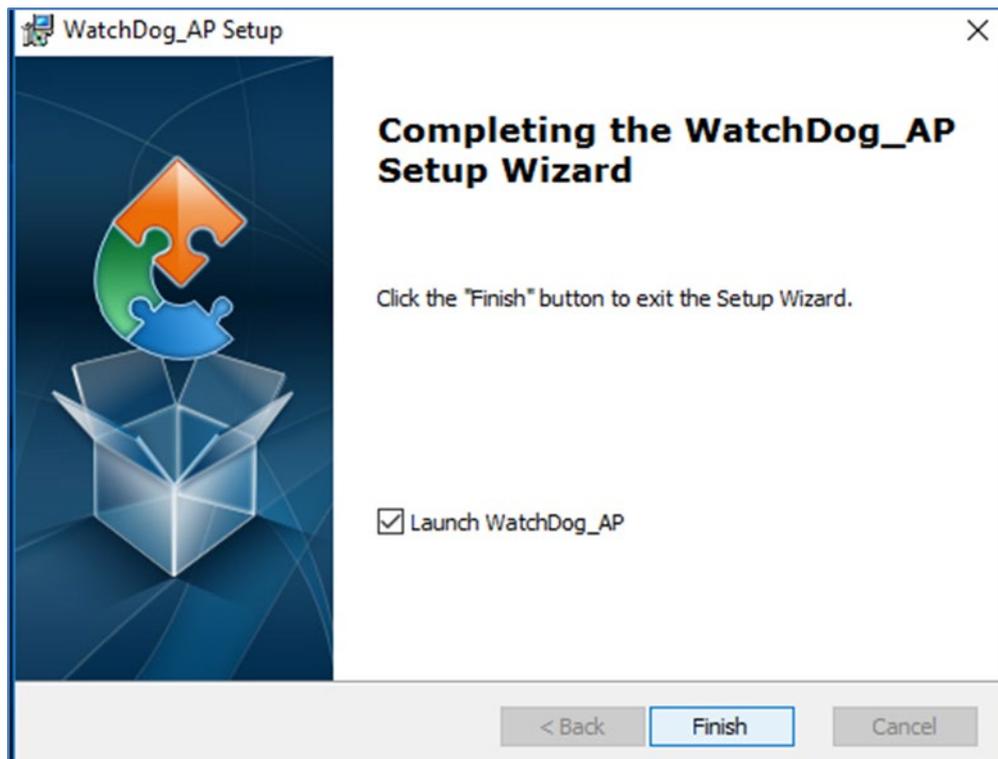
```

7. Select **Next**.8. The installed storage location is displayed, select **Next** to continue.

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



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



## **Chapter 7: 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.

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## Appendix A: Product Specifications

### Hardware Specifications

|                 | Model Name   |  |  |  |
|-----------------|--|--|--|--|
|                 | R15IK3S-SPC369   | R19IK3S-SPM169   | W22IK3S-SPA369   | W24IK3S-SPA269   |
| <b>Display</b>  |  |  |  |  |
| Size            | 15"  | 19"  | 21.5"  | 23.8"  |
| Resolution      | 1024 x 768   | 1280 x 1024  | 1920 x 1080  | 1920 x 1080  |
| Brightness      | 300 <i>cd/m<sup>2</sup></i> (typ.)                               | 250 <i>cd/m<sup>2</sup></i> (typ.)                               | 250 <i>cd/m<sup>2</sup></i> (typ.)                               | 250 <i>cd/m<sup>2</sup></i> (typ.)                       |
| Contrast Ratio  | 2000 : 1(typ.)   | 1000 : 1 (typ.)  | 3000 : 1(typ.)   | 3000 : 1(typ.)   |
| Viewing Angle   | -88~88(H);<br>-88~88(V)  | -85~85(H)<br>;-80~80(V)  | -89~89(H);<br>-89~89(V)  | -89~89(H);<br>-89~89(V)                                  |
| Max Colors      | 16.2M  | 16.7M  | 16.7M  | 16.7M  |
| Touch           | P-Cap(Default),<br>Glass (Optional),<br>AG Coating<br>(Optional) | P-Cap(Default),<br>Glass (Optional),<br>AG Coating<br>(Optional) | P-Cap(Default),<br>Glass (Optional),<br>AG Coating<br>(Optional) | P-Cap(Default),<br>Glass (Optional)                      |
| <b>System</b>   |  |  |  |  |
| Processor       | Intel® Core™ i5-7200U Kaby Lake 2.5GHz (turbo to 3.1GHz)         | Intel® Core™ i5-7200U Kaby Lake 2.5GHz (turbo to 3.1GHz)         | Intel® Core™ i5-7200U Kaby Lake 2.5GHz (turbo to 3.1GHz)         | Intel® Core™ i5-7200U Kaby Lake 2.5GHz (turbo to 3.1GHz) |
| BIOS            | Insyde BIOS  | Insyde BIOS  | Insyde BIOS  | Insyde BIOS  |
| System Chipset  | Intel® SoC Integrated  | Intel® SoC Integrated  | Intel® SoC Integrated  | Intel® SoC Integrated                                    |
| System Memory   | 4GB DDR4-2133 SO-DIMM (Max 16 GB)                                | 4GB DDR4-2133 SO-DIMM (Max 16 GB)                                | 4GB DDR4-2133 SO-DIMM (Max 16 GB)                                | 4GB DDR4-2133 SO-DIMM (Max 16 GB)                        |
| Storage         | 64GB M.2 B Key SATA III SSD (Options up to 256GB)                | 64GB M.2 B Key SATA III SSD (Options up to 256GB)                | 64GB M.2 B Key SATA III SSD (Options up to 256GB)                | 64GB M.2 B Key SATA III SSD (Options up to 256GB)        |
| Graphic Chipset | Intel® HD Graphics 620   | Intel® HD Graphics 620   | Intel® HD Graphics 620   | Intel® HD Graphics 620                                   |
| Audio           | Realtek ALC283 HD Audio Codec                                    | Realtek ALC283 HD Audio Codec                                    | Realtek ALC283 HD Audio Codec                                    | Realtek ALC283 HD Audio Codec                            |
