Giada

www.giadatech.com

IB2-281 User Manual

Shenzhen JIEHE 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

Shenzhen JIEHE Technology Development Co., Ltd.

Website: www.giadatech.com

Phone: +86-755-3330 0336

Email: support@giadatech.com

Address: 1~2/F, Block A, Tsinghua Information Harbor, North Section, Shenzhen Hi-tech Park, Nanshan District, Shenzhen, China

Table of Contents

1. Product Introduction 5

1.1 Brief Introduction 5

1.2 Motherboard Picture 5

1.3 Spec 5

2. Hardware Usage Instruction 7

2.1 Dimensions chart 7

2.2 Interface Definition 7

2.2.1 Board Jumper, Header And Interface Diagram 7

2.2.2 Board Jumper And Header Definition 8

3. Accessories Installation Steps 11

3.1 Memory Installation 11

3.2 WIFI (M.2) Installation 11

3.3 SSD (M.2) Installation 12

4. Bios Setup 13

4.1 Main (Standard CMOS setting) 16

4.2 Advanced (Advanced BIOS setup) 17

4.2.1 ACPI Setting 17

4.2.2 CPU Configuration 19

4.2.3 WAKE Configuration 21

4.2.4 Trusted Computing 22

4.2.5 HM monitor & Smart FAN 24

4.2.6 System Devices Configuration..... 25

4.3 Security (set the administrator/user password) 28

4.4 Boot Menu 29

4.5 Save & Exit 30

1. Product Introduction

1.1 Brief Introduction

Giada IB2-281 is a 2.5-inch Pico-ITX Single Board Computer adopted Intel® Alder Lake-N Platform N100 processor, or optional long life cycle processors Atom x7211E, Core i3-N305. It features HDMI+LVDS display outputs, 4 x USB, 1 x COM, 4 x GPI, 4 x GPO a and single LAN port, The motherboard is an ideal choice for IoT applications, like kiosk, smart locker, AIO, gaming machine, etc.

1.2 Motherboard Picture

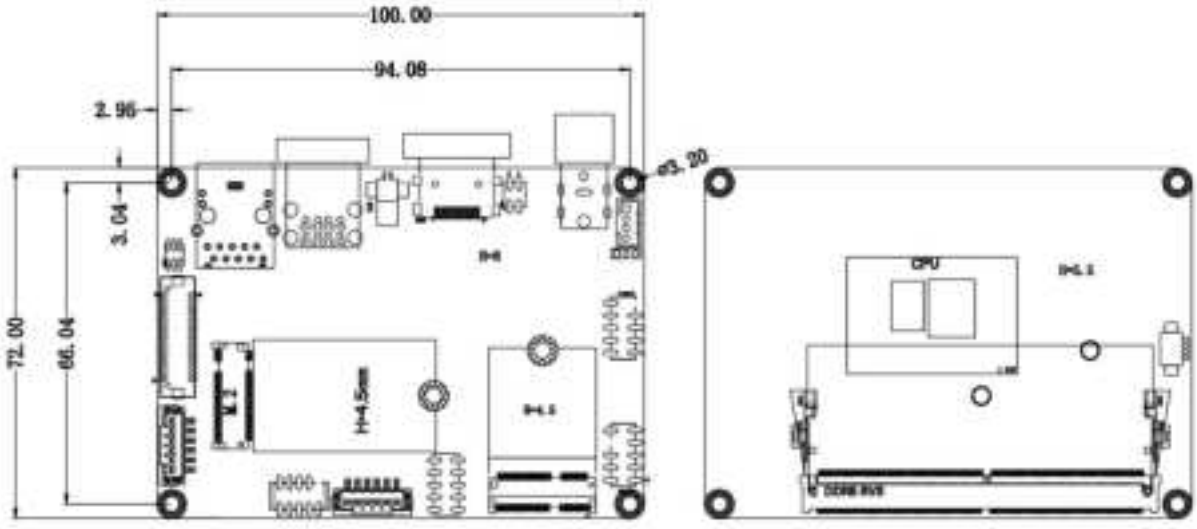
1.3 Spec

Processor	CPU	Intel® Atom® x7211E Processor
		Intel® processor N100
		Intel® Core i3-N305 Processor
	Frequency	3.20 GHz / 3.40 GHz / 3.60 GHz
	Chipset	SoC
	Processing Units	2 Cores / 4 Cores / 4 Cores
	Scenario Design Power	6 W / 6 W / 9 W
Rear I/O	USB	2 x USB3.2 Gen1
	Display Interface	1 x HDMI (Max.3840 x 2160 @30 Hz)
	Ethernet Interface	1 x 2.5 GbE RJ45

Internal I/O	USB	2 x USB2.0, signal by 2 x 5pin USB header
	Display	1 x 30pin dual channel 24bit LVDS (Max. 1920 x 1200@60 Hz)
	Serial port	1 x RS232, signal by 2 x 5pin header
		1 x TP_I2C
	GPIO	4 x GPI, 4 x GPO
	Audio	2 x 5pin F_AUDIO
	Others	1 x 4pin F_Panel, 1 x 6pin INVERTER
Network	Network Controller	1 x Intel Ethernet Controller I226-V
	Wi-Fi/BT	1 x E-Key M.2 (2230) for Wi-Fi/BT
	Mobile Network	NA
System	GPU	Intel® UHD Graphics
	Graphic Engine	DirectX 12.1, OpenGL 4.6, OpenCL 3.0
	System Memory	Up to 16 GB, 1 x SO-DIMM DDR5-4800 MHz
	Storage	1 x M-Key M.2 (2242) PCIe3.0 X4 for SSD
	TPM	Optional: TPM2.0
	Power Requirement	DC-IN, 12 V
	Dimensions	100 mm x 72 mm (3.94" x 2.83")
	Operating system	Windows 10 (64bit) / Windows 11 (64bit) / Linux Ubuntu (64bit)
	Operating Temperature	0°C ~ 60°C (32°F ~ 140°F) @0.7m/s Air Flow
	Storage Temperature	-20°C ~75°C (-4°F ~ 167°F)
	Humidity	95% @ 60°C (non-condensing)

