Giada

www.giadatech.com

VM23 User Manual

Shenzhen JEHE Technology Development Co., Ltd.

Statement

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.

Contact Information

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Table of Contents

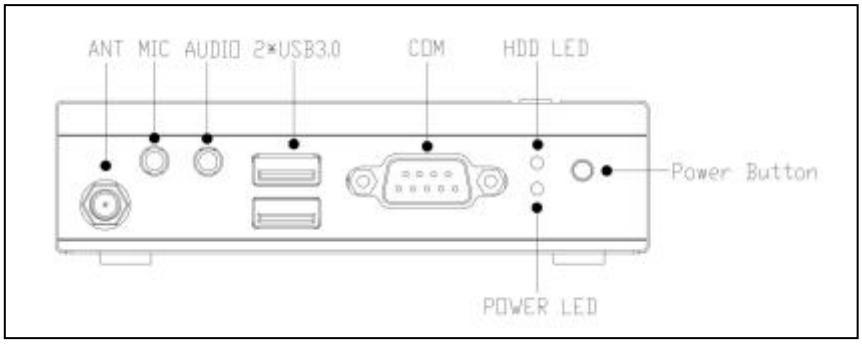
1. Product Introduction

Based on Intel® Apollo Lake, Giada VM23 adopts fanless design, onboard 2G or 4G memory, onboard Emmc storage. With one DP and one HDMI display outputs, it supports 4K resolution. The player is suitable to be applied in entry-level or middle range digital signage applications.

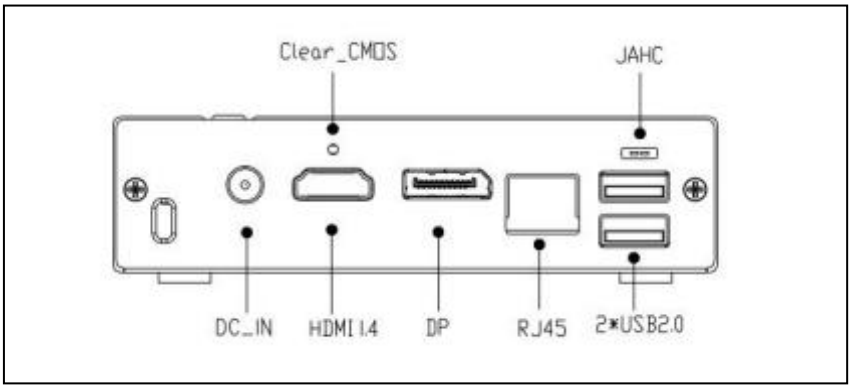
2. Interface Description and Hardware Specifications

2.1 Interface Description

Front I/O Port



Rear I/O Port



2.2 Hardware Specifications

VM23		VM23-F1-N335031E5G-GIA	VM23-F2-N345032E5G-GIA
Processor	**CPU**	Intel® Celeron N3350/N3450	
	Frequency	1.10GHz (Up to 2.40GHz)/1.10GHz (Up to 2.20GHz)	
	BIOS	AMI Source Code	
	Chipset	SOC	
Memory	**Type**	DDR3L-1866MHz	
	Socket	Onboard	
	Capacity	2GB/4GB	
Graphics	**GPU**	Intel® HD Graphic engine	
	Graphic Engine	Direct X12.0, OpenGL4.3, OpenCL2.0	
	DP	1 x DP（Max.4096 x 2304@60Hz）	
	HDMI1.4	1 x HDMI（Max.3840 x 2160@30Hz）	
Network	**Controller**	Realtek RTL8111H Gigabit Ethernet	
	Interface	1 x RJ45	
I/O Interface	**USB**	2 x USB 3.0, 2 x USB 2.0	
	Serial Port	1 x RS232	
	Audio	1 x MIC_IN，1x Audio OUT	
	Mini PCIe	1 x Full-size Mini-PCIe for mSATA	
	M.2 (2230)	1 x M.2（2230）for WiFi/BT	
Storage	**mSATA**	1 x Full-size mSATA	
	eMMC	Onboard 32GB eMMC	
JAHC	**JAHC**	Watchdog / Auto power on/IR Remote Control / RTC/Wake On Lan	
Operation System	**OS**	Windows 10（64-bit) / Linux	
Power	**Power Type**	DC-IN	
	Input Voltage	12V/2A	
Mechanical	**Construction**	Metal	
	Mounting	Desk/VESA Mounting（JC530）	
	Dimension (W x D x H)	116.6mm x 107.4mm x 30 mm	
	Color	Black	
Environment	**Operating Temperature**	0-40℃ at 0.7m/s Air Flow	
	Relative Humidity	95%@40℃ (non-condensing)	
Certification		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 four screws and remove the bottom cover. (M.2 slot for WIFI and mini PCIE slot for MSATA are on this side)

3.1 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.

3.2 MSATA Installation

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

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 setting 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 Figure1.

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.

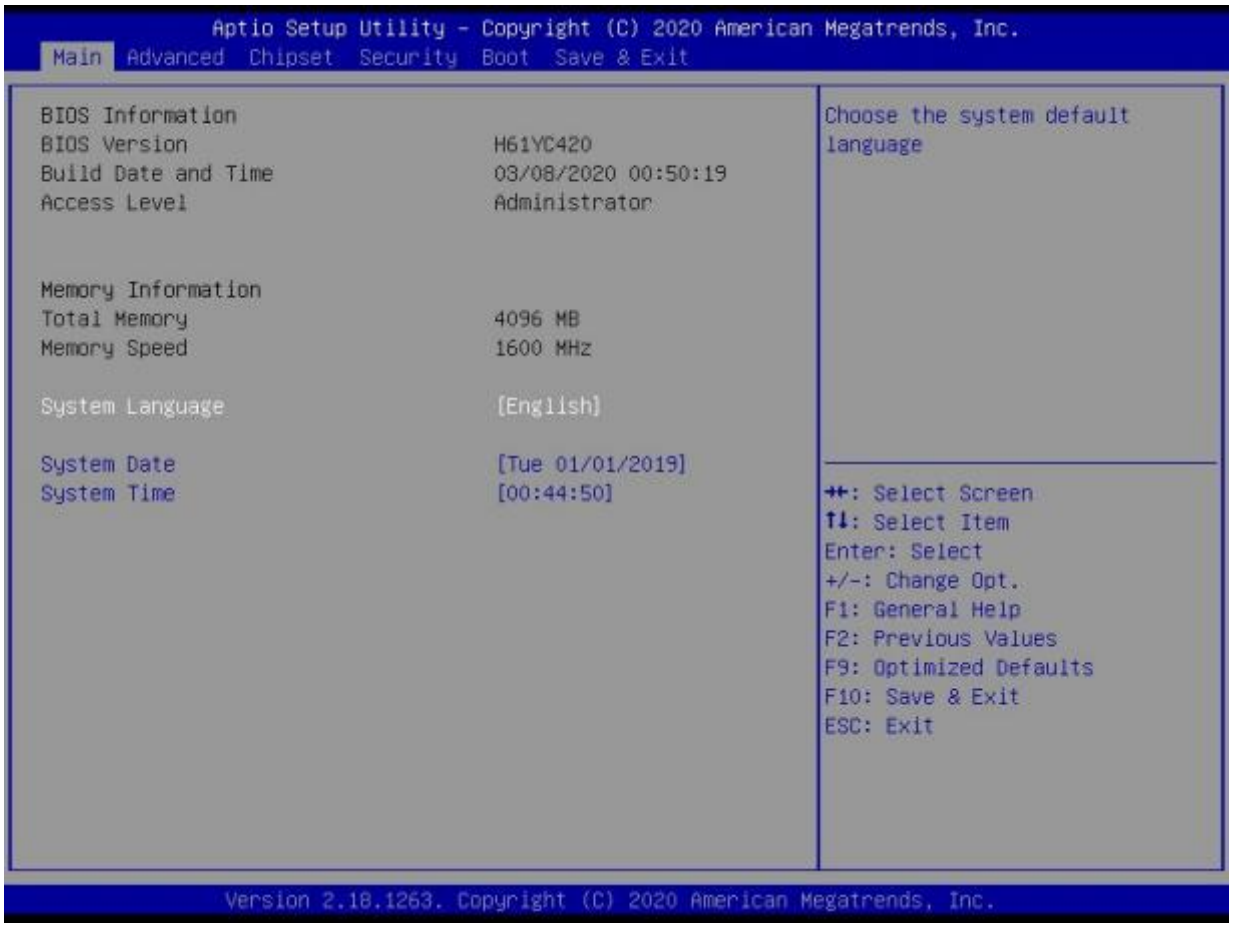


Fig 1

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）Chipset

4) Security (set the administrator/user password)

5) Boot (startup configuration characteristics)

6) 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)

4.2.1Trusted Computing

4.2.2 ACPI Settings

ACPI Menu	Description
Enable ACPI Auto Configuration	Enables or Disables BIOS ACPI auto configuration.
Enable Hibernation	Enables or disables system ability to Hibernate (OS/S4 Sleep). This option may be not effective with some OS.
ACPI Sleep State	Select the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
Lock Legacy Resources	Enabled or disabled lock of legacy resources.

