
CW-NAS

Product Brochure (R200)



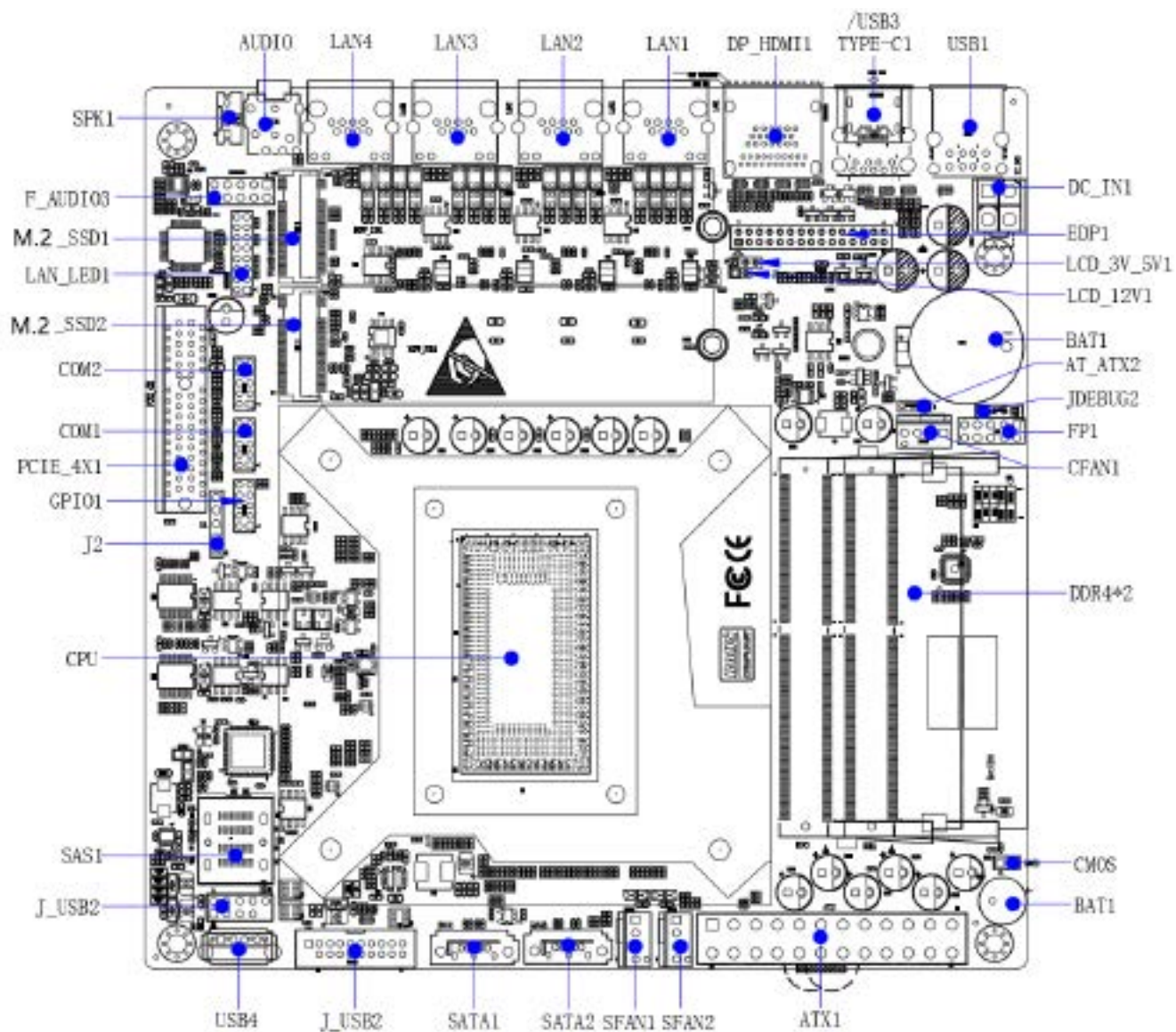
2024. 01. 10

Chapter 1: Product Introduction

1.1 Product Specifications

Processor system	Intel Tiger Lake-U/-H series processors, TDP 28W, compatible with LGA115X CPU coolers
	EFI BIOS
Memory	2*DDR4 SO-DIMM 4800MHz, total maximum 64GB
Storage	1*M.2 M-Key 2280 (PCIe4.0_4x) storage interface
	1*M.2 M-Key 2280/22110(PCIe3.0_2x) storage interface
	1*Mini SAS 8643 interface (converted to 4*SATA3.0 via connecting cable)
	2*SATA3.0 interface
Display	1*HDMI2.0 interface, support 4K@60Hz
	1*DP1.4 interface, support 4K@60Hz
	1*eDP
Board edge I/O interface	2*USB2.0, TF card, 1*USB3.0, 1*Type-C (double-sided USB3.0 + DP), CONSOLE
	2*LAN Intel i226-V
	1*HDMI, 1*DP, 1*2-in-1 audio jack
Expansion interface/function	TPM2.0 is optional and not available by default
	1*PCIe_X4 (PCIe3.0_4x protocol, can be plugged in X8/X16 card)
	1 set of 2 USB2.0 pin headers, spacing 2.54mm, 1 vertical USB2.0
	1 set of 2 USB3.0 pin headers, spacing 2.0mm
	2*RS232 pin header, 2x5Pin, spacing 2.54mm; LAN LED pin, spacing 2.54mm
	1*8-bit GPIO pin header, 2x5Pin, spacing 2.54mm
	1*4Pin PWM CPU fan, 2*4Pin system fan; F_Audio pin header, SPEAK
Power Supply	ATX 24+4 Pin
Work Environment	Working temperature: -20℃ ~ +60℃; working humidity: 5% ~ 90%
	Storage temperature: -40℃ ~ +85℃; Storage humidity: 5% ~ 90%
Operating System Support	Windows10, Windows11, Linux
Size	170x170 mm
Weight	About 300g (without radiator)

