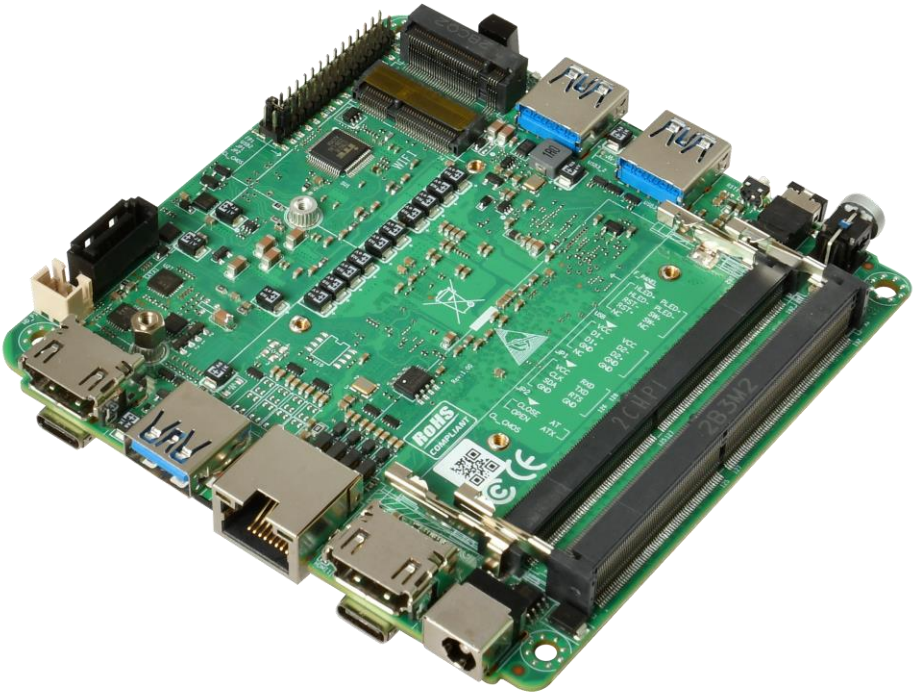
AD600CA

Manual
(R100)



