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SPC-9150

User's Manual

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Chapter 1. About this Manual

1. About this Manual

1.1 Revision History

Date	Version	Chapter	Updates
2024/10/23	First Draft		

1.2 Copyright

1.3Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents here of and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

1.4Conventions

The following conventions are used in this manual:

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts your to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problem.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

1.5 Preface

Before using this information and the product it supports, please read the following general information.

This service guide provides you with all technical information relating to the basic configuration decided for Darveen's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (e.g. Add-on card, WLAN card, SSD card, com card or extra memory capability). These localized features will not be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

Chapter 2. Introducing the Motherboard

2.Introducing the Motherboard

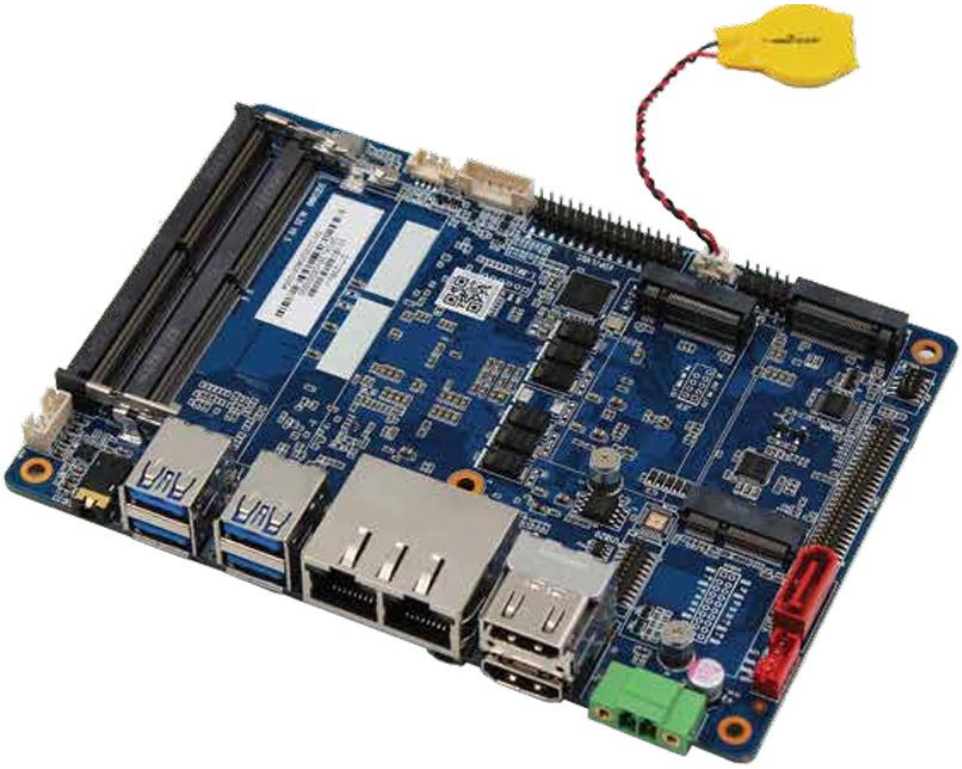
2.1 Introduction

Thank you for choosing the SPC-9150 industrial all-in-one machine, which uses the INTEL AL-35 motherboard, The AL35 motherboard is a 3.5 "SBC (Single Board Computer) based on the Intel Alder Lake-U platform, featuring a small size，Characteristics of low power consumption and high efficiency

2.2 Motherboard specification

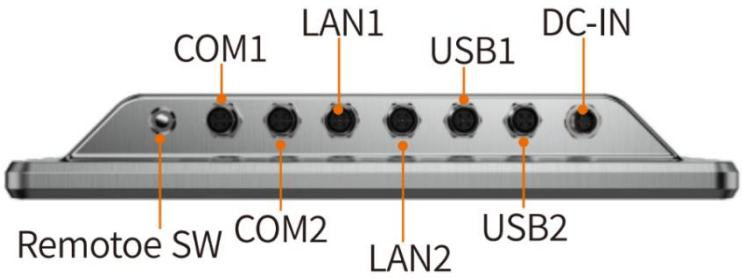
CPU:
I5-1235U-10 core 12 thread maximum turbo frequency 4.4GHz, reference power 15W, maximum turbo frequency power 55W
I3-1215U-6 core 8-thread maximum turbo frequency of 4.4GHz, reference power of 15W, maximum turbo frequency power of 55W
Memory: 2 SO-DIMM DDR4-3200 slots, supporting dual channels, with a maximum memory capacity of 64GB
Graphics card: CPU integrated display core, providing 2 HDMI 2.0b interfaces and 1 LVDS interface (optional EDP)
Storage: 1 M.2 slot Key M, supports 2280 SSD NVME protocol (PCIE4.0 X4 signal), 1 SATA3.0 Interface, 1 M.2 slot Key B, supports 2242 SSD SATA protocol or 4G module
USB: 4 USB 3.2 Gen2 sockets, 4 USB 2.0 onboard pins
Network card: 2 Gigabit Ethernet cards (Intel i210+Intel i219)
Sound card: equipped with high-resolution audio chip, supporting 1 2-in-1 audio interface (supporting Line_out, Mic_in), supporting
1 built-in dual channel amplifier output socket for connecting passive speakers
Serial ports: 6 RS232 serial ports (COM1, COM2 can be switched to RS232/RS422/RS485 through BIOS; COM5, COM6
For three wire RS232)
Expansion port: 1 M.2 slot Key E, supporting 2230 WiFi modules (PCIe/USB2/CNVi)
Other ports: 1 switch pin (JFP), 1 SIM card slot, 1 set of GPIO pins, 1 CN1 interface
Size: 146mm x 102mm
Power supply: Supports wide voltage 12V-35V DC adapter power supply
Working temperature: -20 ℃~60 ℃

2.3 Main-board Physical Image



2.4 Front and Rear View

2.5 System I/O：



2.6 System Information

1Table 1.1-1 Product specification of SPC-9150

Display	
Size	15 inch
Touch Type	5-wire resistive touch/Projected capacitive multi touch (optional)
Transmittance	87% (capacitive) / 80% (resistive)
Control Interface	USB
Surface Hardness	≥7H/≥3H
Resolution	1024 x 768
Luminance	350 nits
Contrast Ratio	1000: 1
View Angles	89 (left), 89 (right), 89 (up), 89 (down)

LED Lifetime	50,000 hrs
Color	16.7M
System	
CPU	Intel® Core I5 1235U(1.3 GHz) processor Intel® Core I3 1215U(1.2 GHz) processor
Memory	1x SO-DIMM DDR4-3200MHz, up to 64GB
Storage	1x 2.5" SATA HDD/SSD (optional) 1x m.2 2280 NVME SSD
I/O Ports	
USB	4x USB 2.0 M12
Serial	2x COM (supports RS-232) M12
Ethernet	2x GbE LAN M12
Expansion Slot	
Mini PCIe	1x m.2 2230 for Wi-Fi 1x m.2 2280 NVME SSD
RF Communication	
Wi-Fi	M.2 2230 (optional)
Cellular	M.2 2242 (optional)
Bluetooth	M.2 2230 (optional)
Power	
Bution	YES
DC Input	9-36VDC
Power Connector	3-pin M12
Power Consumption	29W
Power Adaptor	AC-DC, 24V@3.75A, 90W
Operating System	
Windows	Windows 10, Windows 11
Mechanical	
Dimensions (W x D x H)	362 x 286 x 52 mm (14.26 x 11.26 x 2.04 inches)
Weight (N.W.)	5.7 kg (12.57 lbs)

Mounting	Wall mount bracket VESA 100
Material	Stainless Steel
Environment	
Operating Temperature	-10 to 50°C (14 to 122°F)
Storage Temperature	-20 to 60°C (-4 to 140°F)
Relative Humidity	10% to 95% @ 40°C (104°F), non-condensing
Vibration	5-500Hz, 0.026 G²/Hz, 2.16 Grms, X, Y, Z, 1 hour per axis
IP Rating	IP66 compliant (for front panel)
Certification	
EMC	CE, FCC
Packing List	
Packing	1x SPC-9150 1x AC-DC power adapter 1x warranty card

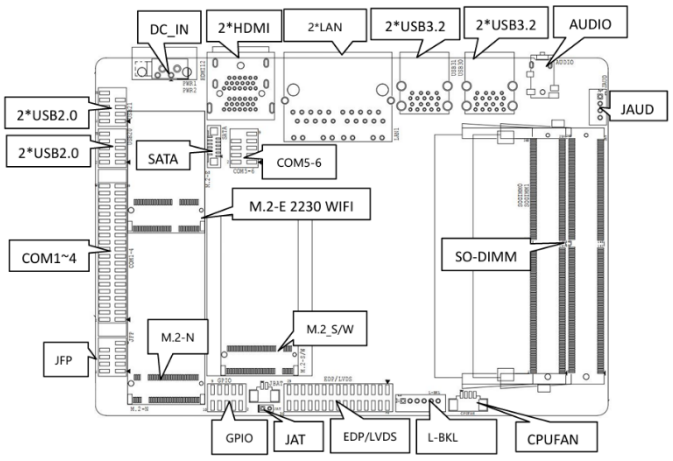
Chapter 3. Jumper and Installation Instructions

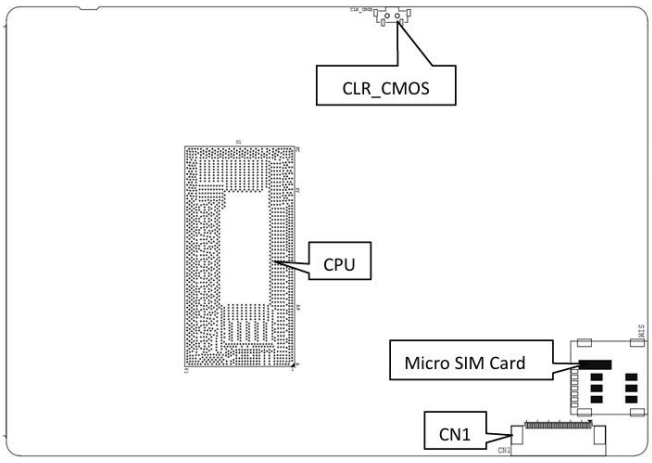
3.Jumper and Installation instructions

3.1 Safety Precautions

1. Follow these safety precautions when installing the motherboard
2. Wear a grounding strap attached to a grounded device to avoid damage from static electricity
3. Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
4. Leave components in the static-proof bags they came in
5. Hold all circuit boards by the edges. Do not bend circuit boards Attention:
6. Please make sure to choose appropriate screws and use the correct installation method, otherwise it may damage the motherboard.
7. How to identify the first pin of the jumper or interface, observe the text mark next to the plug and socket, which will be represented by a triangle symbol or "1" or bold lines; Look at the solder pad on the back. The square solder pad is the first pin. When inserting the device and connecting wires, pay attention to distinguishing the first pin, otherwise it may damage the motherboard

3.2 Schematic Diagram of Interface Location





Reminder:
The working voltage of LVDS screen supports 3.3V, 5V, and 12V voltage outputs, with a default value of 3.3V. Before using LVDS, please understand its required rated working voltage before setting it.