4.2.3 Super IO Hardware Monitor

Super IO Hardware Monitor Menu	Description
PC Health Monitor Status	PC Health Monitor Status
System temperature2	The Current System temperature2.

4.2.4 Wake Configuration

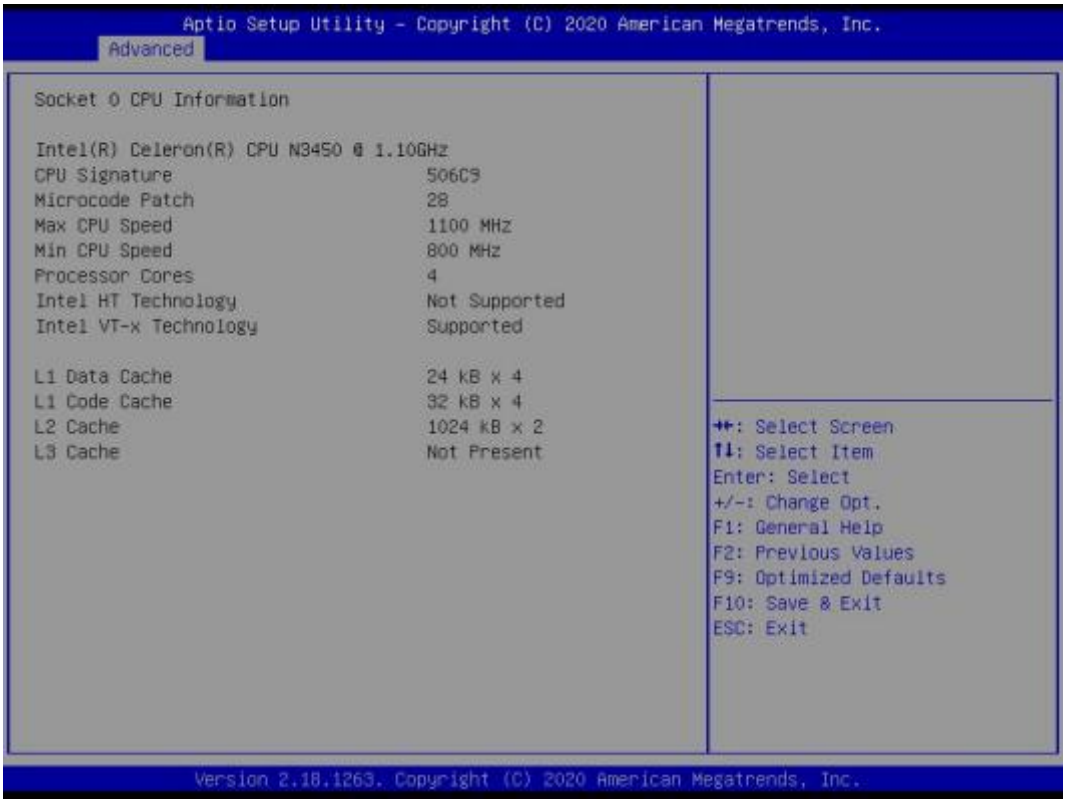
Wake Configuration Menu	Description
JAHC Switch	JEHE Active Hardware Control (JAHC) management system includes both hardware Micro Control Unit (MCU) and software (JAHC Technology Manager). ● Disabled: The JAHC is disable by default. ● Enabled.
Wake system from RTC	Enable or disable System wake on alarm event. Select FixedTime, system will wake on the hr::min::sec specified. Select DynamicTime, system will wake on the current time + Increase minute(s).
Wake On USB	Enabled or Disabled Wake Up by USB KB/MOUSE from S3 Status. ● Disabled: the wake on USB is disabled by default. ● Enabled.
Wake On LAN	Wake On LAN Function. ● Disabled: the WOL is disabled by default. ● Enabled.

4.2.5 CPU Configuration

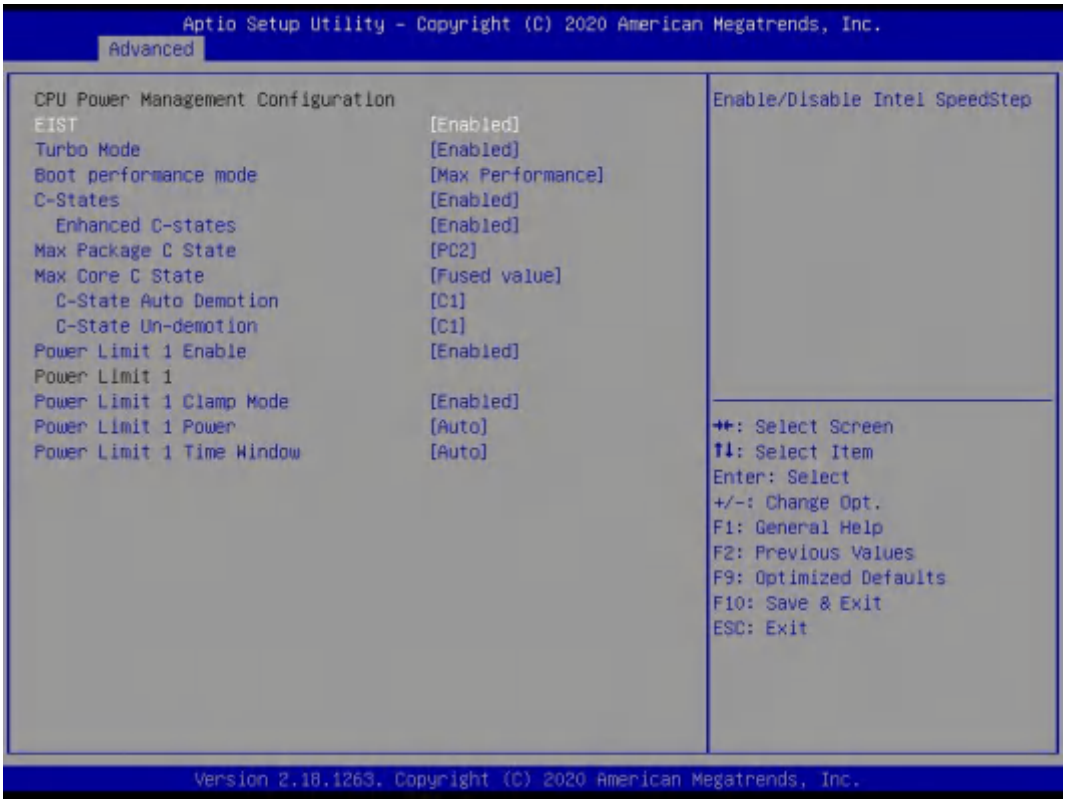
CPU Configuration Menu	Description
Socket 0 CPU Information	Socket specific CPU information.
CPU Power Management	CPU Power Management
Intel Virtualization Technology	Intel Virtualization Technology is enabled by default. User can enable and disable the Intel Virtualization Technology function.
VT-d	Intel® Virtualization Technology for Directed I/O
Bi-directional PROCHOT	When a processor thermal sensor trips (either core), the PROCHOT# will be driven. If bi-direction is enabled, external agents can drive PROCHOT# to throttle the processor.
Thermal Monitor	Enable/Disable Thermal Monitor. ● Enabled. This item is enabled by default. ● Disabled.
Monitor Mwait	Enable/Disable Monitor Mwait. ● Enabled. This item is enabled by default. ● Disabled. ● AUTO.

CPU Configuration Menu	Description
P-STATE Coordination	The user can set the CPU P-States by P-STATE Coordination. ● HW_ALL. Enable hardware to support P-STATES. This item is enabled by default. ● SW_ALL. Enable software to support P-STATES ● SW_ANY. Disabled P-STATE Function.
DTS	This item is CPU digital thermal sensor.