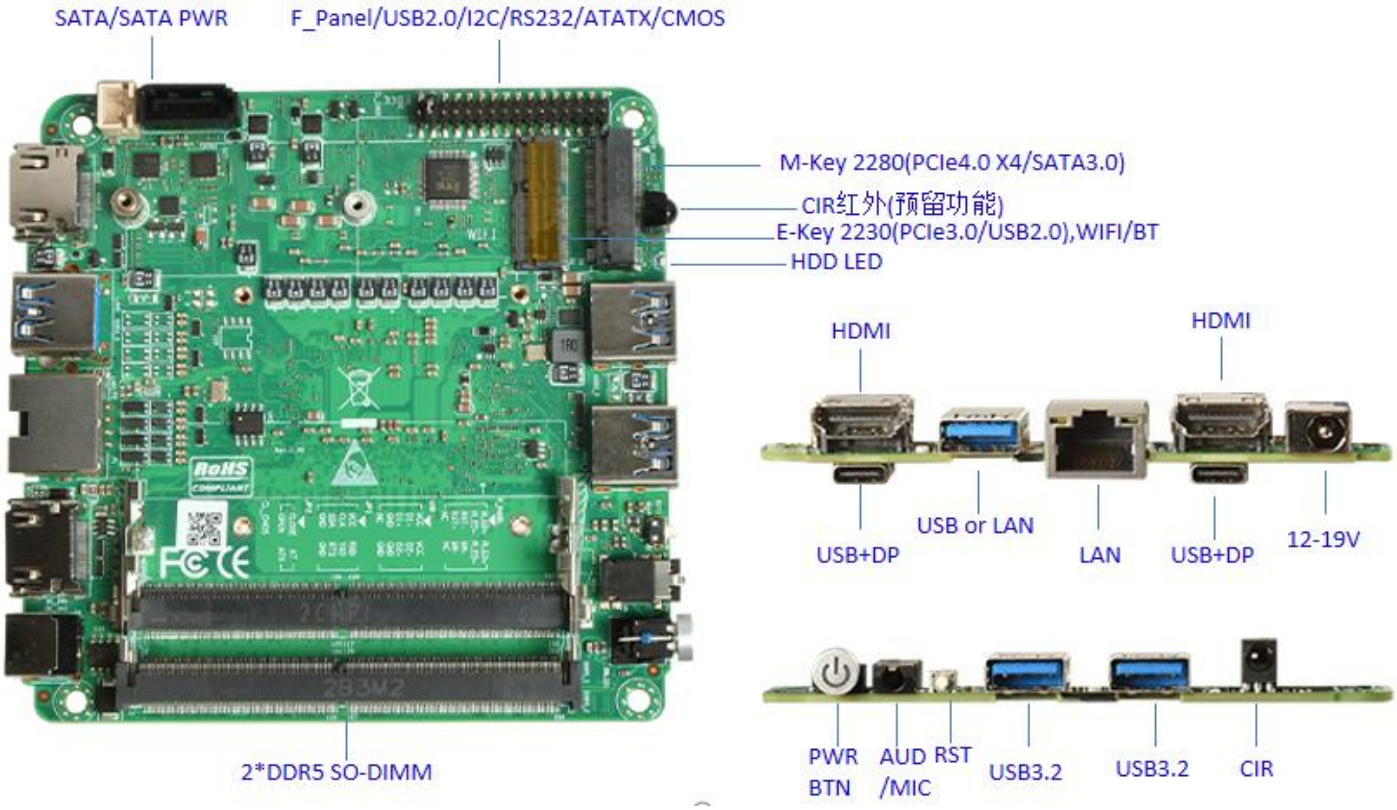
2023.4.15

Chapter 1 Product Introduction

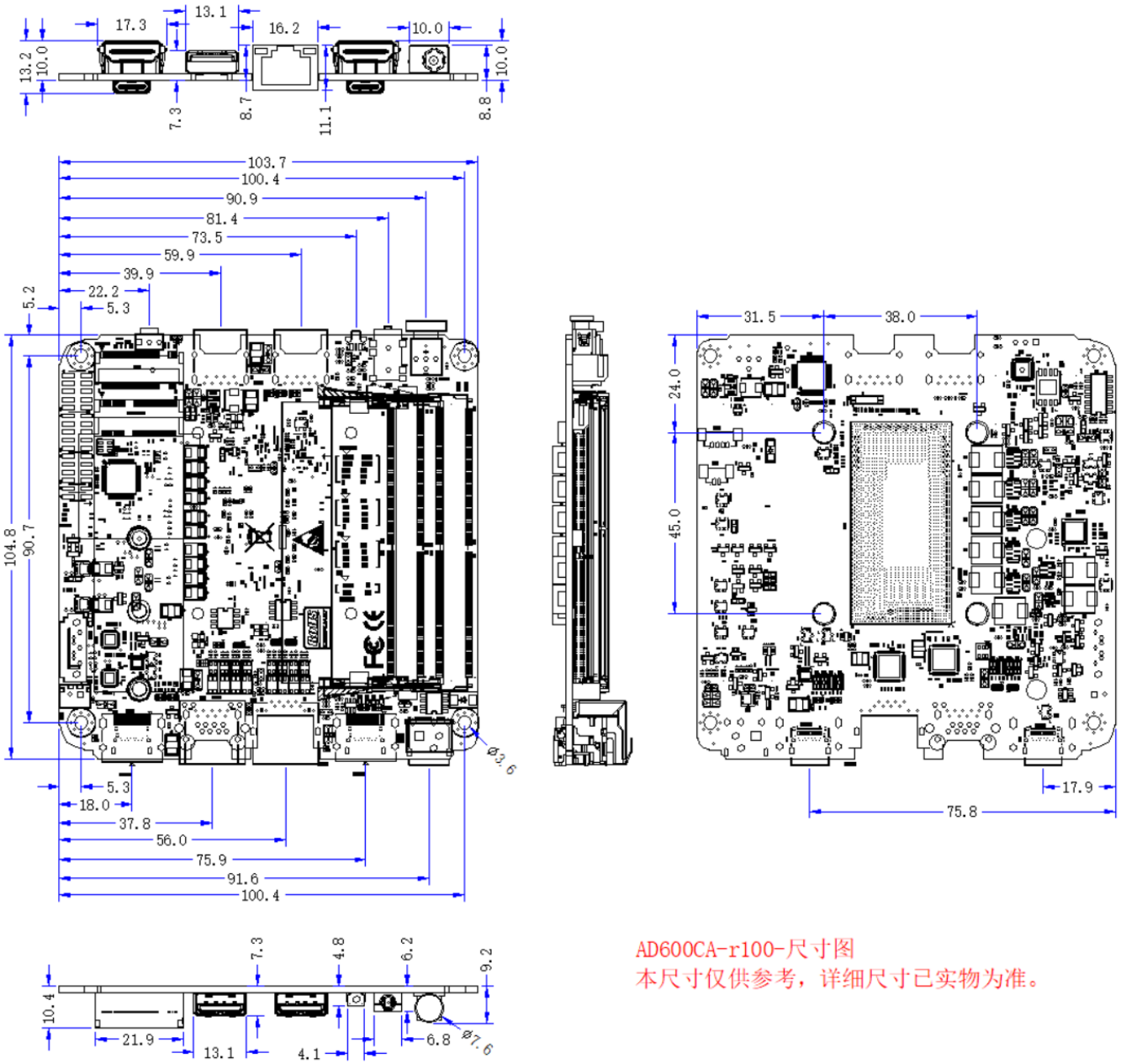
1.1、Product Specification

processor system	Onboard Intel Alder Lake-U/-P series processors
	EFI BIOS
Memory	2*DDR5 SO-DIMM, total maximum 64GB
storage	1*M.2 M-Key 2280 (NVMe PCIe 3.0 x4/SATA3.0 protocol)
	1*SATA3.0 interface, 2Pin 5V power supply
Display	2*HDMI2.0 interface, support 4096x2160@60Hz
	2*Type-C interface, support DP 7680x4320@60Hz and USB3.2 Gen2
Board edge I/O interface	Power button, 2-in-1 audio jack, reset button, 2*USB3.2 Gen2
	DC JACK, 2*HDMI, 2*Type-C, 1*LAN（can choose 2 lan)
	Single and double networks are optional: for single network, 1*USB3.2 is used; for dual network, 1*USB3.2 is required
Extended Interface/Function	External TPM2.0 is optional, but not by default. The default is CPU built-in TPM2.0
	1*M.2 E-Key (PCIe+USB2.0 protocol, WIFI/BT module)
	1*RS232 header, pitch 2.0mm
	1*USB2.0 header, 2x5Pin, pitch 2.0mm
	1*4Pin PWM CPU FAN
power supply	DC 12-19V, above 120W
working environment	Working temperature: -20℃ ~ +60℃; Working humidity: 5% ~ 90%
	Storage temperature: -40℃ ~ +85℃; storage humidity: 5% ~ 90%
operating system support	Windows10, Windows11, Linux
size	100 x100mm
net weight	About 120g without radiator, about 220g with radiator

1.2、Functional position diagram on the front of the product



1.3、Product Dimension Drawing(Unit：mm)



AD600CA-r100-尺寸图
本尺寸仅供参考，详细尺寸已实物为准。

Chapter 2、PIN Definition

The first Pin is marked with a protruding triangle or square or number.

