

# DF68 User Manual



## Statement

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The information provided in this manual is accurate and reliable. The company does not take any legal responsibility for the consequences of infringement use of this manual.

## Safety Notice

- Read the user manual carefully before setting up the Giada product.
- Disconnect the power cord before installing the internal components
- Most electronic components are sensitive to static electrical charge, please wear a wrist-grounding strap when installing the internal components.
- Don't disconnect the power cord when the system is running to avoid damage to the sensitive components by instantaneous surge voltage.

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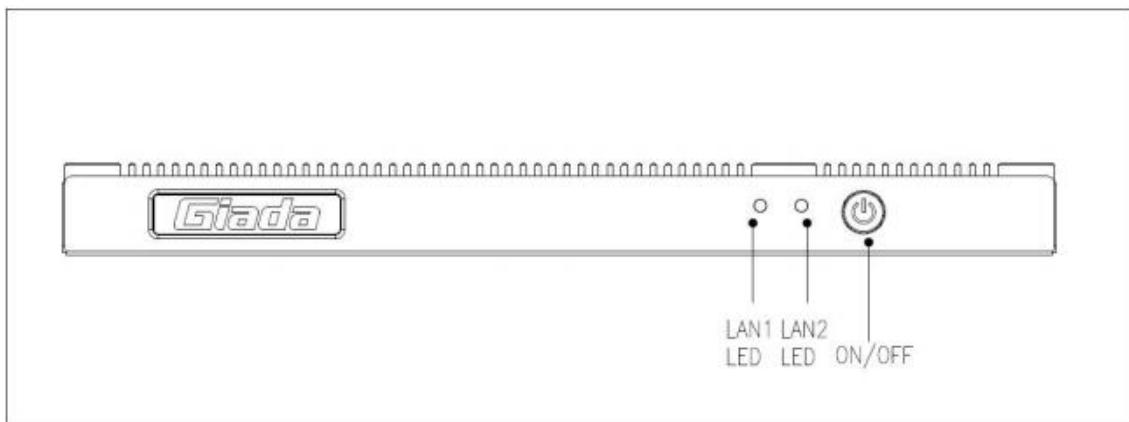
## 1. Product Introduction

Based on Intel® Whiskey Lake platform, Giada DF68 is a fanless model featured with Intel® Core processors. With one DP and one HDMI display outputs, it supports 4K resolution. The player is suitable to be applied in high-end digital signage applications.

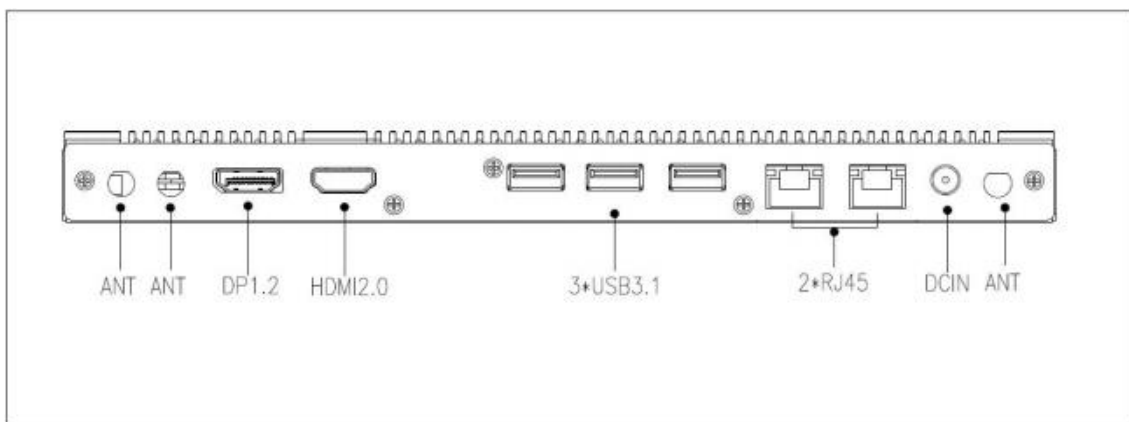
## 2. Interface Description and Hardware Specifications

### 2.1 Interface Description

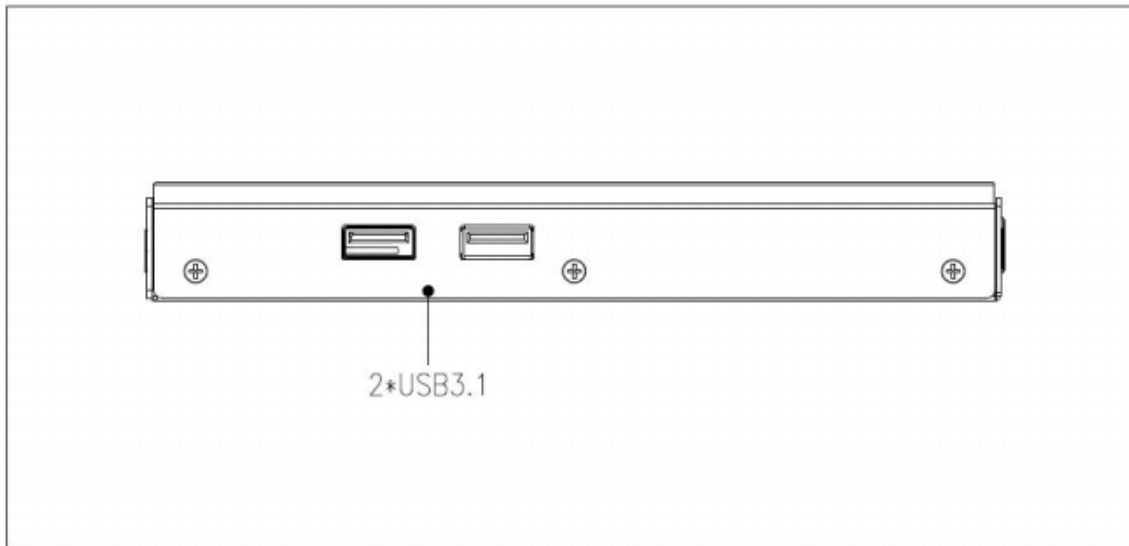
#### Front I/O Port



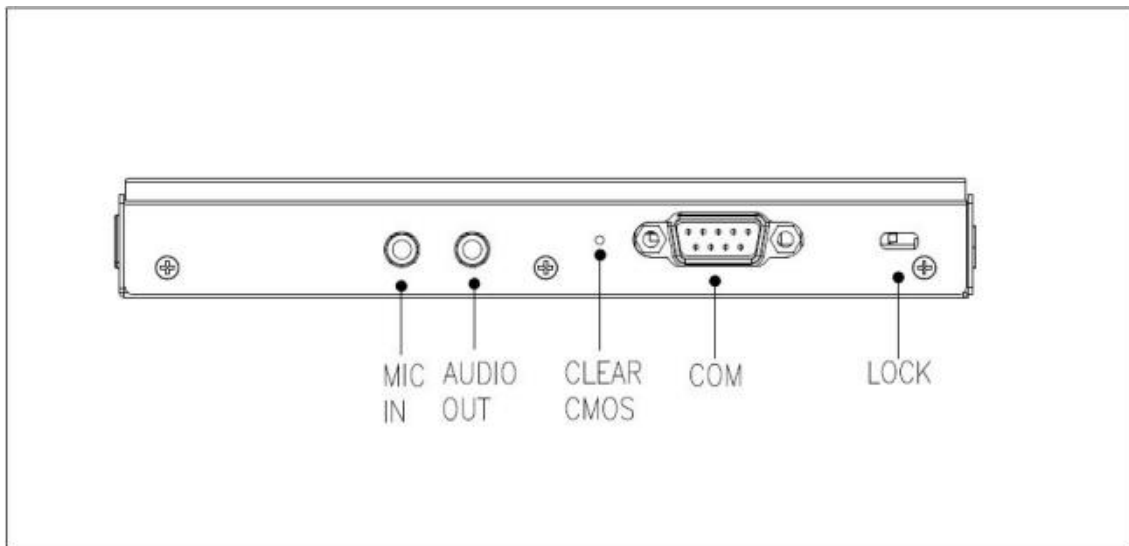
#### Rear I/O Port



## Left I/O Port



## Right I/O port



## 2.2 Hardware Specifications

DF68		DF68-8145U40M0G-GIA	DF68-8265U40M0G-GIA
<b>Processor</b>	<b>CPU</b>	Intel® Core i3-8145U	Intel® Core i5-8265U
	<b>Frequency</b>	2.10 GHz (Up to 3.90 GHz)	1.60 GHz (Up to 3.90 GHz)
	<b>BIOS</b>	AMI Source Code	
	<b>Chipset</b>	SOC	

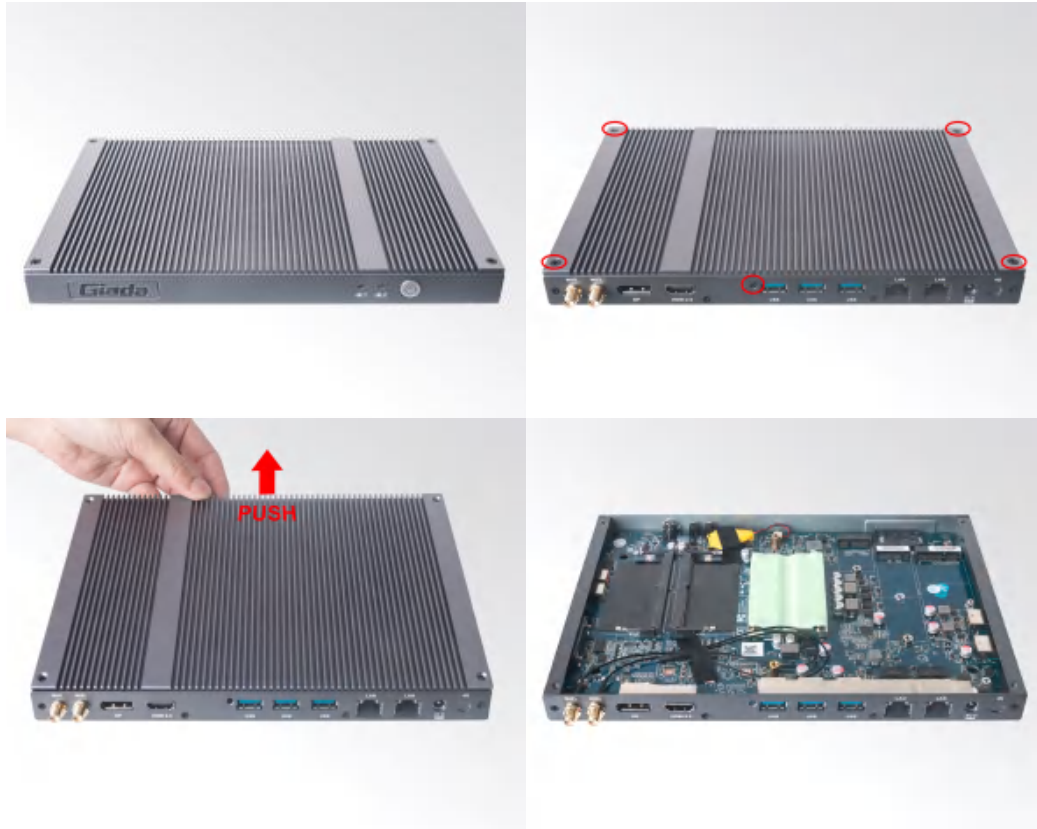
<b>Memory</b>	<b>Type</b>	DDR4-2400MHz
	<b>Socket</b>	2 x SO-DIMM
	<b>Max Capacity</b>	32 GB
<b>Graphics</b>	<b>GPU</b>	Intel® HD Graphics
	<b>Graphic Engine</b>	DirectX 11.1,OpenGL 3.0, OpenCL 1.1, OpenGL ES
	<b>DP 1.2</b>	1 x DP (Max.4096 x 2304@60Hz)
	<b>HDMI 2.0</b>	1 x HDMI (Max.4096 x 2304@60Hz)
<b>Network</b>	<b>Controller</b>	Realtek RTL8111H Gigabit Ethernet
	<b>Interface</b>	2 x RJ45
<b>I/O Interface</b>	<b>USB</b>	5 x USB 3.1
	<b>Serial Port</b>	1 x RS232
	<b>Audio</b>	1 x MIC-IN, 1 x AUDIO-OUT
	<b>M.2</b>	1 x M.2 ((2242/2280) for SSD
		1 x M.2 (2230) for WiFi
	<b>SIM</b>	1 x SIM Slot
<b>Mini PCIe</b>	1 x Full-size Mini-PCIe for mSATA /3G/4G	
<b>Storage</b>	<b>M.2 and MSATA</b>	1 x M.2 (2242/2280) for SSD
		1 x Mini PCIe for MSATA
<b>JAHC</b>	<b>JAHC</b>	Watchdog / Auto power on / IR Remote Control / RTC/Wake On Lan
<b>Operation System</b>	<b>OS</b>	Windows 10 (64-bit) / Linux
<b>Power</b>	<b>Power Type</b>	DC-IN
	<b>Input Voltage</b>	19V/3.42A
<b>Mechanical</b>	<b>Construction</b>	Metal
	<b>Mounting</b>	VESA Mounting (JC 560)
	<b>Dimension (W x D x H)</b>	240mm x 158mm x 22mm (9.45" x 6.22" x 0.87")
	<b>Color</b>	Dark Gray
<b>Environment</b>	<b>Operating Temperature</b>	0-40°C( 32 °F ~ 113 °F ) at 0.7m/s Air Flow
	<b>Relative Humidity</b>	95%@40°C (non-condensing)
<b>Certification</b>	<b>EMC</b>	CE/FCC