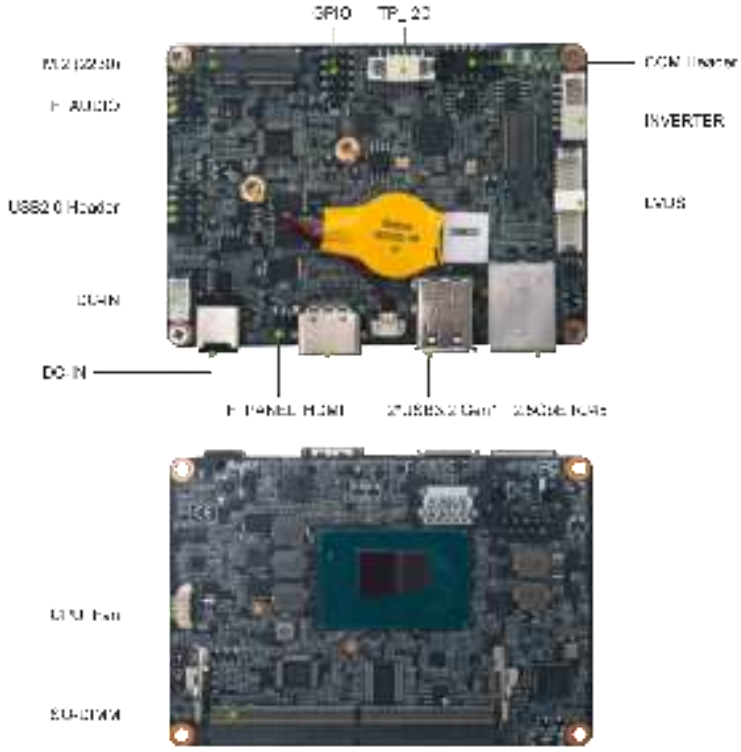
2. Hardware Usage Instruction

2.1 Dimension Chart

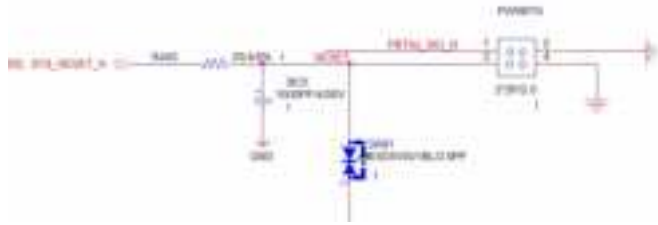
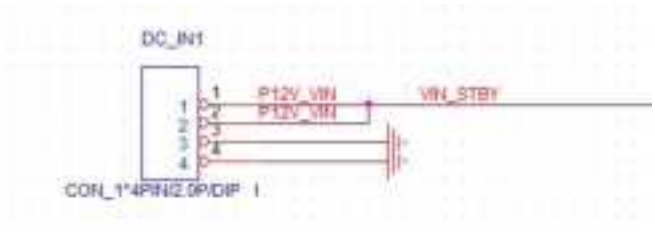
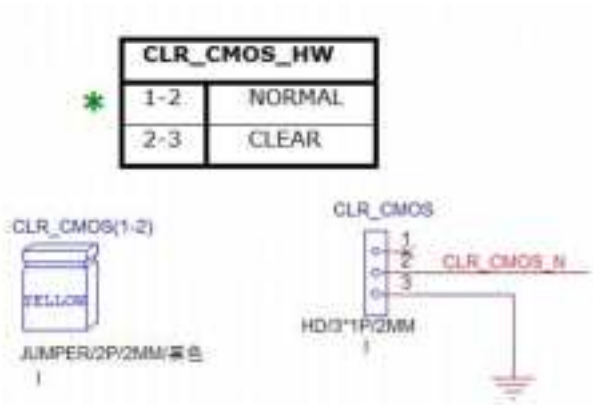
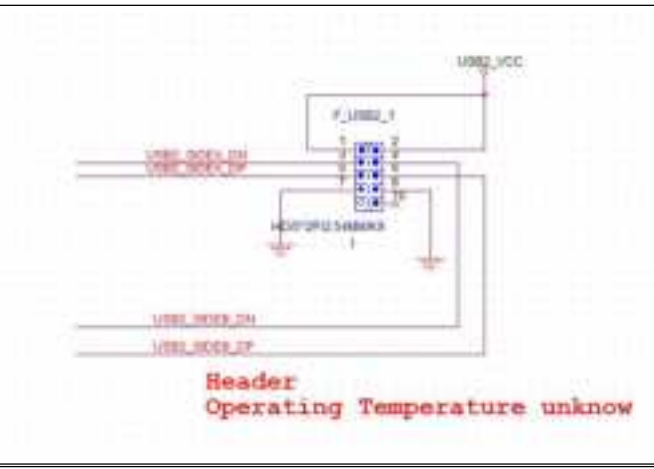


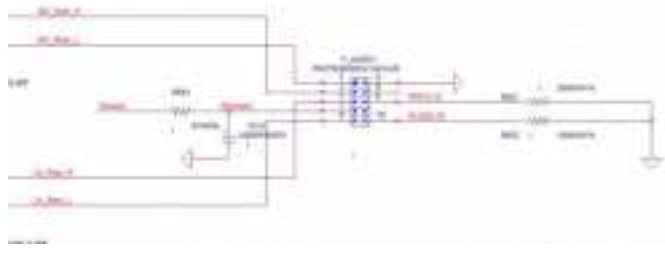
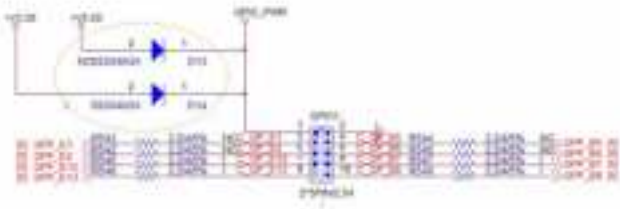
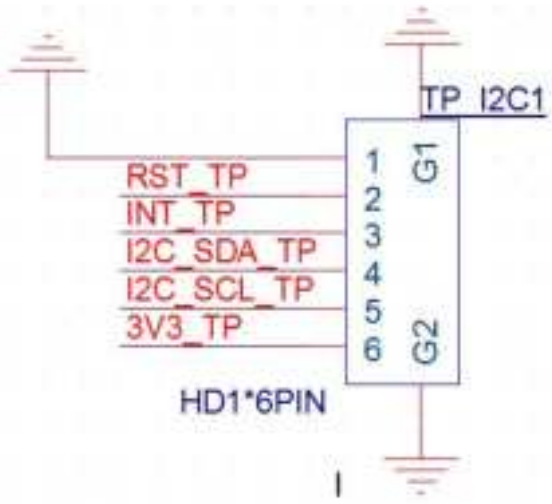
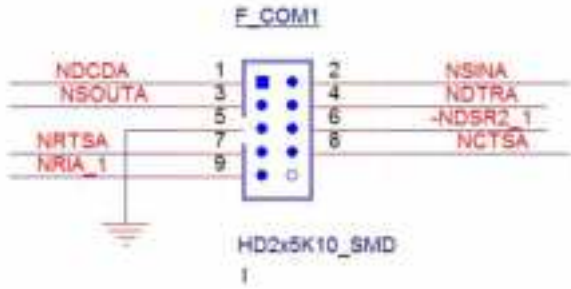
2.2 Interface Definition