4.2.5.1 Socket 0 CPU Information



4.2.5.2 CPU Power Management

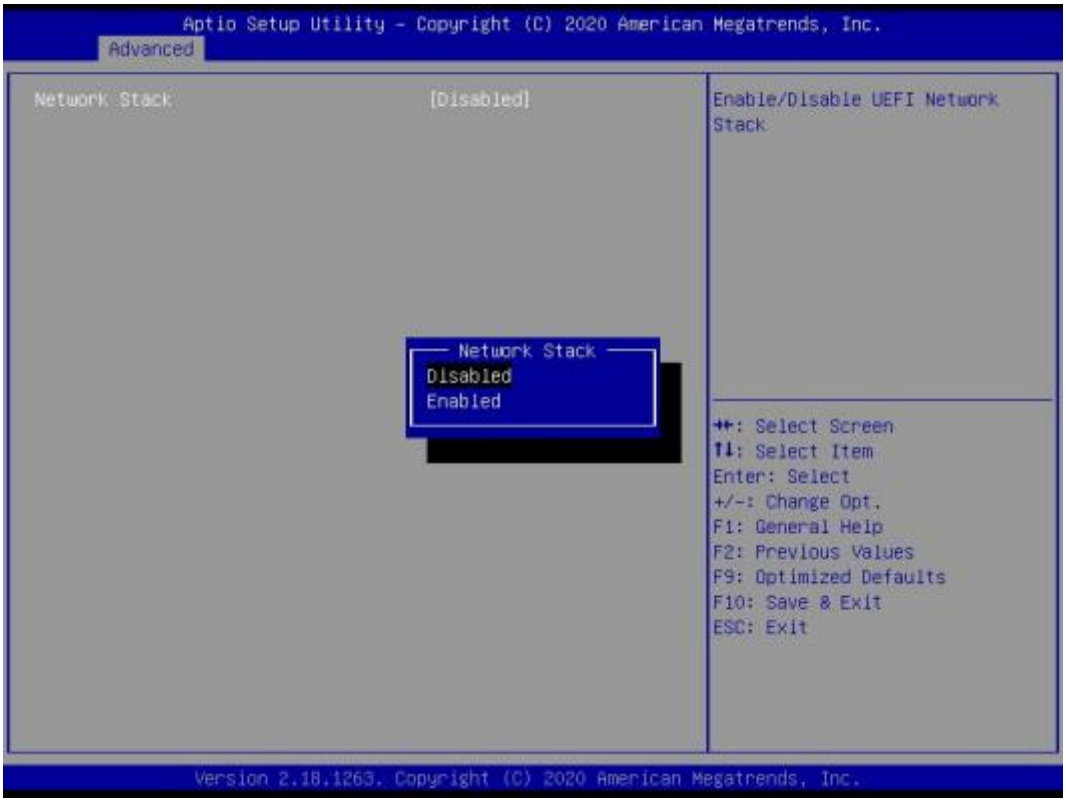


CPU Configuration menu	Description
CPU Power Management	
EIST	Enable/Disable Intel SpeedStep.
Turbo Mode	Turbo Mode
Boot performance mode	Select the performance state that the BIOS will set before OS handoff.
C-states	Enable/Disable Intel C States.
Enhanced C-states	Enable/Disable when enabled, PU will switch to minimum speed when all cores entre C-State.
Power Limit 1 Enable	Enable/Disable Power Limit 1.
Power Limit 1 Power	Power Limit 1 in watts. Auto will program power Limit 1 based on silicon default support value.

4.2.6 AMI Graphic Output Protocol Policy

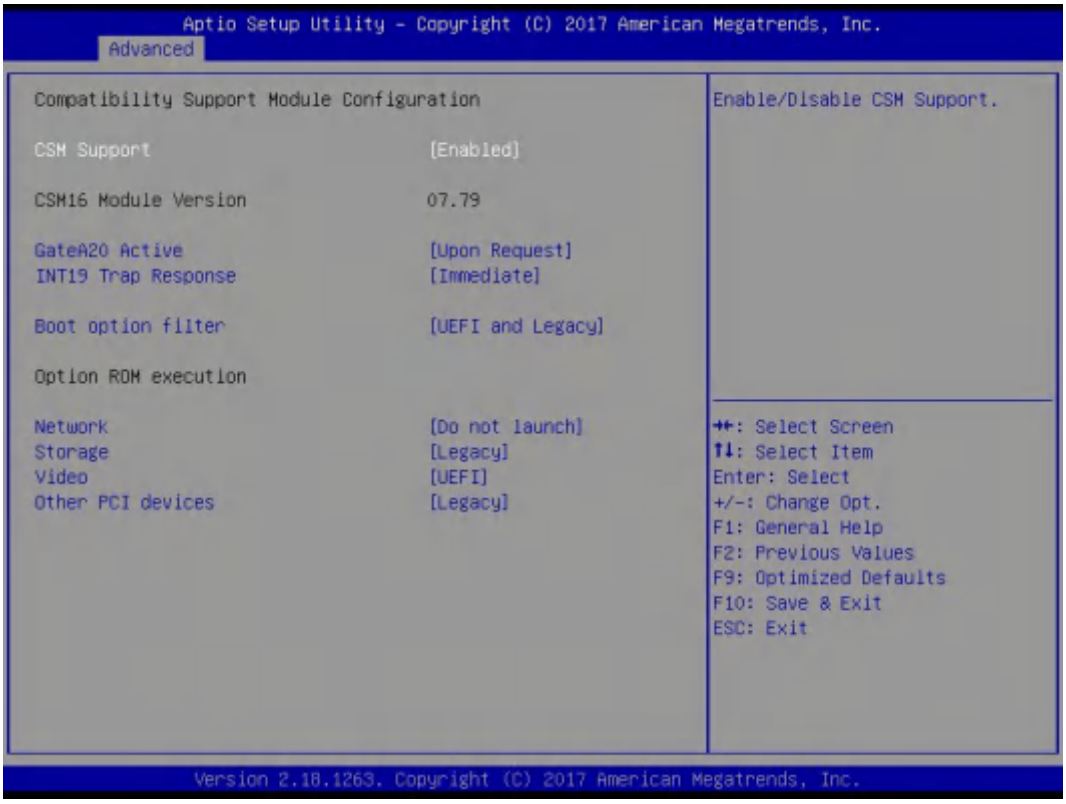
Graphic Output Protocol Policy Menu	Description
Output Select	User select monitor output by graphic output protocol.

4.2.7 Network Stack Configuration



Network stack Menu	Description
Network Stack	This item can enable and disable UEFI network stack.
Ipv4 PXE Support	The user can enable or disable IPV4 PXE Boot support. ● Enabled. ● Disabled.IPV4 PXE support is disabled by default.
Ipv4 HTTP Support	The user can enable and disable IPV4 PXE Boot support. ● Enabled. ● Disabled. IPV4 HTTP support is disabled by default
Ipv6 PXE Support	The user can enable or disable IPV4 PXE Boot support. ● Enabled. ● Disabled.IPV6 PXE support is disabled by default.
Ipv6 HTTP Support	The user can enable and disable IPV4 PXE Boot support. ● Enabled. ● Disabled. IPV6 HTTP support is disabled by default
PXE boot wait time	● It means wait time to press ESC key to abort the PXE boot.
Media detect count	● Number of time presence of media will be checked.