### 3. Accessories Installation Steps

▲ For safety reasons, please ensure that the power cord is disconnected before opening the case.

#### How to open the top cover and bottom cover

Unscrew the five screws at corners and in the middle to remove the top cover. SO-DIMM #1 and #2 are at the left side. Mini PCIE slot for mSATA /3G/4G, M.2 for SSD/Wifi and SIM card slot are at the right side.

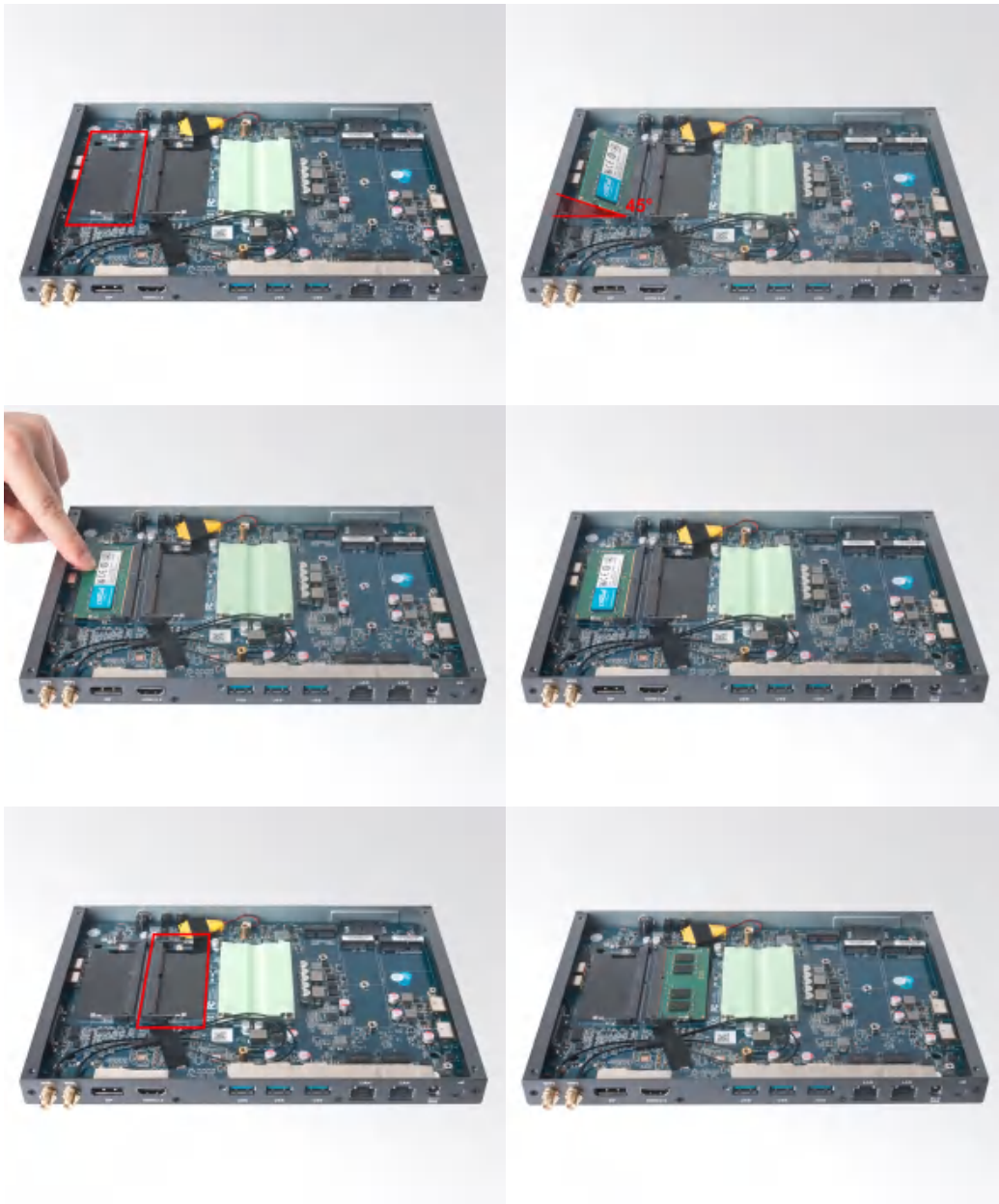


#### 3.1 Memory Installation

▲ This product only supports DDR4 SO-DIMM memory modules.

1. Locate the SO-DIMM slot on the board.
2. Gently insert the module into the slot in a 45-degree angle.
3. Carefully push down the memory module until it snaps into the locking mechanism.





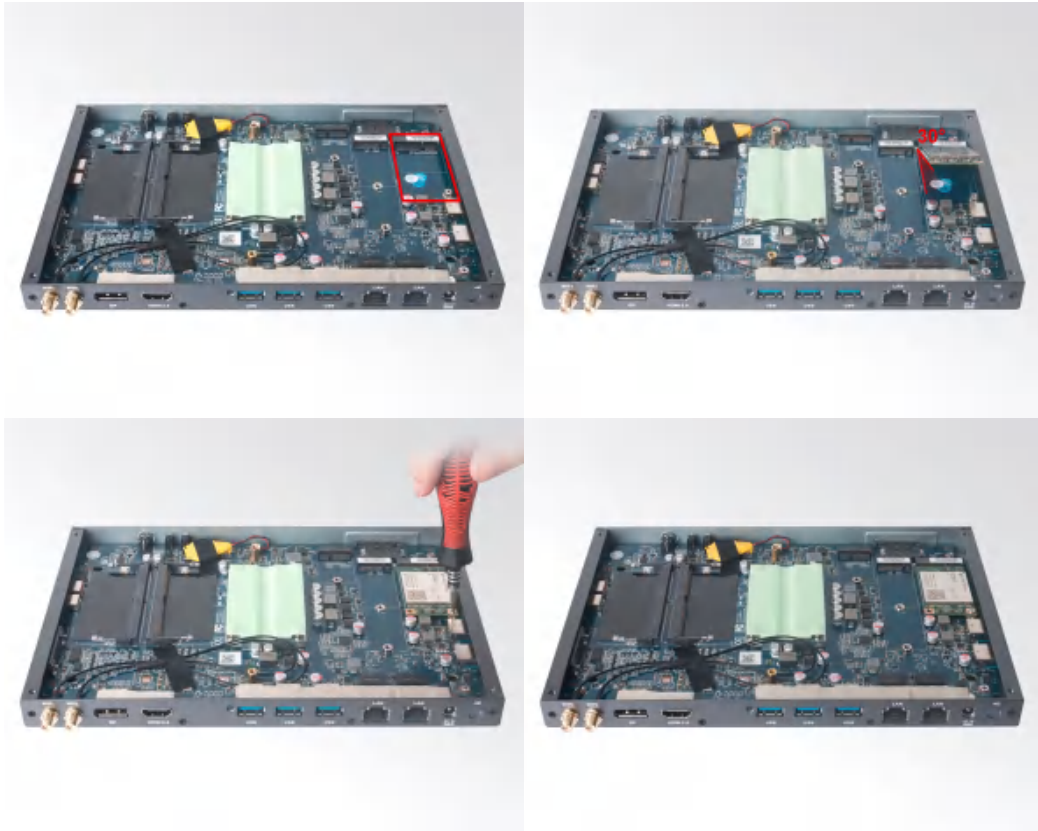
## 3.2 MSATA/3G/4G Installation

### ● MSATA Installation

1. Plug the MSATA module into the mini PCIE slot.
2. Secure the module to the carrier by tightening up the screw.

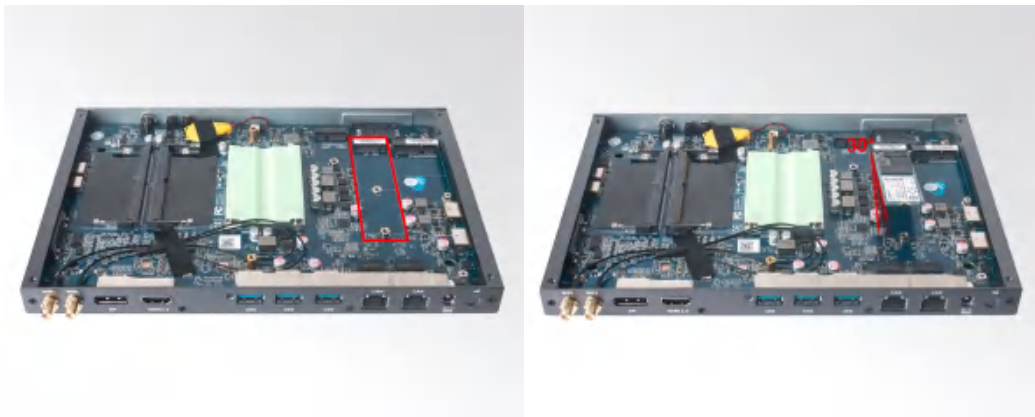
### ● 3G/4G Installation

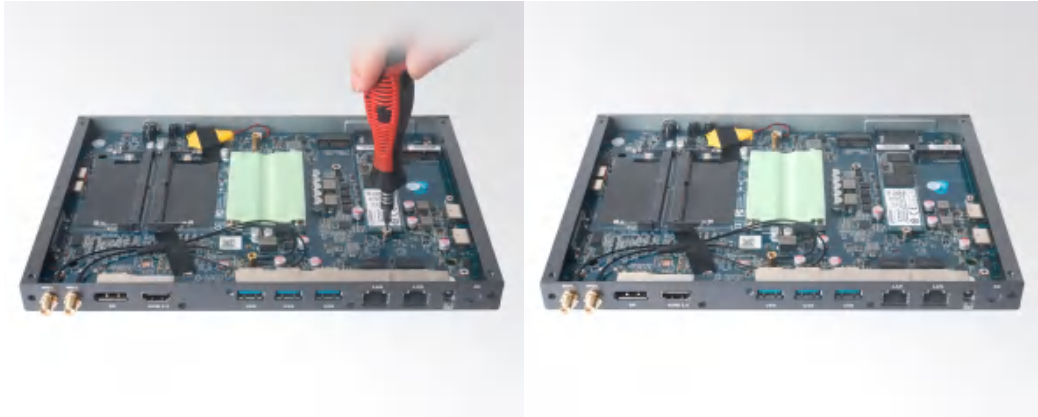
- ▲ Default SMA connector and cable is for WIFI. Please change to 3G/4G SMA connector and cable.
1. Plug the 3G/4G module into the mini PCIE slot.
  2. Secure the module to the carrier by tightening up the screw.
  3. Connect the cable to **Main** and install the antenna.