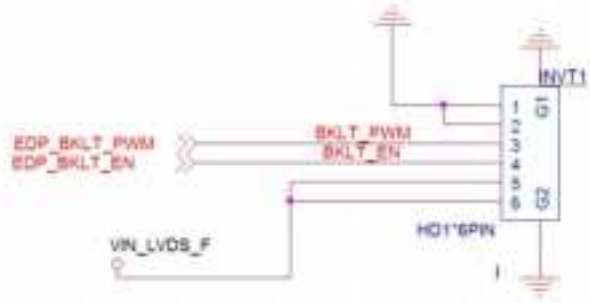
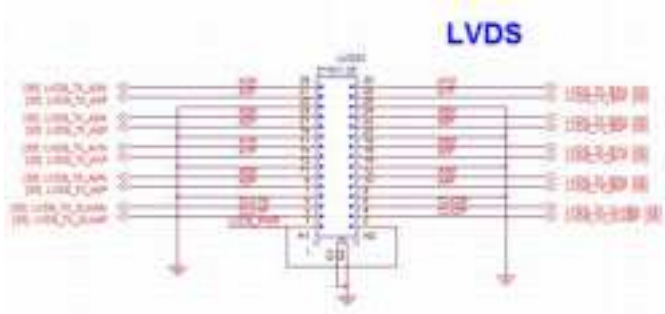
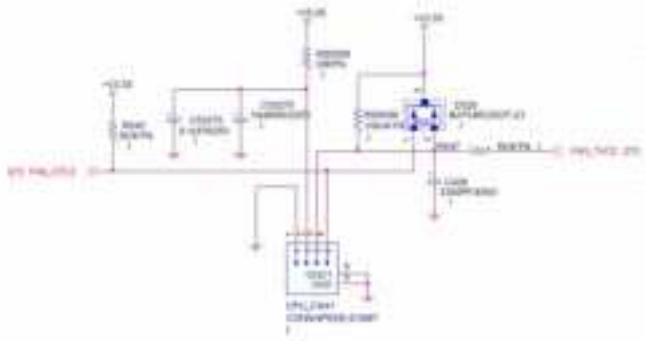
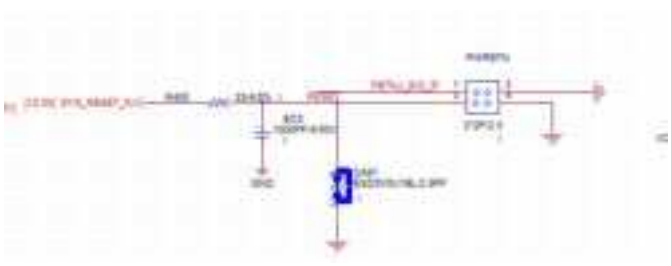
2.2.1 Board Jumper, Header And Interface Diagram



2.2.2 Board Jumper And Header Definition

No.	Jumper /Header	Function	PIN Definition
1	PWRBTN	Power button, restart button	
2	DC_IN1	Power	
3	CLR_CMOS	CLR_CMOS	
4	F_USB2_1	USB 2.0	

5	F_AUDIO1	F_AUDIO1	
6	GPIO1	GPIO1	
7	TP_I2C1	Touch Panel	
8	F_COM1	COM232	

9	INVERTER	LVDS Backlight	
10	LVDS1	LVDS1	
11	LVDS_PWR_SEL	LVDS Voltage Switching	
12	CPU_FAN1	CPU_FAN1	
13	F_PANEL	PWRBTN	

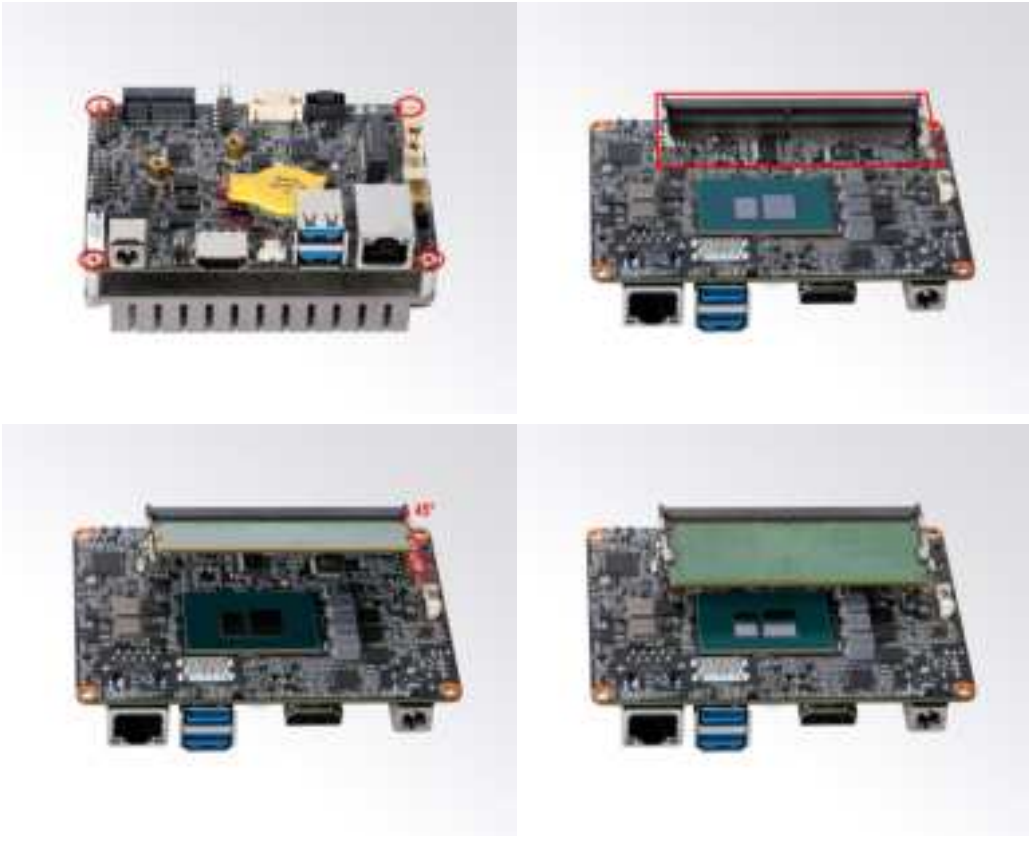
3. Accessories Installation Steps

⚠ For safety reasons, please ensure that the board is disconnected from power before installation.

3.1 Memory Installation

⚠ This product only supports DDR5 SO-DIMM memory modules.