Reminder:
How to identify alarm sounds: (A long beep indicates a system memory error; a short 'beep' indicates a power on sound).

3.3 Installation Steps

Please follow these steps to assemble your computer:
1. Refer to the user manual and adjust all Jumpers on the EHL35 correctly.
2. Install other expansion cards.
3. Connect all signal lines, cables, panel control lines, and power supplies.
4. Start the computer and complete the setup of the BIOS program.

3.4 Memory Installation

This motherboard is equipped with 1x SO-DIMM slots. Please note the following two points when installing a memory module:
During installation, align the notch of the memory module with the notch of the slot and then firmly insert it.
When selecting a memory module, you must select a memory module that supports the specifications of this motherboard.

3.5 Jumper Function Settings

Before installing hardware devices, please set the corresponding jumpers according to the table below according to your needs.
Tip: How to identify the first pin of the jumper or interface, observe the text mark next to the plug and socket, and use "1" or add
Thick lines or triangular symbols represent; Look at the solder pad on the back, the square solder pad is the first pin; All jumper pins There is a white arrow on either side.

3.6 Display Interface

Equipped with one HDMI 2.0b interface (supporting HDCP2.3) and one DP1.4 interface on the board, supporting up to 4K 60Hz; one
Supports LVDS pins with a maximum resolution of 1920x1080 24 bits (this pin can be optionally used as EDP).

LVDS (silk screen printing: EDP/LVDS, L-BKL, L_VCC/BKL)
When configured with LVDS function, the "EDP/LVDS" pin transmits LVDS signals, and the "L-BKL" pin is used for backlight adjustment,
The "L_VCC/BKL" pin is used to regulate the working voltage of the screen

LVDS data pin (silk screen: EDP/LVDS)

signal	Pin	Pin	signal
VCC	1	2	VCC
VCC	3	4	GND
GND	5	6	GND
A_DATA0_DN	7	8	A_DATA0_DP
A_DATA1_DN	9	10	A_DATA1_DP
A_DATA2_DN	11	12	A_DATA2_DP
GND	13	14	GND
A_CLK_DN	15	16	A_CLK_DP
A_DATA3_DN	17	18	A_DATA3_DP
B_DATA0_DN	19	20	B_DATA0_DP
B_DATA1_DN	21	22	B_DATA1_DP
B_DATA2_DN	23	24	B_DATA2_DP
GND	25	26	GND
B_CLK_DN	27	28	B_CLK_DP
B_DATA3_DN	29	30	B_DATA3_DP

LVDS backlight pin (silk screen: L-BKL)

Pin	signal
1	GND
2	GND
3	LCD_BKL_ADJ
4	LCD_BKL_ON
5	12V
6	12V

LVDS working mode pin (silk screen: L_VCC/BKL)

Interface	setting	function
1-3 short circuit	Close	VCC(+3.3V)
3-5 short circuit	Close	VCC(+5V)
2-4 short circuit	Close	REV (Backlight Control Flip)
4-6 short circuit	Close	STD (Backlight Control Forward)

Attention: The LVDS screen power supply is made into a jumper, which can be flexibly adjusted between 5V/3.3V. Customer Root
According to the voltage parameters of the LVDS screen, use jumper caps to short-circuit the voltage pins that meet the requirements (it is strictly prohibited to short-circuit different voltages at the same time)
Insert the pin).

3.7 Storage ports

The board supports one mSATA interface, which also supports 4G modules and comes with a standard Micro SIM card slot; 1 SATA

Interface and provide one PWSATA power socket (with a spacing of 2.0mm).

SATA power supply definition (silk screen: PWSATA):

Pin	signal
1	5V
2	GND
3	GND
4	12V

3.8 Expansion Slot

Provide 1 M.2 slot Key E on the board, supporting 2230

3.9 USB interface

Equipped with 4 USB 3.2 Gen2 sockets and 4 USB 2.0 pins (spaced 2.0mm apart) on the board

Built in USB 2.0 pins (silk screened: USB 20, USB 21)

signal	Pin	Pin	signal
VCC 5V	1	2	VCC 5V
USB DATA-	3	4	USB DATA-
USB DATA+	5	6	USB DATA+
GND	7	8	GND
NC	9	10	/

3.10 LAN interface

The motherboard adopts high-performance Gigabit Ethernet control chip intel I210+I219, providing 2 RJ45 ports and supporting network
Awakening (Magic packet wake up); LAN1 also supports PCIe network booting.
Port LED status indicator:

LILED (green) status	function	ACTLED (orange) status	function
Always on	network link	flashing	Perform data transmission

3.11 Serial port

The board has built-in serial port pins (2.0mm spacing) and supports 6 RS232 serial ports by default (COM1, COM2 can be accessed through BIOS)

Switch to RS232/RS485/RS422; COM5 and COM6 are three wire RS232 serial ports, with each string between COM1-COM4

The 10th pin of the mouth supports 12V charging.
RS232 serial port (silk screen: COM14):

signal	Pin	Pin	signal
DCD#	1	2	RXD
TXD	3	4	DTR#
GND	5	6	DSR#
RTS#	7	8	CTS#
RI#	9	10	VCC
DCD#	11	12	RXD
TXD	13	14	DTR#
GND	15	16	DSR#
RTS#	17	18	CTS#
RI#	19	20	VCC
DCD#	21	22	RXD
TXD	23	24	DTR#
GND	25	26	DSR#
RTS#	27	28	CTS#
RI#	29	30	VCC
DCD#	31	32	RXD
TXD	33	34	DTR#
GND	35	36	DSR#
RTS#	37	38	CTS#
RI#	39	40	VCC

COM5-6 default RS232 definition (silk screen: COM5-6)

signal	Pin	Pin	signal
NC	1	2	NC
RX5	3	4	RX6
GND	5	6	GND
TX5	7	8	TX6
NC	9	10	(NC)

COM1-2 Optional RS232/RS485/RS422 definition

Pin	RS-232	RS-485	RS-422
1	DCD	DATA-	TX
2	RXD	DATA+	TX+
3	TXD	(NC)	RX+
4	DTR	(NC)	RX
5	GND	GND	GND
6	DSR	(NC)	(NC)
7	RTS	(NC)	(NC)
8	CTS	(NC)	(NC)
9	RI	(NC)	(NC)

3.12 GPIO (silk screen: GPIO)

The board provides a 2x5Pin GPIO pin (2.0mm spacing) with a total of 8 programmable input/output ports.

GPIO (screen printing: GPIO)

signal	Pin	Pin	signal
SIO_GP70	1	2	3.3V
SIO_GP71	3	4	SIO_GP74
SIO_GP72	5	6	SIO_GP75
SIO_GP73	7	8	SIO_GP76
GND	9	10	SIO_GP

3.13 Mainboard power supply (silk screen printing: PWR2)

The motherboard provides one DC power interface (5.5mm * 2.5mm) and one 1 * 4PIN power interface; Support the use of 12V

Powered by a DC adapter.

PWR2 (silk screen printing: PWR2)

Pin	signal
1	VCC
2	VCC
3	GND
4	GND

3.14 Power on/off button/indicator light pin (silk screen: JPOWER)

The motherboard provides one set of switch buttons with 2.0mm spacing pins, which can be connected to one power on/off button and one system reset button,
1 hard disk read/write indicator light, 1 power on indicator light.

JPOWER (silk screen printing: JPOWER)

signal	Pin	Pin	signal
HDD_LED+	1	2	PWR_LED+
HDD_LED-	3	4	PWR_LED-
RSTBTN-	5	6	PWR_ON+
RSTBTN+	7	8	PWR_ON-
NC	9	10	NC

3.15 Audio interface (silk screen: AUDIO, JAUD)

Using Realtek audio control chip, providing one 3.5mm Line_out/MIC_in 2-in-1 jack (CTIA) American standard), 1 built-in dual channel amplifier output socket for connecting passive speakers.
2-in-1 headphone jack:

Amplifier output socket (silk screen: JAUD):

Pin	signal
1	L+
2	L-
3	R-
4	R+

3.16 Hardware call auto start (screen printing: JAT)

JAT (silk screen printing: JAT)

SET	JAT
Close	Hardware call auto start

It should be noted that this jumper function is similar to the "State After G3" function in BIOS, when the latter is set to
When set to "S0 State", the host will also start automatically when powered on after power off

3.17 Hardware call auto start (screen printing: JAT)

CMOS is powered by button batteries on the board. Clearing CMOS will permanently erase previous system settings and reset them to their original state
(Factory settings) System settings.
Step:
(1) Turn off the computer and disconnect the power supply;
(2) Press and hold the CLR_CMOS button for about 10 seconds, then disconnect;
(3) When starting the computer, press the<Del>key to enter the BIOS, load the optimal default values, and save the exit settings.
CMOS (screen printing: CLR_CMOS)

SET	CLR_CMOS
Close	Clear CMOS content

Please do not clear the CMOS when the computer is powered on to avoid damaging the motherboard.

Chapter 4. System Utilities

4.System Utilities

BIOS (Basic Input and Output System) records the setting parameters of various hardware devices in the system through the CMOS chip on the motherboard BIOS includes a BIOS setup program for users to set system parameters as needed to ensure that the motherboard functions properly or performs specific functions

The relevant settings modified through the BIOS Setup program (except for date and time) are saved in the flash memory of the system. The power required to memorize CMOS data is supplied by the battery on the motherboard. Therefore, when the system power is turned off, these data will not be lost. When the power is turned on again, the system can read these set data When unable to access the Setup interface due to incorrect operation, to restore factory settings, please short circuit JBAT1 2 and 3 pins to clear CMOS content

Attention! The BIOS settings directly affect the performance of the computer. Setting incorrect parameters can cause damage to the computer and even prevent it from turning on. Please use the built-in default values in the BIOS to restore normal system operation

Due to the slight differences in the settings interface between different products of our company, the following screen is for your reference and may not be completely the same as the BIOS setup program you are currently using

4.1 BIOS Basic Function Settings

4.1.1 Enter the BIOS interface

Follow these steps to enter the BIOS interface

1. Turn on the power and the display screen will display a POST interface

2. When the prompt "Press<DEL>or<ESC>to enter setup" appears on the screen, press<DEL>or

<ESC>key to enter the BIOS setup program

3. Use the arrow keys<↑><↓><←><→>to move to the option you want to modify, and press the<Enter>key to enter the sub screen of the option

4. Use the arrow keys and<Enter>key to modify the value of the selected item. Press Enter to select the BIOS option and modify it