### 3.3 SSD (M.2) Installation

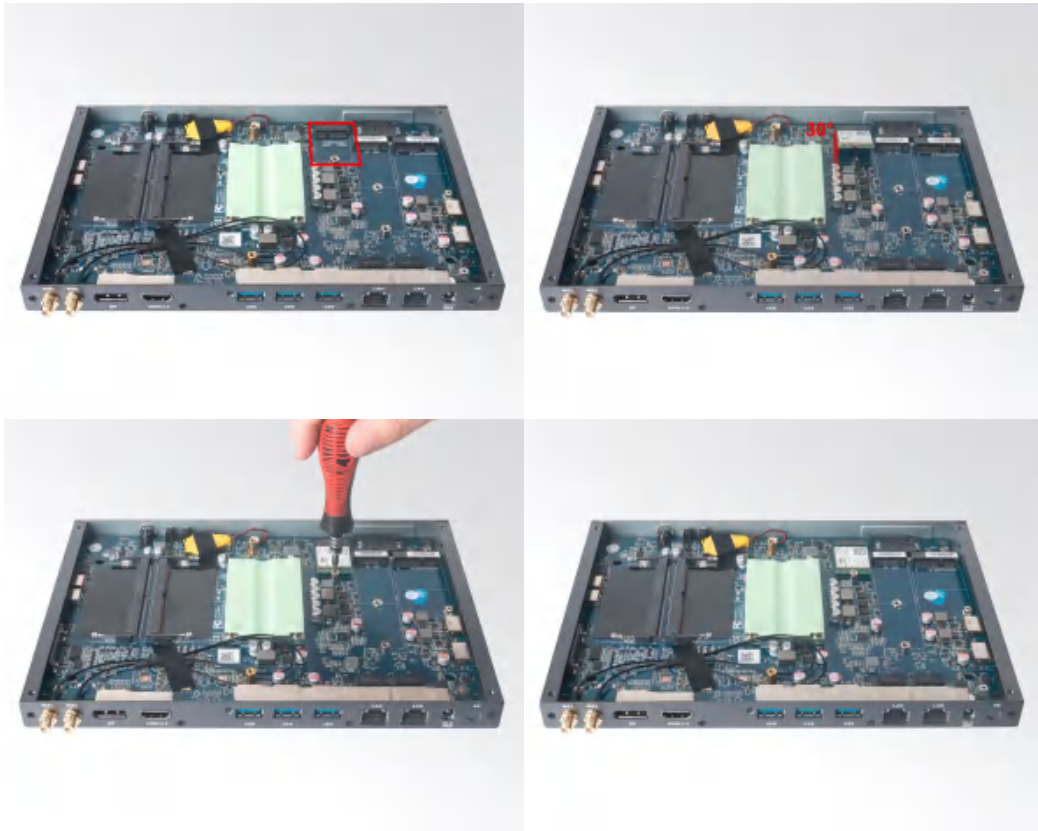
1. Plug the SSD (M.2) into the appropriate slot.
2. Secure the module to the carrier by tightening up the screw.





### 3.4 WIFI (M.2) Installation

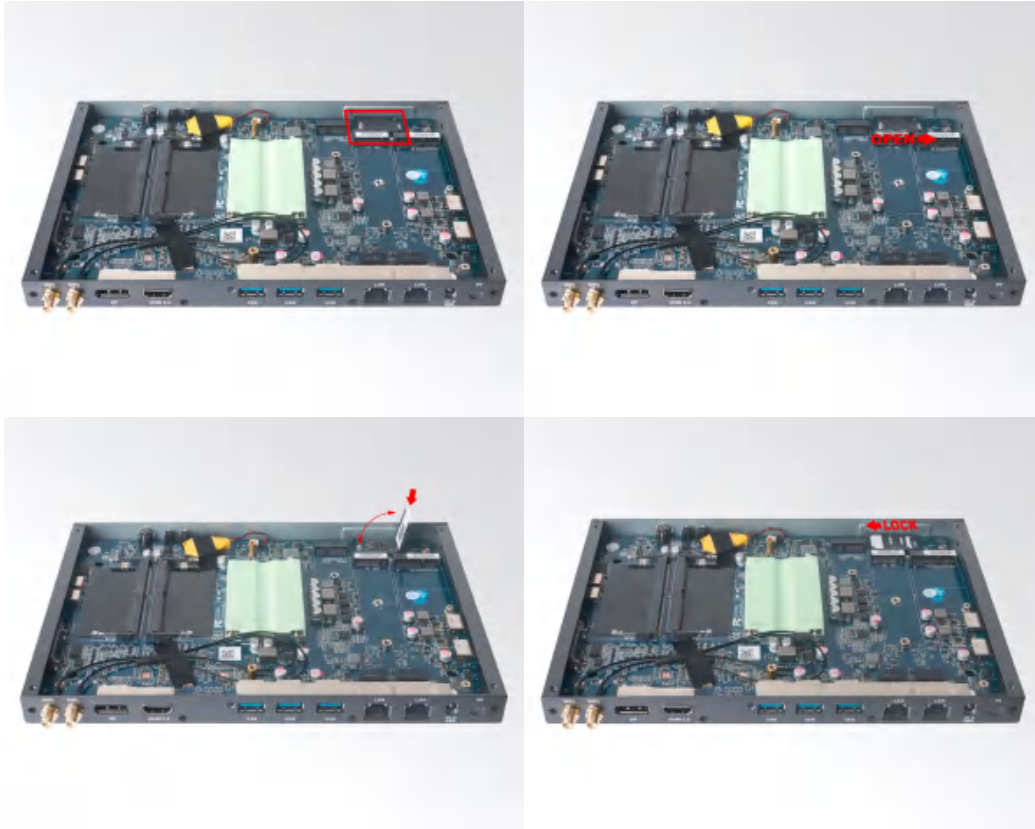
1. Plug the WIFI module into the appropriate slot.
2. Secure the module to the carrier by tightening up the screw.
3. Connect the black cable to **Main** and grey cable to **AUX**. Install the antenna.



### 3.5 SIM Card Installation

▲ This product supports standard SIM card with the size of 25mm × 15mm.

1. [Open] the SIM card holder and pull it up.
2. Insert the SIM card.
3. [Lock] the card holder.



## 4 BIOS Setup

### Notice:

The descriptions relating to BIOS setup in this Manual is for reference only since the BIOS version of the product might be upgraded. Giada provides no guarantee that all the contents in this Manual are consistent with the information you acquired.

BIOS is a basic I/O control program saved in the Flash Memory. Bridging the motherboard and the operation system, BIOS is used for managing the setup of the related parameters between them.

When the computer is activated, the system is first controlled by the BIOS program. Firstly, a self-detection called POST is performed to check all hard devices and confirm the parameters of the synchronous hardware.

Once all detections are completed, BIOS will hand over the controlling to the operation system (OS). As BIOS serves as the only channel that connects the hardware and software, whether your computer can run stably and work in optimized state will hinge on how to properly set the parameters in BIOS. Therefore, the correct setup of BIOS plays a key role in stably running the system and optimizing its performance.

The CMOS Setup will save the set parameters in the built-in CMOS SRAM on the motherboard. When the power is shut off, the lithium battery on the motherboard will provide continuously power to CMOS SRAM.

### **The BIOS setup program will allow you to configure the following items:**

1. HD drive and peripheral devices
2. Video display type and display items
3. Password protection
4. Power management characteristics

### **A. State of BIOS Setup**

When the computer is started up, BIOS will run the self-detection (Post) program. This program includes series of diagnosis fixed in BIOS. When this program is executed, the following information will appear if any error is found:

Press [F1] to Run General help

Press [F2] to Load previous values and continue

To enter BIOS, you can press F2; to load the default values and enter the system, you can press DEL to enter the BIOS interface if no error occurs. If the indicative information disappears before operating, you can shut down the computer and turn it on again, or you can press the RESET key on the product case. To restart your computer, you can also press < Ctrl > + < Alt > + < Delete > simultaneously.

## B. Function Keys definitions

Hot Key	Description
↑	(Up key) Move to the previous item
↓	(Down key) Move to the next item
←	(Left key) Move to the left item
→	(Right key) Move to the right item
ESC	Exit the current interface
Page Up	Change the setup state, or add the values
Page Down	Change the setup state, or deduct the values
F1	Display the information of the current function Keys definitions.
F9	Load the optimized values
F10	Save the settings and exit the CMOS SETUP

## C. Auxiliary information Main interface

When the system enters the main interface of Setup, the major selected contents will be displayed at the lower part of the interface with the change of the options.

When you set the value for each column, you can view the preset value of the column and the values that can be set if you press F2, for example, the BIOS default values or CMOS Setup values. To exit the interface for auxiliary information, press [ESC].

### 1) Main menu

When the system enters the CMOS Setup menu, you can see the main menu on the upper part of the screen, as shown in Figure 1.

In this main menu, you can use the left and right direction keys to select the setup items.

Once the item is selected, the lower part of the computer screen will show the details of setting.



Fig 1

### 1) Main (standard CMOS setup)

This item is used for setting the date and time.

### 2) Advanced (advanced BIOS setup)

This item is used for setting the advanced functions provided by BIOS, such as specifications of PCIe facilities, CPU, HDD, etc.

### 3) Security (set the administrator/user password)

### 4) Boot (startup configuration characteristics)

### 5) Save & Exit (option of exit)

This item includes load optimal defaults / load failsafe defaults value / discard changes / discard changes and exit.

