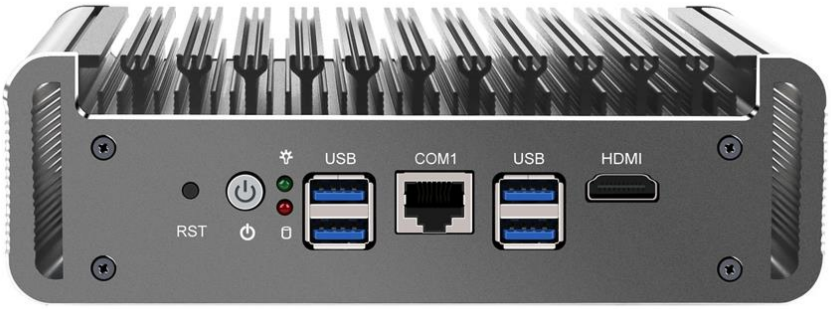
Motherboard (Rev:1.00)

RJ25a RJ25 Product Manual



1 Product Introduction

MOTHERBOARD is a standard low-power Nano-ITX (12x12mm) industrial motherboard, using Intel the 11th generation mobile Tiger Lake-U series single-chip CPU, the main features are as follows

1.1 Main features:

1.1.1 1.1.1 Onboard CPU, supports Intel Mobile 11th generation Tiger Lake-U series CPU (BGA1356)

1.1.2 1.1.2 2 x DDR4 3200MHz SODIMM, maximum support 64GB DDR4 memory

1.1.3 1.1.3 6 x onboard Intel I211/I210 Gigabit LAN or 2.5GbE I225-V b3 (choose one of them)

1.1.4 1.1.4 1 x Mini-PCIE card holder (support USB signal device, and PCIE signal device)

1.1.5 1.1.5 1 x Mini-SATA socket

1.1.6 1.1.6 1 x SATA 3.0 hard disk interface

1.1.7 1.1.7 4 x USB 3.1, 2 x USB2.0 ports (USB2.0 is a pin header port)

1.1.8 1.1.8 1 x RJ45 interface RS232 or RS485 (RS485 is the pin header, select RS232 or RS485 through the jumper cap and BIOS)

1.1.9 1.1.9 Support HDMI2.0 output, support 4K display output

1.1.10 1.1.10 Two 3-Pin FAN ports

1.1.11 1.1.11 provides 8-bit GPIO for users to choose

1.1.12 1.1.12 1 x power button with indicator light

1.1.13 1.1.13 1 x reset button

1.1.14 1.1.14 1 x hard disk indicator and 1 power indicator

1.1.15 1.1.15 Supports level 255 watchdog

1.1.16 1.1.16 Only supports UEFI mode installation system, not support legacy mode installation system