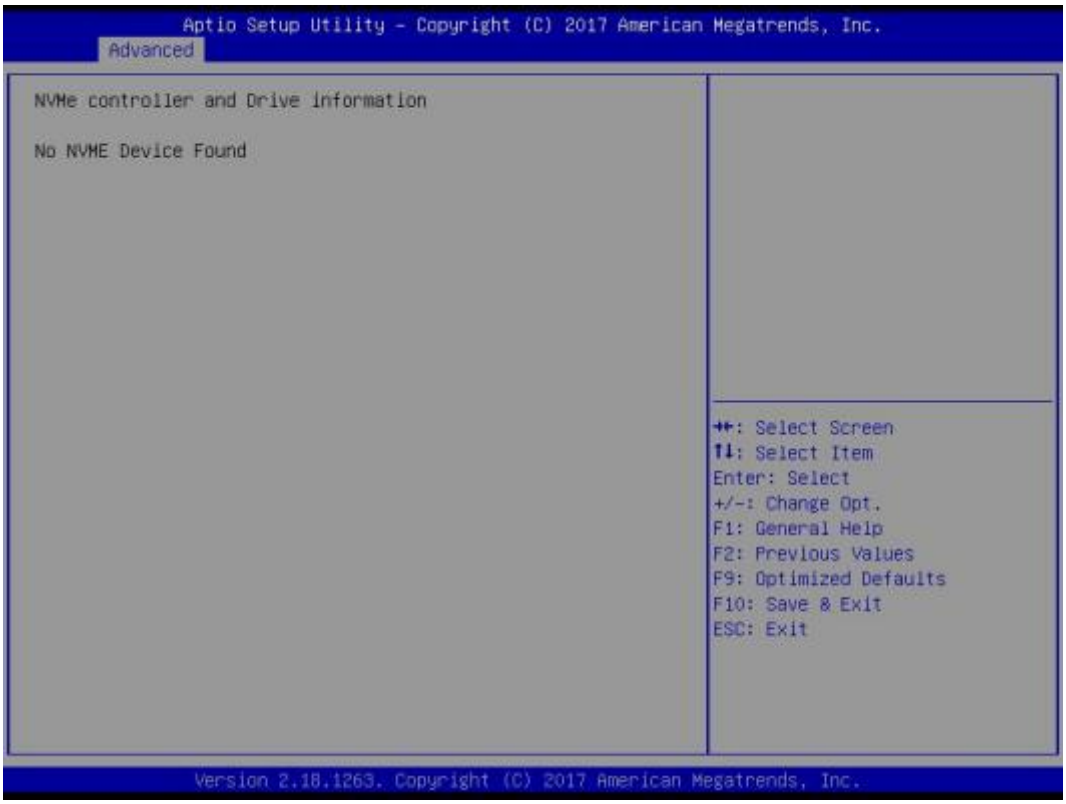
4.2.8 CSM Configuration



Advanced Menu	Description
compatibility support Module Configuration	
CSM Support	● Enabled: the CSM support function is enabled by default. ● Disabled.
GateA20 Active	● UPON REQUEST: GA20 can be disabled using BIOS services. ● ALWAYS: do not allow to disable GA20; this option is useful when any RT code is executed above 1MB.
INT19 Trap Response	● BIOS reaction on INT19 trapping by option ROM; ● IMMEDIATE. Execute the trap right away; ● POSTPONED. Execute the trap during legacy boot.
Boot option filter	● UFEI and Legacy: it will support both UEFI and legacy mode. ● Legacy only: it only supports legacy mode. ● UEFI only: it only supports UEFI mode.
Option ROM execution	

Advanced Menu	Description
Network	Network ROM Boot. ● Do not launch: Do not Boot. ● UEFI: It will support UEFI mode network ROM. ● Legacy: It will support legacy mode network ROM.
Storage	Storage ROM Boot. ● Do not launch: Do not Boot. ● UEFI: It will support UEFI mode storage ROM. ● Legacy: It will support legacy mode storage ROM.
Video	Video ROM Boot. ● UEFI: It will support UEFI mode Video ROM. ● Legacy: It will support Legacy mode Video ROM.
Other PCI devices	● Do not launch: Do not Boot. ● UEFI: It will support UEFI mode PCI ROM. ● Legacy: It will support Legacy mode PCI ROM.

4.2.9 NVME Configuration



4.2.10 SDIO Configuration

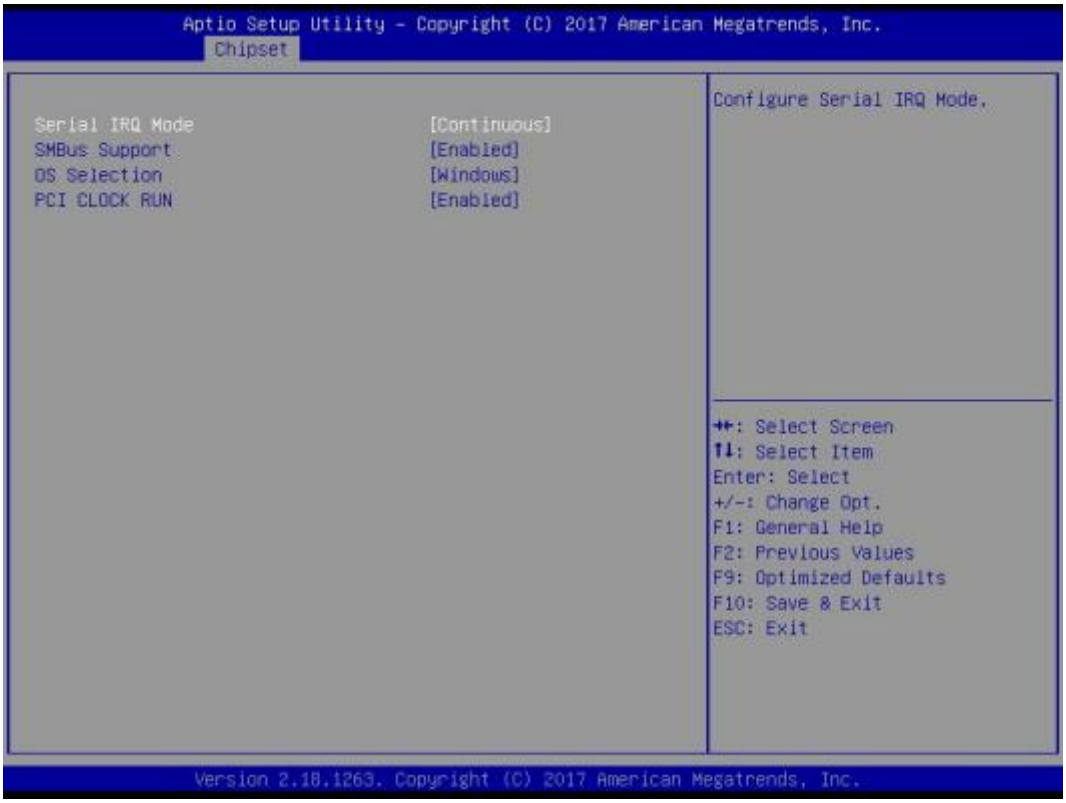
Graphic Output Protocol Policy Menu	Description
Output Select	● Auto option: Access SD device in DMA mode if controller supports it, otherwise in PIO mode. ● DMA Option: Access SD device in DMA mode. ● PIO Option: Access SD device In PIO mode.

4.3 Chipset

4.3.1 North Bridge

Chipset menu	Description
North Bridge Configuration	
Max TOLUD	Maximum value of TOLUD(Top of Low Usable Dram) for GPU ● 2 GB. The value TOLUD is 2GB by default.
Above 4GB MMIO BIOS assignment	Enable/Disable above 4GB momoryMappDIO BIOS assignment. This is disabled automatically when aperture size is set to 2048MB.
PCIE VGA Workaround	Enable it if your PCIE card cannot boot to MS-DOS. This is for test only.

4.3.2 South Bridge

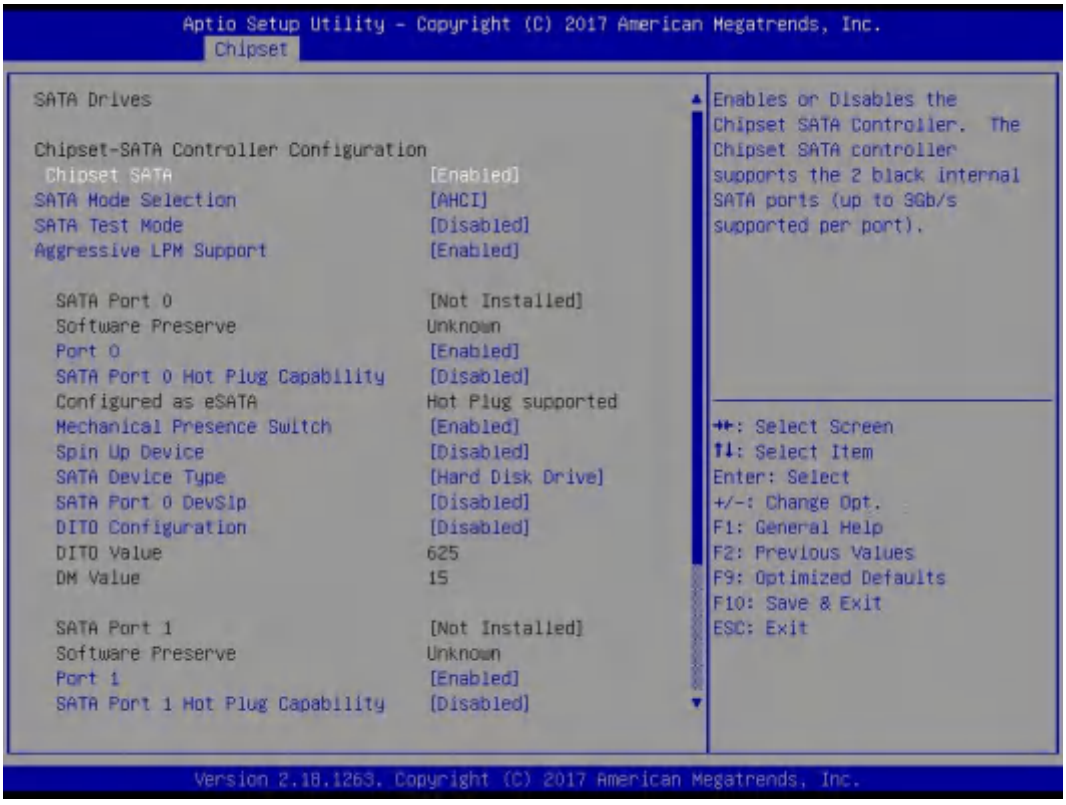


Chipset menu	Description
South Bridge Configuration	
Serial IRQ Mode	Configure Serial IRQ Mode
SMBUS Support	Enable/Disable SMBUS Support.
OS Selection	The user can set the target OS(Android or windows) as needs. ● Windows. The OS selection is windows by default.