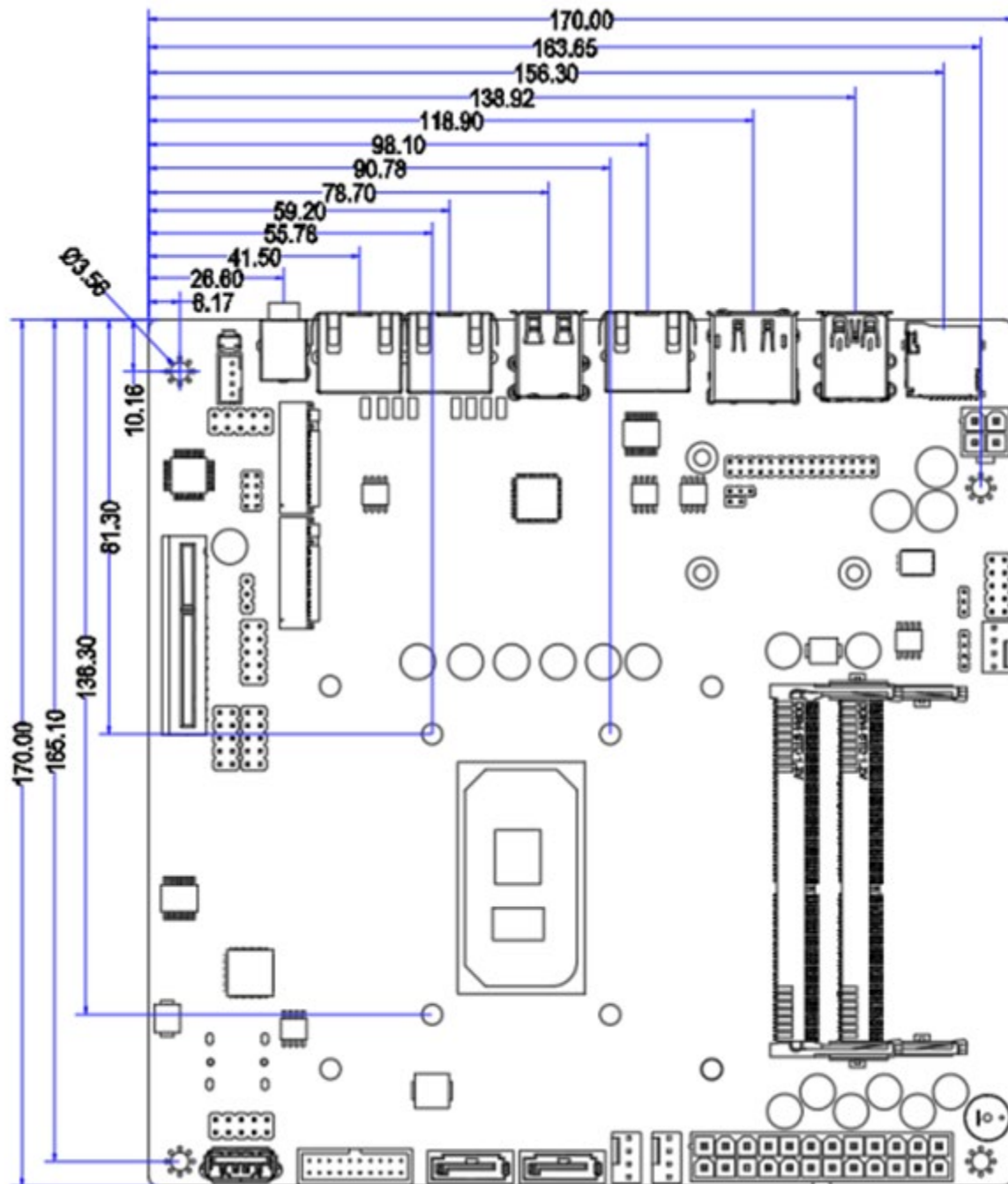
1.2 Product function location map



NAS-TL500-R200-排布图

1.3 No functional interface on the back

1.4 Product size drawing (unit: mm)



Chapter 2: PIN Definition

The first pin has a prominent triangle, square or number logo.

2.1. the power input is ATX 24+4PIN, recommended more than 200W, according to the actual use of peripherals.

2.2. The CPU radiator has LGA115X standard holes and will be equipped with a metal CPU protection seat. Whether the radiator is delivered will be subject to the specific business negotiation results.

2.3. Memory supports DDR4 SO-DIMM memory slot, supports dual channels, and has a maximum of 64GB.

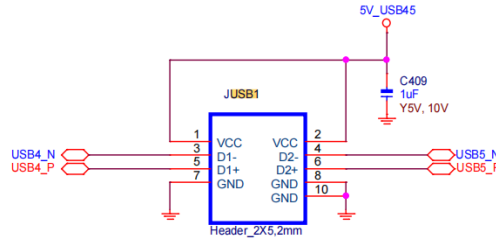
2.4. PCIe_X4 slot is PCIe4.0 4x protocol, and can be used for X8 or X16 slot cards.

2.5. M.2 2280 supports storage devices with M.2 M-Key interface 2280 size and PCIe4.0 2x protocol.

2.6. M.2 2280/22110 supports M.2 M-Key interface 2280 or 22110 size, PCIe3.0x2 protocol storage devices. The stud positions corresponding to the two sizes of SSD are different, please pay attention when placing an order.