1.2 Power

Support DC 12-19V power supply, 90W

Support power-on automatic power-on function, jumper selection

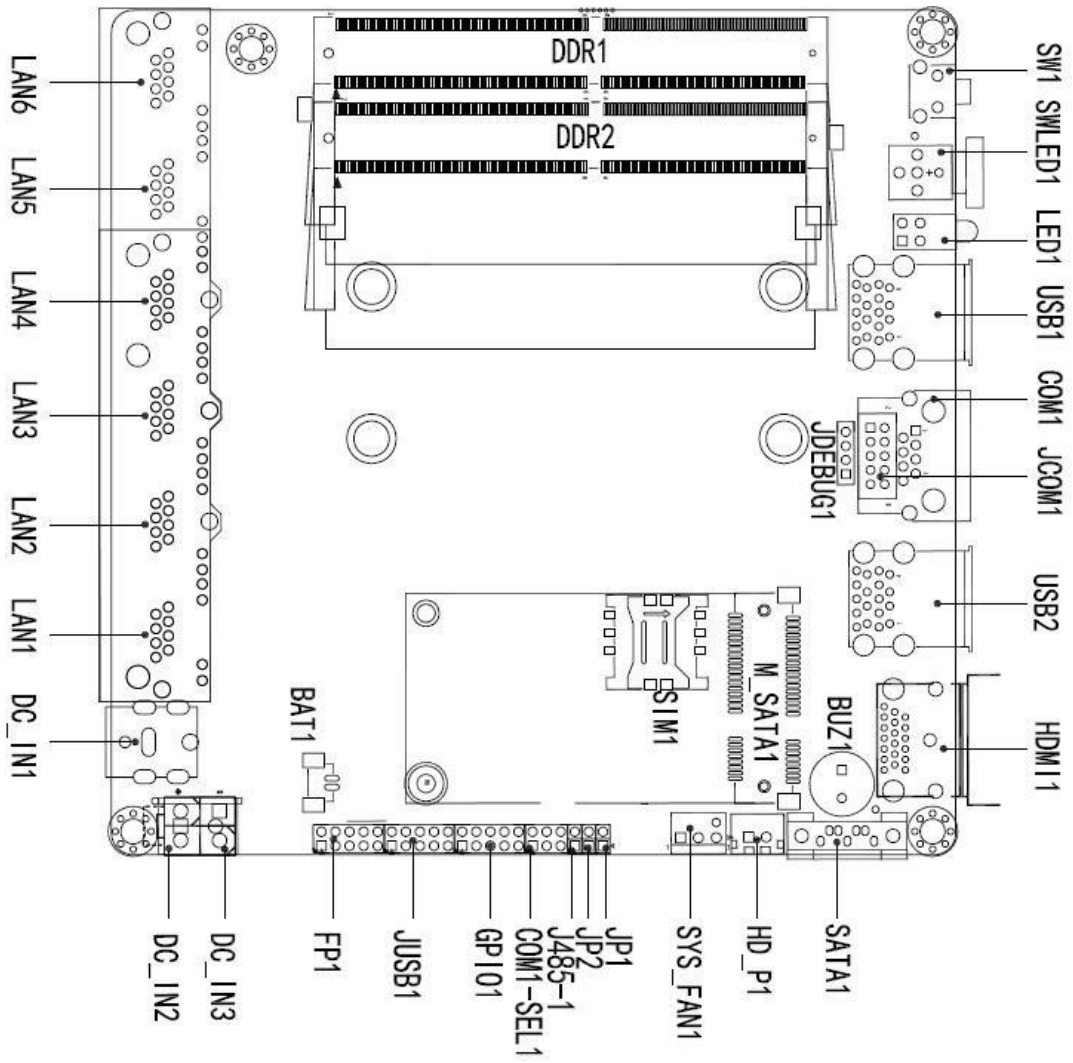
1.3 Structure: 120x120mm

1.4 Working Environment

Motherboard working temperature: -20℃ ~ +60℃ Motherboard

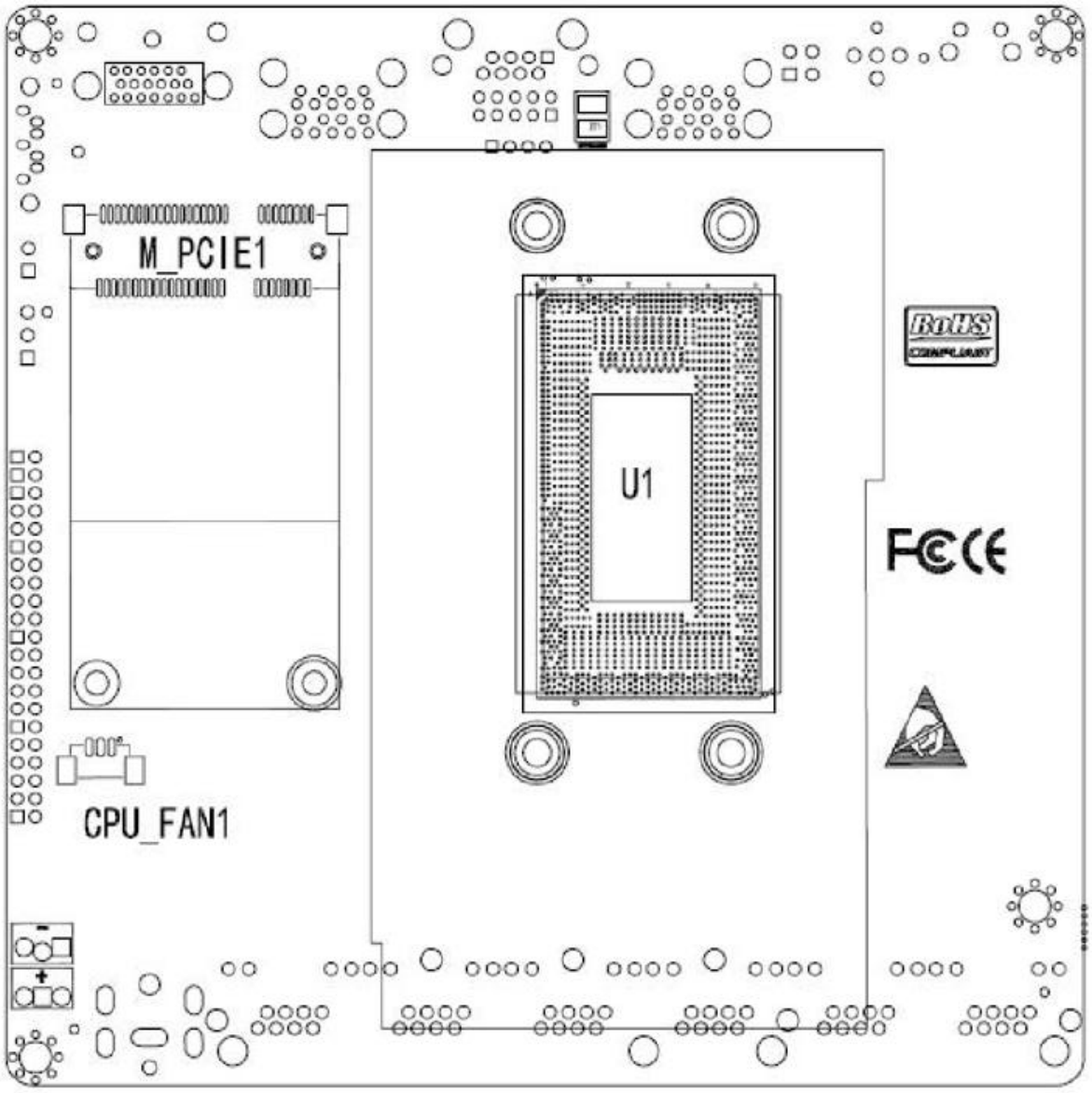
Storage temperature: -40℃ ~ +85℃

2.1 Product Front Interface Layout



Note: The interface in the picture, the pin is square is Pin 1

2.2 Interface Layout on the Back of the Product


M_PCIE1
U1
CPU_FAN1

3 Definition of motherboard PIN

3.1 DC_IN1 and DC_IN2

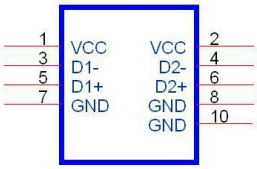
The same is the input power interface of the motherboard, and only one interface can be selected during production. DC12-19V, 90W

DC_IN1 is the standard DC-JACK port, and DC_IN2 is the DT-126RP-02P type Terminal Blocks interface. Pay special attention to the positive and negative poles of the power supply

Note: When assembling, testing, and using, the equipment and cables must be installed before powering on