2.1、The power input is DC 12-19V, and the socket method is selected according to the customer's needs.

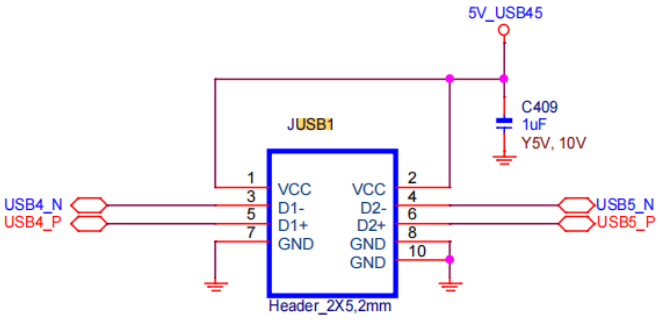
DC_IN1 is the 5525 DC JACK power connector; DC_IN3 is the 2Pin Phoenix terminal connector.

2.2、The power on button with light is the indicator of the power up of the motherboard after pressing the power on button, blue.

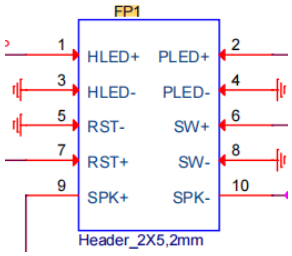
The blue LED on the motherboard is the DC power input indicator, plugged into the power supply is bright.

The blue LED on the side of the motherboard is the hard disk indicator.

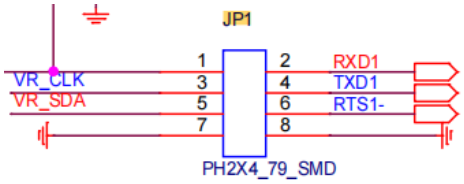
2.3、USB2 is a 2x5Pin, 2.0mm pitch row of pins defined as follows:



2.4、FP1 is a 2x5Pin, 2.0mm pitch row of pins defined as follows:



2.5、JP1 is a 2x5Pin, 2.0mm pitch row of pins defined as follows:



2.6、JP2 is a 1x2Pin, 2.0mm pitch AT/ATX power-on method selection row of pins; Close:power on, default; Open:press power on button to power on.

2.7、CFAN is a 4Pin CPU fan socket defined as follows:

Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	PWM	**2**	**FG**	**3**	**+5V**	**4**	GND

2.8、JP1 is a 1x2Pin, 2.0mm pitch CMOS line pin defined as follows:

Status	Definition	Pin	Definition
Close	Clear CMOS	**Open**	**default state**

2.9、M.2_2280 is an M.2 M-Key storage device slot with optional NVMe (PCIe4.0_x4 default) and SATA3.0 protocols in 2280 size. The hardware materials are different for the two protocols.

2.10、M.2_WIFI is a WIFI/BT device slot for M.2 E-Key, PCIe+USB2.0 protocol, supports 2230 size.

2.11、2*TYPE-C ports support USB3.2+DP function.

2.12、USB or LAN is a two-choice function, so you need to pay attention to it when you place an order.

2.13、AUD/MIC is a 2-in-1 audio jack with audio output and microphone input。

2.14、CIR1 is a reserved function, infrared interface, which needs to be debugged with software. The definition is as follows:

Pin	Definition	Pin	Definition	Pin	Definition
1	CIRRX	2	GND	3	+5V

Chapter 3：BIOS parameter setting

3.1、Entering BIOS and Updates

3.1.1、How to enter BIOS system and key functions

1. Power on or reboot the system.

2. After powering on the system, when the self-test message appears on the screen, press F2 to enter the BIOS SETUP interface, and press F12 to enter the BOOT selection interface.

3.1.2、The function of each key in the BOIS screen is as follows；

- →← ： Select menu
- ↑↓ ： Select item
- Enter : Confirm selection
- +/- : Change value
- F1 : Help
- F2 : Abandon this modification and return to the last set value.
- F9 : Restore factory defaults
- F10 : Save changes and exit
- ESC : Go back to the previous screen

3.1.3、Precautionary：

1. BIOS settings directly affect the performance of the computer and the use of its functions.

2. Setting the wrong parameters will cause damage to the computer and even prevent it

from booting.