2.7. MiniSAS connector, with SFF8643 adapter cable, can transfer 4 SATA3.0.

2.8. J_USB1 is a 2x5Pin, 2.54mm pitch USB2.0 pin header, defined as follows:

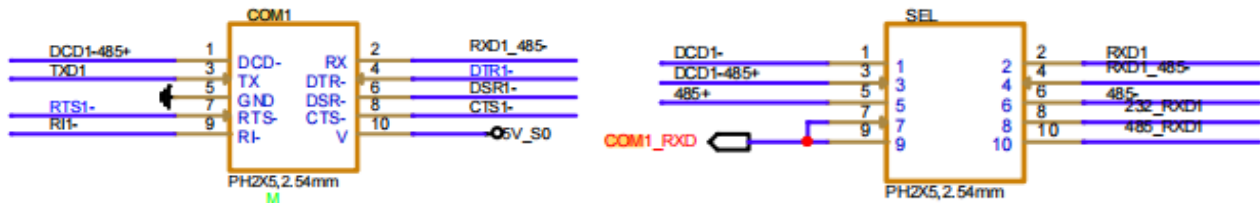


2.9. JUSB3.0 is a 2x10Pin, 2.0mm pitch USB3.0 pin header.

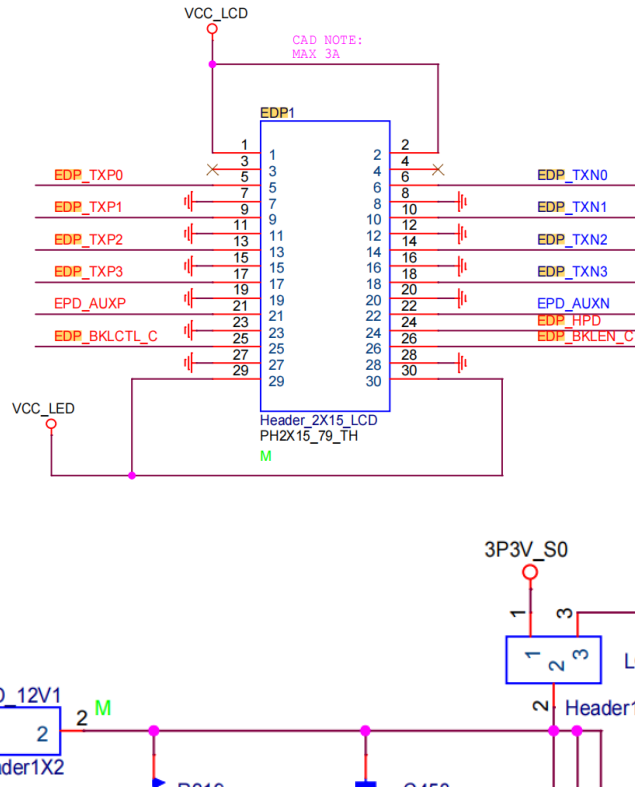
2.10. GPIO is a 2x5Pin, 2.54mm pitch pin header, defined as follows:

Pin1	GPO0	Pin2	GPI0
Pin3	GPO1	Pin4	GPI1
Pin5	GPO2	Pin6	GPI2
Pin7	GPO3	Pin8	GPI3
Pin9	+3.3V	Pin10	GND

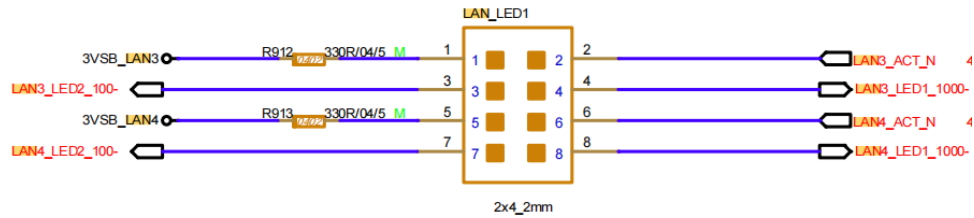
2.11. COM1/2, COMSEL are 2x5Pin, 2.54mm spacing pin headers, defined as follows:



2.12. eDP is a 2x15Pin header with a spacing of 2.0mm. The eDP voltage selection jumper is a 5Pin header with a spacing of 2.0mm. The definitions are as follows:



2.13. LAN LED is 2x8Pin, 2.54mm spacing pin header, defined as follows:



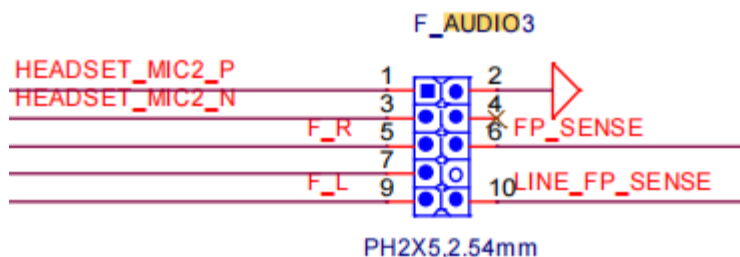
2.14. The definitions of CFAN and two SFANs are as follows:

Pin	definition	Pin	definition	Pin	definition	Pin	definition
1	GND	2	+12V	3	FANTACH	4	FANPWM

2.15. AT/ATX is a 1x3 pin header with a spacing of 2.54. The power-on mode selection is defined as follows:

Pin	1-2Pin short circuit	Pin	2-3Pin short circuit
1	AT power-on mode	2	ATX power-on mode