Chipset menu	Description
PCI CLOCK RUN	Enables CLKRUN# logic to stop PCI clocks.

4.3.3 South Cluster Configuration

4.3.3.1 SATA Drivers Configuration

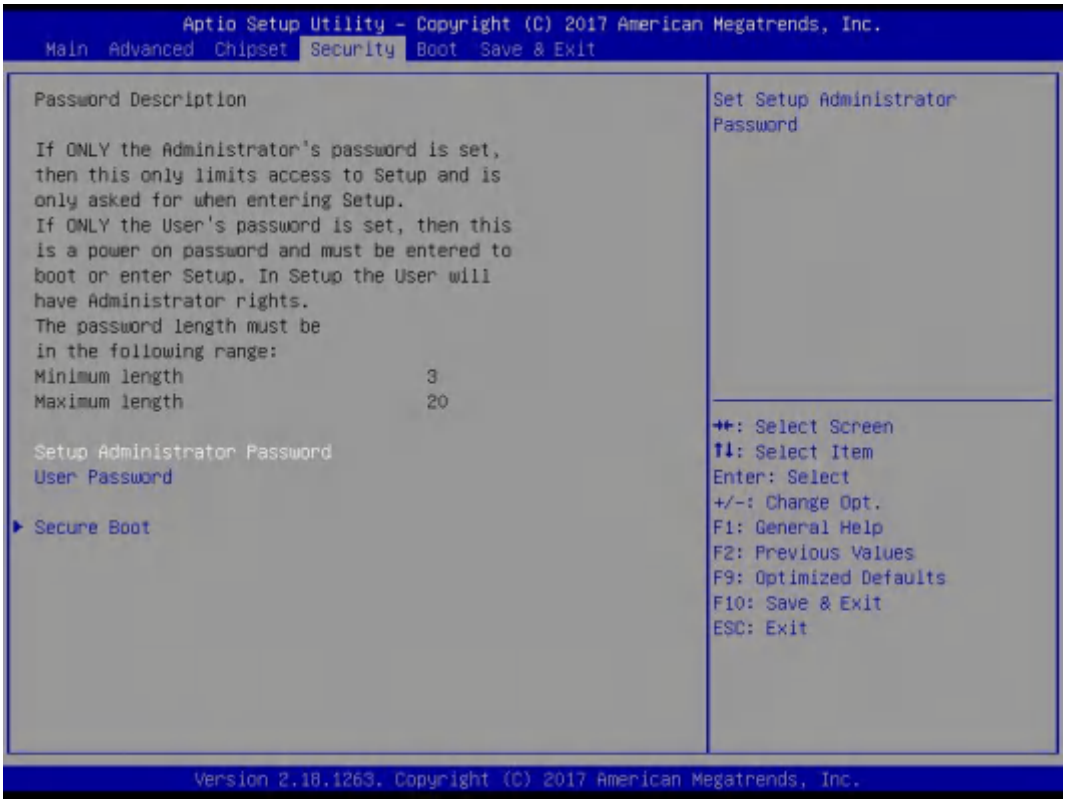


Options	Description
SATA Drivers Configuration	
Chipset SATA	This item can enable or disable the chipset SATA controller. The chipset SATA controller support the 2 black internal SATA ports (up to 3Gb/s supported per port).
SATA Mode Selection	The user can determine how SATA controller(s) operate. It can support AHCI and RAD mode. This item is AHCI mode by default.
SATA Test Mode	Test mode enable/Disabled.
Aggressive LPM Support	The user can enable PCH to aggressively enter link power state. ● Enabled. This item is enabled by default. ● Disabled.
Miscellaneous Configuration	
State After G3	State After G3 means after restore power supply. ● S5 State (Default): If set it as S5 State, it means the system will remain shutdown state ● S0 State: If set it as S0 State, it means the system will be power on automatically. ● Last State: If set it as Last State, it means the system will keep State of last setup.

4.3.3.2 Miscellaneous Configuration

Options	Description
SATA Drivers Configuration	
State After G3	State After G3 means after restore power supply. ● S5 State (Default): If set it as S5 State, it means the system will remain shutdown state ● S0 State: If set it as S0 State, it means the system will be power on automatically. ● Last State: If set it as Last State, it means the system will keep State of last setup.

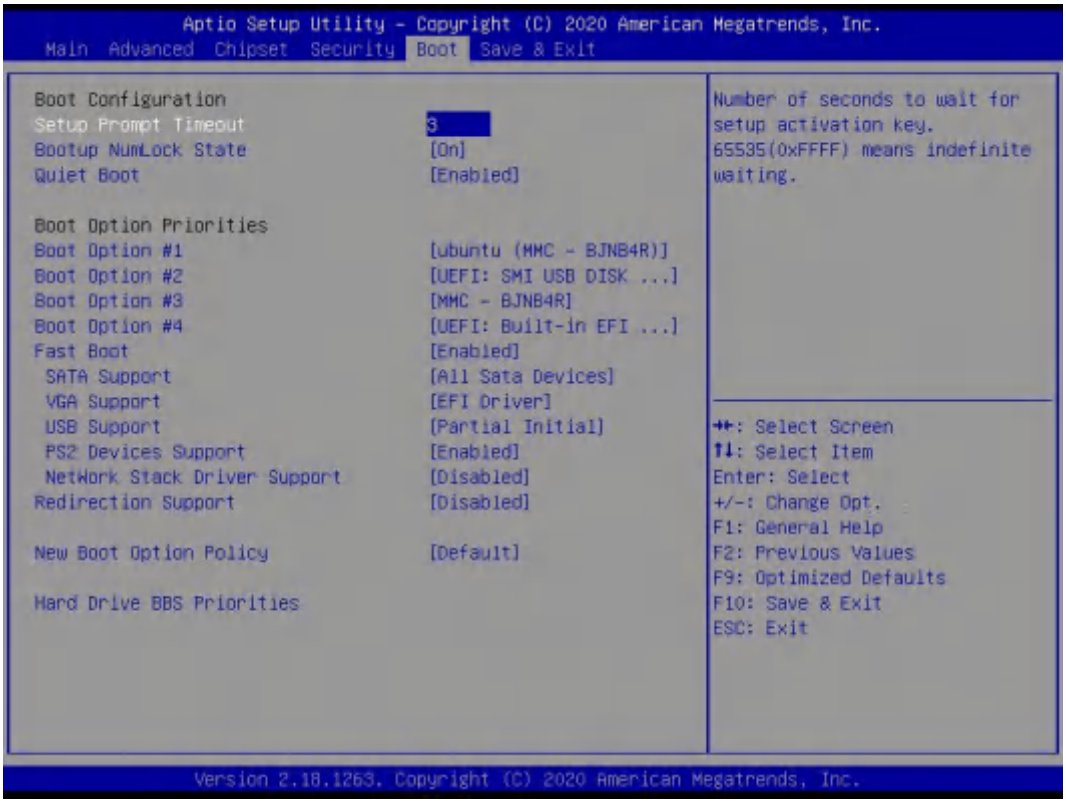
4.4 Security



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.