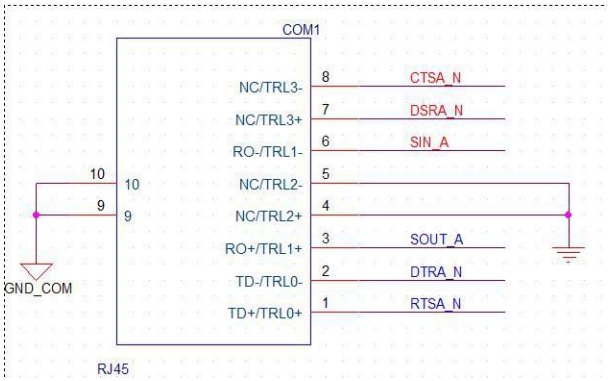
3.2 JUSB1

JUSB1 is a 2x5PIN, 2mm pitch pin header interface, supports USB 1.0/1.1/2.0 devices, defined as follows:

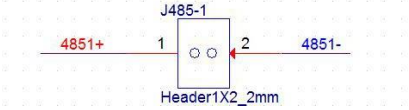


3.3 COM1 and J485 (choose one of two, choose RS232 or RS485 through jumper cap and BIOS)

COM1 is the RS232 RJ45 interface, which is defined as follows:

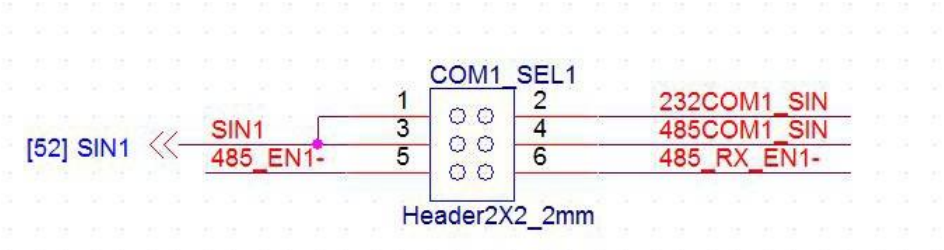


J485 is a pin header, using 1*2PIN, 2mm pitch pin header interface, defined as follows:



3.4 COM1_SEL1

COM1_SEL1 selects pin headers for RS232 and RS485, using 2*3PIN, 2mm pitch pin headers, defined as follows:



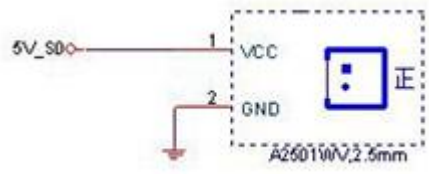
1.2 short-circuit selection is RS232; 3.4 and 5.6 short-circuit selection is RS485.

3.5 SATA1

Standard SATA device interface, support SATA3.0 and below SATA

3.6 HD_P1

SATA device power interface, using CJT company A2501WV-2P device or other compatible devices. The definitions are as follows



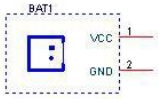
3.7 RTC1

RTC1 is the RTC clear jumper, using 1x2PIN, 2mm pitch pin header.

RTC1	Function Description
Close	Clear RTC CMOS
Open	Default Setting

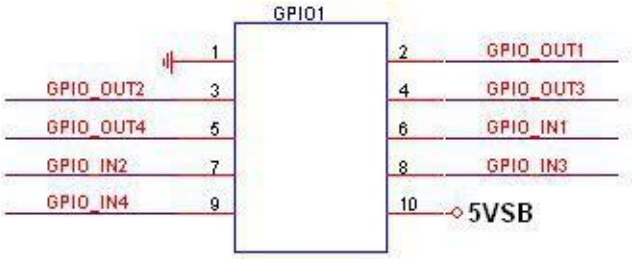
3.8 BAT1

Battery interface for easy battery replacement. Adopt CJT company A1251WV-2P type interface or other compatible

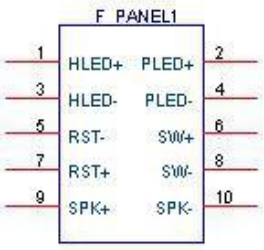


interface.