2.16. FAUDIO is a 2x5Pin pin header with a spacing of 2.54mm, and is defined as follows:



2.17. SPEAK is a 1x4Pin wafer with a spacing of 2.0mm, and is defined as follows:

Pin1	Pin2	Pin3	Pin4
R+	R-	L-	L+

2.18. FPANEL is a 2x5Pin pin header with a spacing of 2.54mm, defined as follows:

Pin1	HDD LED+	Pin2	PLED+
Pin3	HDD LED-	Pin4	PLED-
Pin5	RST-,GND	Pin6	SW+
Pin7	RST+	Pin8	SW-
Pin9	SPK+	Pin10	SPK-

Chapter 3: BIOS parameter settings

3.1. Entering BIOS and updating

3.1.1. How to enter BIOS and key functions

1. Turn on the system power or restart the system.
2. After booting up, when the self-test information 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 functions of each button in the BOIS interface are as follows:

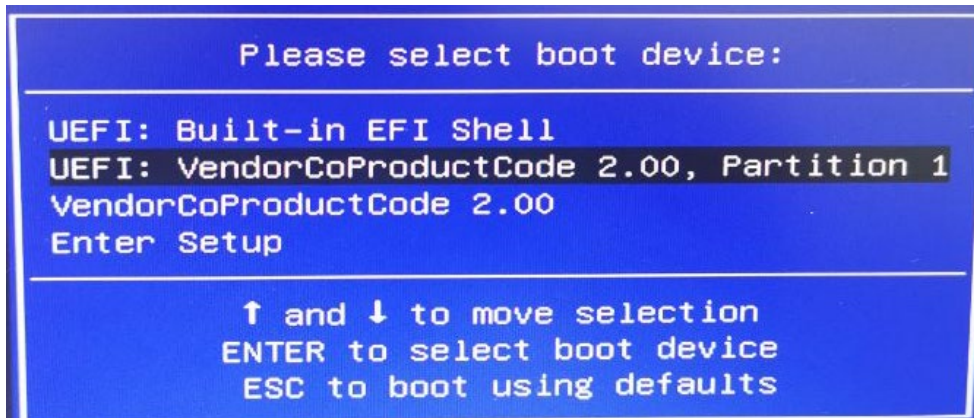
- →←: Select menu
- : Select item
- Enter: Confirm selection
- +/-: Change value
- F1: Help
- F2: Abandon this change and return to the last setting value.
- F9: Restore factory defaults
- F10: Save changes and exit
- ESC: Return to the previous screen

3.1.3. Notes:

1. BIOS settings directly affect the performance and function of the computer.
2. Setting incorrect parameters will damage the computer or even prevent it from booting.
3. If the computer cannot boot due to incorrect settings, please restore the factory mode.

3.1.4 BIOS update steps (If you need to update the BIOS, please contact our technical support personnel)

1. Prepare a FAT32 formatted USB flash drive.
2. Copy the EFI directory provided by our company to the root directory of the USB flash drive.
3. After booting up, press F12 to select the boot item, select boot from UEFI: USB flash drive, and enter the SHELL interface as shown below:



4. After entering SHELL, wait for 5 seconds and it will automatically refresh (do not cut off the power during the update process. If the power is cut off during the update process, it will cause the computer to fail to boot). Picture of the BIOS update process:

```
EFI Shell version 2.70 [5.12]
Current running mode 1.1.2
Device mapping table
fs0 :Removable HardDisk - Alias hd6e0b blk0
    PciRoot(0x0)/Pci(0x14,0x0)/USB(0x4,0x0)/HD(1,MBR,0x005EC1C0,0x40,0x1DAFFC0)
blk0 :Removable HardDisk - Alias hd6e0b fs0
    PciRoot(0x0)/Pci(0x14,0x0)/USB(0x4,0x0)/HD(1,MBR,0x005EC1C0,0x40,0x1DAFFC0)
blk1 :Removable BlockDevice - Alias (null)
    PciRoot(0x0)/Pci(0x14,0x0)/USB(0x4,0x0)

Press ESC in 1 seconds to skip startup.nsh, any other key to continue.
fs0:\EFI\BOOT\startup.nsh> FS0:
fs0:\EFI\BOOT\startup.nsh> CD EFI\BOOT
fs0:\EFI\BOOT\startup.nsh> Fpt -F 250.bin

Intel (R) Flash Programming Tool. Version: 11.8.50.3460
Copyright (c) 2007 - 2017, Intel Corporation. All rights reserved.

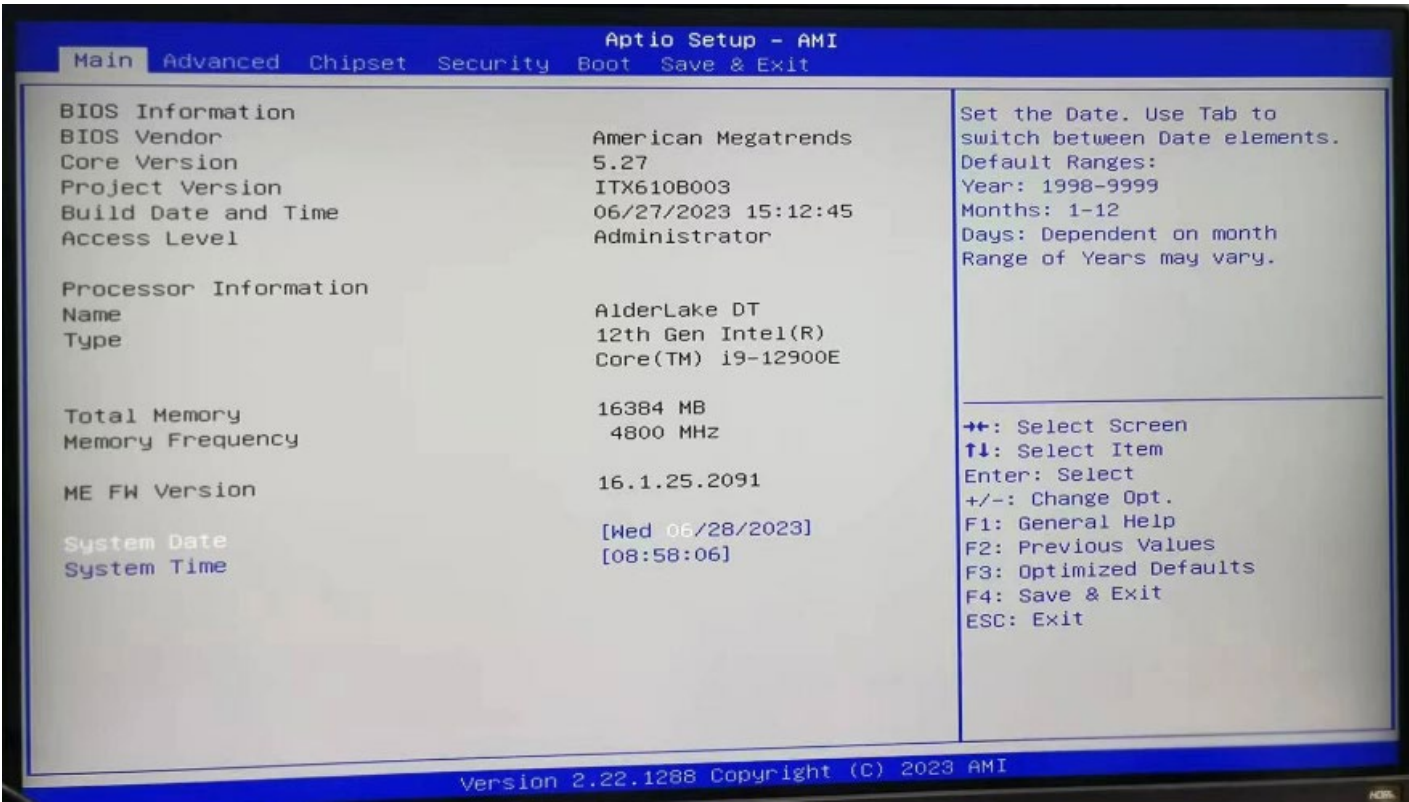
Reading HSFSTS register... Flash Descriptor: Valid

--- Flash Devices Found ---
W25Q128FV      ID:0xEF4018      Size: 16384KB (131072Kb)

= Reading Flash [0x011EBC0] 1146KB of 16384KB - 7 percent complete.
```

5. After updating the BIOS, restart.

3.2 Main Menu

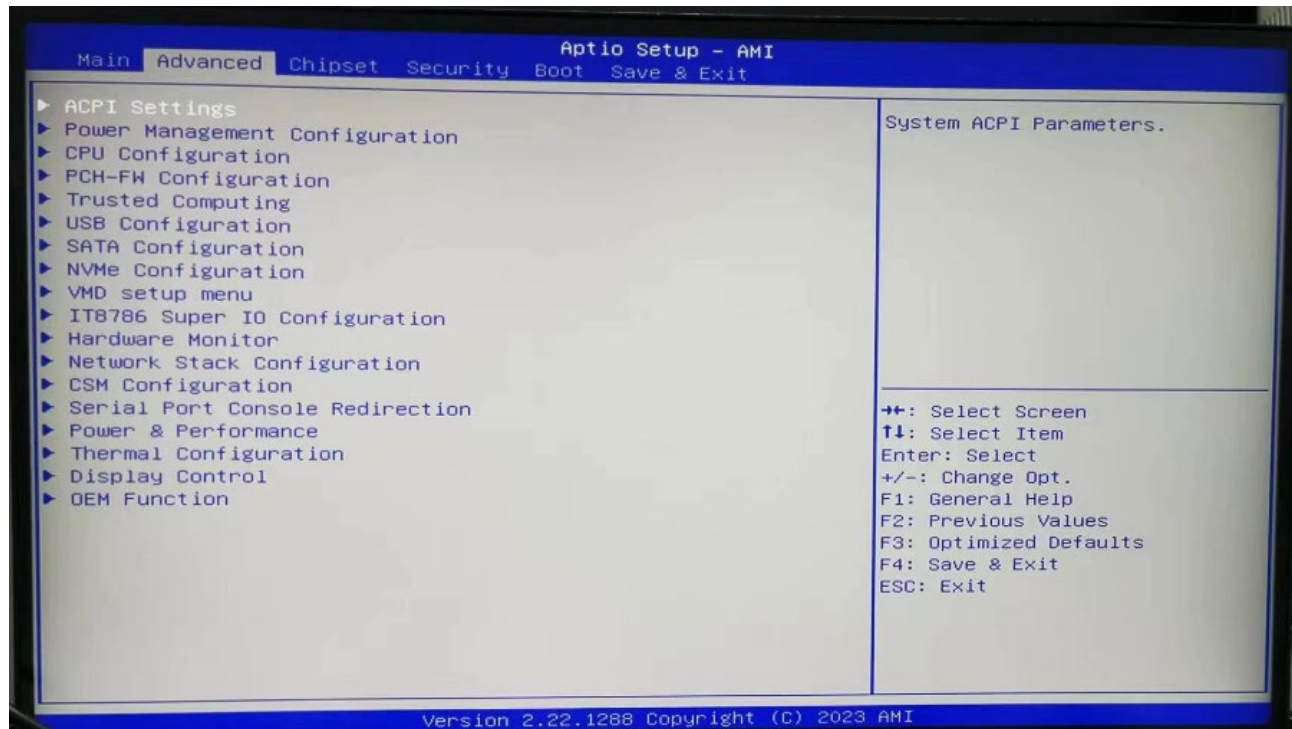


The black font part is a read-only information item; it contains BIOS ID and version. Detailed information of CPU, including CPU manufacturer, model, frequency, L1 cache size, L2 cache size, etc.