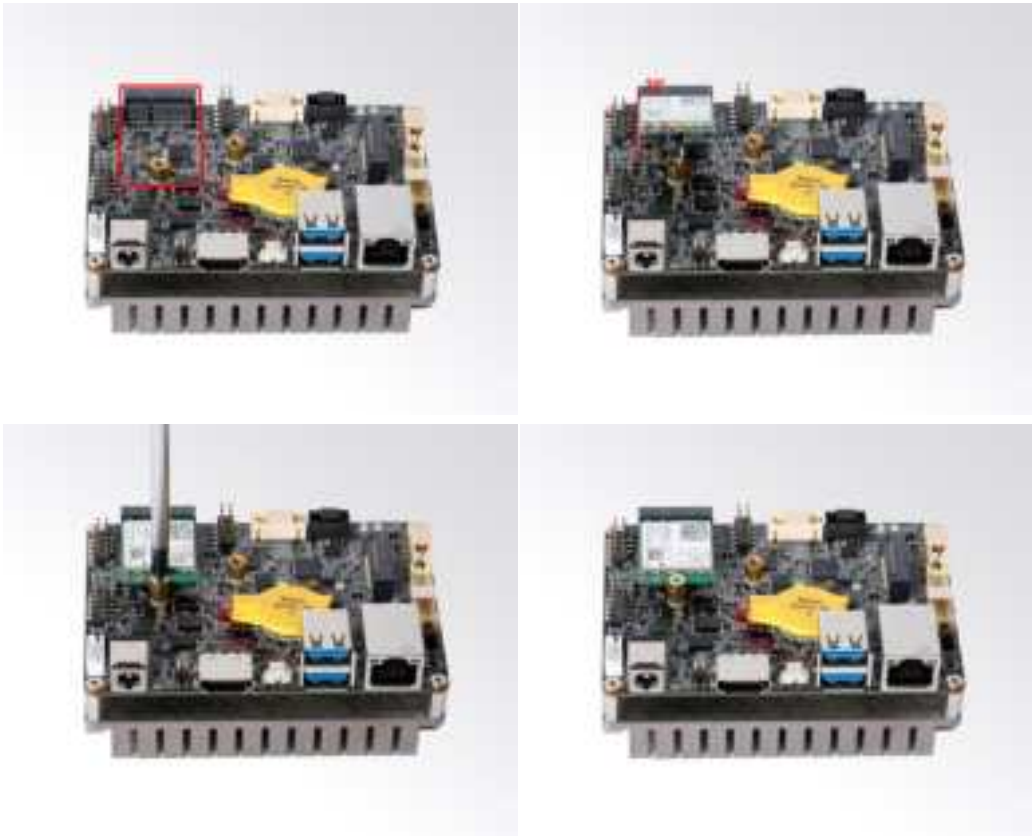
1. The memory slot is on the other side, unscrew the four screws then remove the cooling fan.
2. Locate the SO-DIMM slot on the board, open the slot latch.
3. Gently insert the module into the slot.
4. Carefully push down the memory module until it snaps into the locking mechanism.
5. Lock the slot latch.



3.2 WIFI (M.2) Installation

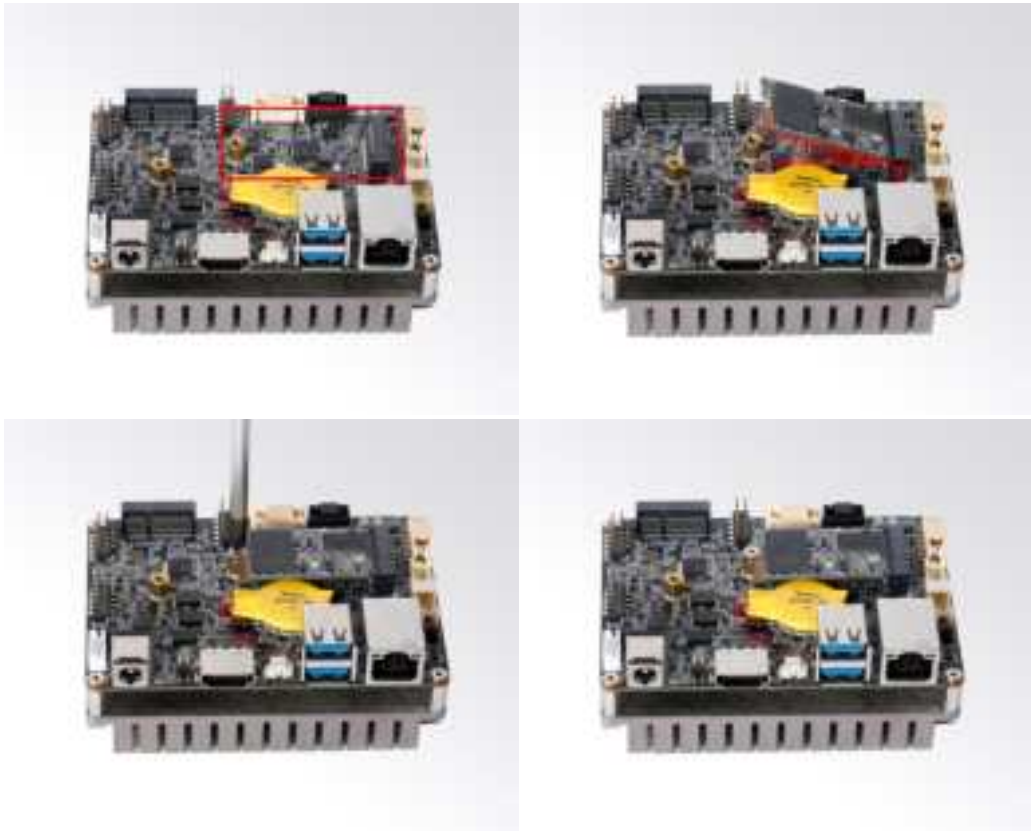
- **WIFI Installation**

1. Plug the WIFI module into the M.2 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.



3.3 SSD (M.2) Installation

1. Plug the M-Key M.2 (2242) SSD (PCIe protocol) into the appropriate 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 fi×ed 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 DEL; to load the default values and enter the system, you can press DEL to enter the BIOS interface if 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	E×it 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 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

2) Main (standard CMOS setup)

This item is used for setting the date and time.

3) 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.