## 4.1 Main (Standard CMOS setting)



### 1) System time (hh:mm:ss)

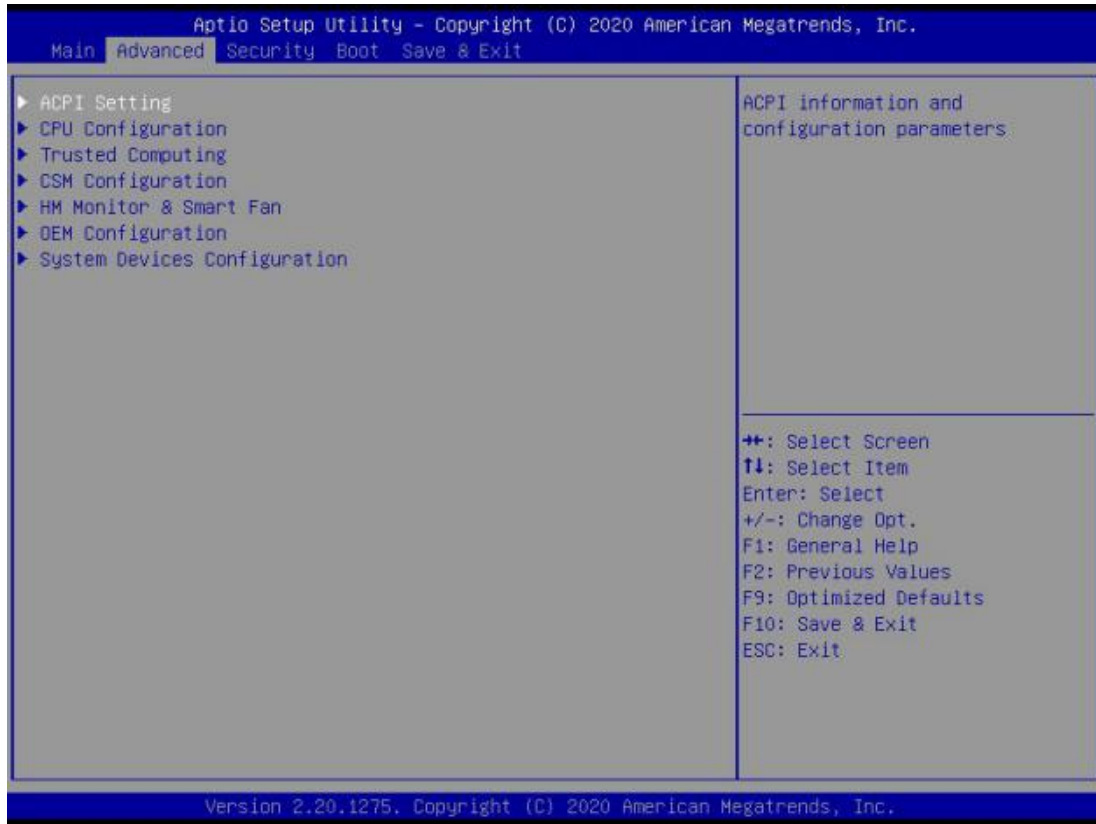
Use this item to set the time for the computer, with the format as “HH / MM / SS”.

### 2) System date (mm:dd:yy)

Use this item to set the date for the computer, with the format as “week, MM / DD / YY”.



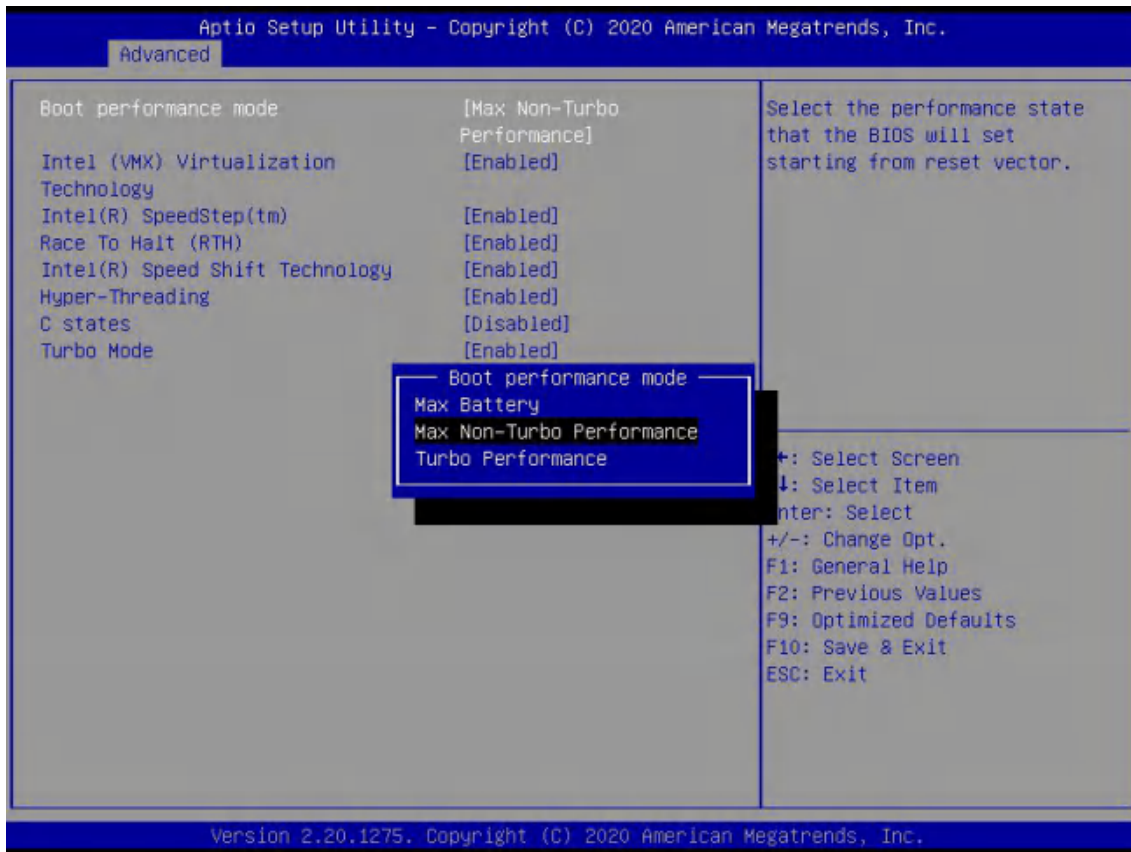
## 4.2 Advanced (Advanced BIOS setup)



**4.2.1 ACPI Settings**

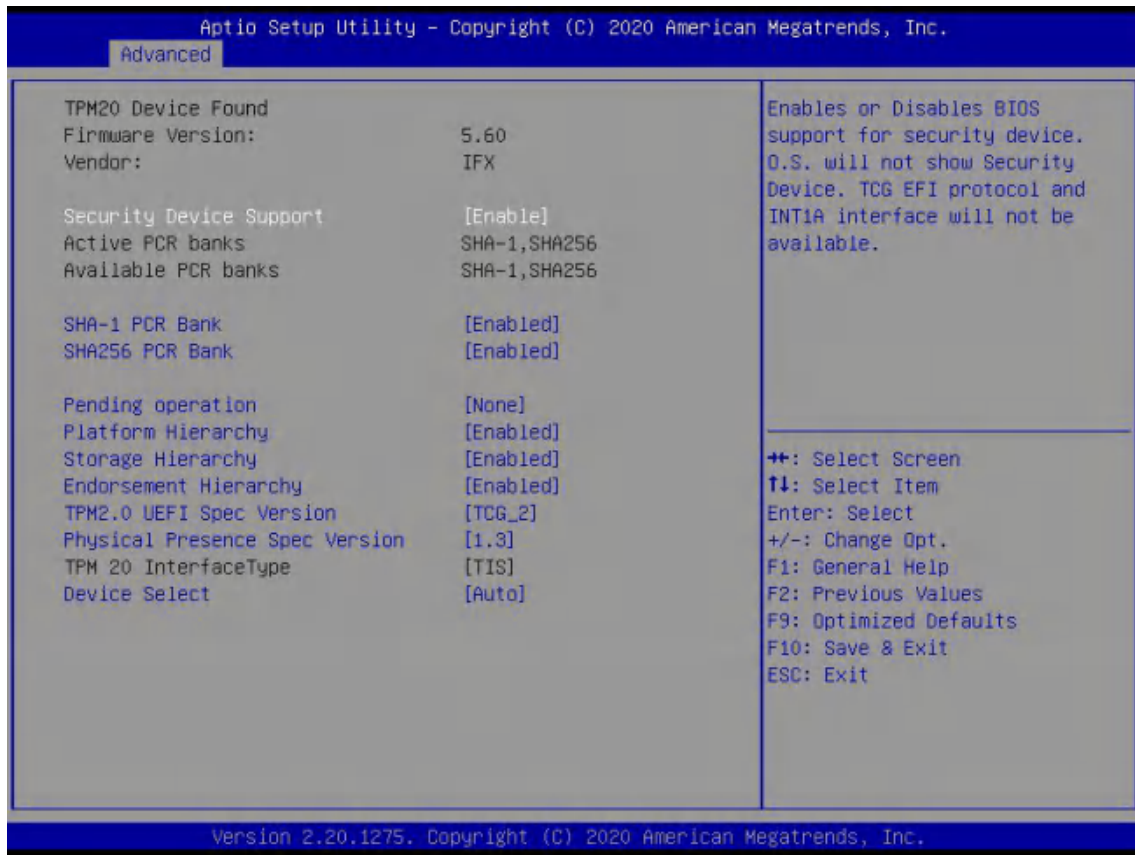
ACPI Menu	Description
<b>Enable ACPI Auto Configuration</b>	Enables or Disables BIOS ACPI.
<b>State After G3</b>	<p>State After G3 means after restore power supply.</p> <ul style="list-style-type: none"> <li>● S5 State (Default): If set it as S5 State, it means the system will remain shutdown state</li> <li>● S0 State: If set it as S0 State, it means the system will be power on automatically.</li> <li>● Last State: If set it as Last State, it means the system will keep State of last setup.</li> </ul>
<b>Wake system from S5</b>	<p>Enable or disable System wake on alarm event.</p> <ul style="list-style-type: none"> <li>● Select Fixed Time, system will wake on the hr::min::sec specified.</li> <li>● Select Dynamic Time, System will wake on the current time + Increase minute(s).</li> </ul>

**4.2.2 CPU Configuration**



<b>CPU Configuration Menu</b>	<b>Description</b>
<b>Boot performance mode</b>	Select the performance state that the BIOS will set starting from reset vector.
<b>Intel Virtualization Technology</b>	Intel Virtualization Technology is enabled by default. User can enable and disable the Intel Virtualization Technology function.
<b>Intel® SpeedStep (tm)</b>	Allows more than two frequency range to be supported.
<b>Race To Halt (RTH)</b>	RTH will dynamically increase CPU frequency in order to enter PKG C-State faster to reduce overall power.
<b>Intel® speed Shift Technology</b>	Intel® Speed Shift Technology uses hardware-controlled P-states to deliver dramatically quicker responsiveness with single-threaded, transient (short duration) workloads, such as web browsing, by allowing the processor to more quickly select its best operating frequency and voltage for optimal performance and power efficiency.
<b>Hyper-Threading</b>	Enable/Disable Hyper-Threading
<b>C-States</b>	Allows CPU to go to C states when it's not 100% utilized.
<b>Turbo Mode</b>	Enable/Disable processor Turbo Mode (Requires Intel Speed Step or Intel Speed Shift to be available and enabled).