5. Use<Esc>to exit the main menu without saving changes, submenu to exit the current page and return to the main menu

6. <Page Up/+>Add numerical values or change

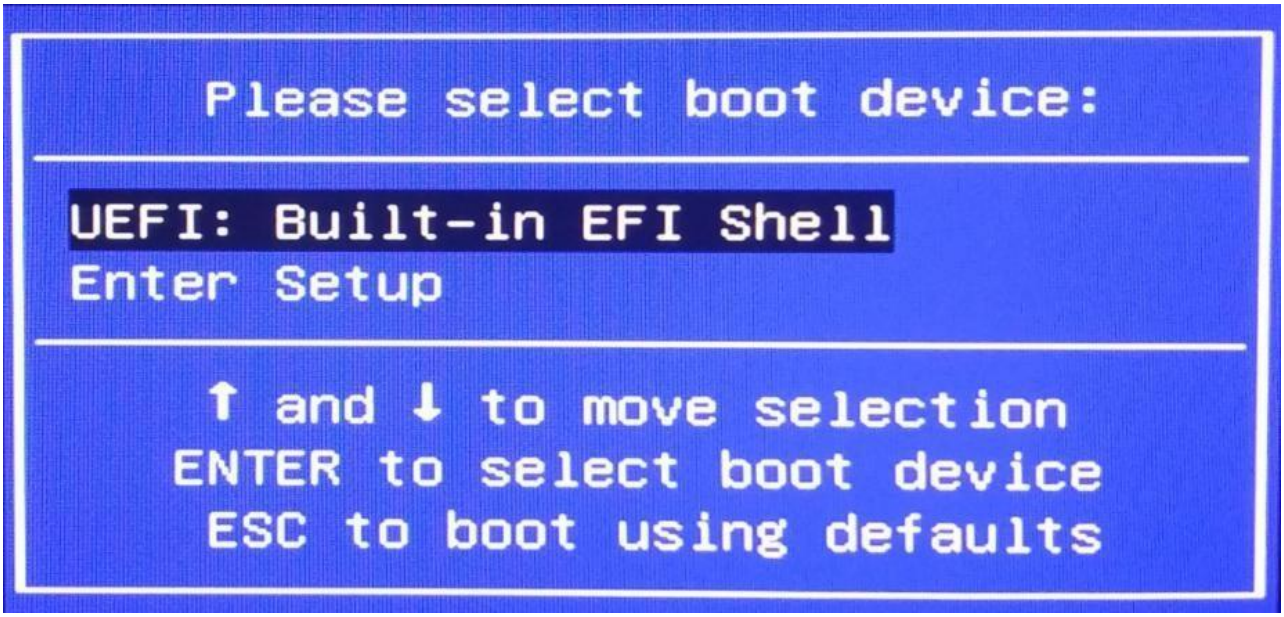
<Page Down/->Reduce numerical values or change

<F1>Settings submenu help

<F9>Set to default value (optimized to factory settings)

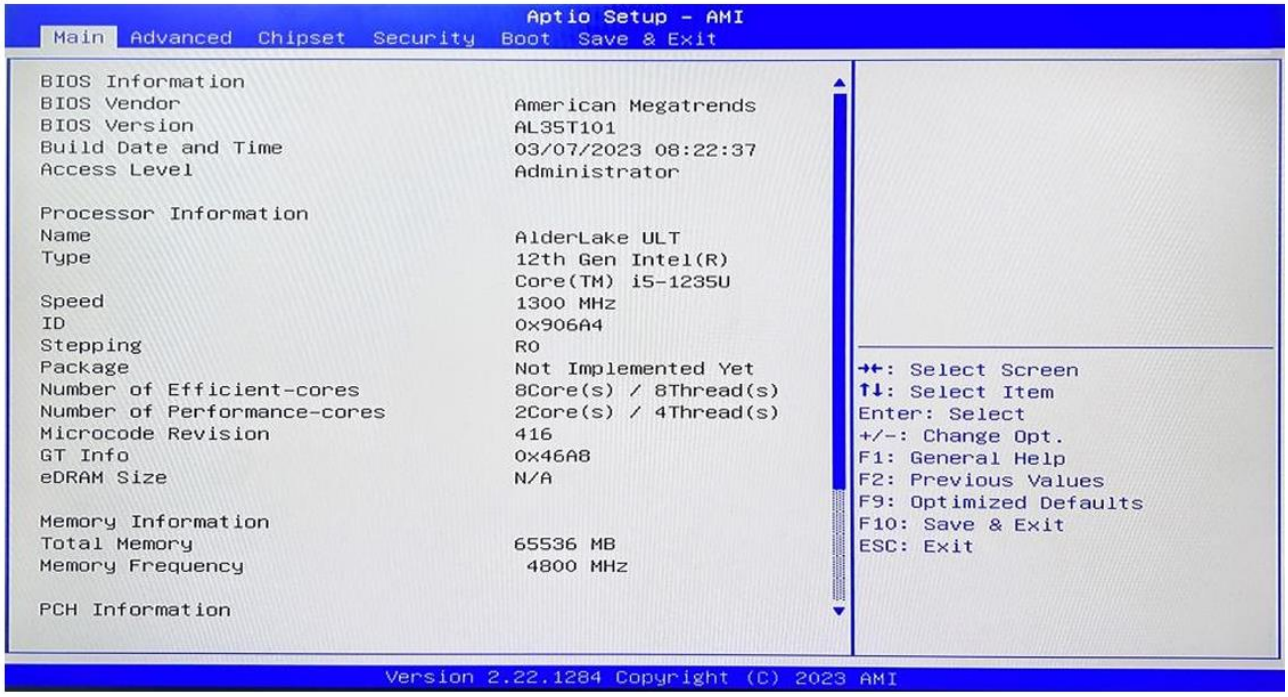
<F10>Save BIOS settings

Note: 1. For BIOS that supports hard disk UEFI mode, hard disk information cannot be seen in BBS, but it can be viewed in SATA Configure in BIOS to access the hard disk information. The following are the details



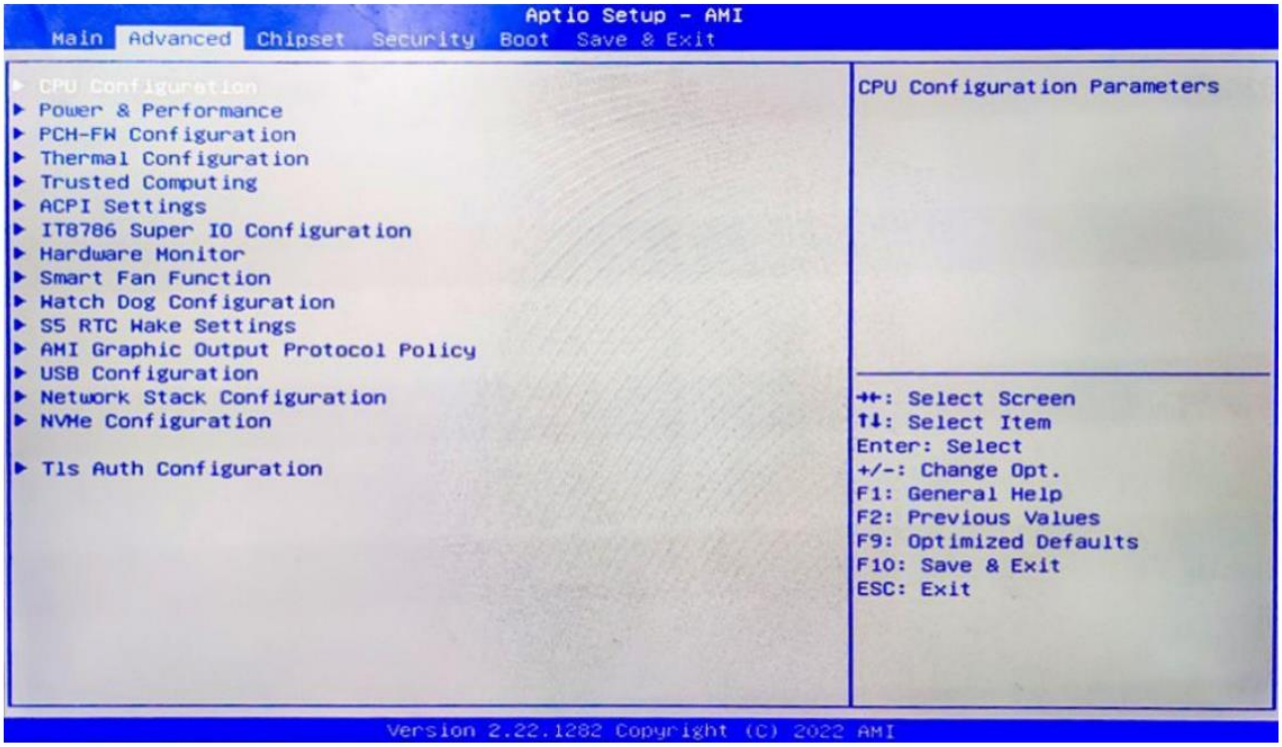
2. After installing the UEFI system, you can view the system boot information ex: Windows Boot Manager (hard disk information) in BBS

4.2 MIAN Menu (BIOS information and time date)



1. BIOS ID: BIOS version
2. Build Date and Time: BIOS time date
3. System Date:
4. Set the current date. Expressed in month/day/year format. The setting range is: Month/Month (Jan. Dec.),
5. Date/day (01-31), Year/year (up to 2099), Week/week (Mon. to Sun.). System Time:
6. Set the current time. Represented in hours/minutes/seconds format. The setting range is: Hour/hour (00-23), Minute/minute (00-59), Second/second (00-59).