4) Security (set the administrator/user password)

5) Boot (startup configuration characteristics)

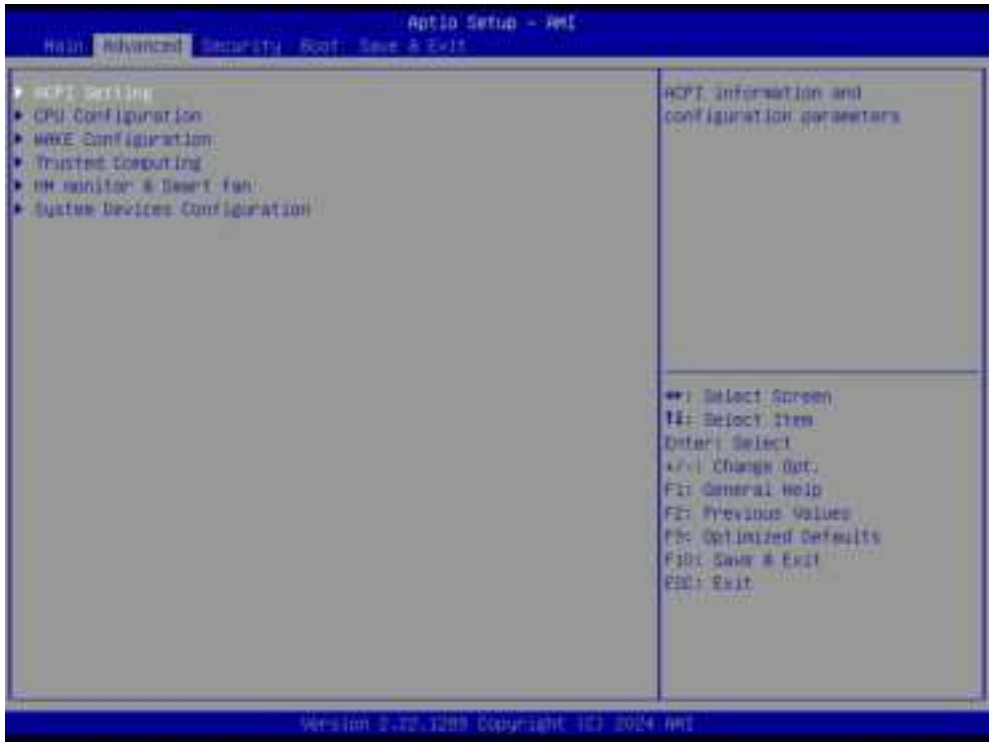
6) Save & Exit (option of exit)
This item includes load optimal defaults / load failsafe defaults value / discard changes / discard changes and exit.

4.1 Main (Standard CMOS setting)

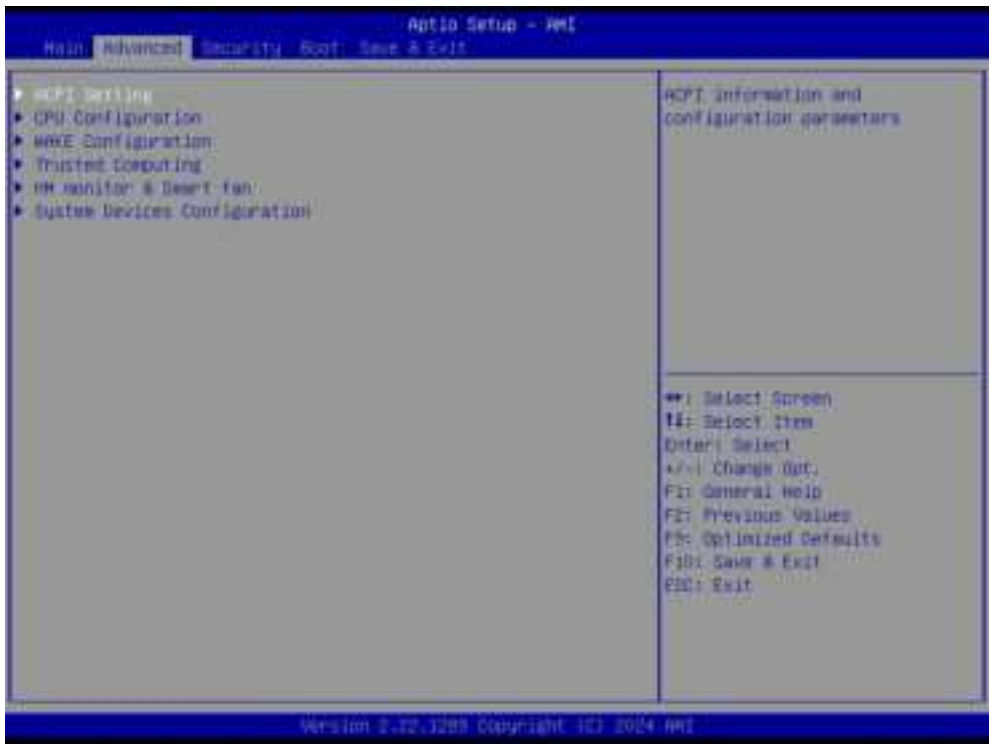
1) System time (hh:mm:ss)
Use this item to set the time for the computer, with the format as “HH / MM / SS”.

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)