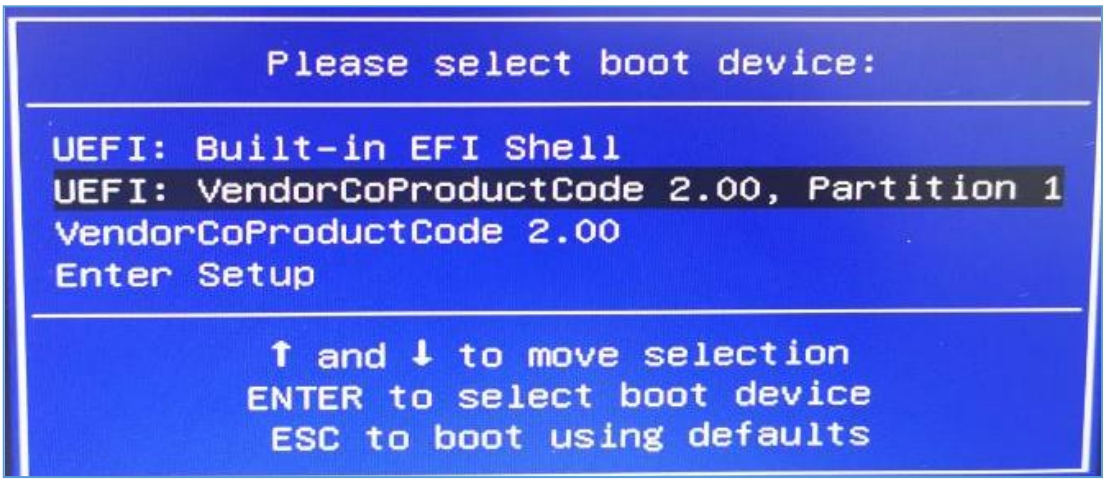
3. If the wrong settings cause the computer not to boot up, please restore the factory mode.

3.1.4、BIOS update step (If you need to update the BIOS, please contact our technical support staff.)

1. Prepare a USB flash disk in FAT32 format.

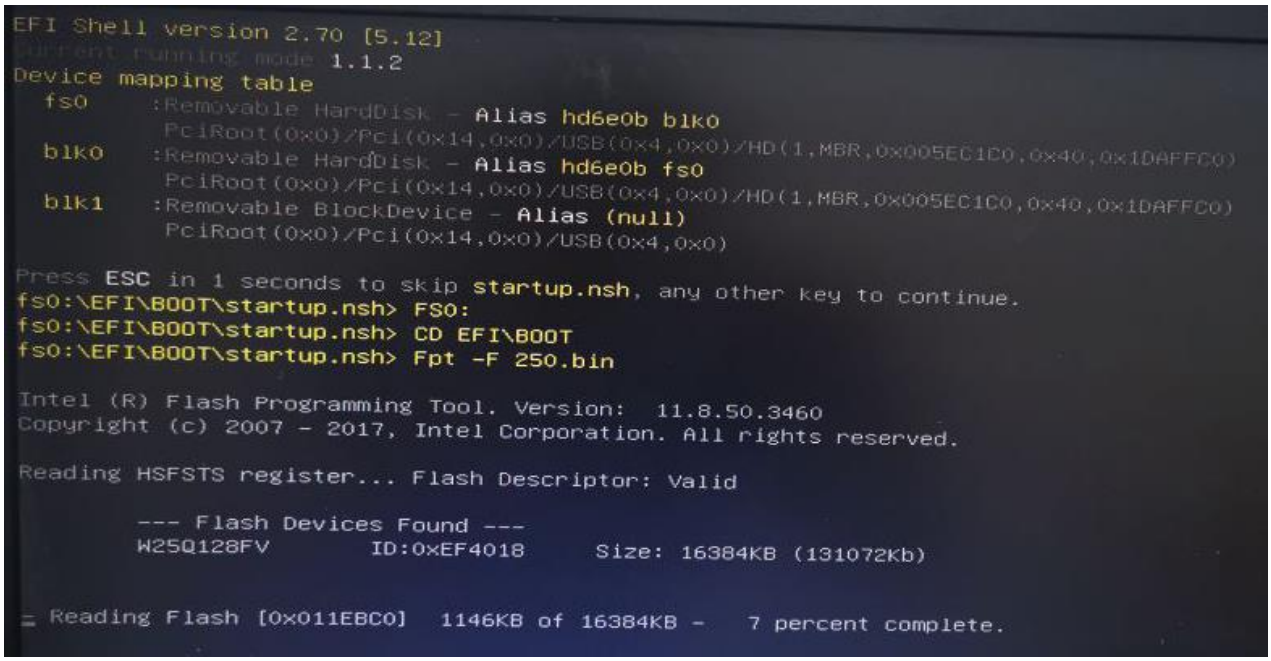
2. Copy the EFI directory provided by our company to the root directory of the USB disk.

3. Press F12 to select the startup item when you turn on the computer, choose to boot from UEFI:USB flash disk, and enter into the SHELL interface as below:

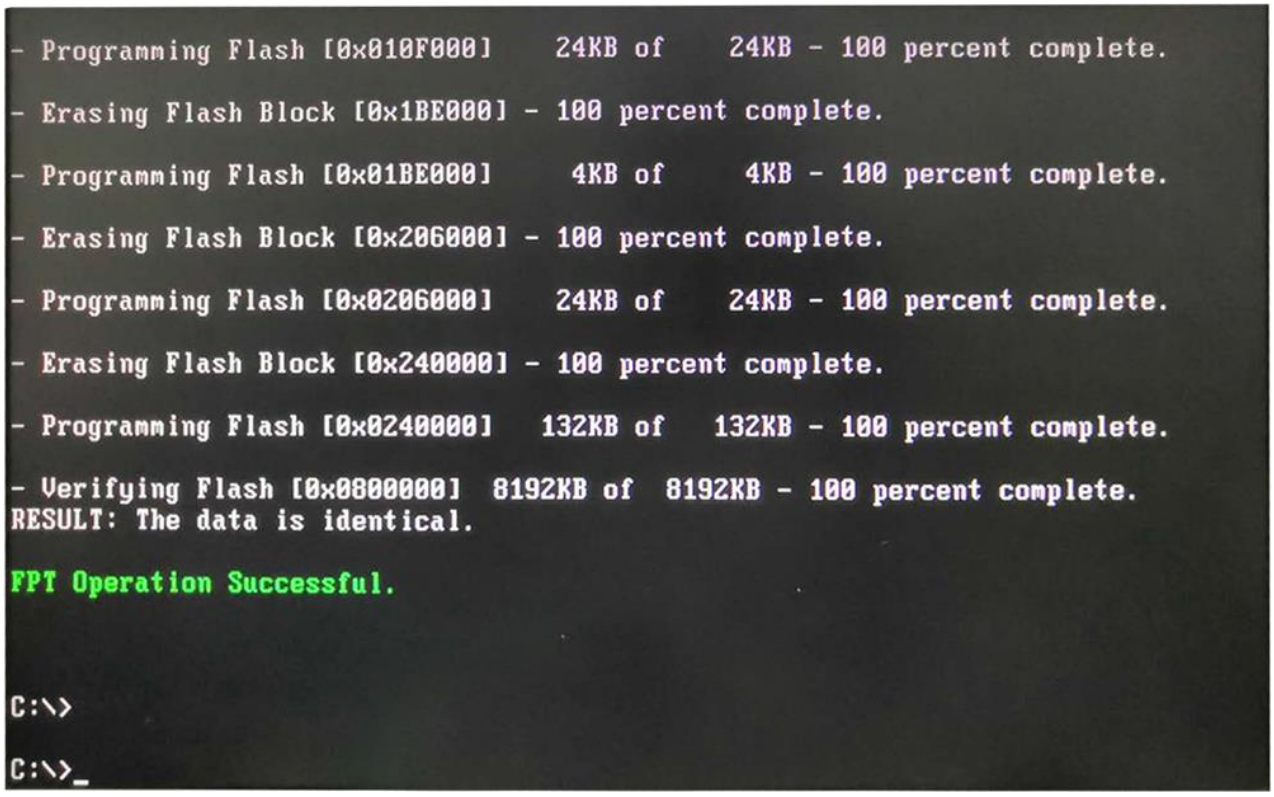


4. After entering the SHELL, wait for 5s, it will be automatically refreshed (the process of updating can not power off, if the update process interrupt the power, it will cause not boot).

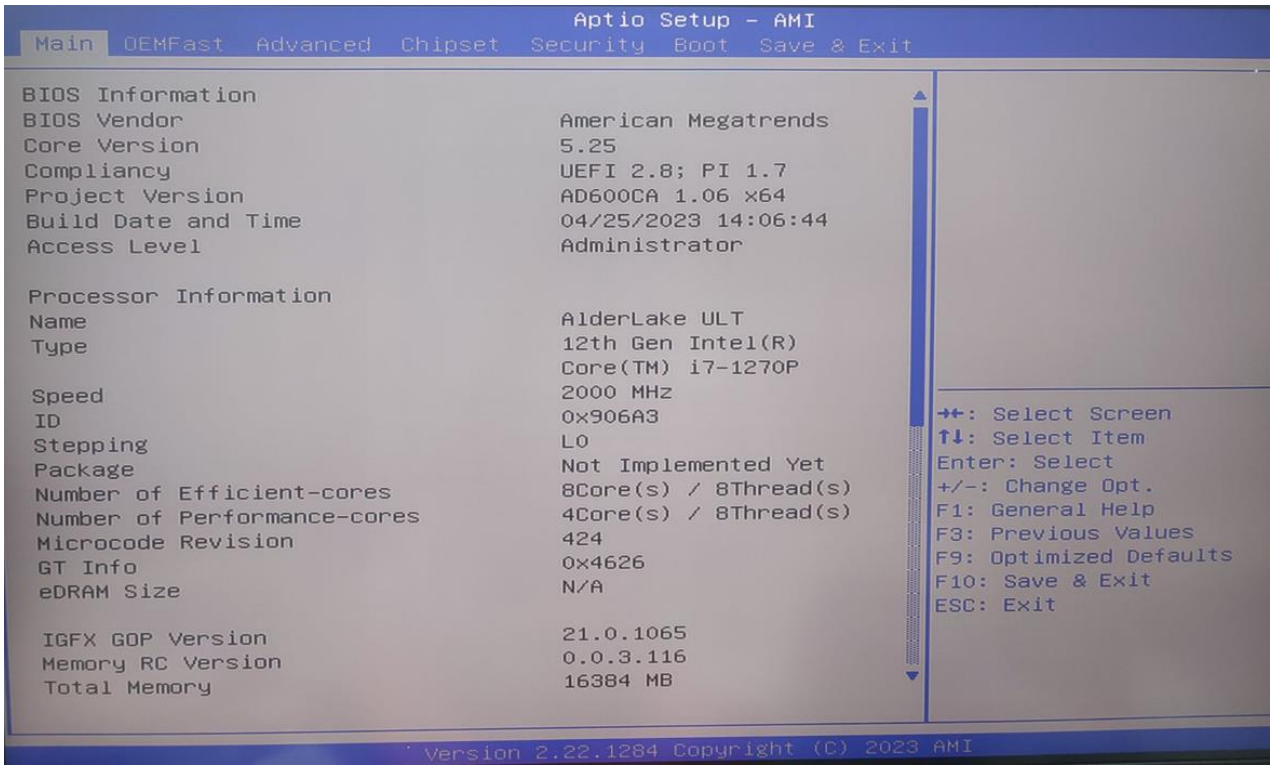
Pictures of the BIOS update process:



5. As shown in the following figure is the interface that has finished updating the BIOS, and then reboot on it.

6. 