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

3.2.2、System Time; Set the system time. It is expressed in the format of hour/minute/second. The setting range is: Hou hour (00-23), Minute/minute (00-59), Second/second (00-59).

3.3 Advanced settings



ACPI Settings: Advanced configuration and power management

Power Management Configuration: Power management setting options CPU

Configuration: Fan related information and setting options

USB Configuration: USB information and control options

SATA Configuration: SATA information and control options

IT8786 Super IO Configuration: 8786 IO control options Hardware Monitor

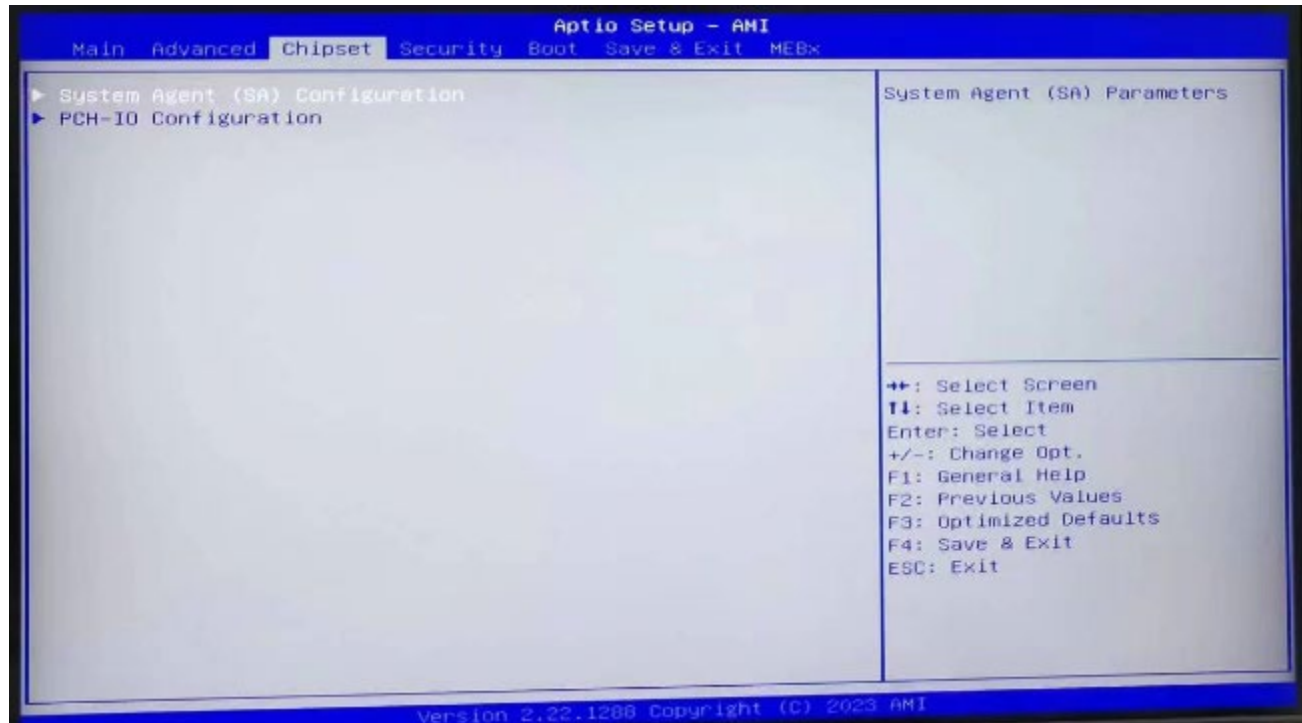