3.9 GPIO1: GPIO interface, using 2x5, 2mm pitch pin headers, defined as follows. The input and output characteristics of GPIO can be modified by BIOS. Please contact FAE for GPIO address entry



3.10 FP1: Interface for control panel, using 2x5, 2mm pitch pin headers, integrated HDD_LED, PWR_LED, power button, reset button, SPEAKER function. The pins are defined as follows



F_PANEL1	Pin definition
1，3	Positive and negative signal pins of hard disk read and write indicators
2，4	Main power indicator positive and negative signal pins
5，7	Mainboard reset signal positive and negative signal pins
6，8	Mainboard switch signal positive and negative signal pins
9，10	Alternate buzzer interface

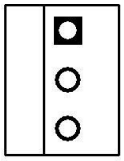
3.11 JP1：AT power on mode selection jumper, when Close is selected, the DC power supply is powered on, and the motherboard is powered on

PS_ON	Boot mode selection
Close	AT power on mode
Open	ATX power on mode

3.12 MPCIE1：It is a standard Mini-PCIE card holder, which can insert full-length cards. When using a half-length card Mini-PCIE card, it must be fixed with an extension card

3.13 SIM1：SIM card holder

3.14 CPU_FAN1、SYS_FAN1：The fan interface supports a maximum current of 0.3A, 5V. Defined as follows



CPU fan interface, supports automatic speed adjustment. The maximum voltage of the fan is equal to the input power voltage. When the input power voltage is higher, pay attention to select the appropriate fan. SYS fans do not support automatic speed adjust

4 BIOS parameter settings

4.1.1 How to enter BIOS

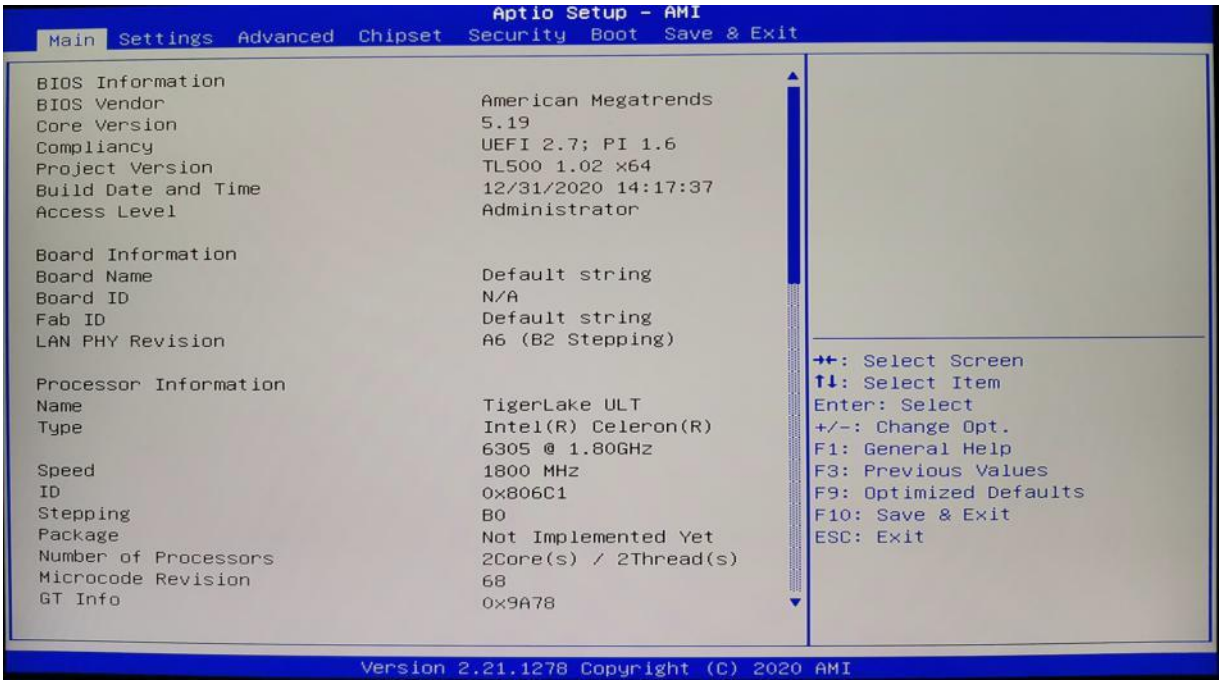
1. Power on the system or restart the system
2. After booting, when the self-check information appears on the screen, press the F2 key to enter the BIOS