4.3Advance (Advanced Menu Settings)



1） Power & Configuration：

2） PCH-FW Configuration：

3） Thermal Configuration：

4） Trusted Computing：

5） ACPI settings：

6） IT8786 Super IO Configuration：

7） Hardware Monitor：

8） Smart Fan Function：

9） Watch Dog Configuration：

10）S5 RTC Wake Settings：

11）AMI Graphic Output Protocol Policy：

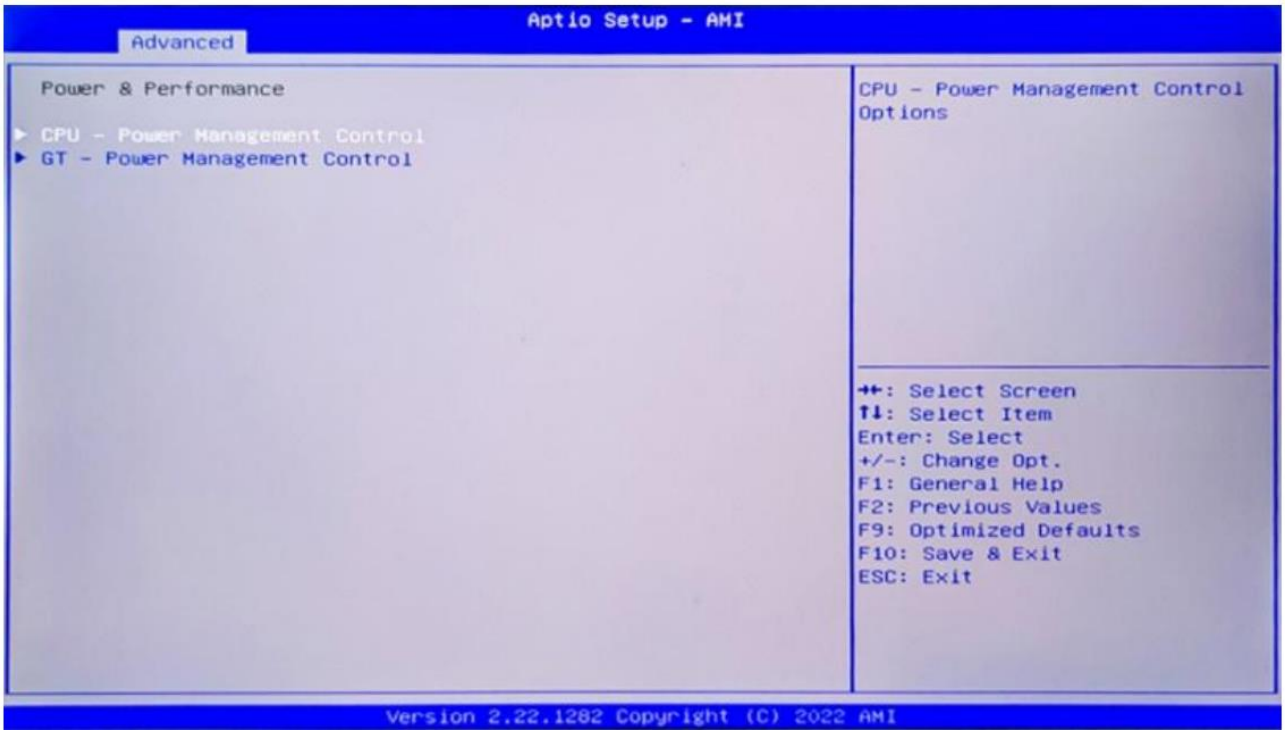
12）USB Configuration：

13）Network Stack Configuration：

14）NVME Configuration：

15）Tls Auth Configuration：

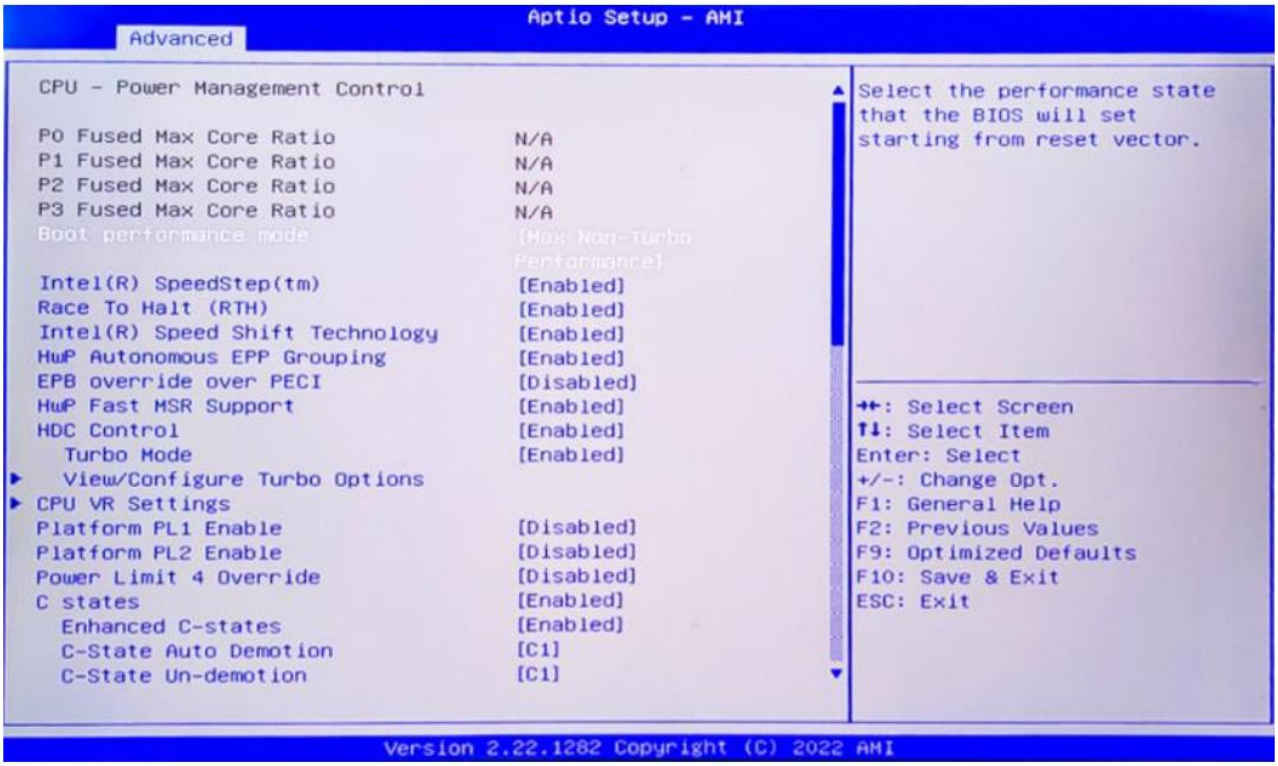
4.4Power & Configuration



1） CPU-Power Management Control：

2） GT-Power Management Conteol：

4.5 CPU-Power Management Control



1）intel ® Speedstep(tm)：

Intel's CPU automatically adjusts voltage and harmonics based on usage to reduce power consumption and heat generation

2）intel ® Speed Shift Technology

SpeedStep, a dynamic voltage frequency switching technology proposed by Intel, can dynamically adjust the operation of processors

Frequency and voltage can reduce system power consumption and processor operating temperature when processor load is low

When the load on the processor is high, it runs at full speed to provide all performance, and is turned on by default (Enabled).

3） Turbo Mode

Turbo Mode is the Turbo mode acceleration, referring to the "Integrated PowerGate" power source management based on Nehalem

Technology. This mode allows certain cores to be turned off and power to other cores to operate at a higher frequency

Okay, the capacity of the entire CPU remains unchanged, which can optimize the efficiency of the

CPU. It is enabled by default.

4） C states

C-States starts from C0, which is the normal operating mode of the CPU and the CPU is in a 100% running state. The number after C

The higher it is, the deeper the CPU sleeps, the more the power consumption of the CPU is reduced, and it takes more time to return to C0 mode,

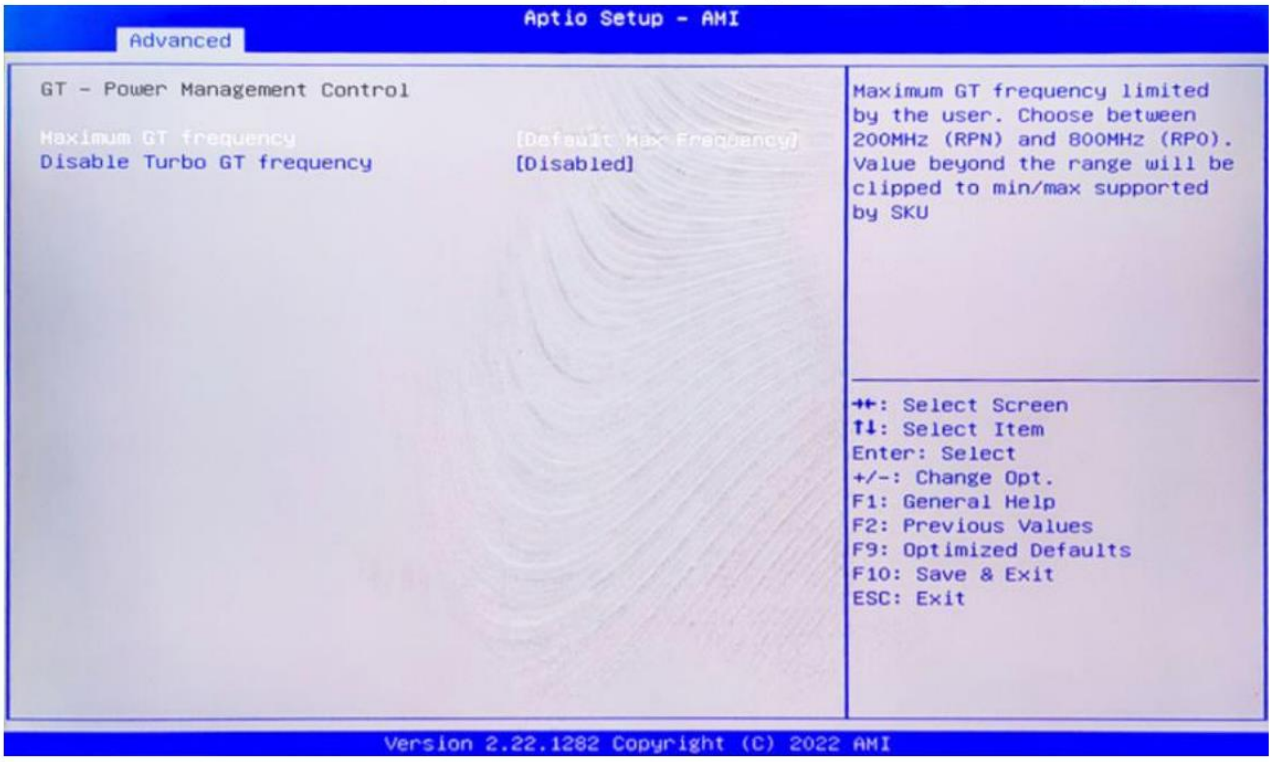
C1 to C3 cut off the internal clock of the CPU, while C4 to C6 modes reduce the voltage of the CPU by default (Enabled)

Open it.

5） Enhanced C states

C1 to C3 cut off the internal clock of the CPU, while C4 to C6 modes reduce the voltage of the CPU. Both methods are used for the 'Enhanced' mode, which is enabled by default.