Hardware monitoring

CSM Configuration: UEFI, PXE and other related settings

Display Control: Display settings

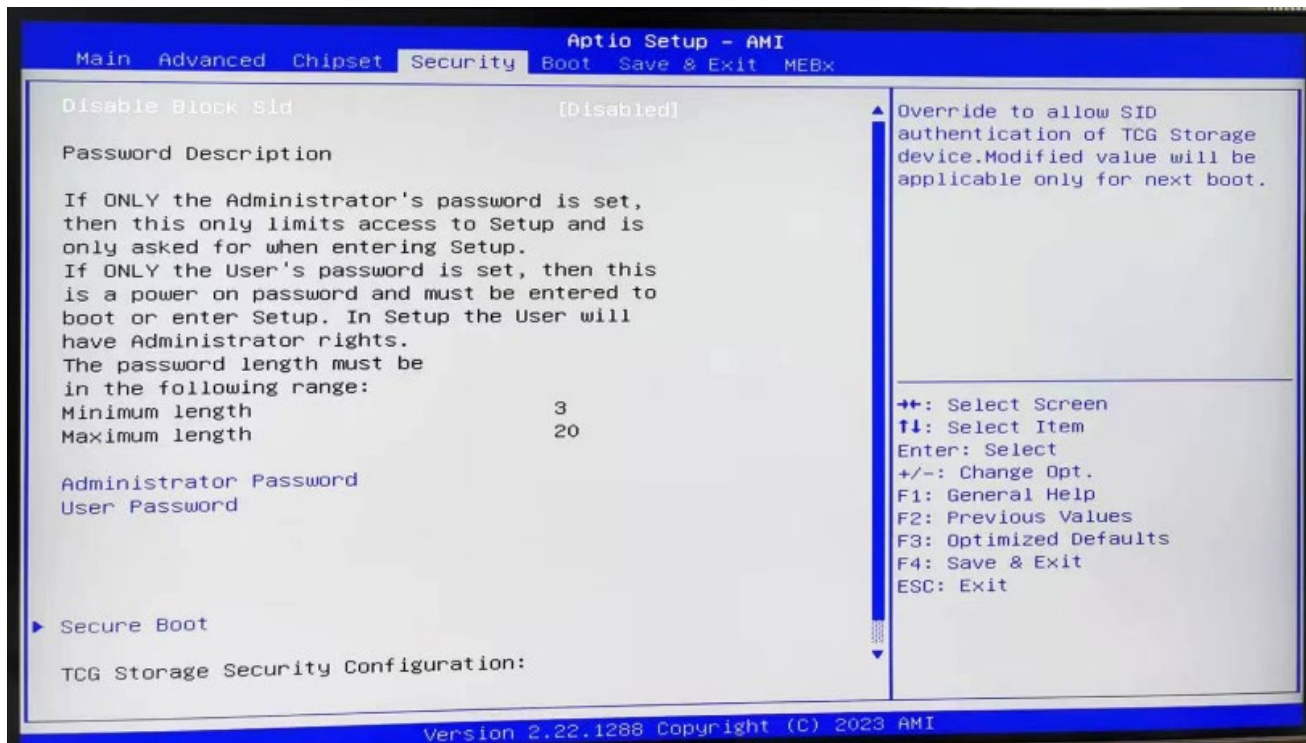
OEM Function: OEM settings

3.4、Chipset



System Agent (SA) Configuration: System configuration control options
PCH-I/O Configuration: Bridge chip control options

3.6、Security



Administrator Password; This prompt line is used to set the super user password

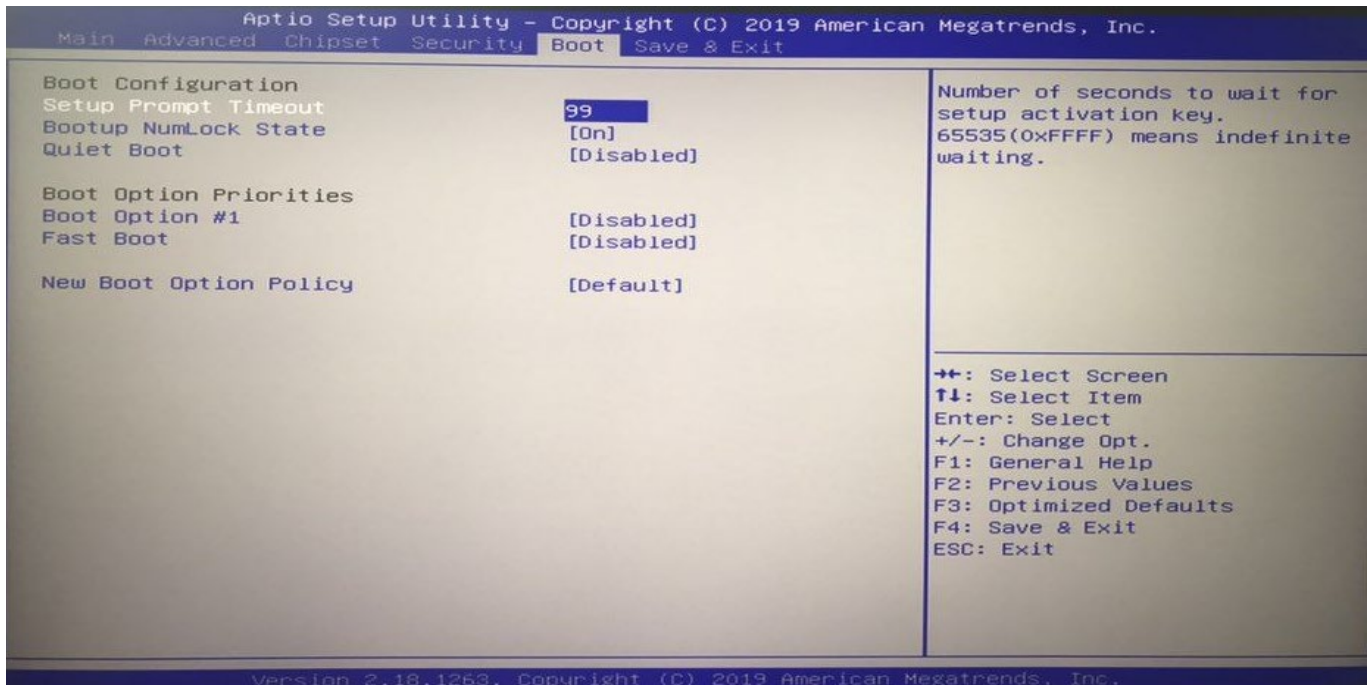
User Password; This prompt line is used to set the ordinary user password

Secure Boot; Secure boot settings

Tip; The minimum password length is 3 characters and the maximum length is 20 characters.