4.1.2 The functions of each key under BOIS are as follows:

- →← : select menu
- ↑ ↓ : options
- Enter : confirm selection
- +/- : change value
- F1 : help
- F3 : abandon this modification and return to the last setting value
- F9 : restore factory defaults
- F10 : save changes and exit
- ESC : back to previous screen

4.1.3 Notes:

- The settings of the BIOS directly affect the performance and function of the computer
- Setting the wrong parameters will cause the computer to malfunction, be damaged, or even fail to boot
- If the wrong settings cause it to fail to boot, please restore the factory mode

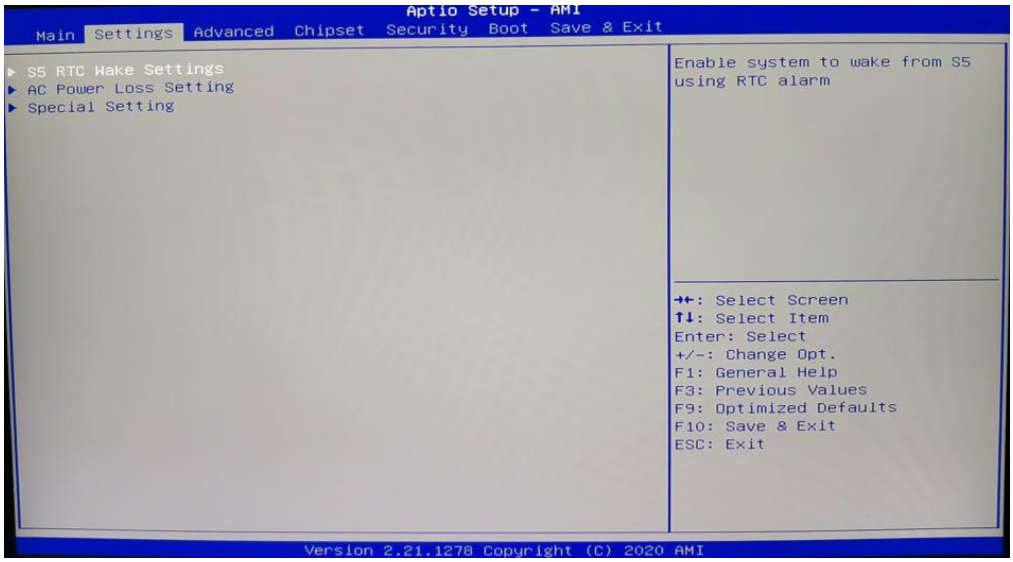


4.2 Main

4.2.1 System Date; set system date

4.2.2 System Time; set the system time

The part in black font is read-only information item; it includes BIOS ID, version, manufacturer. Detailed information of CPU, including CPU manufacturer, model, frequency, including memory information and other information