4.6 GT-Power Management Control



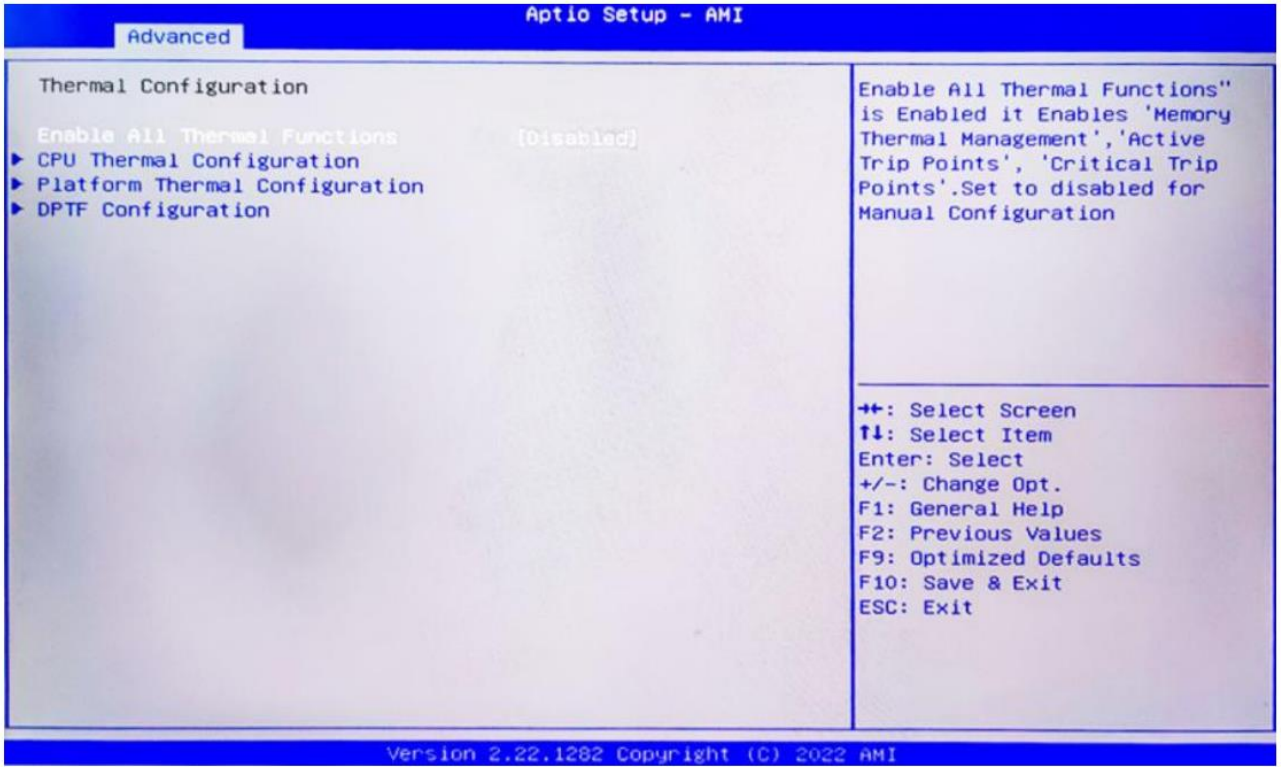
1） Maximum GT frequency：

The maximum limit frequency of the graphics card is set to the default maximum

2） Disable Turbo GT frequency：

Disable the turbo mode of the graphics card by default (Disabled)

4.7 Thermal Configuration



1) Enable All Thermal Functions: Enable all thermal function options

2) CPU Thermal Configuration: CPU Thermal Configuration

This unlocks the temperature wall, where Tcc Actviation Offset is the temperature wall modification option, with the highest temperature

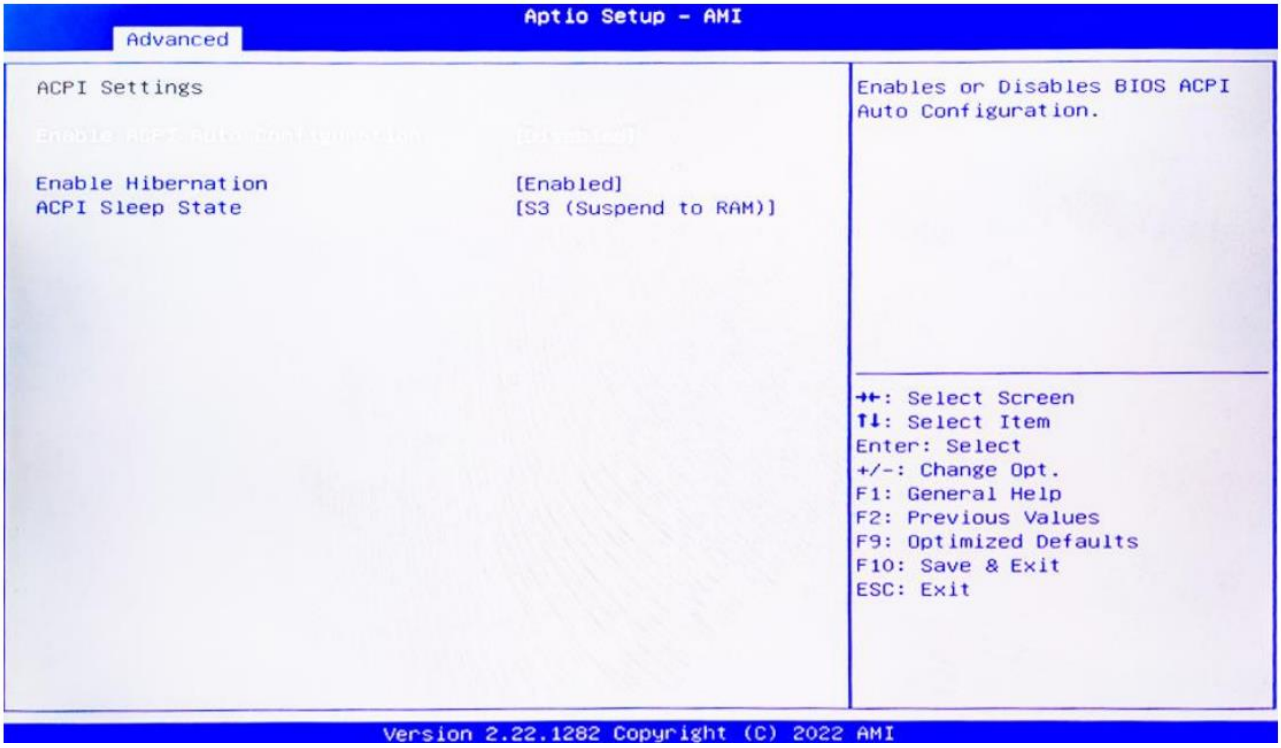
It is 105 ℃, and the modified number is a subtraction (for example: filling in 0 is 105-0 to set the 105 ℃ temperature wall; filling in 20 is...)

105-20 setting 85 ℃ temperature wall)

3) Platform Thermal Configuration: Platform Thermal Settings

4) DPTF Configuration: DPTF Settings

4.8 ACPI Settings



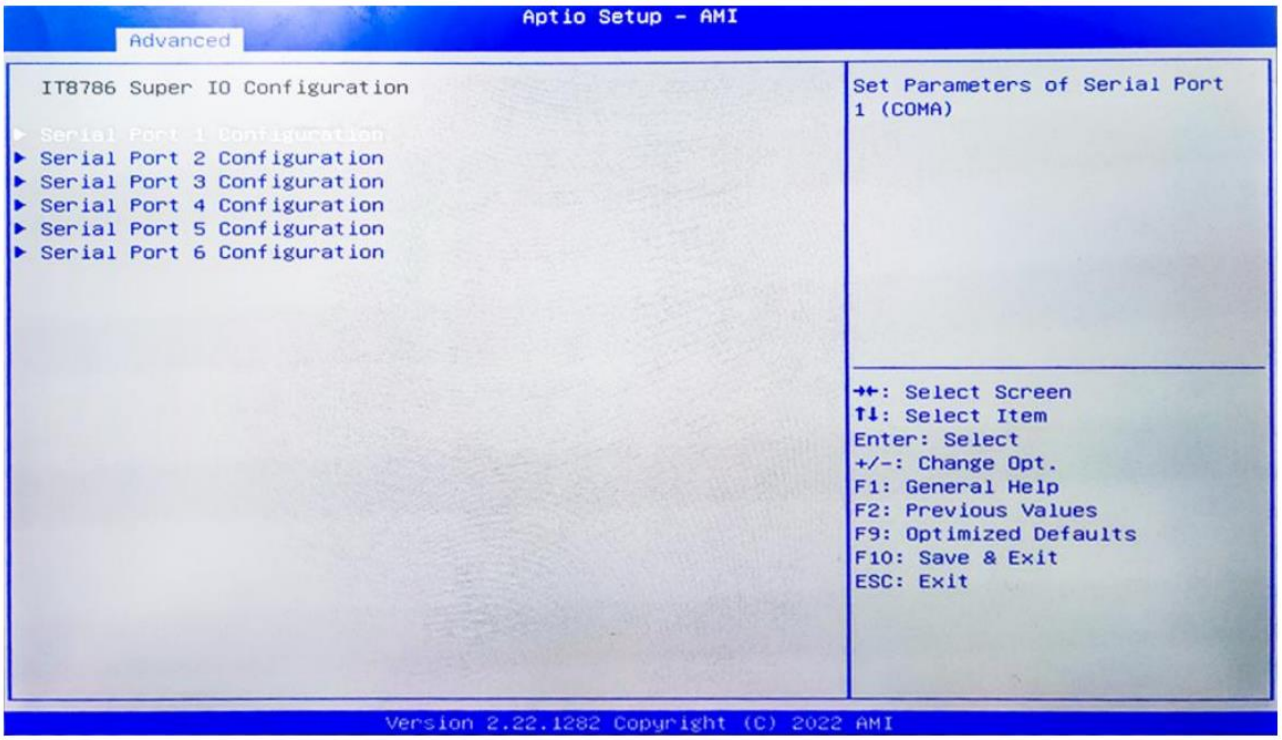
1) Enable ACPI Auto Configuration: The meaning of allowing ACPI auto configuration, disabled by default

close

2) Enable Hibernation: Enable hibernation

3) ACPI Sleep State: Set the power-saving mode of the ACPI function in conjunction with the operating system, and configure different sleep functions