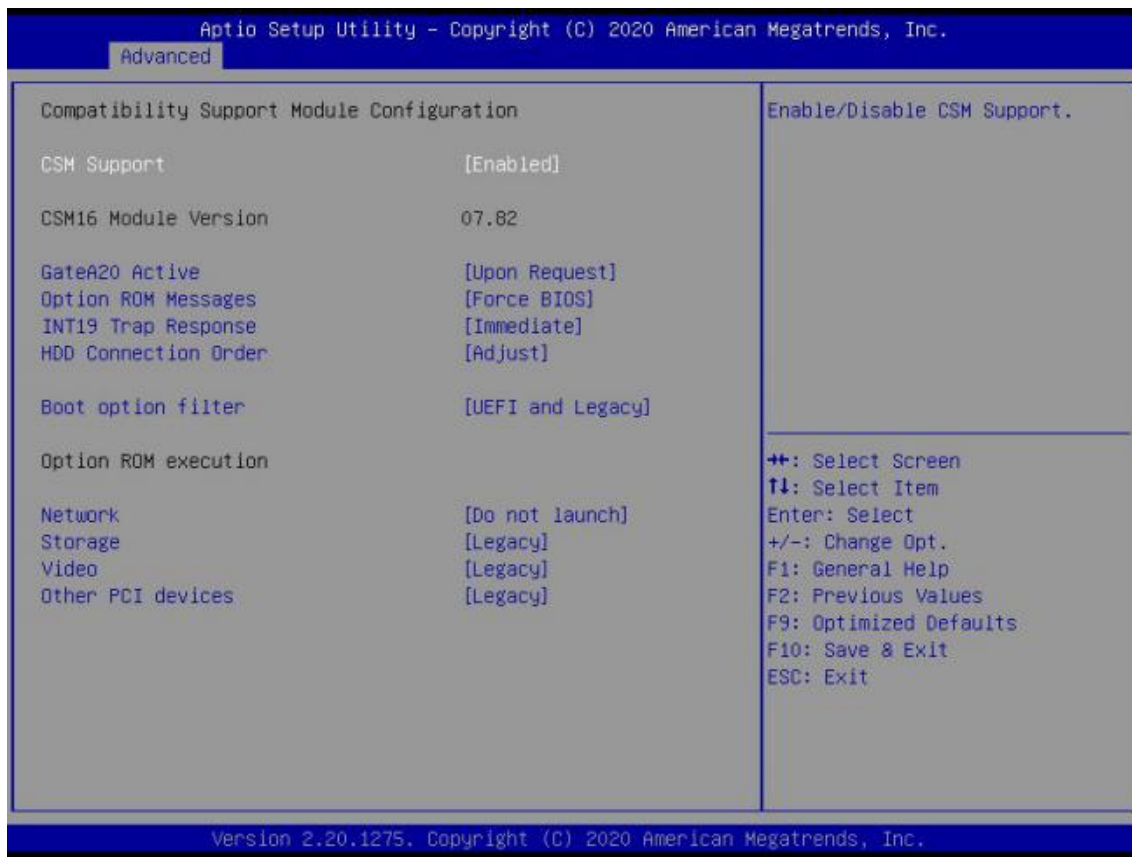
## 4.2.3 Trusted Computing



Trusted Computing	Description
<b>TPM20 Device Found</b>	TPM2.0 device information.
<b>Security Device Support</b>	Enable or Disable BIOS support for security device. OS will not show security device. TCG EFI protocol and INT1A interface will not be available.
<b>SHA-1 PCR Bank</b>	Enabled/Disabled SHA-1 PCR Bank
<b>SHA256 PCR Bank</b>	Enabled/Disabled SHA256 PCR Bank
<b>Pending operation</b>	Schedule an operation for the security device. Note: Your computer will reboot during restart in order to change State of security device.
<b>Platform Hierarchy</b>	The user can enable or disable this item.
<b>Storage Hierarchy</b>	The user can enable or disable this item.
<b>Endorsement Hierarchy</b>	The user can enable or disable this item.

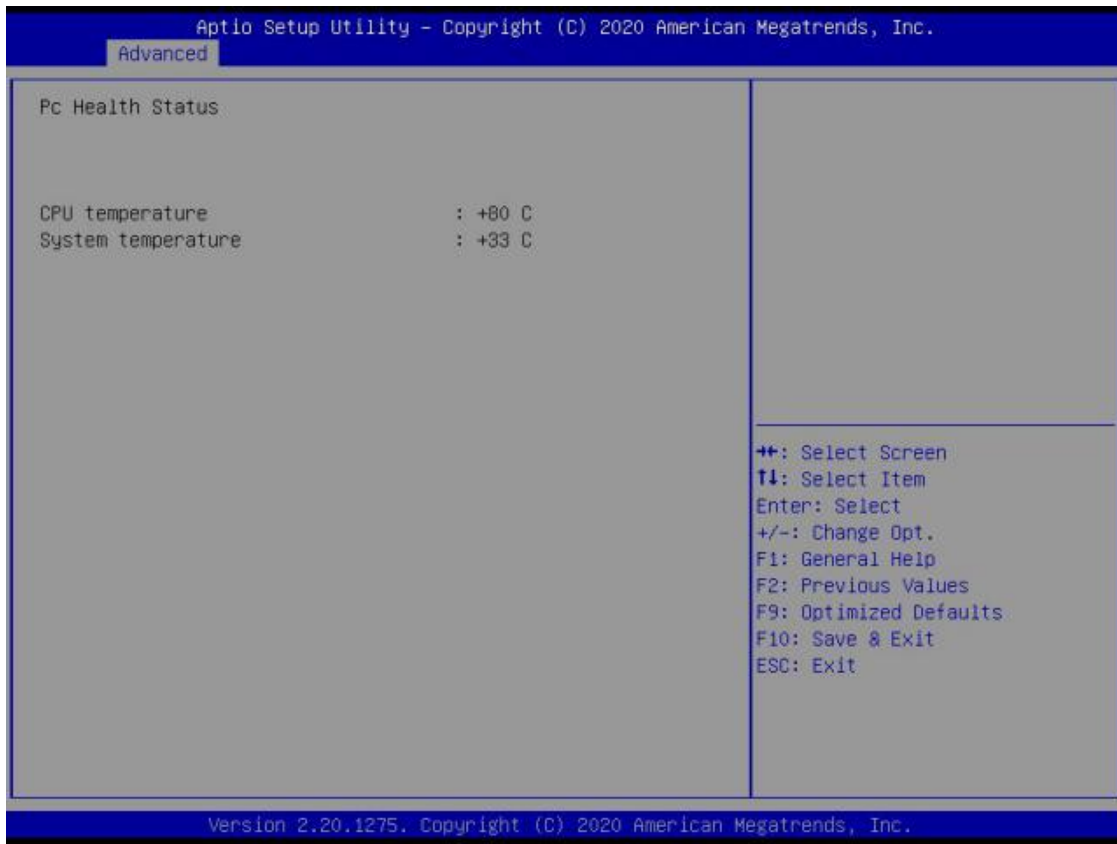
Trusted Computing	Description
<b>TPM2.0 UEFI spec version</b>	<p>Select the TCG2 SPEC version support.</p> <ul style="list-style-type: none"> <li>● TCG_1_2: The compatible mode for win8/win8.</li> <li>● TCG_2: Support new TCG2 protocol and event format for win10 or later.</li> </ul>
<b>Physical Presence Spec Version</b>	<p>Select to tell OS to support PPI SPEC version 1.2 or 1.3. Note: some HCK tests might not support 1.3.</p>
<b>TPM 20 Interface Type</b>	Select the communication interface to TPM20 device.
<b>Device Select</b>	<p>TPM1.2 will support TPM1.2 device only TPM2.0 will support TPM2.0 device only, Auto will support both. If no device is found, the default setting will be TPM2.0.</p>

## 4.2.4 CSM Configuration



Advanced Menu	Description
<b>compatibility support Module Configuration</b>	
<b>CSM Support</b>	<ul style="list-style-type: none"> <li>● Enabled: The CSM support function is enabled by default.</li> <li>● Disabled.</li> </ul>
<b>GateA20 Active</b>	<ul style="list-style-type: none"> <li>● UPON REQUEST:GA20 can be disabled using BIOS services.</li> <li>● ALWAYS: Do not allow disabling GA20. This option is useful when any RT code is executed above 1MB.</li> </ul>
<b>INT19 Trap Response</b>	<ul style="list-style-type: none"> <li>● BIOS reaction on INT19 trapping by option ROM;</li> <li>● IMMEDIATE. Execute the trap right away;</li> <li>● POSTPONED. Execute the trap during legacy boot.</li> </ul>
<b>Boot option filter</b>	<ul style="list-style-type: none"> <li>● UEFI and Legacy: It will support both UEFI and legacy mode.</li> <li>● Legacy only: It only supports legacy mode.</li> <li>● UEFI only: It only supports UEFI mode.</li> </ul>
<b>Option ROM execution</b>	
<b>Network</b>	Network ROM Boot. <ul style="list-style-type: none"> <li>● Do not launch: Do not Boot.</li> <li>● UEFI: It will support UEFI mode network ROM.</li> <li>● Legacy: It will support legacy mode network ROM.</li> </ul>
<b>Storage</b>	Storage ROM Boot. <ul style="list-style-type: none"> <li>● Do not launch: Do not Boot.</li> <li>● UEFI: It will support UEFI mode storage ROM.</li> <li>● Legacy: It will support legacy mode storage ROM.</li> </ul>
<b>Video</b>	Video ROM Boot. <ul style="list-style-type: none"> <li>● UEFI: It will support UEFI mode Video ROM.</li> <li>● Legacy: It will support Legacy mode Video ROM.</li> </ul>
<b>Other PCI devices</b>	<ul style="list-style-type: none"> <li>● Do not launch: Do not Boot.</li> <li>● UEFI: It will support UEFI mode PCI ROM.</li> <li>● Legacy: It will support Legacy mode PCI ROM.</li> </ul>

## 4.2.5 HM Monitor & Smart Fan



## 4.2.6 OEM Configuration



OEM Configuration Menu	Description
<b>JAHC Configuration</b>	<p>JEHE Active Hardware Control (JAHC) management system includes both hardware Micro Control Unit (MCU) and software (JAHC Technology Manager).</p> <ul style="list-style-type: none"> <li>● Disabled: The JAHC is disabled by default.</li> <li>● Enabled.</li> </ul>
<b>Wake On LAN Enable</b>	<p>Wake On LAN Function.</p> <ul style="list-style-type: none"> <li>● Disabled: The WOL is disabled by default.</li> <li>● Enabled.</li> </ul>
<b>Power Limit Level</b>	<ul style="list-style-type: none"> <li>● Set TDP Power Limit Level.</li> </ul>