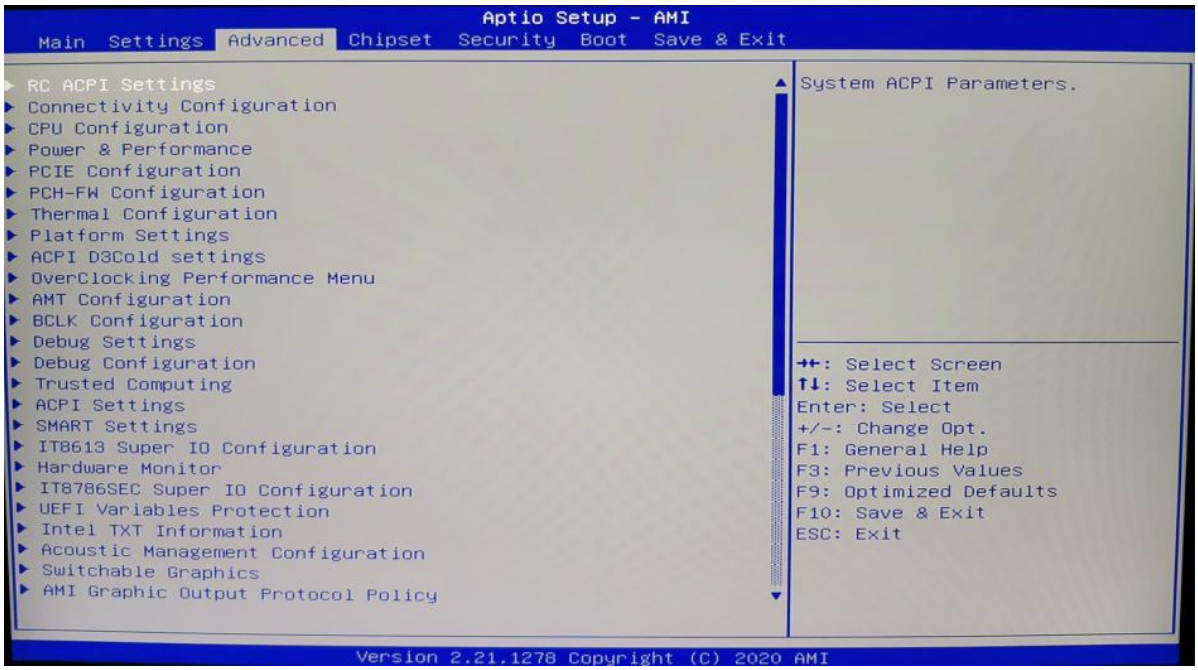


4.3 Settings

4.3.1 S5 RTC Wake Setting：S5 real-time wake-up settings

4.3.2 AC Power Loss Setting Incoming call auto-start setting

4.3.3 Special Setting: Special settings



4.4 Advanced

4.4.1 RC ACPI Settings：RC ACPI settings

4.4.2 Connectivity Configuration：Connection configuration

4.4.3 CPU Configuraion：CPU model, frequency, thread, cache and other related information and settings

4.4.4 Power &Performance：Common configuration options such as CPU turbo frequency and power consumption

4.4.5 PCIE Configuration：PCIE configuration

4.4.6 PCH-FM Configuraion：PCH-FM settings

4.4.7 Thermal Configureion：Thermal configuration options

4.4.8 Platform Settings：Serial console redirection

4.4.9 ACPI D3Cold Settings：ACPI D3Cold Settings

4.4.10 OverClocking Performance Menu：Overclock settings

4.4.11 AMT Configuraion Realsense：AMT configuration

4.4.12 BCLK Configuraion：BCLK configuration

4.4.13 Debug Settings：Debug settings

4.4.14 Debug Configuraion：Debug configuration

4.4.15 Trusted Computing：Computing Technology Configuration

4.4.16 ACPI Serrings：Advanced Configuration and Power Management Interface

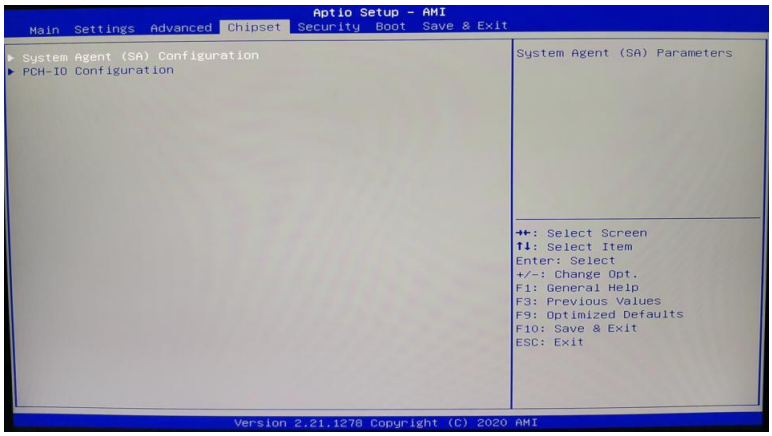
4.4.17 IT8613 Super IO Configuration：Super IO configuration options