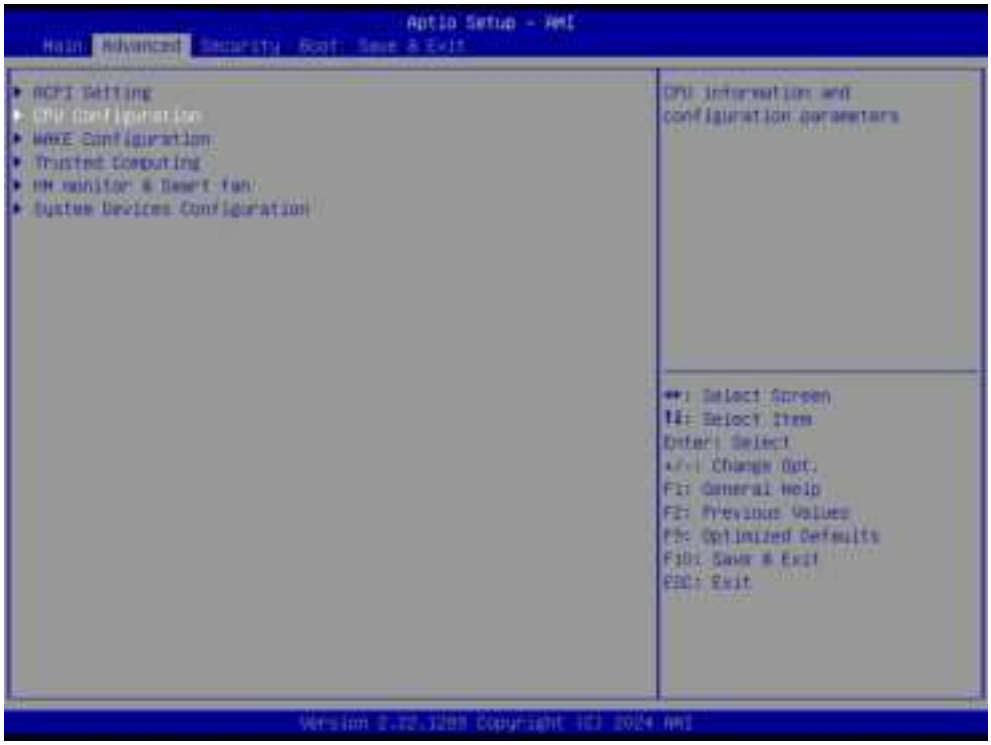


4.2.1 ACPI Setting



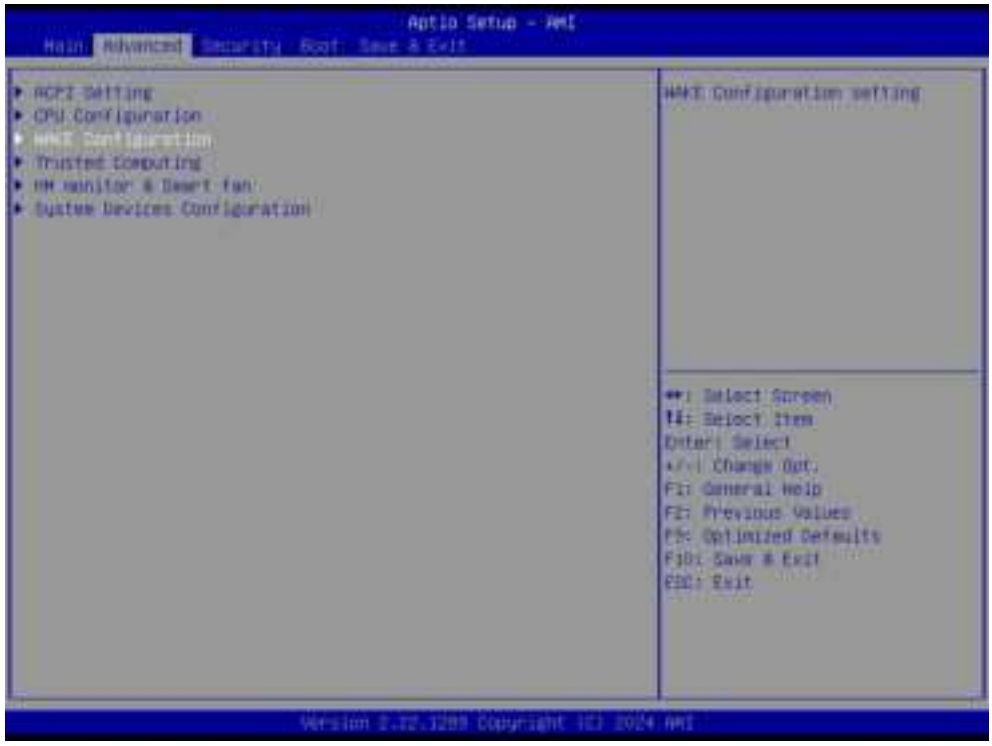
ACPI Configuration menu	Description
ACPI Sleep State	● Select the highest ACPI sleep state the system will enter when SUSPEND button is pressed.
State After G3	● State After G3 means after restore power supply. ● S5 State (Default): If set it as S5 State, it means the system will remain shutdown state ● 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.
Eup Support	● Disabled: The Eup is disable by default. ● Enabled.

4.2.2 CPU Configuration



The menu	Description
CPU Configuration	
Boot performance mode	● Max Non-Turbo Performance: the best performance. ● Max Battery. ● Turbo performance.
Intel (VMX) Virtualization Technology	Intel Virtualization Technology is enabled by default. User can enable and disable the Intel Virtualization Technology function.
Intel（R） Speed Step（tm）	Intel（R）Speed Step Technology dynamically increases the processor's frequency as needed by taking advantage of thermal and power headroom to give you a burst of speed when you need it, or increased energy efficiency.The option is enabled by default. You can disable the function if it's necessary.
Race To Halt（RTH）	The Race To Halt（RTH） function is enable by default. It can adjust the CPU base frequency work in C-state. Optional: C-state.
Intel（R）Speed Shift Technology	Intel speed shift function is enabled by default. 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.
Turbo Mode	● Disabled. ● Enabled.

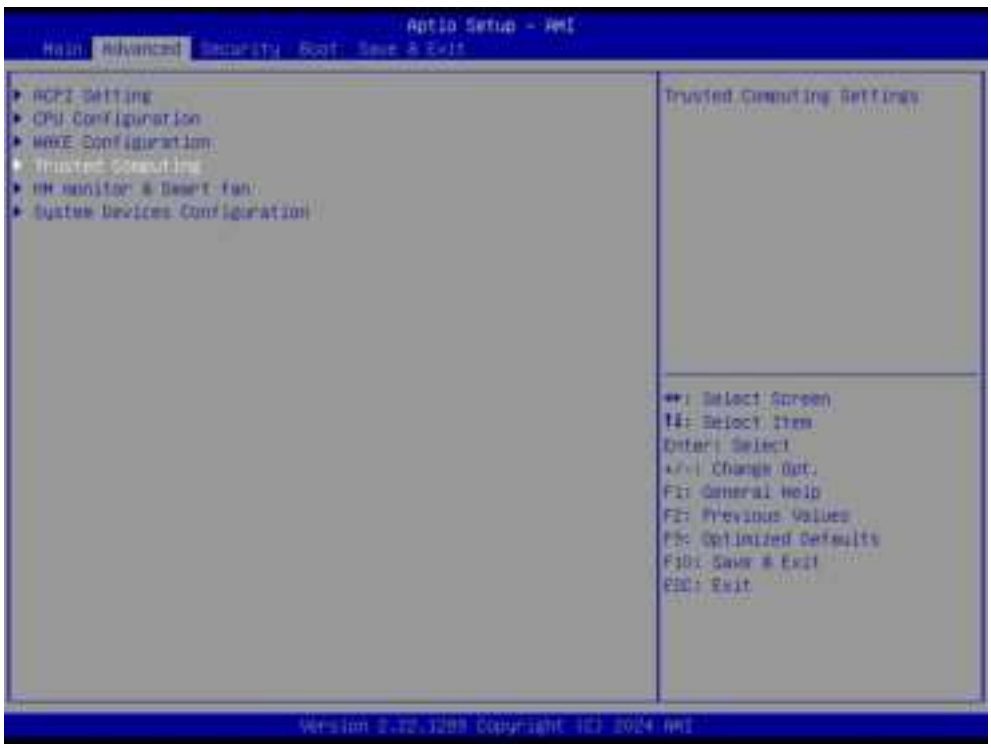
4.2.3 WAKE Configuration



WAKE Configuration	Description
Wake Up On RLT LAN	Wake On LAN Function. ● Disabled: The WOL is disabled by default. ● Enabled.
Wake up by USB KB/MS	● Enabled/Disabled Wake Up by USB KB/Mouse from S3 Status.