4.9 IT8786 Super IO Configuration（IT8786 Super IO 设置）



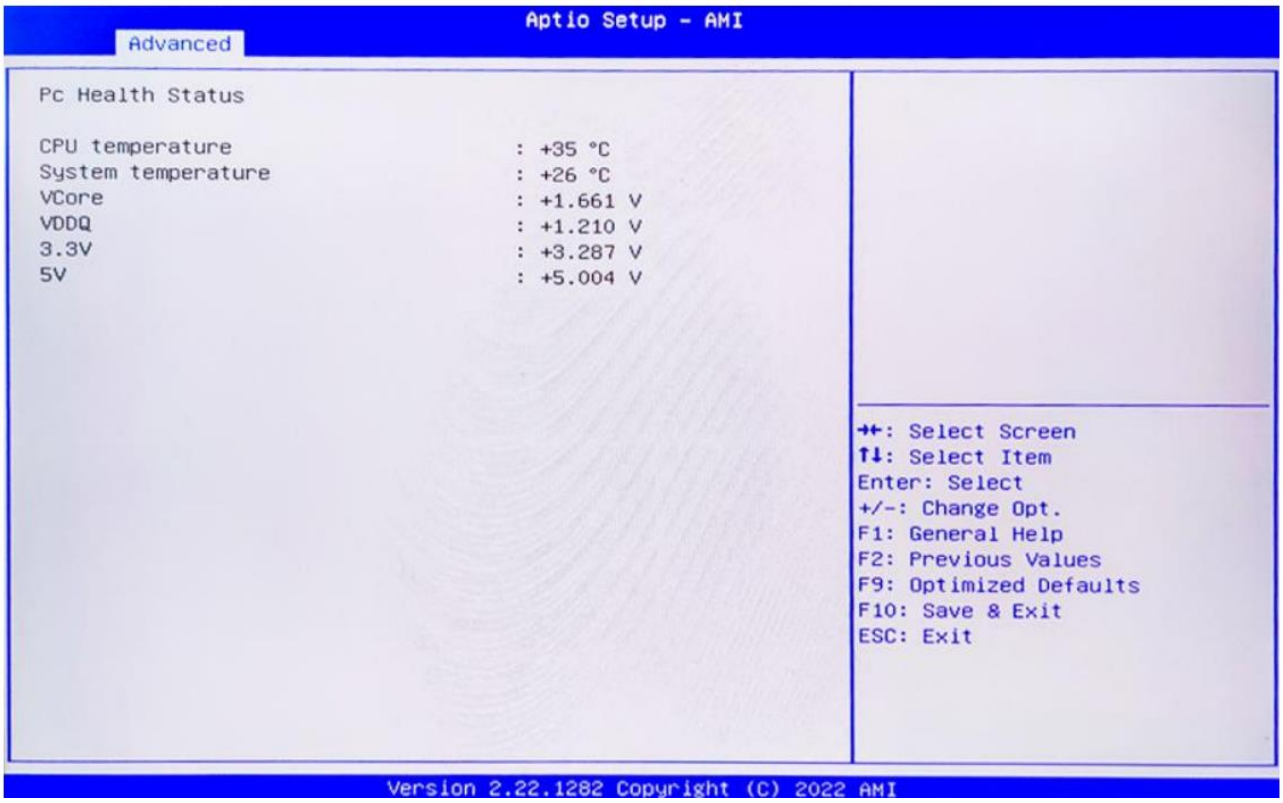
Serial Port 1-6 Configuration: Serial Port 1-6 Configuration

Serial Port: Enable or disable the motherboard serial port

Device Setting (read-only): displays interrupts and addresses of the serial port

Change Setting: This option is used to change the serial port settings. It is recommended to select Auto by def

4.10 Hardware Monitor



Hardware security detection status

PC Health Status

Hardware security detection, displaying the current system temperature, CPU temperature, fan speed, and other related voltage values. above

The parameters have a certain range, and the system cannot operate beyond these ranges

1) CPU temperature: CPU temperature

2) System temperature: System temperature

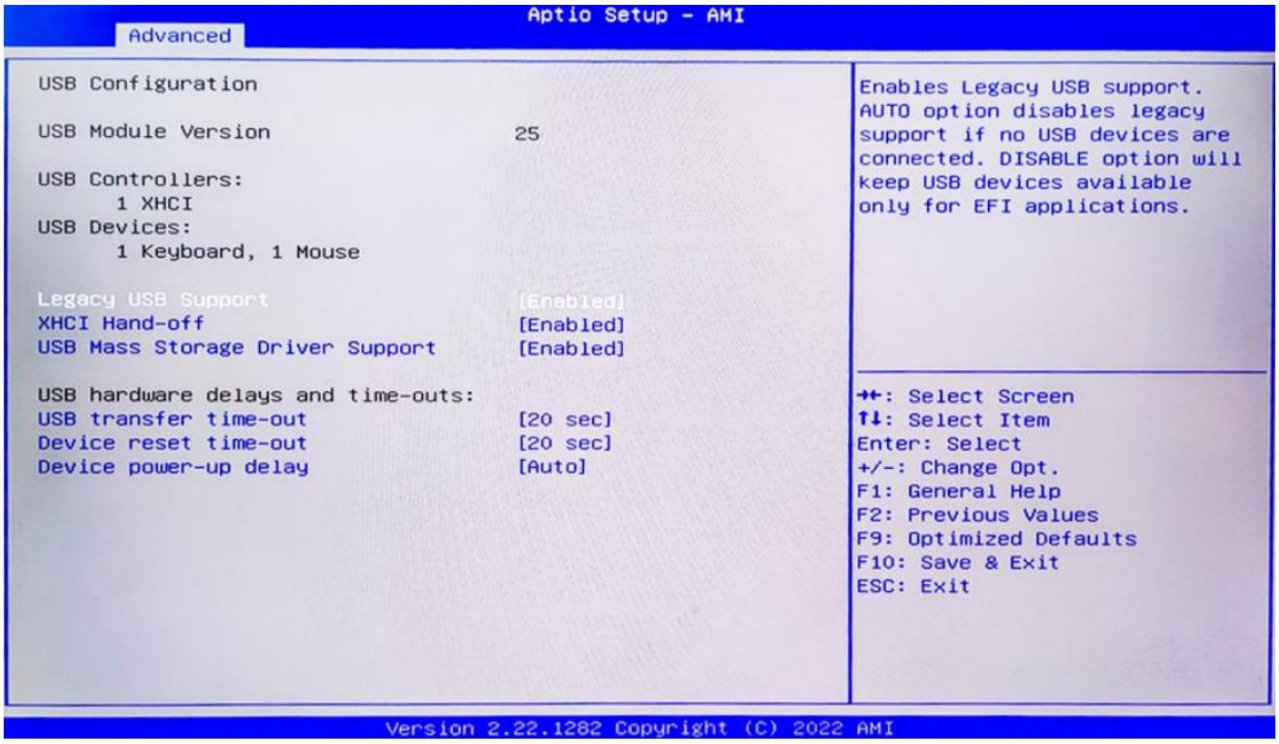
3) Vcore: Core voltage

4) VDDQ: Memory Voltage

5) +3.3V: 3.3V voltage

6) +5V: 5V voltage

4.11 USB Configuration



1）Legacy USB Support

This item is used to set USB interface support. If USB devices such as USB drives and USB keys need to be supported under UEFI

For disks, set this option to [Enabled], otherwise select [Disabled]

2）XHCI Hand-off

Is the USB XCHI transfer protocol enabled

3）USB Mass Storage Driver Support

USB mass storage devices support switches, set to enabled

4）USB transfer time-out

USB transfer timeout: Set timeout times for control, batch, and interrupt transfers, default is 20 seconds

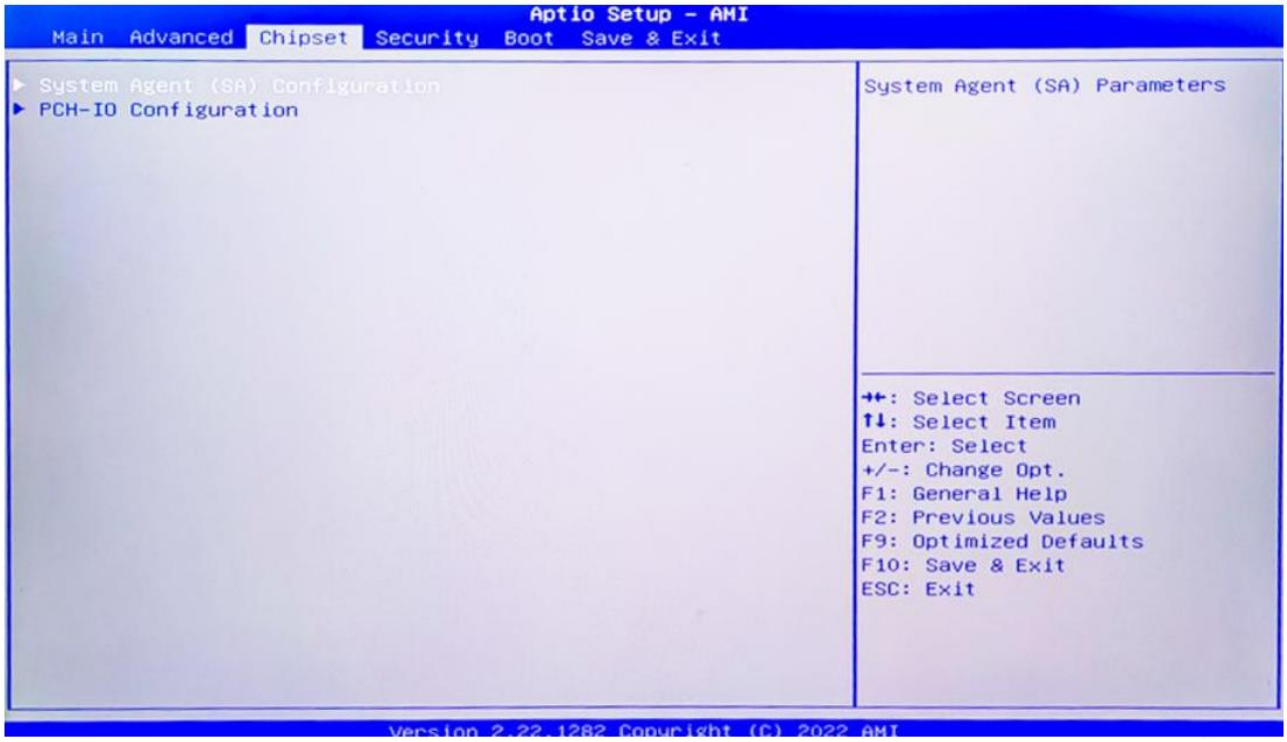
5）Device reset time-out

Device reset timeout: Set the timeout time for the startup command of the large capacity USB drive. The default is 20 second

6）Device Power-up Delay

Device power on delay: Set the maximum delay time for USB devices to report to the main controller