| Ethernet        | 1000 Base-Tx Gigabit Ethernet Compatible                         | 1000 Base-Tx Gigabit Ethernet Compatible                         | 1000 Base-Tx Gigabit Ethernet Compatible                         | 1000 Base-Tx Gigabit Ethernet Compatible                 |
| USB             | 2 x USB 2.0  | 2 x USB 2.0  | 2 x USB 2.0  | 2 x USB 2.0  |
| Serial          | 1 x RS232  | 1 x RS232  | 1 x RS232  | 1 x RS232  |
| OS              | Windows 10 IoT Enterprise  | Windows 10 IoT Enterprise  | Windows 10 IoT Enterprise  | Windows 10 IoT Enterprise                                |

|                                    |                             | Model Name                  |                             |                             |                             |
|------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                                    |                             | R15IK3S-SPC369              | R19IK3S-SPM169              | W22IK3S-SPA369              | W24IK3S-SPA269              |
| <b>Input/ Output Connectors</b>    |                             |                             |                             |                             |                             |
| Ethernet LAN                       | 1 x RJ45 - 10/100/1000 Mbps |
| COM                                | 1 x RS232                   |
| USB                                | 2 x USB Type-A Receptacle   |
| Power                              | 1 x 12V DC                  |
| <b>Mechanical Specification</b>    |                             |                             |                             |                             |                             |
| Cooling System                     | Fanless                     | Fanless                     | Fanless                     | Fanless                     | Fanless                     |
| Mounting                           | Yoke Mount, VESA Mount      |
| <b>Environmental Consideration</b> |                             |                             |                             |                             |                             |
| Operating Temperature              | 0°C to +45°C                |
| Operating Humidity                 | 30% to 90% (non-condensing) |
| IP Rating                          | Full IP69K                  |
| <b>Power Specifications</b>        |                             |                             |                             |                             |                             |
| Power Input                        | 12V DC IN                   |
| Power Consumption*                 | 52W (typ.)                  | 56W (typ.)                  | 66W (typ.)                  | 66W (typ.)                  | 66W (typ.)                  |
| <b>Standards and Certification</b> |                             |                             |                             |                             |                             |
| Certification                      | CE, FCC, RoHs               |

\*With maximum backlight and high CPU load.

**NOTE:**

1. Accessories and Integrated Options may vary depending on your configuration. The product shown in this datasheet is a standard model. For diagrams that contain customized or optional I/O, please contact the Winmate Sales Team for more information.
2. All specifications are subject to change without prior notice.

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