## 4.2.7 System Devices Configuration

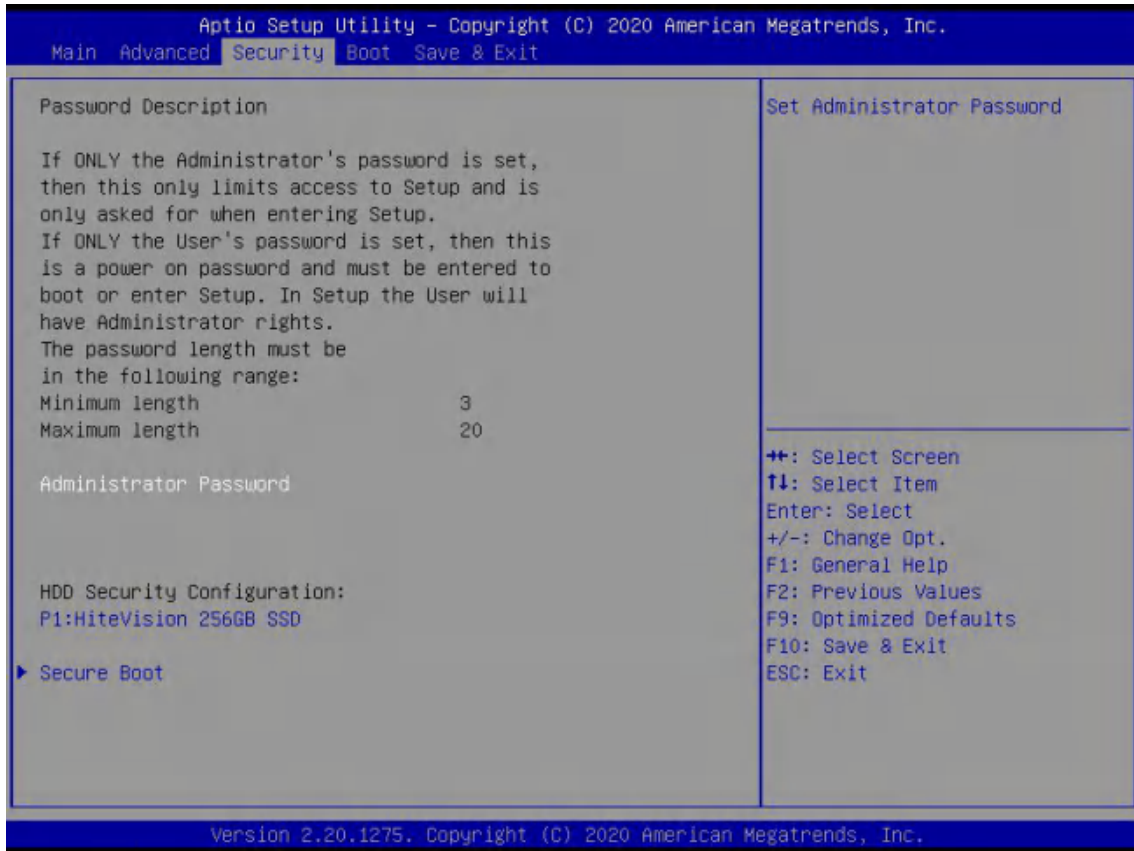


System Devices Configuration Menu	Description
<b>SATA Configuration</b>	Enable/Disable SATA Device
<b>SATA Mode Selection</b>	Determines how SATA controller (s) operate.



System Devices Configuration Menu	Description
<b>HD Audio</b>	Control Detection of the HD-Audio device. <ul style="list-style-type: none"> <li>● Disabled. HDA will be unconditionally disabled</li> <li>● Enabled. HDA will be unconditionally enabled.</li> </ul>
<b>Network Stack</b>	Enable/Disable UEFI Network Stack.

### 4.3 Security



If this function is selected, the following information will appear:

Enter New Password hhhhhh

Then enter a password which is no more than eight characters and press <Enter>. BIOS will require to enter the password again.

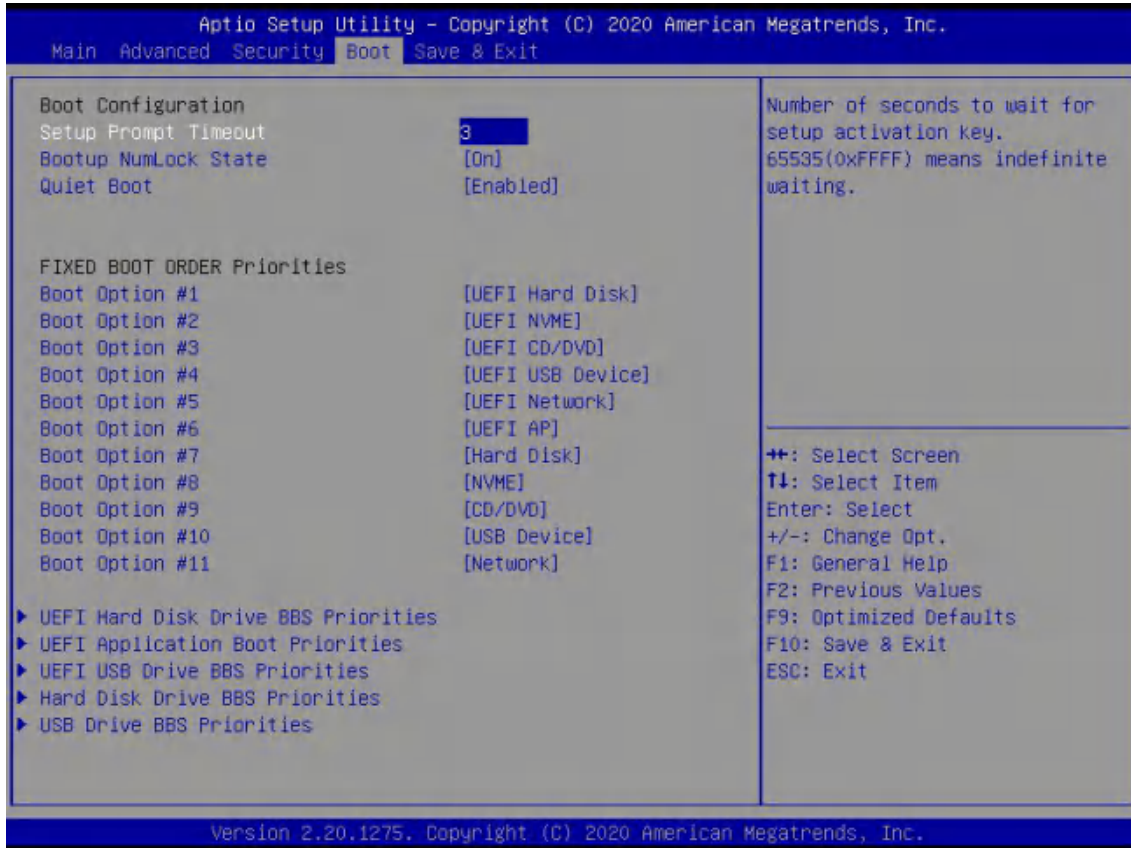
Once you enter it again, BIOS will save the set password. Once the password item is enabled, you will be required to enter the password every time before the system entering to the setup program of BIOS. The user can set this item through the Security Option in advanced BIOS properties. If the Security Option is set as System, the password will be required to be entered before both the system guides and entering to the setup program of BIOS. If it is set as Setup, the password will be required to be entered only before the system entering to the setup program of BIOS.

To delete the password, press <Enter> in the popped-up window that requires to enter the password. Then information for confirmation will appear on the screen to allow you decide whether the password will be disabled. Once the password is disabled, you can enter the setup program directly

without password when the system is restarted.

**Boot Sector Virus Protection.** This item is used for setting the alarm function in case of virus attack in IDE disk sector. If this item is set as Enable and some program writes information in the sector, BIOS will display alarm information on the screen and buzz.

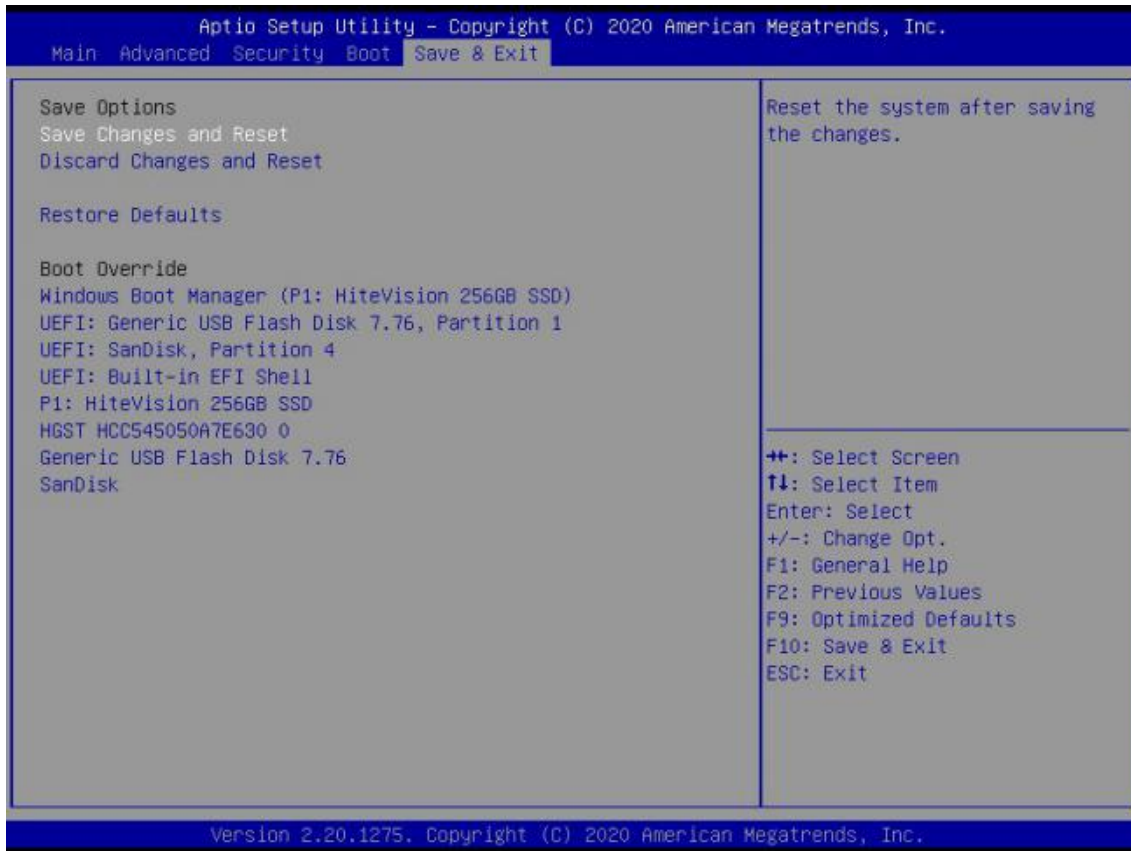
## 4.4 Boot Menu



Boot Item	Description
<b>Boot Configuration</b>	
<b>Setup Prompt Timeout</b>	This item is use to set the waiting time of entering the operation system. During the BIOS post, if user doesn't press the keyboard, it won't respond unless you reboot the BIOS. The Setup Prompt Timeout is 3s by default. You can set the time as you want.
<b>Bootup NumLock State</b>	Options are OFF and ON. In other words, this item can be used to set the state of Num Lock after entering the system. It can be set according to user's needs and doesn't affect the performance of the computer.

<b>Quiet Boot</b>	If this item is set as Enabled, the system can be started within five seconds and some detection items will be ignored. The options are [Disabled] and [Enabled].
<b>FIXED BOOT ORDER Priorities</b>	
<b>Boot Option #1</b>	The first boot device. If BIOS doesn't detect the first boot device, it will check the second boot device.
<b>Boot Option #2</b>	The second boot device.
<b>Boot Option #3</b>	The third boot device.
<b>Boot Option #4</b>	The fourth boot device.
<b>Boot Option #5</b>	The fifth boot device.
<b>Boot Option #6</b>	The sixth boot device.
<b>Boot Option #7</b>	The seventh boot device.
<b>Boot Option #8</b>	The eighth boot device.
<b>Boot Option #9</b>	The ninth boot device.
<b>Boot Option #10</b>	The tenth boot device.
<b>Boot Option #11</b>	The eleventh boot device.
<b>UEFI Hard Disk Drive BBS Priorities</b>	You can set and manage UEFI hard device after enabling this option.
<b>UEFI Application Boot Priorities</b>	You can set and manage UEFI hard disk after enabling this option.
<b>UEFI USB Drive BBS Priorities</b>	You can set and manage UEFI USB device after enabling this option.
<b>Hard Drive BBS Priorities</b>	You can set and manage legacy Hard disk device after enabling this option.
<b>USB Drive BBS Priorities</b>	You can set and manage legacy USB device after enabling this option.