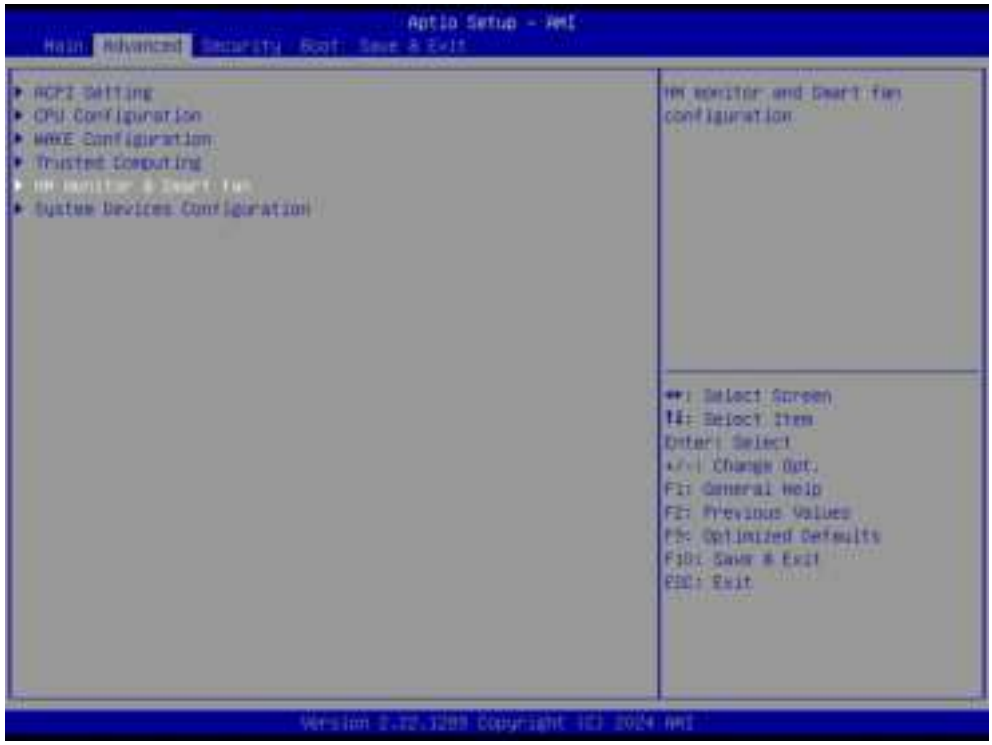
WAKE Configuration	Description
Wake System from S5	The user can set up automatic startup by Fixed Time ● Enabled. ● Disabled. The RTC function is disabled by default.

4.2.4 Trusted Computing



TPM20 Device Found	Description
Firmware Version	● TPM FW version is 600.18
Vendor	● The vendor is INTC
Security Device Support	● Disabled ● Enabled. This item is enabled by default.
SHA256 PCR Bank	● Disabled. ● Enabled. This item is Enabled by default
SHA384 PCR Bank	● Disabled This item is Disabled by default. ● Enabled.
SM3_256 PCR Bank	● Disabled This item is Disabled by default. ● Enabled.
Pending operation	● It includes None and TPM Clear function.
Platform Hierarchy	● Disable or Enable the Platform Hierarchy.
Storage Hierarchy	● Disable or Enable the Storage Hierarchy.
Endorsement Hierarchy	● Disable or Enable the Endorsement Hierarchy.
Physical Presence Spec Version	● You can choose 1.2 or 1.3. The version is 1.3 by default.
TPM 20 Interface Type	● TPM2.0 Interface Type is CRB by default.
Device Select	● You can select TPM1.2 or TPM2.0 or Auto. Auto is set up by default.
Disable Block SID	● You can set override to allow SID authentication in TCG storage device. Disabled is set up by default.