3.2、Main Menu



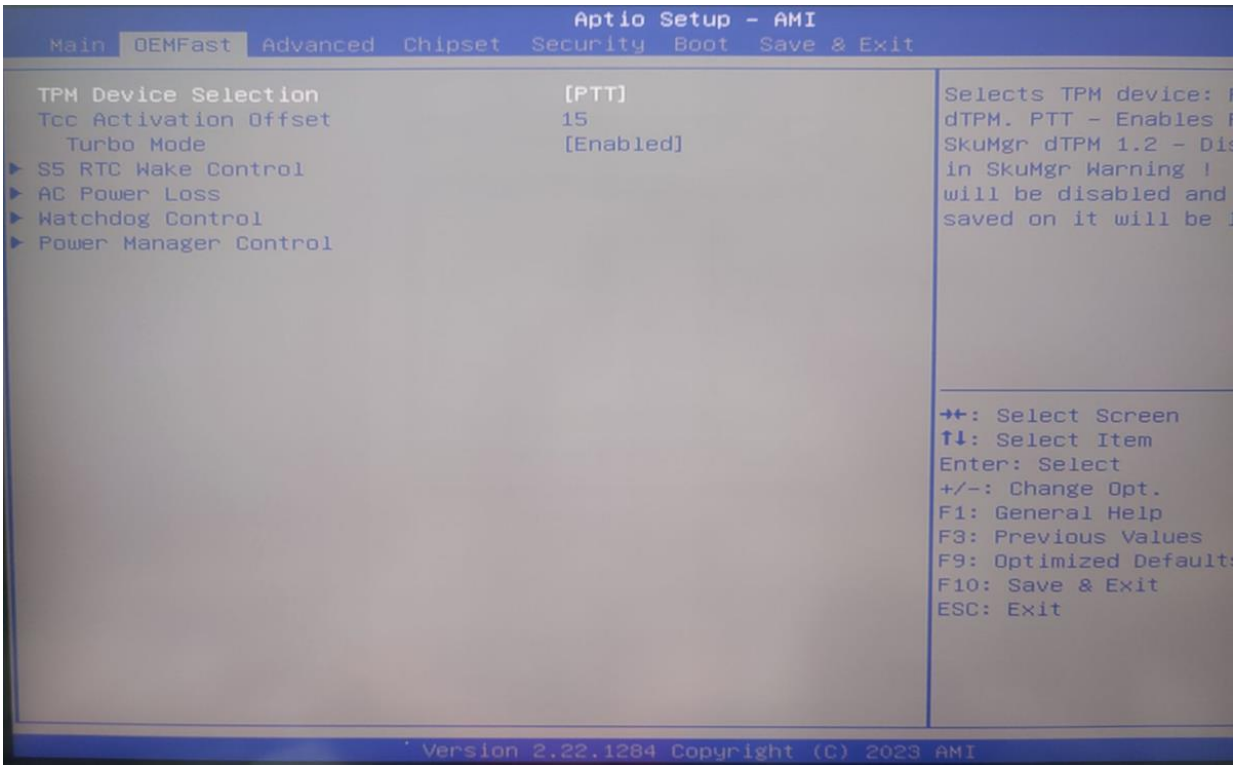
The black font part is the read-only information item; it contains the BIOS ID, version, and CPU details, including the CPU manufacturer, model, frequency, L1 cache size, L2 cache size, and other information.

3.2.1、System Language：

3.2.2、System Date： Sets the system date. It is expressed in the format of Month/Day/Year. The setting range is: Mon month (Jan.-Dec.), Date/day (01-31), Year/year (up to 2099).

3.2.3、System Time： Sets the system time. Expressed in hour/minute/second format. The setting range is: Hou hour (00-23), Minute/minute (00-59), Second/second (00-59).

3.3、Advanced：Advanced Settings



TPM Device selection: Built-in and external selection, when PTT is selected, it is built-in TPM chip and DTPM is external.

Tcc Activation offset: temperature compensation value

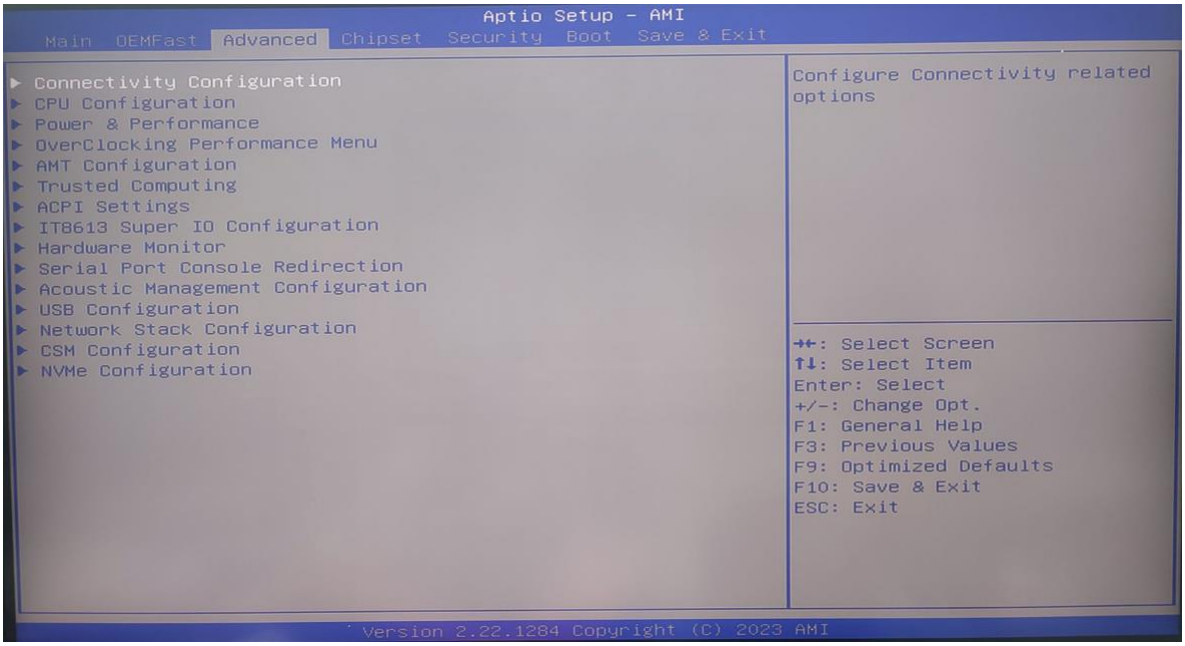
Turbo Mode: CPU RPM setting.