## 4.5 Save & Exit



Save Exit Item	Description
<b>Save Options</b>	
<b>Save Changes and Reset</b>	Save all changes and exit
<b>Discard Changes and Reset</b>	Give up the settings and exit.
<b>Save Changes and Reset</b>	Reset the system after saving the changes.
<b>Discard Changes and Reset</b>	Reset system setup without saving any changes.
<b>Save Changes</b>	Save changes done so far to any of the setup options.
<b>Discard Changes</b>	Discard changes done so far to any of the setup options.
<b>Restore Defaults</b>	Recover it to default.
<b>Save as User Defaults</b>	Save the changes done so far as user default.
<b>Restore User Defaults</b>	Restore the user default to all the setup options.
<b>Boot Override</b>	Whole Boot devices

## 5. JAHC Introduction

JEHE Active Hardware Control (JAHC) management system includes both hardware Micro Control Unit (MCU) and software (JAHC Technology Manager). It can support following functions:

1. Automatically boot up when power on. It is controlled by the Micro Control Unit (MCU) chip.
2. Real Timer Controller (RTC) wake up: user can install the JAHC software to set up automatic startup and shutdown, one week as a circle.
3. Watchdog timer. It is a built-in API interface.
4. Infrared remote control (Optional IR controller).

### 5.1 How to set up Auto power on function

#### Automatically reboot when power on

The function of automatically reboot when power on is controlled by hardware. You can enable it by switching the JAHC button to “on”.

If you cannot find the physical switch on the player, then you can go into the BIOS to enable it by following steps:

- a. Turn on the player and continually press ‘Del’, then it can enter BIOS setup menu.

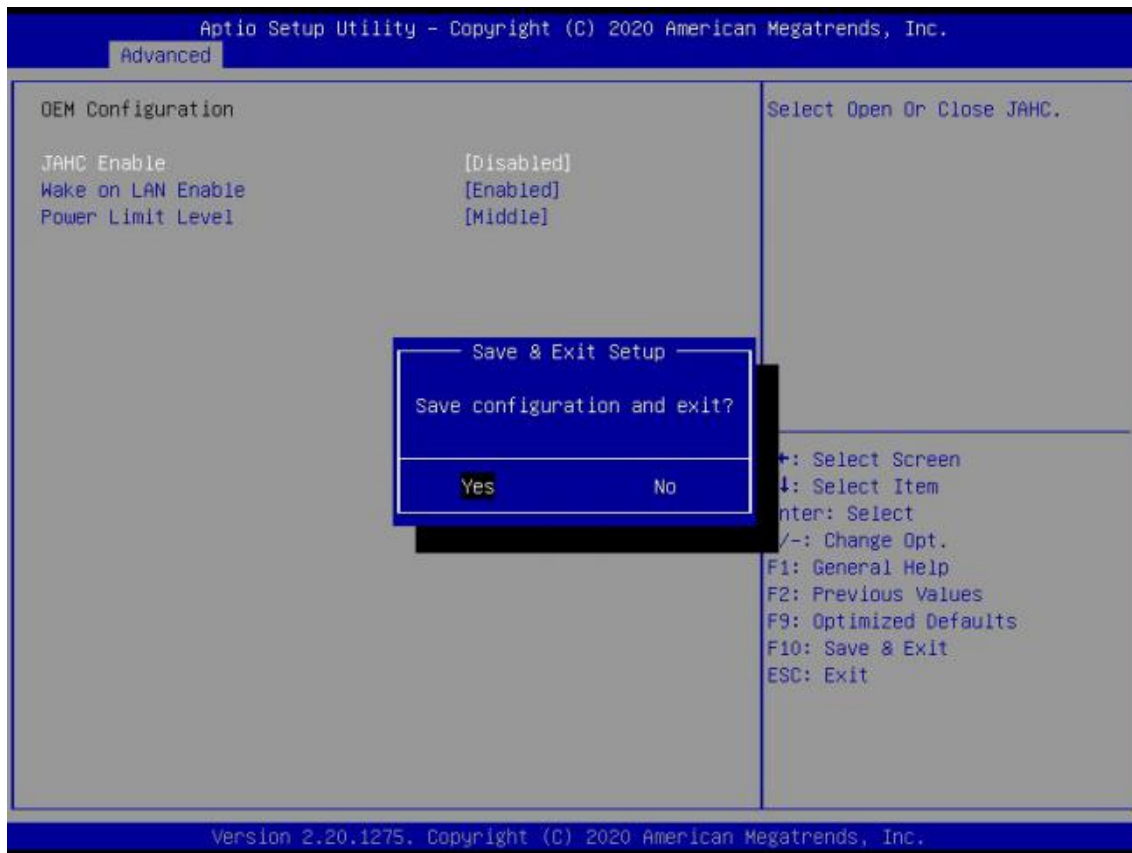


- b. Select Advanced-> OEM configuration-> JAHC Enable-> Enabled.



FIG (1)

c. Press 'F10' to save change & exit after select "JAHC enabled" option.



## 5.2 JAHC software

### 5.2.1 JAHC software functions

- RTC wake up. The user can set up automatic startup and shutdown, one week as a circle
- Caution message prior to shutdown to remind user to save the data. User can also choose to postpone the shutdown process.
- When JAHC is running, it can support reboot automatically when system is crashed. No additional settings needed.

### 5.2.2 JAHC software installation guide

#### System Requirements:

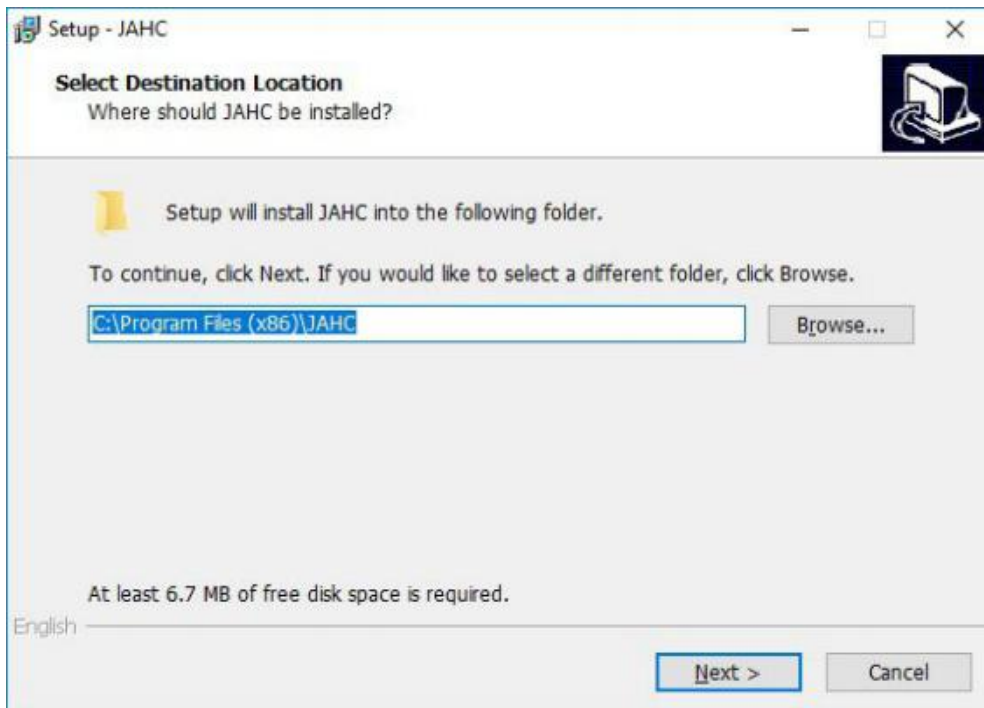
- Giada player with JAHC function.
- Switch the JAHC button to "on" or enable it in BIOS if there is no physical button on the chassis.
- Supported operation system: Windows 10 64bit, Linux 64bit.

#### How to install JAHC software:

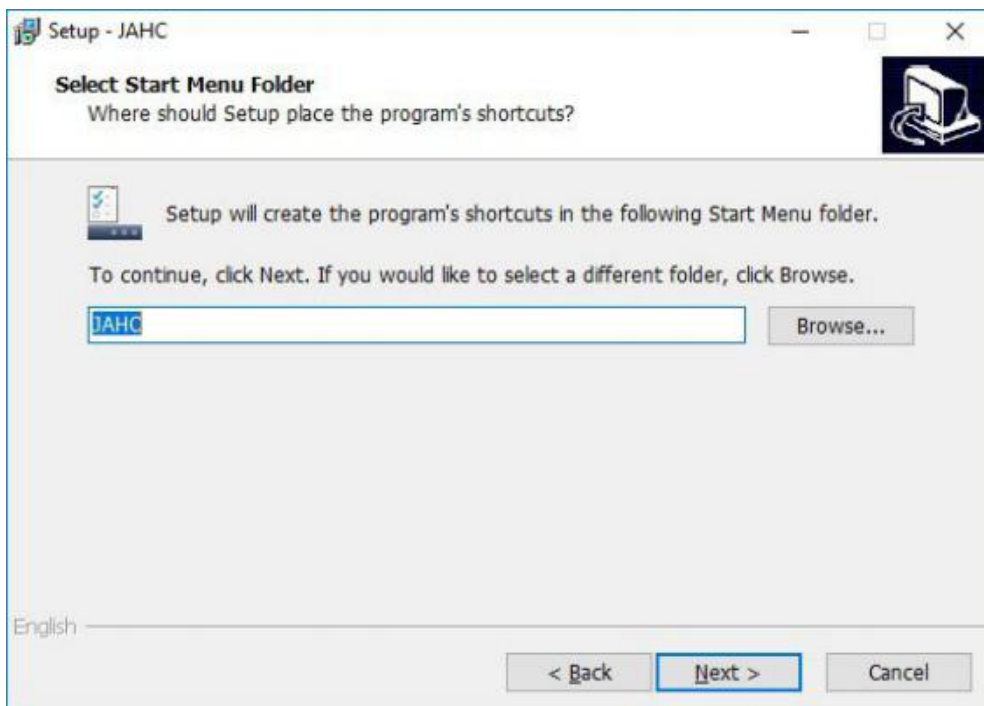
Please download the JAHC.EXE from Giada website: [www.giadatach.com](http://www.giadatach.com), then follow up below steps:

- Double-click the JAHC.EXE file, the setup wizard will pop up, select destination location and

click [Next] button to continue the installation.