If you forget your password; short-circuit the RTC1 pin for 5 seconds or unplug BAT1 and short-circuit the positive and negative poles for 5 seconds to clear the password

3.7、Boot:



Boot configuration; Boot option settings

Boottup Numlock state; Keypad light switch option after booting Quiet Boot; This item allows you to display the vendor logo on the boot screen Fast Boot; Fast boot settings

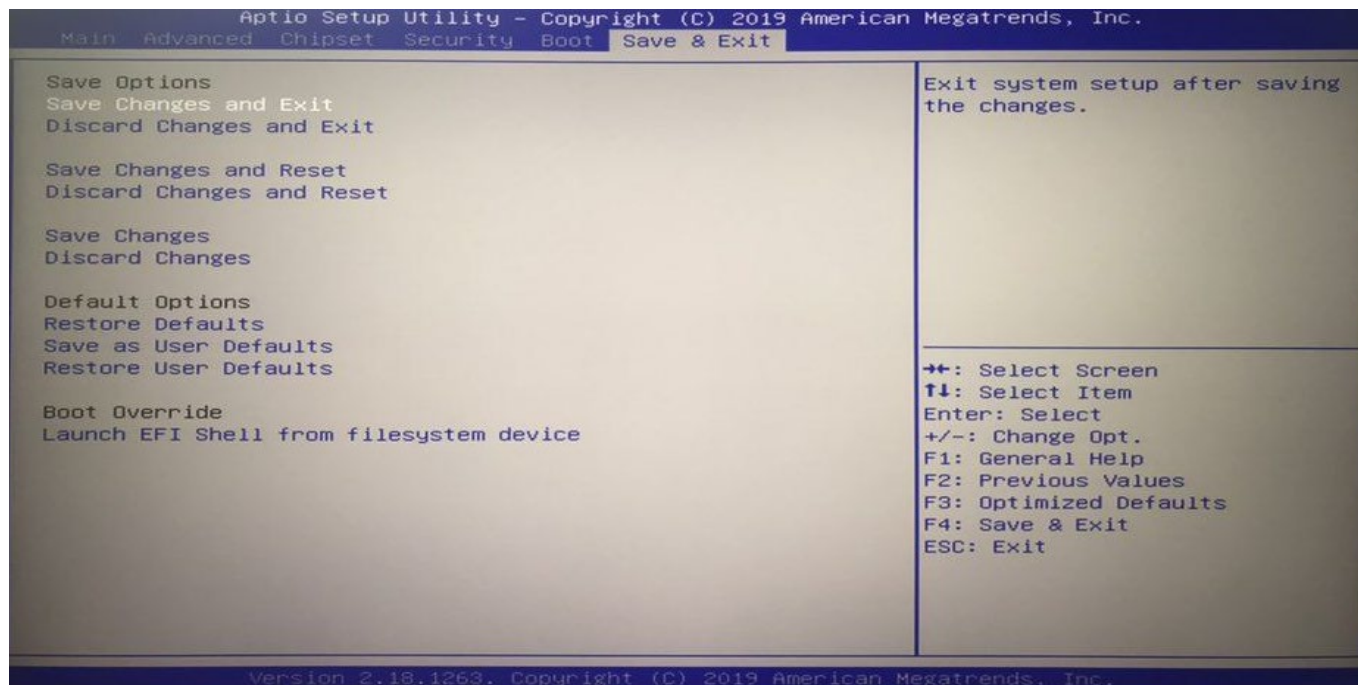
Boot Option Priorities; Boot priority options

Boot Option # 1; First boot option settings

Boot Option # 2; Second boot option settings

New Boot option settings; Add new boot option settings

3.8、Save & Exit



Save Changes and Exit; Save changes and exit

Discard Changes; Abandon changes and return to the last saved content

Save Changes and Reset; Save changes and restart

Discard Changes and Reset; Abandon changes and restart the computer.

Save Changes; Save changes

Discard Changes; Abandon changes Restore Defaults; If this option is selected, the system will be restored to factory settings

Appendix: Common Fault Analysis and Solutions

Fault	Checkpoint
Does not turn on after power on	1. Please confirm whether the power cable is connected properly 2. Please confirm whether the power supply used meets the power supply requirements of the motherboard 3. Try to re-insert 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 and whether it is normal after removing the external card
VGA does not display after powering on	1. Check if the monitor is turned on 2. Check if the power cable is properly connected to the monitor and the system unit 3. Check if the monitor cable is properly connected to the system unit and the monitor 4. Check if the display brightness control is set to dark, you can increase the brightness through the brightness control. For more information, refer to the monitor operating instructions 5. The monitor is in "power saving" mode, press any key on the keyboard
BIOS Setup settings cannot be saved	1. Please confirm whether the CMOS battery voltage is lower than 2.8V. If it is lower than 2.8V, please replace the new battery and reset it to save. 2. The BIOS settings are incorrect. Press the key (DEL) prompted by the boot screen to adjust the time and date in the BIOS Setup.
It says that a bootable device cannot be found.	1. Please confirm whether the hard disk power cable and data cable are connected properly 2. Please confirm whether the hard disk is physically damaged 3. Please confirm whether the operating system is installed normally in the hard disk
Blue screen or freeze during system entry	1. Please check if the memory stick and external card are loose 2. Try to remove the newly installed hardware, uninstall the driver or software 3. Try to replace the memory
Slow system entry	1. Try to use third-party software to check whether the hard disk has bad sectors 2. Please confirm whether the remaining space in the system partition is too small 3. Please confirm whether the CPU cooling fan is running normally
System automatically restarts	1. Please confirm whether the CPU cooling fan is rotating normally 2. Please confirm 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 confirm whether the memory stick and external card are loose 5. Please confirm whether the power supply has sufficient load capacity. You can try to replace the power supply

USB device cannot be detected	1. Please confirm whether the USB device needs to be powered separately 2. Please confirm whether the USB interface has poor contact 3. Please confirm whether the USB controller is turned on in BIOS Setup
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