S5 RTC Wake Control: Timed power on setting.

AC Power Loss: AT/ATX option

Watchdog Control: Watchdog setting

Power Manger Control: Power Management Settings



CPU Configuraion: Processor parameter information and common setting options

Trusted Computing: TPM Settings

ACPI Settings: Advanced Configuration and Power Management

IT8613 Super IO Configuration: COM Port Setting Options

Hardware: Fan-related information and setup options

USB Configuration: USB information and control options

CSM Configuration: UEFI, PXE and other related settings

NVMe Configuration: NVME hard disk related options

3.5、Security:

Administrator Password: This line is used to set the super user password.

User Password: The prompt line is used to set the normal user password.

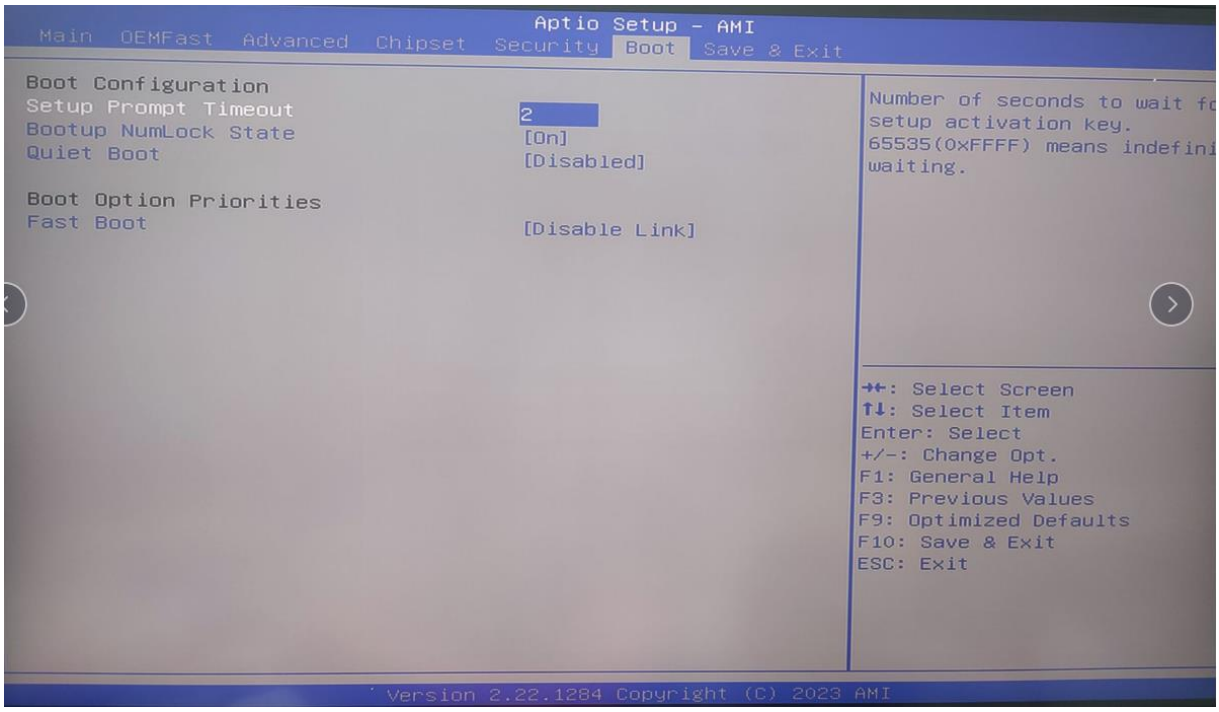
Secure Boot: Secure boot settings

Prompt:

The minimum length of password is 3 digits and the maximum length is 20 digits.

If you forget the password; short the pin RTC1 for 5 seconds or pull out the battery of BAT1 and short the positive and negative terminals for 5 seconds to clear the password.

3.6、Boot:



Boot configuraion: Boot option settings

Bootup Numlock state: option to switch the keypad light on/off after bootup

Quiet Boot: This item allows you to display the supplier logo on the boot screen.