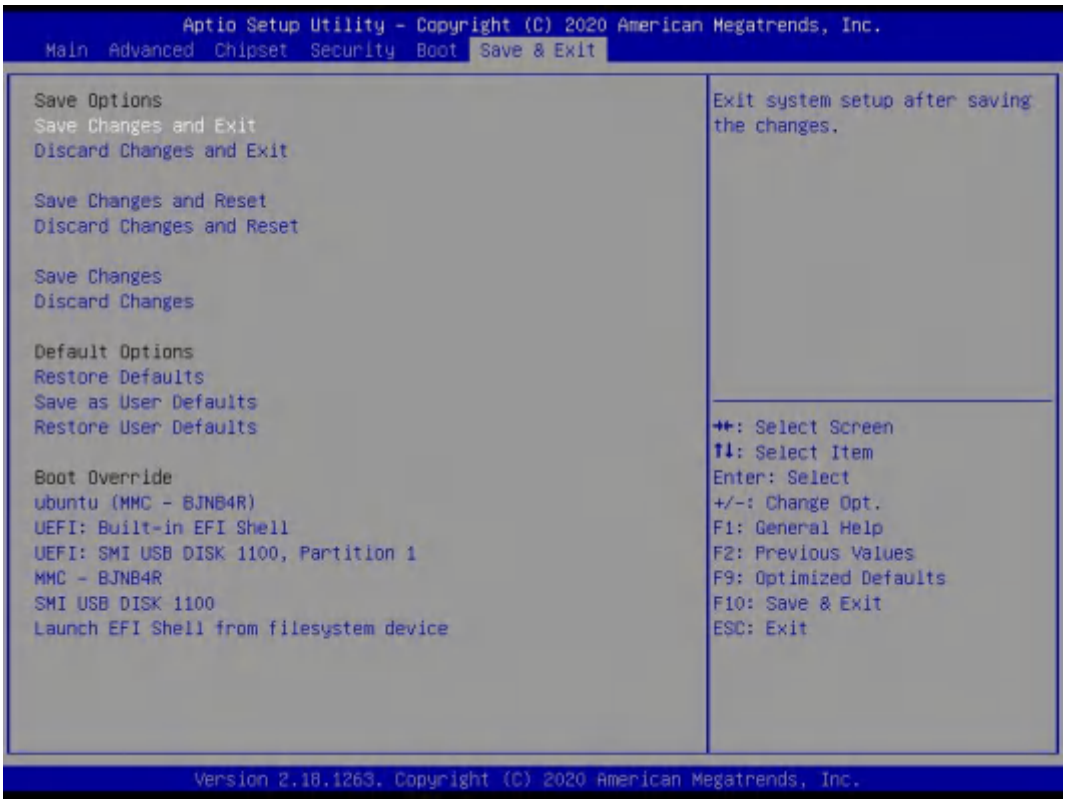
4.5 Boot Menu



Boot Item	Description
Boot Configuration	
Setup Prompt Timeout	This item is use to set the wait 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.
Bootup NumLock State	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.
Quiet Boot	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].
BOOT ORDER Priorities	
Boot Option #1	The first boot device. If BIOS doesn't detect the first boot device, it will check the second boot device.
Fast Boot	Most probes are skipped to reduce time cost during boot.

Boot Item	Description
Hard Drive BBS Priorities	You can set and manage legacy Hard disk device after enabling this option.

4.6 Save & Exit



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

5. JAHC Introduction

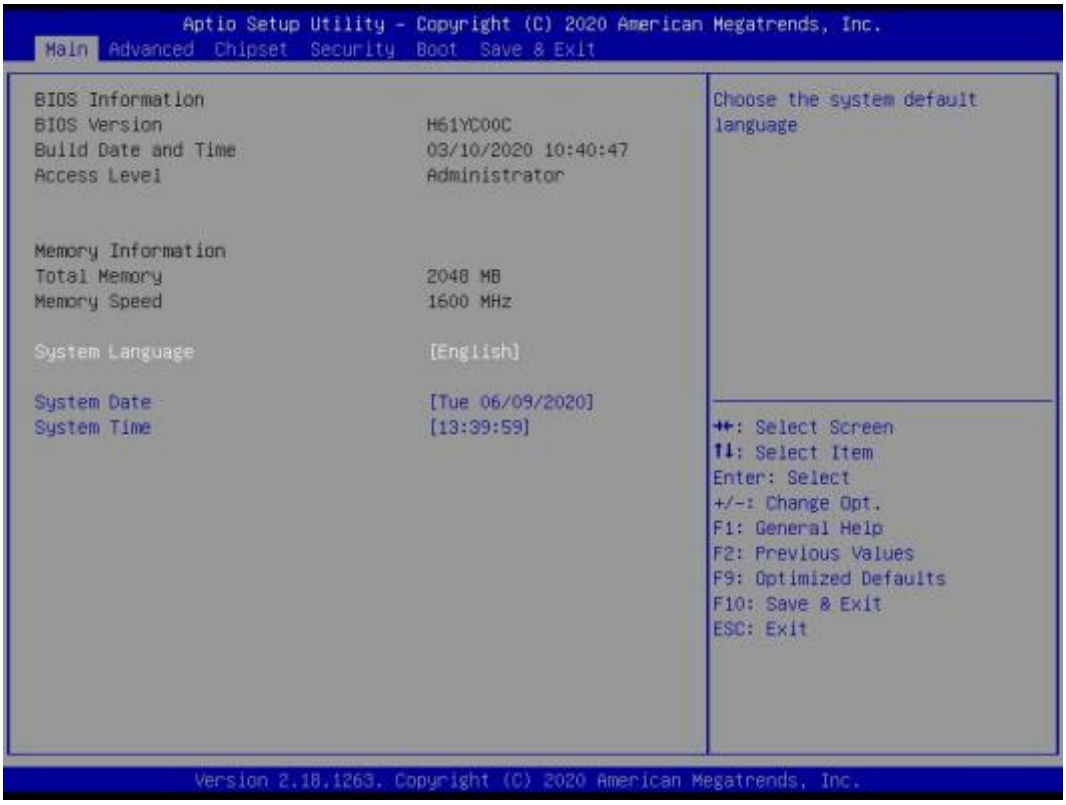
JEHE Active Hardware Control (JAHC) management system includes both hardware Micro Control Unit (MCU) and software (JAHC Technology Manager). It can support following functions:
1. Automatically boot up when power on. It is controlled by the Micro Control Unit (MCU) chip.
2. Real Timer Controller (RTC) 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

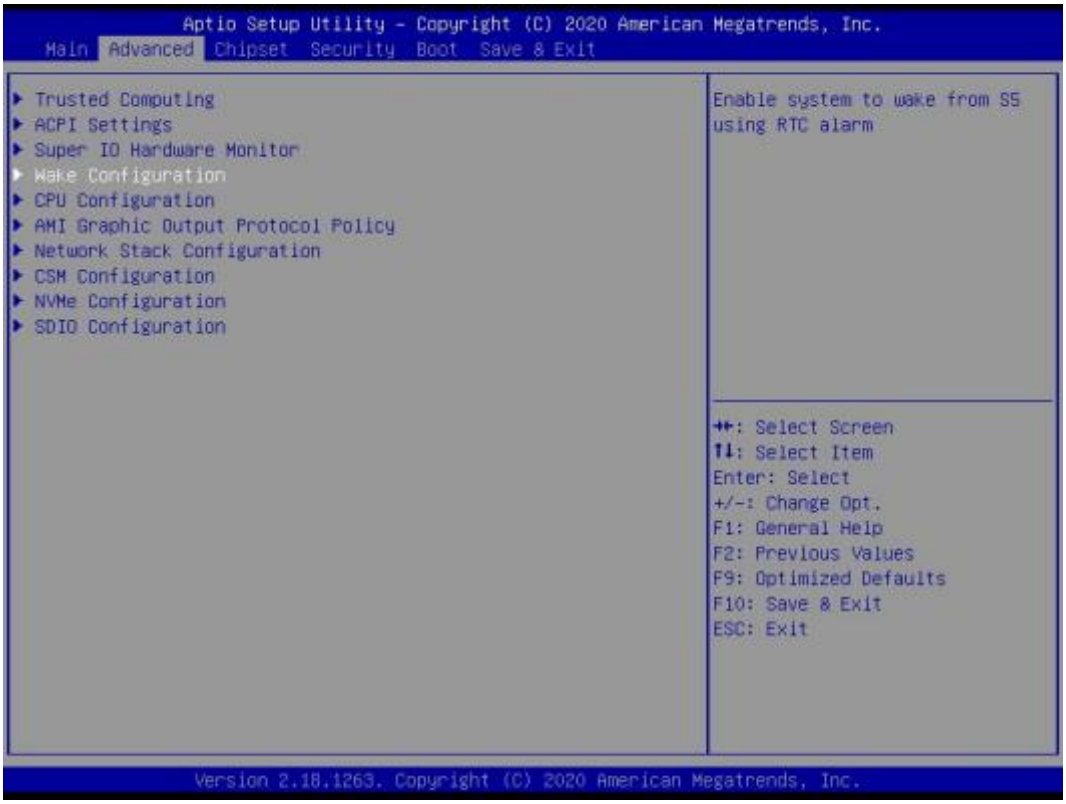
Automatically reboot when power on

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- >Wake Configuration- > JAHC Enable- > Enabled.