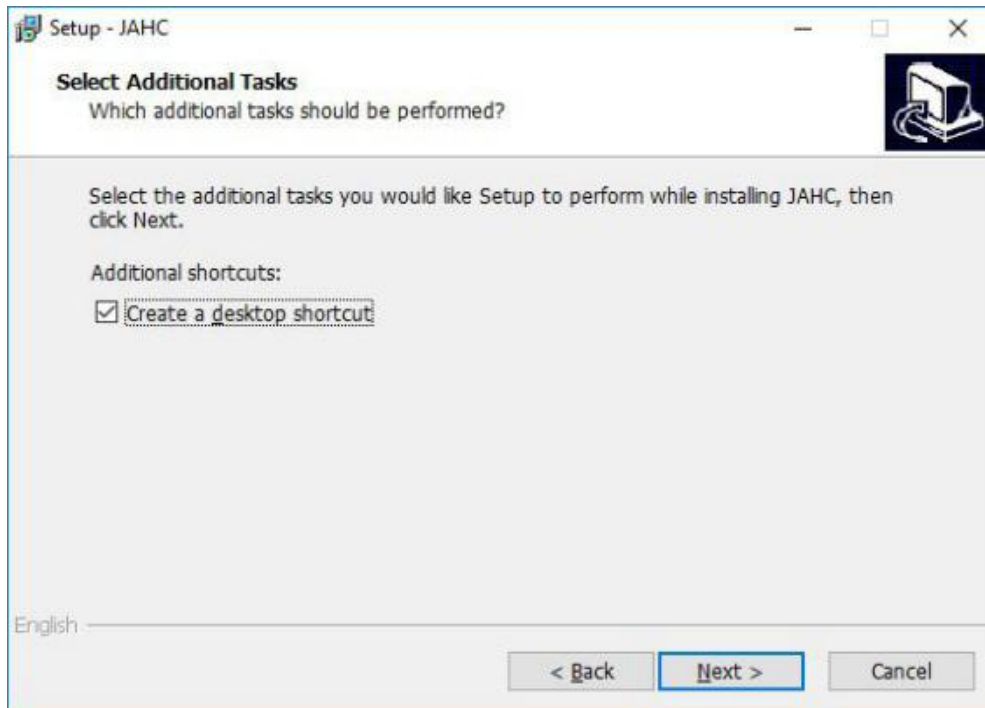


b. Click [Next] button to continue the installation.

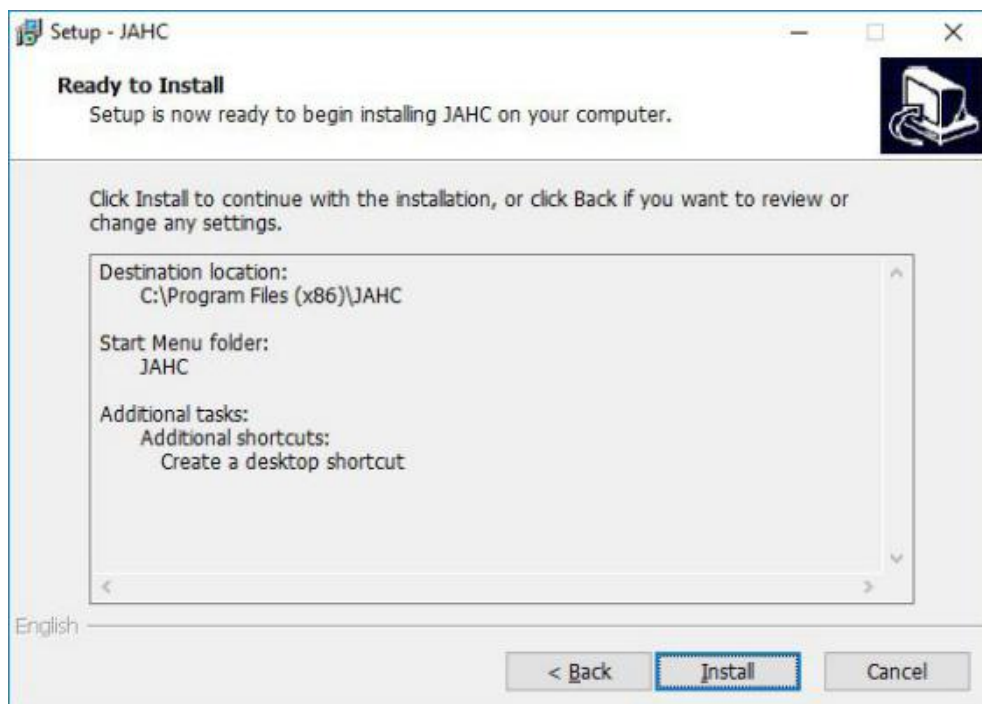


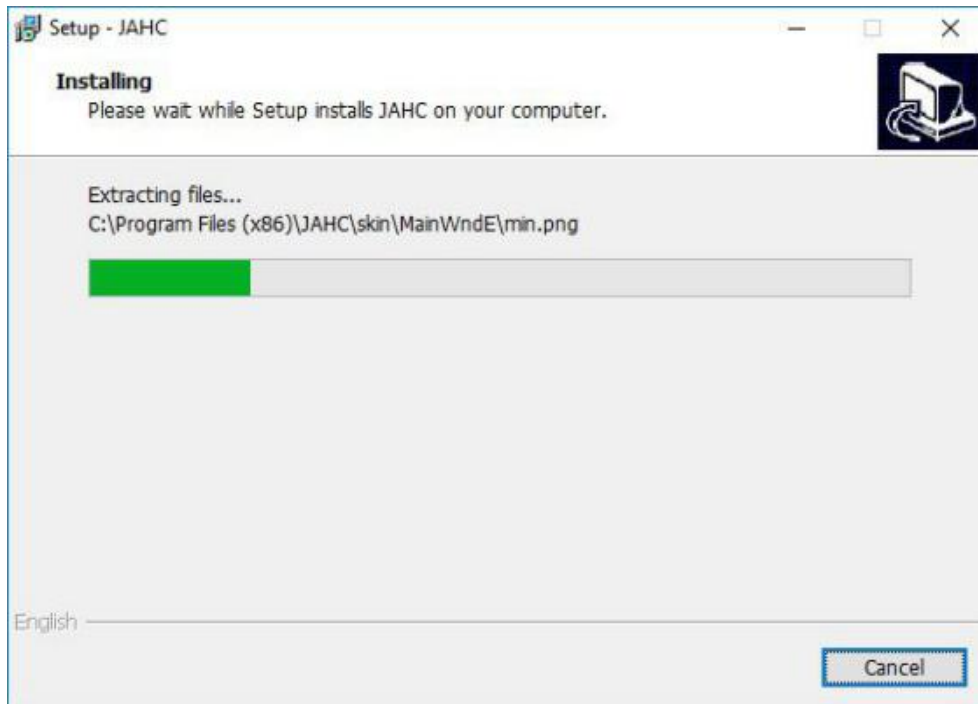
c. Select [Create a desktop shortcut] and click [Next] button.





d. Click [Install] button to continue the installation.





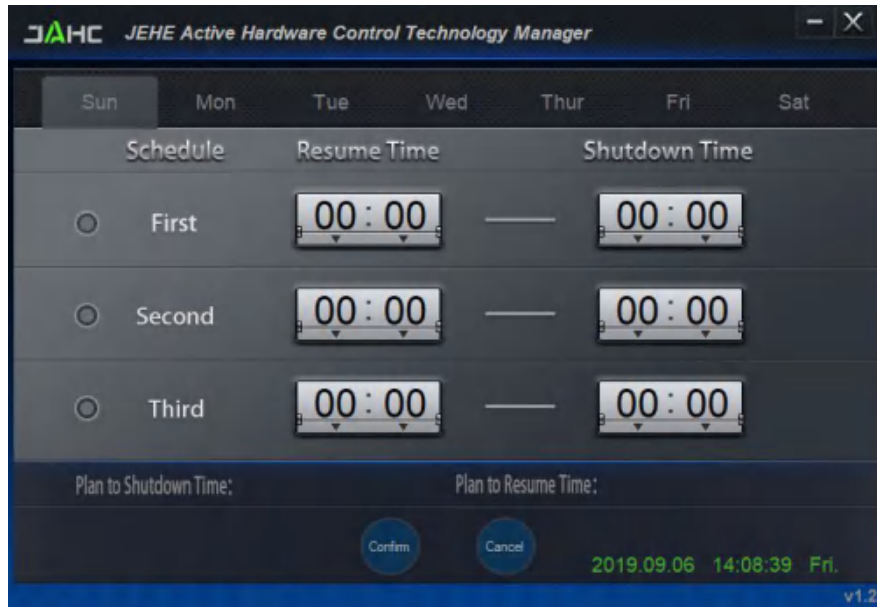
e. Click [Finish] button to finish the installation. You can select [Launch JAHC] to run the software automatically after finishing the installation.



Notice: The JAHC will be added into boot item when it is installed. It will start up when system boot up.

### 5.2.3 Startup & shutdown time setup

After install the JAHC software, double click the JAHC icon on taskbar and the setup menu will pop up.



One week as a circle, maximum 3 schedules per day. Select each schedule to set up the resume time and shutdown time. Click [Confirm] button to launch the schedule.

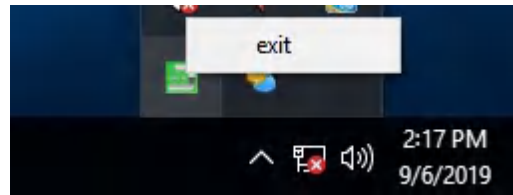


After finishing the setup, the menu window will notice the resume time and shutdown time.

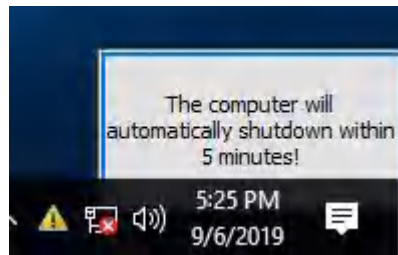
**⚠ Caution:** If the interval from shutdown time to next resume time is less than 3 minutes, the system will not shut down.

Click [Cancel] button to restore the time settings and cancel the shutdown status.

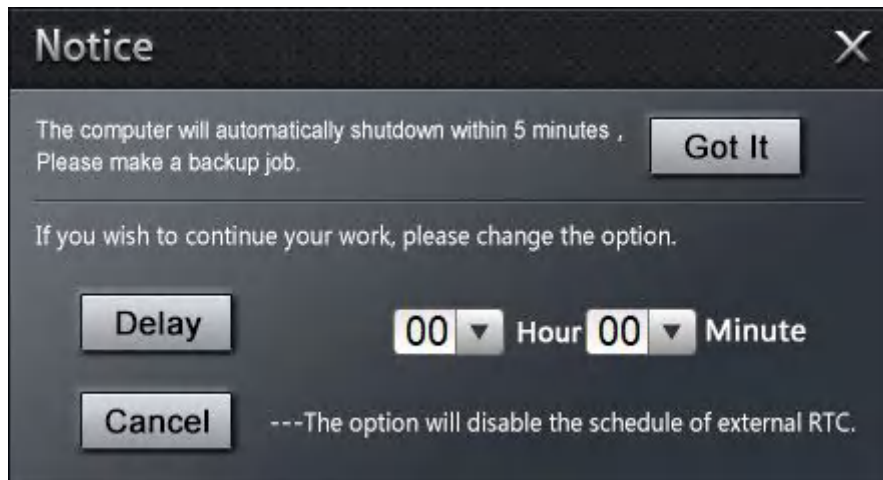
Click [X] button to hide the menu. You can find it on taskbar.  
Right click the JAHC icon on taskbar and select [exit] to exit the software.



Shutdown caution: the shutdown caution will pop up before the system shutdown.



You can double click the message window and a new dialog box will pop up.



You can click [Delay] button and set up the time to delay the shutdown or click [Cancel] button to cancel the shutdown.

### 5.3 Watchdog API and instruction

Please contact Giada FAE (email:support@giadatech.com) for watchdog API software and instruction.



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