Fast Boot: Fast boot settings

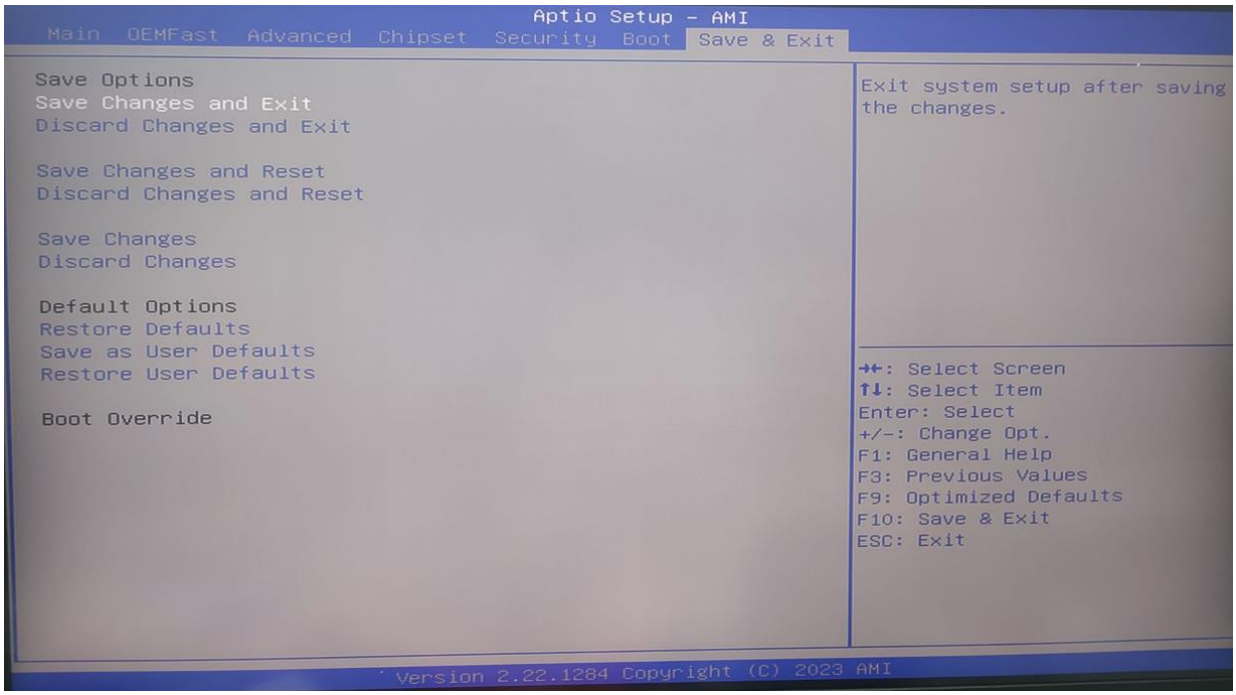
Boot Option Priorities: Boot priority options

Boot Option # 1: First boot item setting

Boot Option # 2: Second boot option setting

New Boot option policy: New boot option setting

3.7、Save & Exit



Save Changes and Exit: Save Changes and Exit

Discard Changes: Discard Changes and go back to the previous save.

Save Changes and Reset: Saves changes and restarts the computer

Discard Changes and Reset: Discard changes and restart the computer.

Save Changes: Save Changes

Discard Changes: Discard changes

Restore Defaults: If selected, the system will restore factory settings.

Appendix: Common Failure Analysis and Resolution

Malfunction	**Checkpoints**
No power on after power on	1. Please make sure that the power supply cable is connected properly. 2. Make sure the power supply meets the power requirements of the motherboard. 3. Try to re-plug the memory stick 4. Try to replace the memory stick 5. Try to clear the motherboard CMOS according to the motherboard manual. 6. Please confirm whether there is an external card, remove the external card after the normal
VGA does not display after power on	1. Check whether the monitor is turned on 2. Check whether the power cable is correctly connected to the monitor and the system unit 3. Check whether the monitor cable is correctly connected to the system unit and the monitor 4. Check if the display brightness control is set to dark, you can increase the brightness by using the brightness control. For more information, refer to the monitor operating instructions 5. The monitor is in the "power saving" mode, press any key on the keyboard.
BIOS Setup cannot be saved	1. Please make sure whether the CMOS battery voltage is lower than 2.8V, if it is lower than 2.8V, please replace it with a new one. 2. BIOS setting is not correct, according to the key (DEL) prompted by the boot screen, adjust the time and date in BIOS Setup.
Cannot find bootable device	1. Please make sure whether the power cable and data cable of the hard disk are connected normally. 2. Make sure the hard disk is not physically damaged. 3. Make sure the operating system is installed properly in the hard disk.
Blue screen or crash during system entry	1. Make sure the memory stick and external card are not loose. 2. Try to remove the newly installed hardware, uninstall the driver or software. 3. Try to replace the memory
Slow to enter the system	1. Try to use third-party software to check whether there are bad sectors on the hard disk. 2.Please make sure whether the remaining space of the system partition is too

	small. 3. Make sure the CPU cooling fan is rotating normally.
System restarts automatically	1. Make sure the CPU cooling fan is rotating normally. 2. Please make sure whether the reset button of the industrial computer is triggered by mistake. 3. Please use antivirus software to confirm whether the system is infected with viruses. 4. Please make sure that the memory stick and external card are not loose. 5. Please make sure whether the power supply with load capacity is enough, you can try to replace the power supply.
Unable to detect USB device	1. Please make sure whether the USB device needs to be powered separately. 2. Please make sure that there is no poor contact with the USB port. 3.Please make sure that the USB controller is turned on in BIOS Setup.