c. Press ‘F10’ to save change & exit after select “JAHC enabled” option

5.2 JAHC software

5.2.1 JAHC software functions

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

5.2.2 JAHC software installation guide

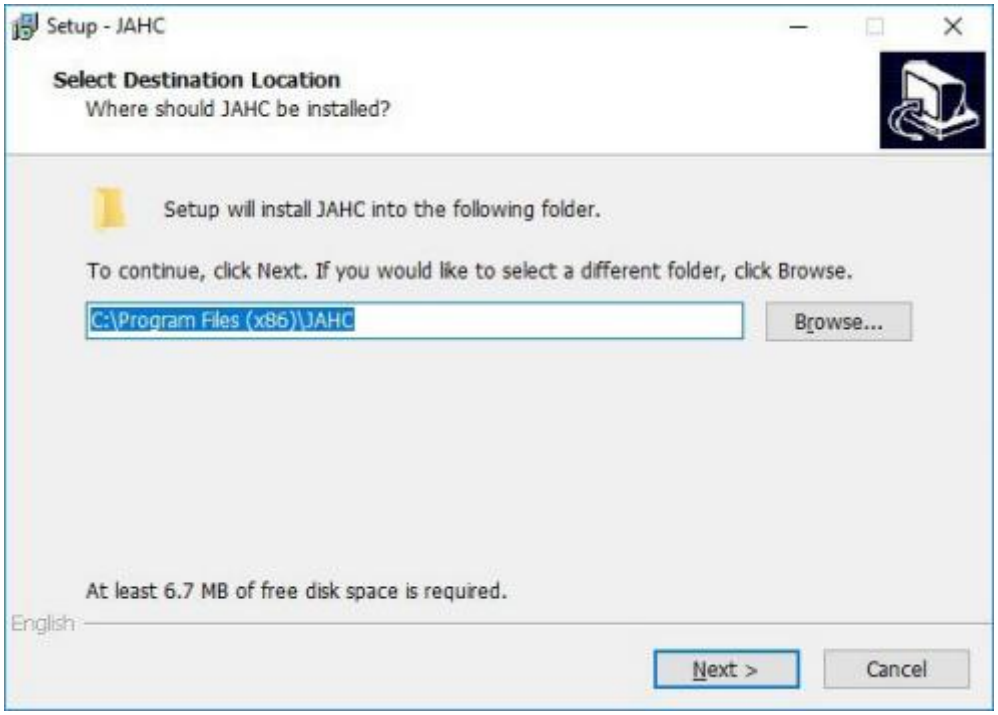
System Requirements:

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

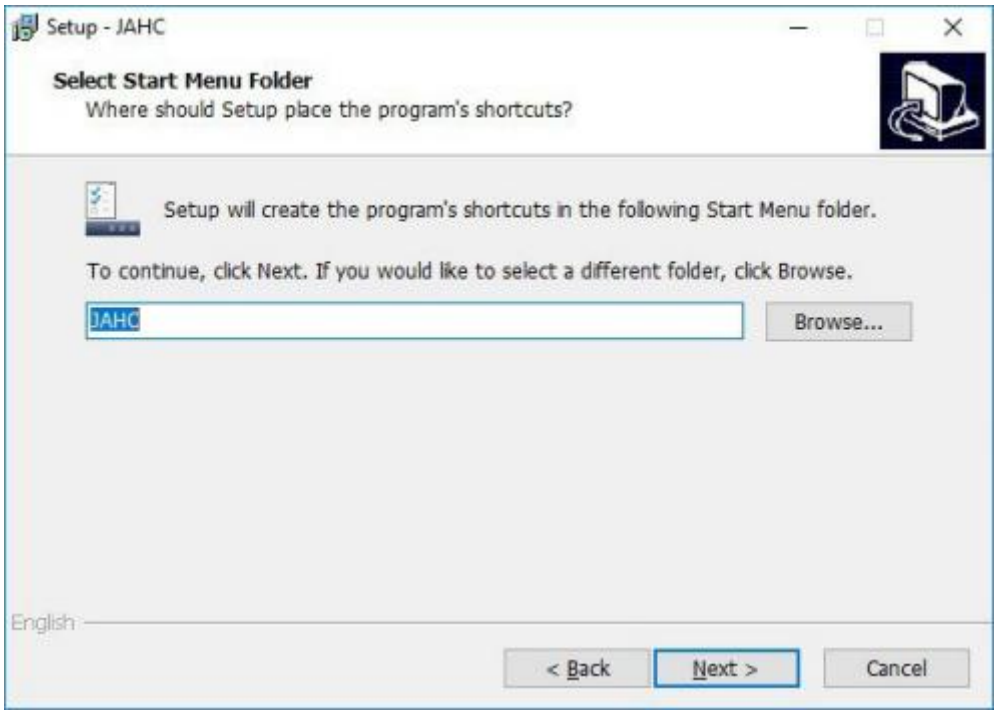
How to install JAHC software:

Please download the JAHC.EXE from Giada website: www.giadatech.com, then follow up below steps:

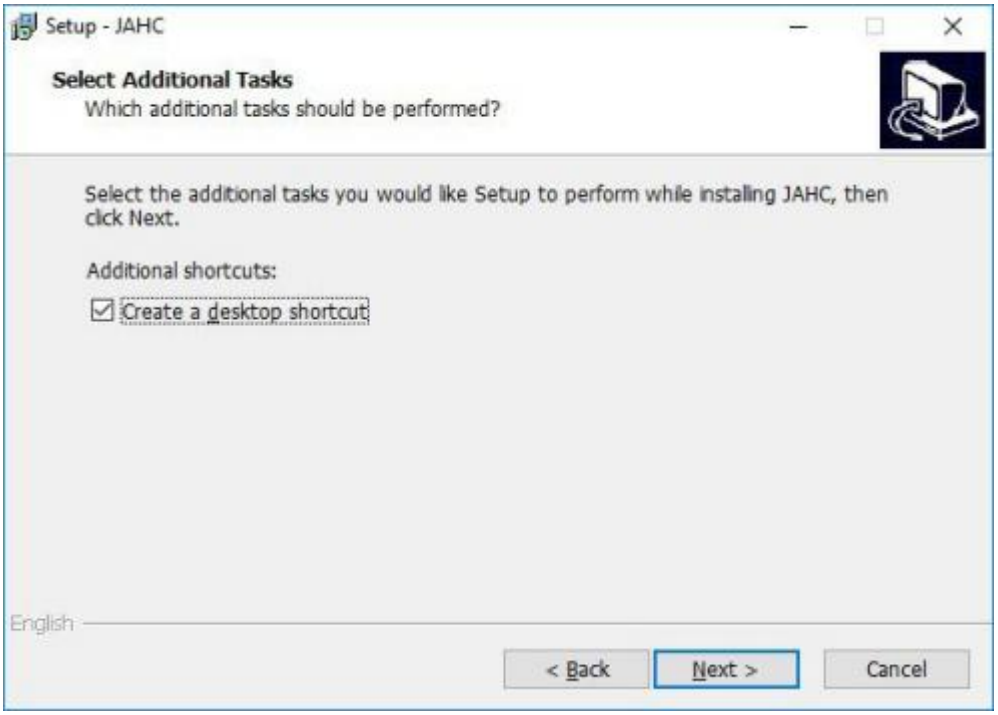
a. Double-click the JAHC.EXE file, the setup wizard will pop up, select destination location and click [Next] button to continue the installation.



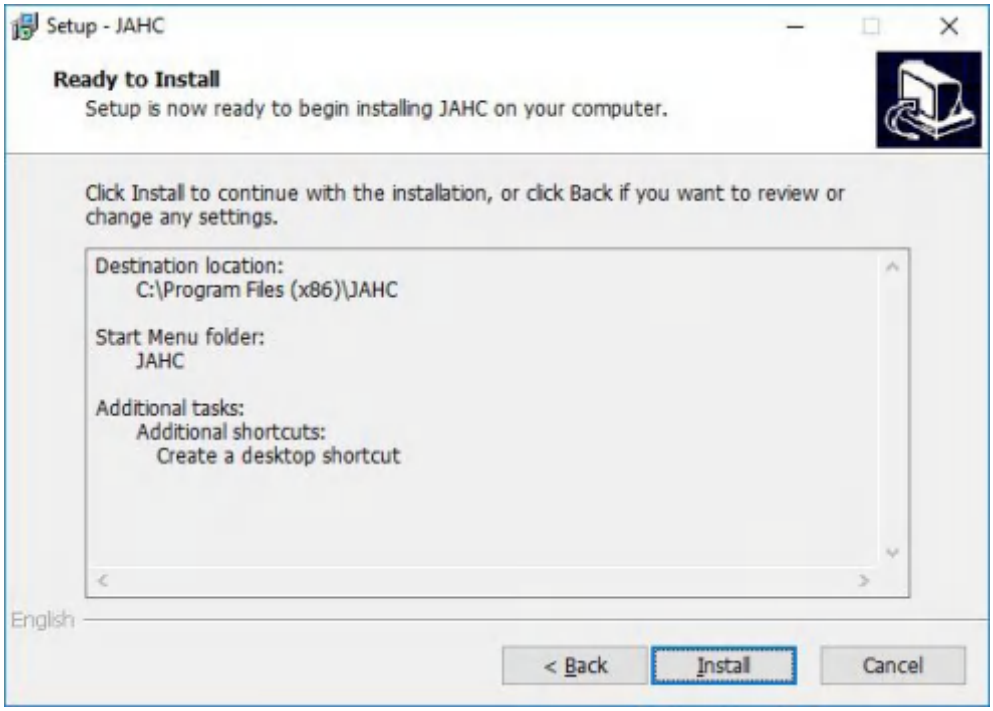
b. Click [Next] button to continue the installation.