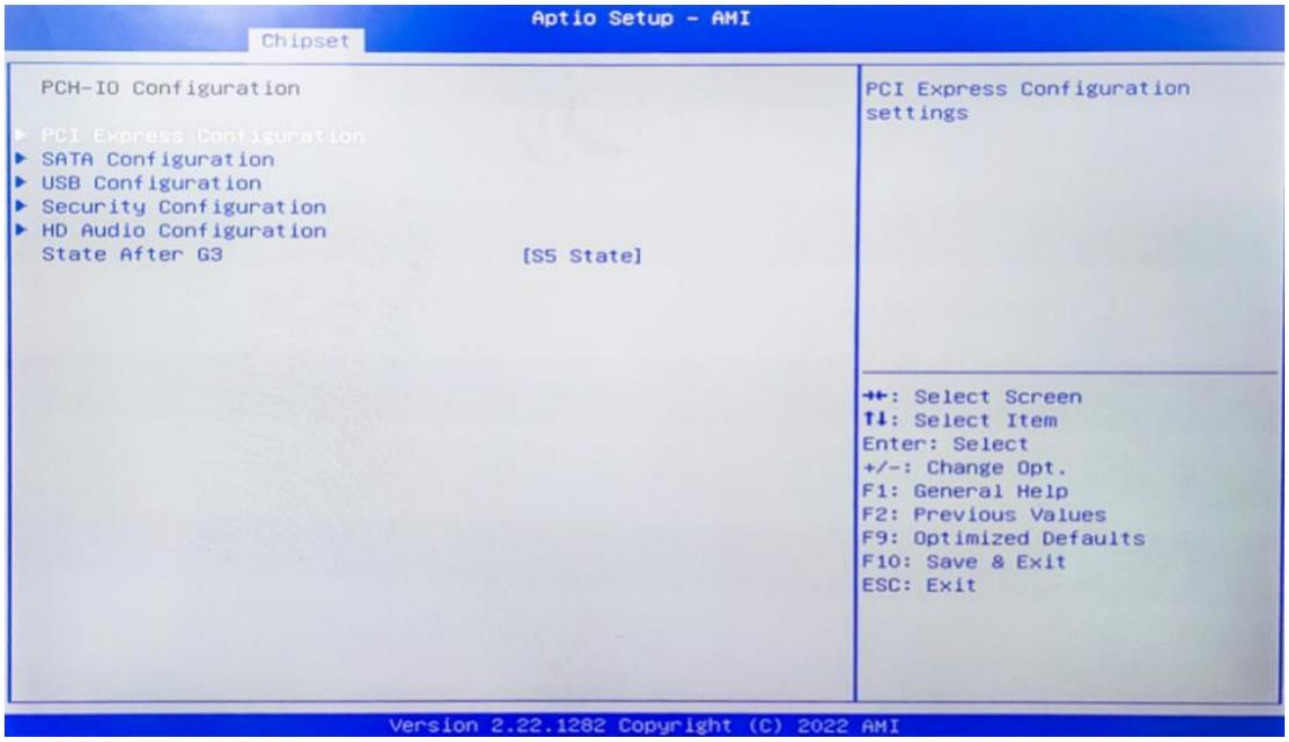
4.12 Chipset



1） System Agent (SA) Configuration

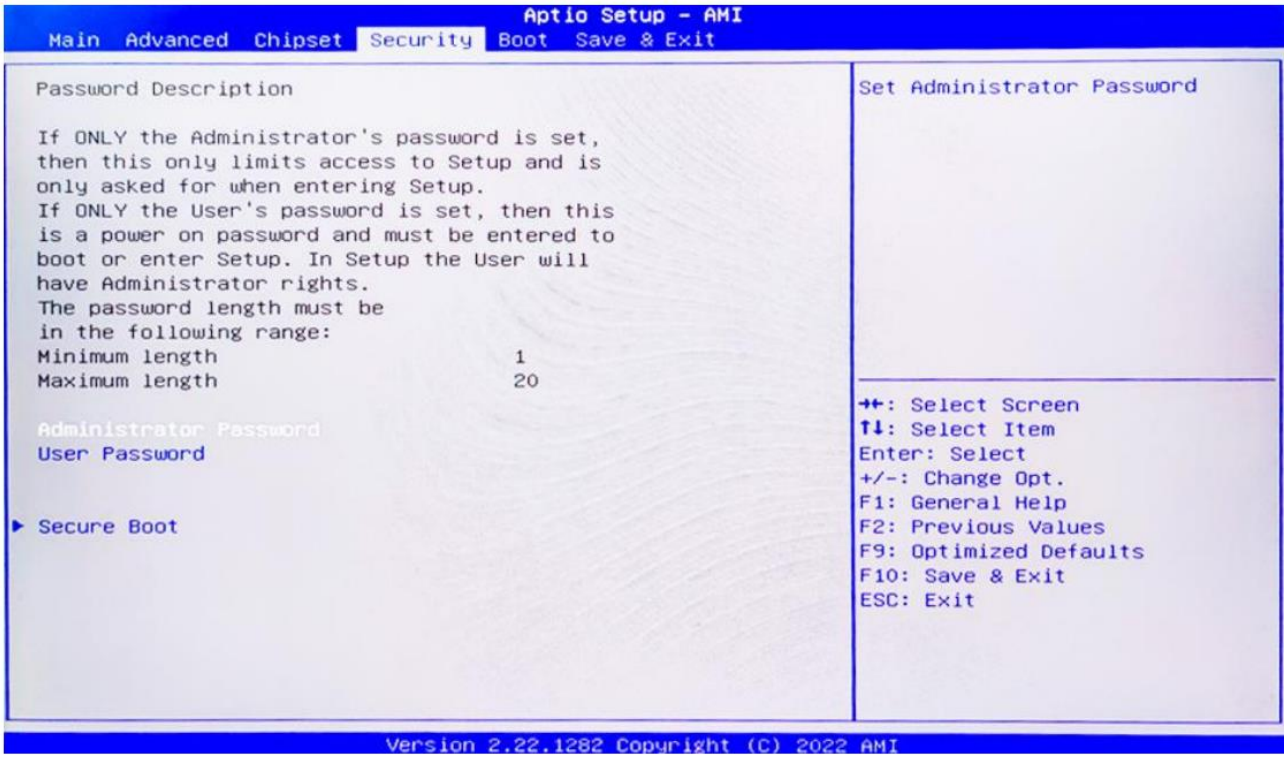
2） PCH-IO Configuration

4.13 State After G3



1. 1) State After G3 is set to: S0 State (power on self start), default S5 State (power on shutdown)

4.14 Security

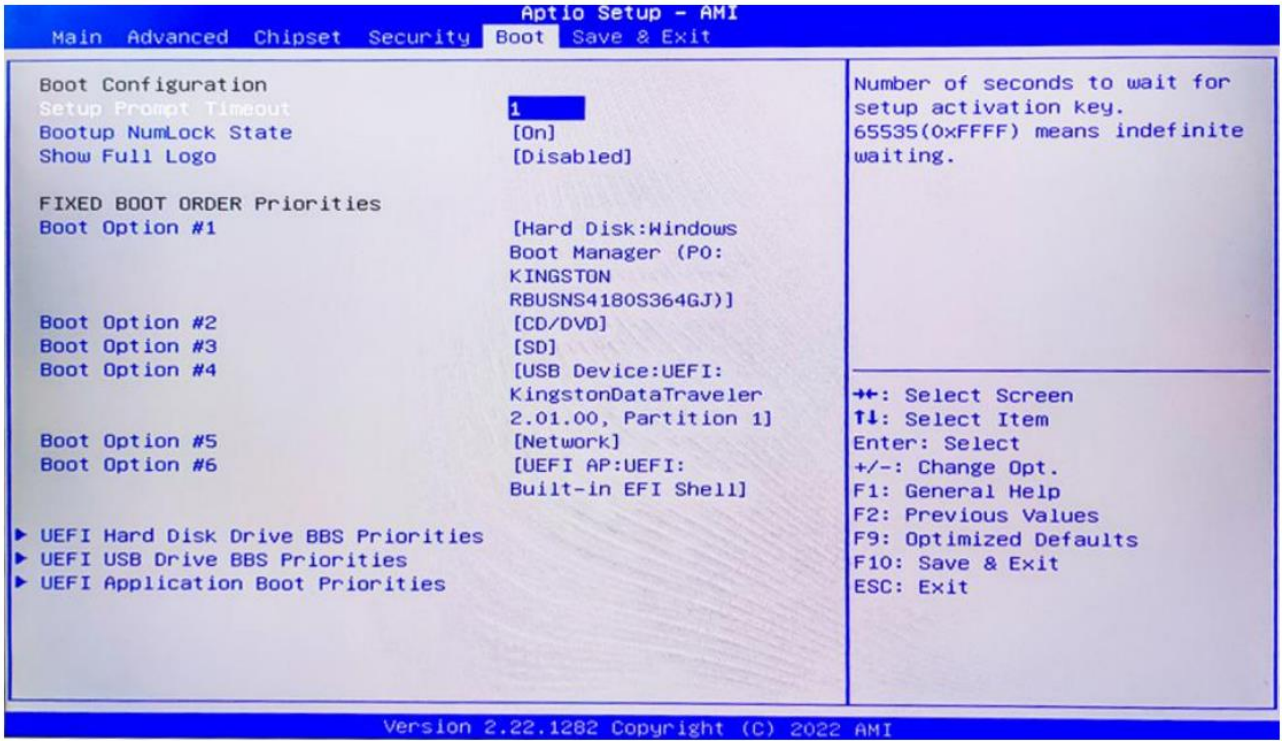


1） Administrator Password

2） User Password

3） Secure Boot

4.15 Boot



1) Setup Prompt Timeout: Set the screen wait time for startup and prompt the wait time for pressing the Delete shortcut key,

If the Delete shortcut key is not pressed within the set time, continue to start

2) Bootup NumLock State: This feature allows the activation of the numeric lock function on the keypad after the system is powered on to the DOS system.

The default value is On, which means the system is in digital lock mode when starting up; Set to Off, the keypad is in cursor control mode when starting

3) Show Full Logo: Display the complete logo (Disabled is off, Enabled is on)

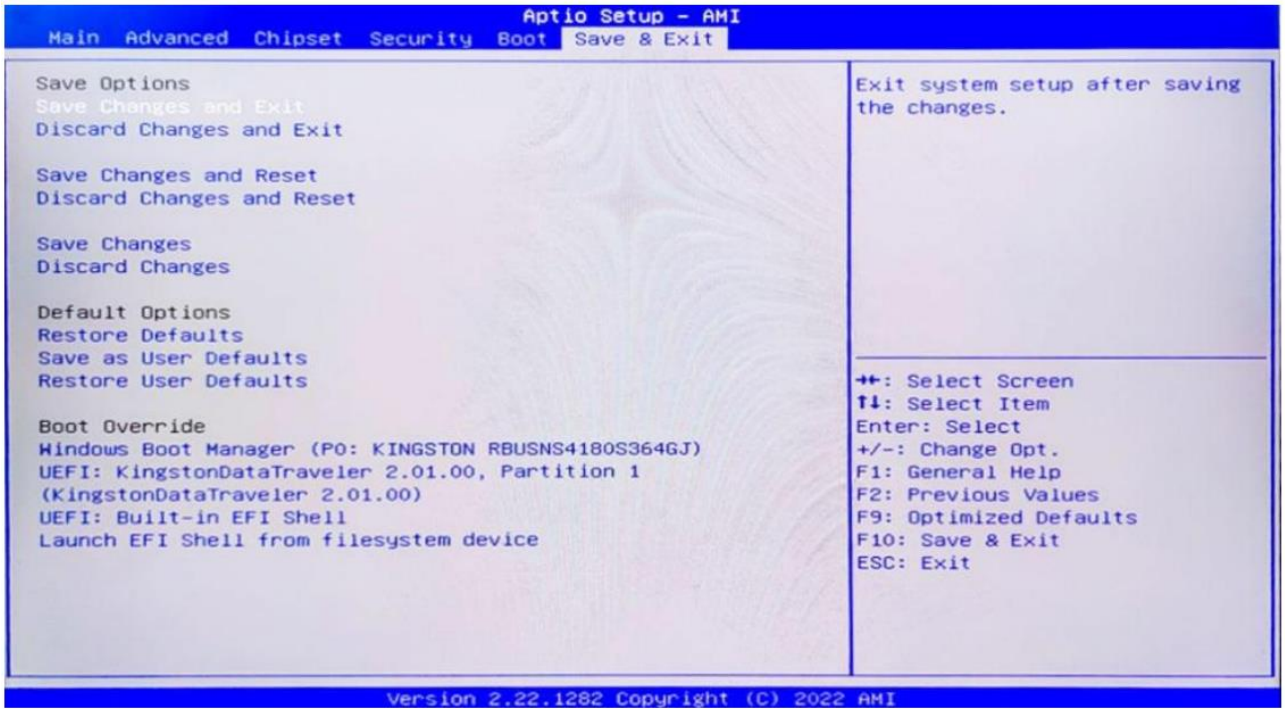
4) Boot Options # 1~# 6: Startup Item Sequence 1~6