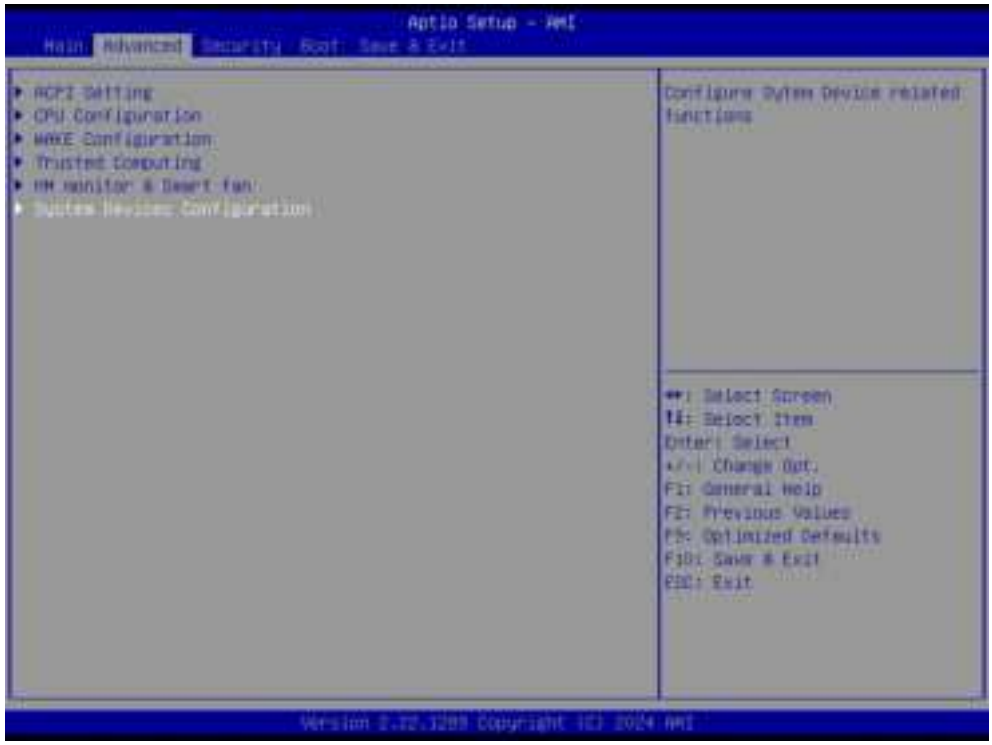
4.2.5 HM monitor & Smart FAN

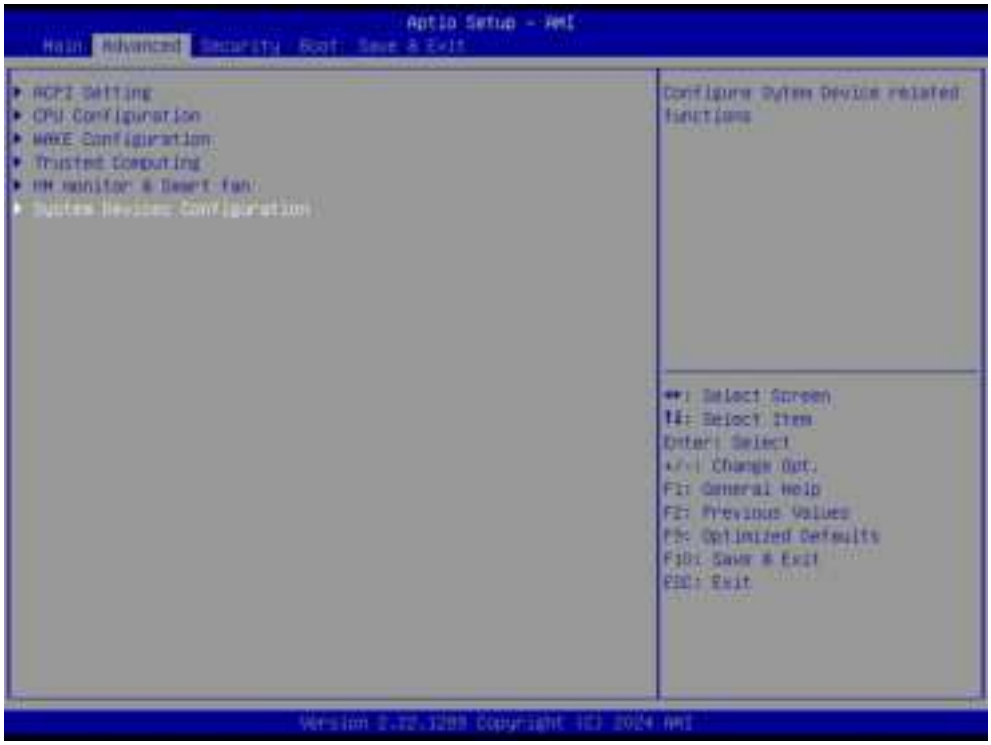


Pc Health Menu	Description
Pc Health Status	
Smart Fan Mode	It includes "Automatic mode" and "software mode". ● Automatic mode. Automatic mode is enabled by default. ● Software mode.

Pc Health Menu	Description
Fan off temperature limit	● FAN will stop work If temperature is lower than the Fan off temperature limit value.
Fan start temperature limit	● If the temperature is higher than fan off temperature limit, FAN will start work.
Fan Full Speed Temp limit	● If the temperature is higher than the FAN Full Speed temp limit value, the FAN will work at full speed.
Fan start PWM	● If the temperature is higher than the FAN start PWM value, the FAN will start work.
PWM slope setting	● 0.125 PWM ● 0.25 PWM ● 0.5 PWM ● 1 PWM ● 2 PWM ● 4 PWM ● 8 PWM ● 15.875 PWM

4.2.6 System Devices Configuration




Aptio Setup – AMI
Main Advanced Security Boot Save & Exit
ACPI Setting
CPU Configuration
WAKE Configuration
Trusted Computing
HW monitor & Smart fan
System Devices Configuration
Configure System Device related functions
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F5: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.22.1289 Copyright (C) 2024 AMI


Aptio Setup – AMI
Advanced
SATA Controller(s) [Enabled]
SATA Mode Selection [AHCI]
LVDS Control [1920x1080x8]
HD Audio [Enabled]
Network Stack [Disabled]
GPIO Configure
Enable/Disable SATA Device.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F5: Optimized Defaults
F10: Save & Exit
ESC: Exit
Version 2.22.1289 Copyright (C) 2024 AMI

System Devices Configuration	Description
SATA Controller(s)	SATA Controller. ● Disabled ● Enabled: The SATA controller is enabled by default.
SATA Mode Selection	● Determines how SATA controller(s) operate.
LVDS Control	Normally, the default resolution is 1920_1080_8.If user need other resolutions, please contact Giada FAE (email:support@giadatech.com) for customized resolution.
HD Audio	Control Detection of the HD Audio device. Disabled = HAD will be unconditionally disabled; Enabled = HAD will be unconditionally enabled. ● Enabled ● Disabled
Network Stack	Enabled/Disabled UEFI P×E ROM. ● Enabled ● Disabled
GPIO Configure	Enabled/Disabled GPIO PORT. ● Enabled ● Disabled

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.

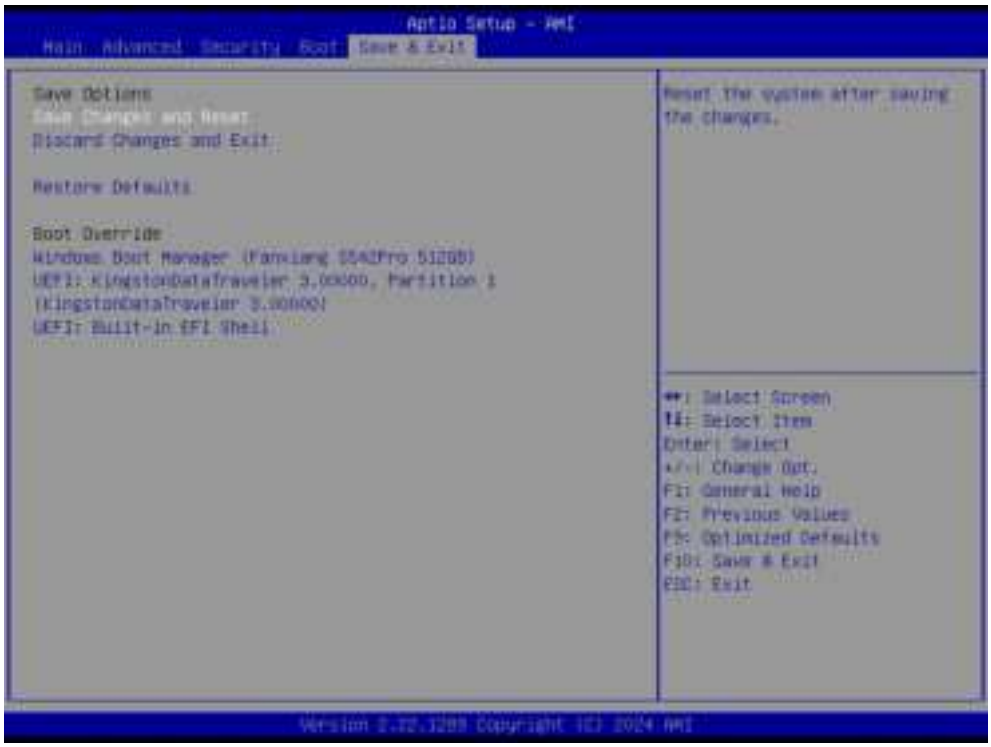
Once you enter it again, BIOS will save the set password. Once the password item is enabled, you will be required to enter the password every time before the system entering to the setup program of BIOS. The user can set this item through the Security Option in advanced BIOS properties. If the Security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

4.4 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.
Boot up Num Lock 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].
FI×ED 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.
Boot Option #2	The second boot device.
Boot Option #3	The third boot device.

4.5 Save & Exit



Save Exit Item	Description
Save Options	
Save Changes and Reset	Save all changes and exit.
Discard Changes and E×it	Give up the settings and exit.
Boot Override	Whole Boot devices.

Shenzhen JIEHE Technology Development Co., Ltd.

Website: www.giadatech.com

Phone: +86-755-33300336

Email: support@giadatech.com

Address: 1~2/F, Block A, Tsinghua Information Harbor, North Section, Shenzhen Hi-tech Park, Nanshan District, Shenzhen, China