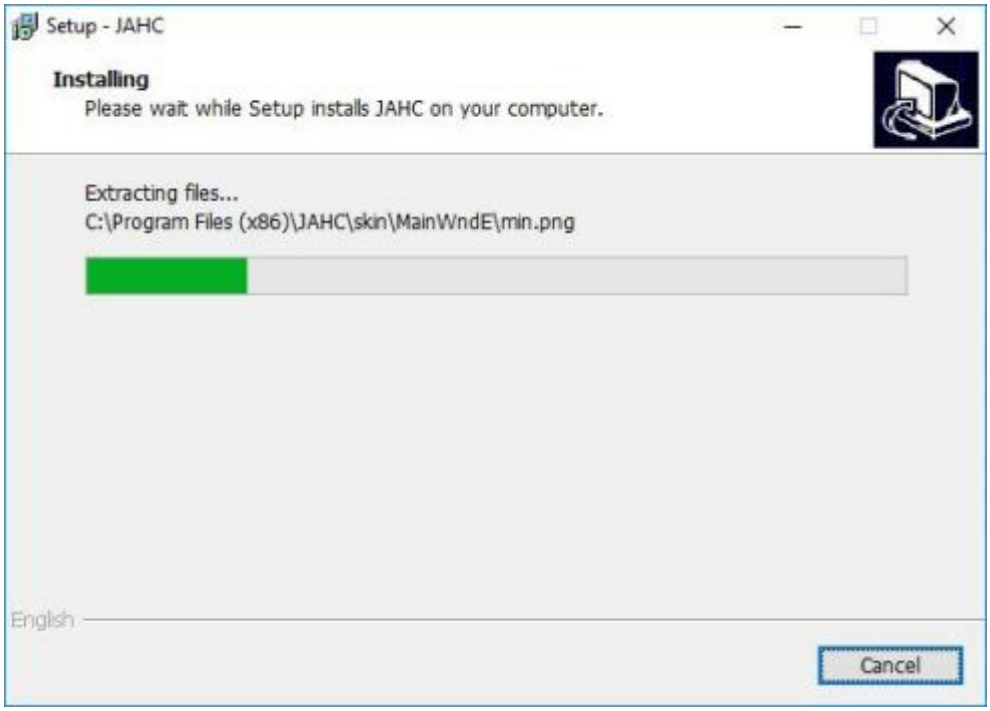


c. Select [Create a desktop shortcut] and click [Next] button.



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



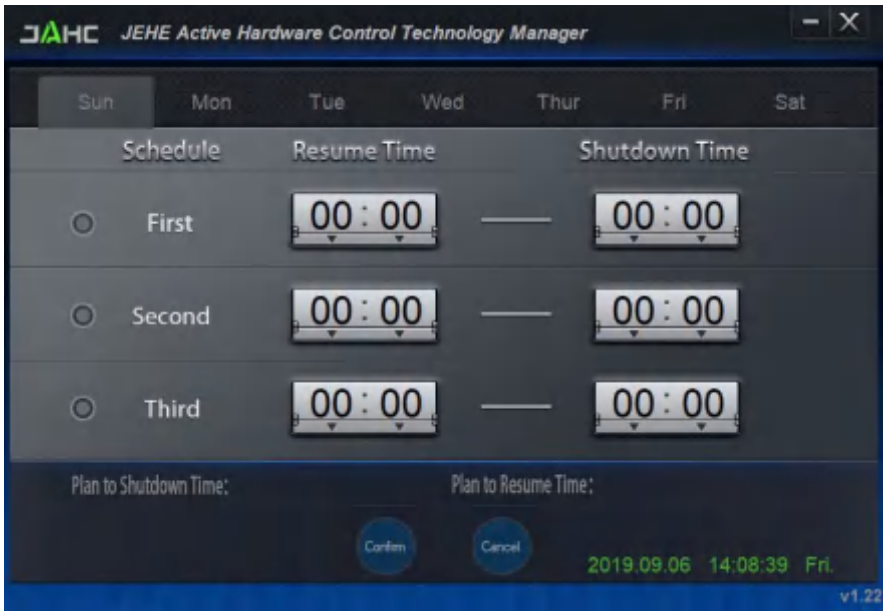


e. Click [Finish] button to finish the installation. You can select [Launch JAHC] to run the software automatically after finishing the installation.

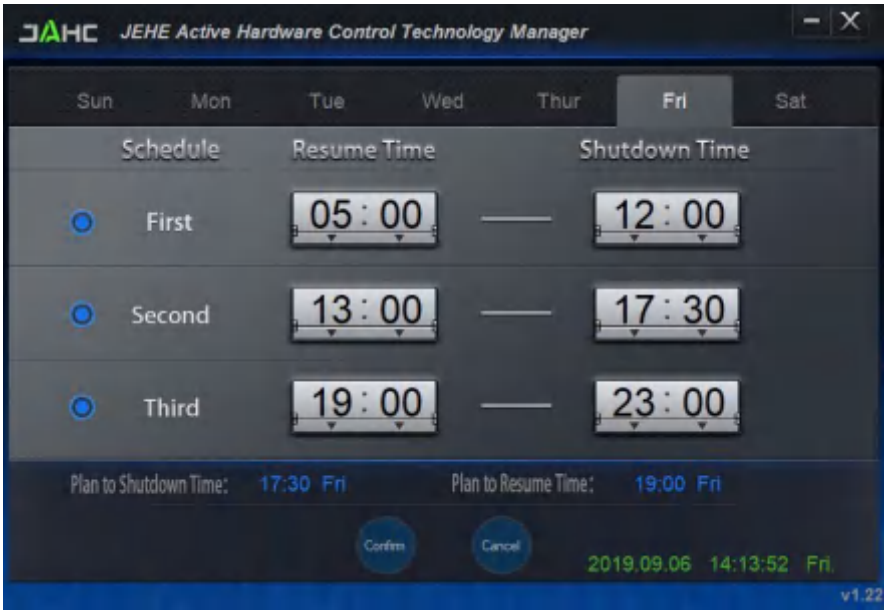
Notice: The JAHC will be added into boot item when it is installed. It will start up when system boot up.

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.



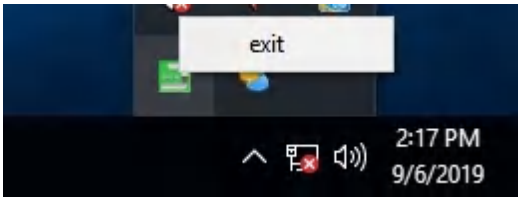
One week as a circle, maximum 3 schedules per day. Select each schedule to set up the resume time and shutdown time. Click [Confirm] button to launch the schedule.



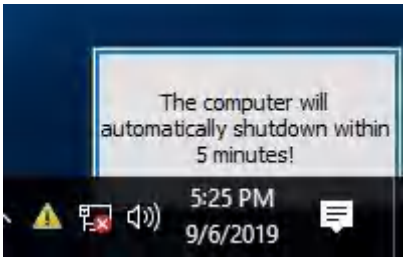
After finishing the setup, the menu window will notice the resume time and shutdown time.

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

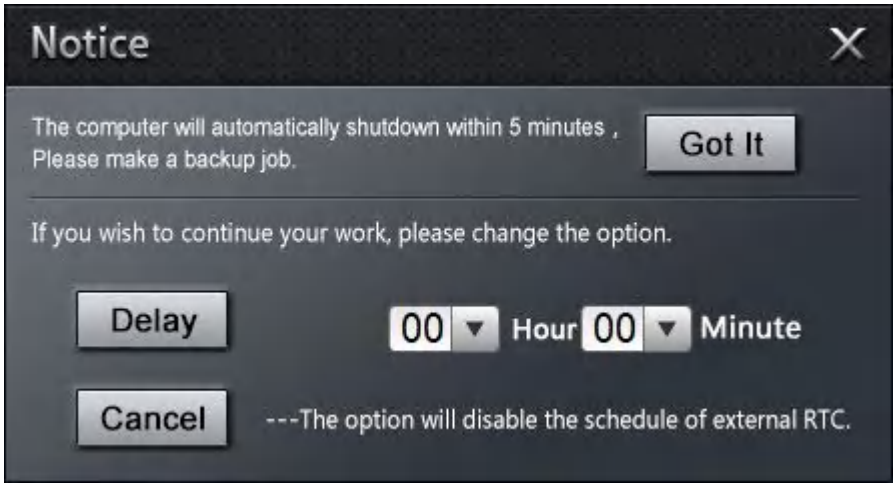
Click [Cancel] button to restore the time settings and cancel the shutdown status.
Click [X] button to hide the menu. You can find it on taskbar.
Right click the JAHC icon on taskbar and select [exit] to exit the software.



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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