5) UEFI Hard Disk Drive BBS priorities: UEFI hard disk drive boot priority settings

6) UEFI USB Drive BBS priorities: UEFI USB device boot priority settings

7) UEFI Application Boot Priorities: UEFI application boot priorities

4.16 Save & Exit



1) Save Changes and Exit: Save BIOS changes and exit the settings interface to continue booting the computer

2) Discard change and Exit: Discard BIOS changes and exit the settings interface to continue booting the computer

3) Save changes and reset: Save BIOS changes and restart

4) Discard changes and Reset: Discard BIOS changes and restart

5) Boot Override: Select the specified boot device, such as SATA hard drive, USB flash drive, EFI Shell, PXE, etc,

Directly start

6) Press F11 to directly select the specified device for startup

Chapter 5. Machine Disassembly and Replacement

5. Machine Disassembly and Replacement

1. To disassemble the computer, you need the following tools:
2. Wrist grounding strap and conductive mat for preventing electrostatic discharge.
3. Wire cutter.
4. Phillips screwdriver (may require different size).

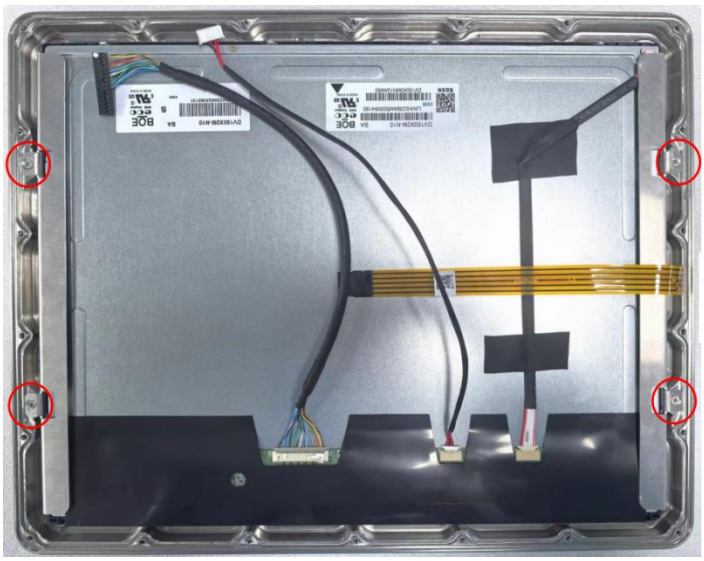
NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatches when putting back the components.

Chapter 6. Standard Assembly Process

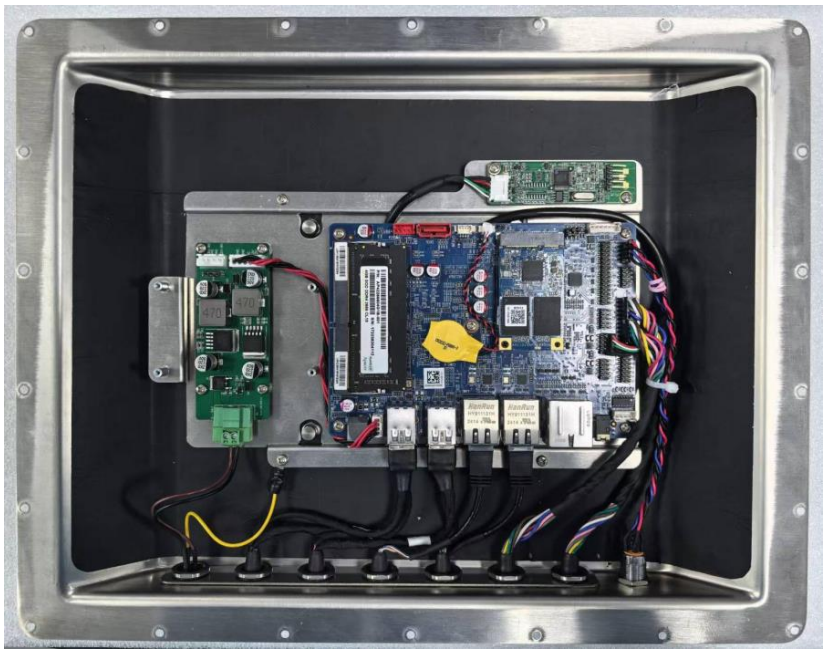
6. Standard Assembly Process

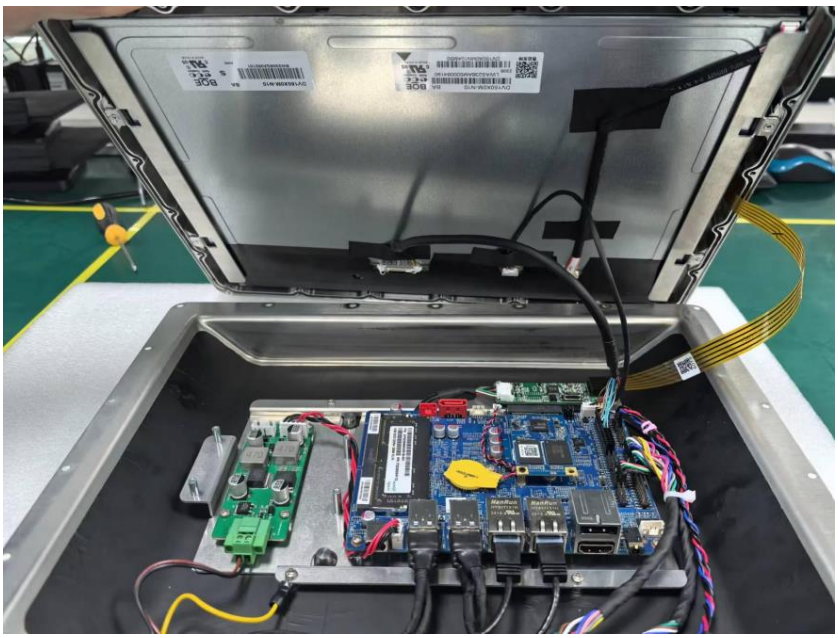
6.1 LCD Assemble

6.1.1 Assemble the LCD bracket



6.2 Assemble the M/B

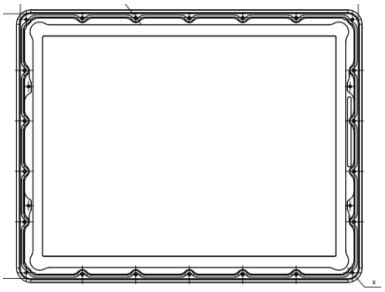
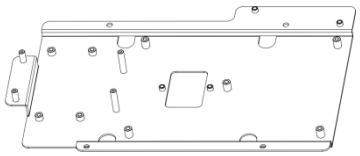
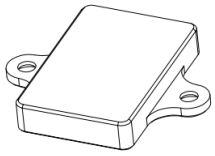
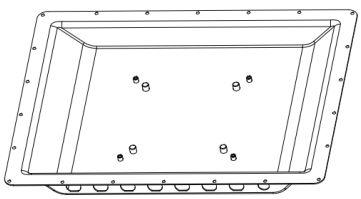


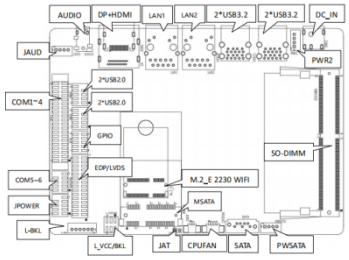
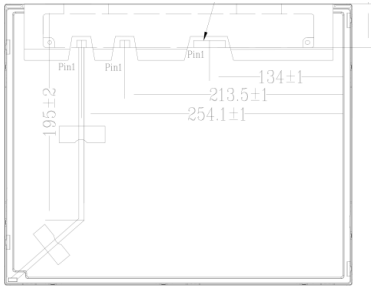
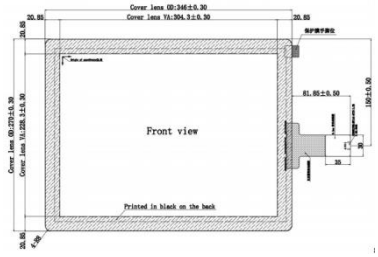
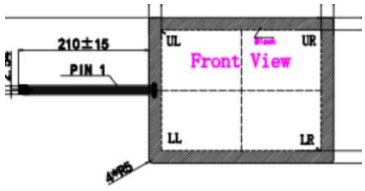


Chapter 7. Appendix

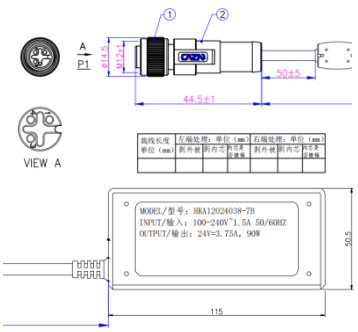
7.Appendix

7.1 Material List

CATEGORY	PARTNAME	PART NO.
Structure		
	SPC-9150-Front Frame	A.03.001.002065
	SPC-9150-LCD Bracket	A.03.002.000937
	SPC-9150-Motherboard Bracket	A.03.002.000975
	SPC-9150-Thermal Block	A.03.002.001001
	SPC-9150-Rear Cover	A.03.001.002066

CATEGORY	PARTNAME	ACER PART NO.
MAINBOARD		
	SBC AL-35 I5-1235U	A.03.008.000679
Display		
	LCD BOE DV150X0M-N10	A.03.006.000048
	15-inch Capacitive Touchscreen with IC	A.03.007.000083
	15-inch Resistive Touchscreen	A.03.007.000098
	EETI-USB Touchpad	A.03.008.000087

CATEGORY	PARTNAME	ACER PART NO.
SDD/ MEMORY		
	SSE128GTLC9-SB	C.02.002.000183
	DDR4,8G	C.02.002.000230

CATEGORY	PARTNAME	ACER PART NO.
POWER SUPPLY/ POWER CORD		
	3CZ01029276,220VAC Input, 24VDC/3.75A 90.W Output, Huntkey HKA12024038-7B,M12 Connector	C.02.009.000175
	POWER Cable	C.02.099.000010

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