4.4.18 Hardware Monitor：Displays CPU temperature, fan speed, and fan speed auto-adjustment settings

4.4.19 IT8786SEC Super IO Configuration：Super IO configuration options

4.4.20 UEFI Variables Protection：UEFI variable protection

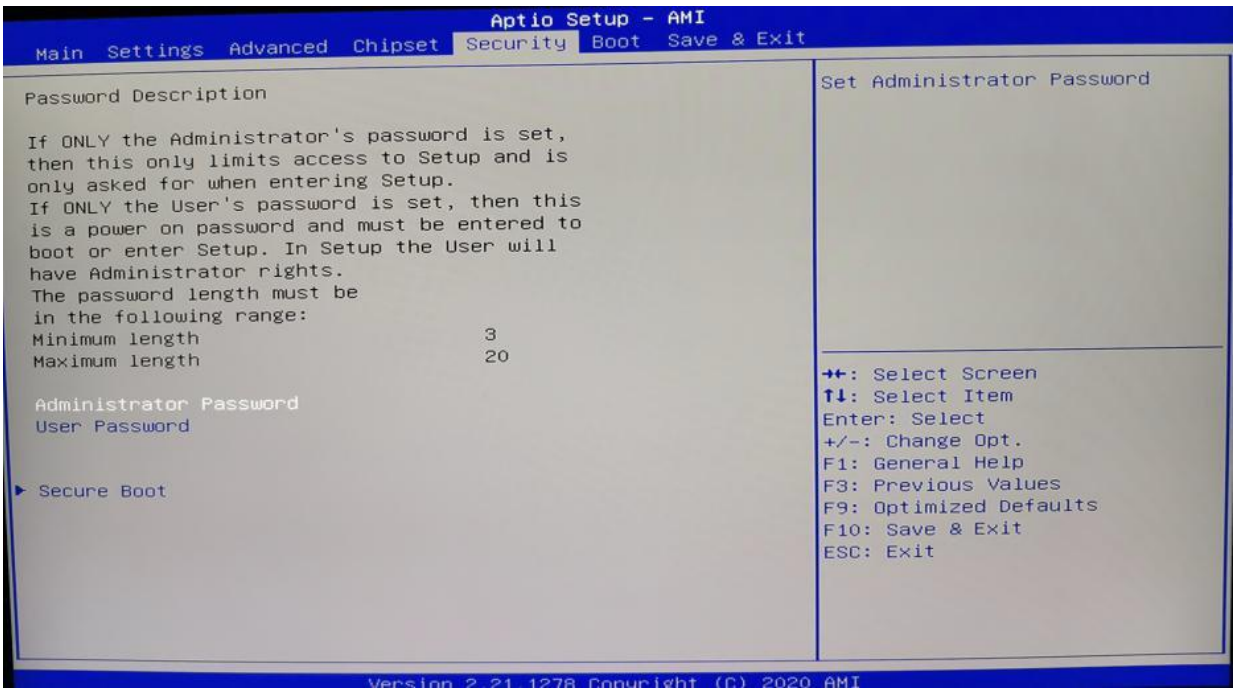
4.5 Chipset



4.51 System Agent（SA）Configuration：System Agent (SA) Configuration

4.52 PCH-IO Configuration：PCH-IO configuration

4.6 Security



4.61 Administrator Password: This prompt line is used to set the superuser password

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

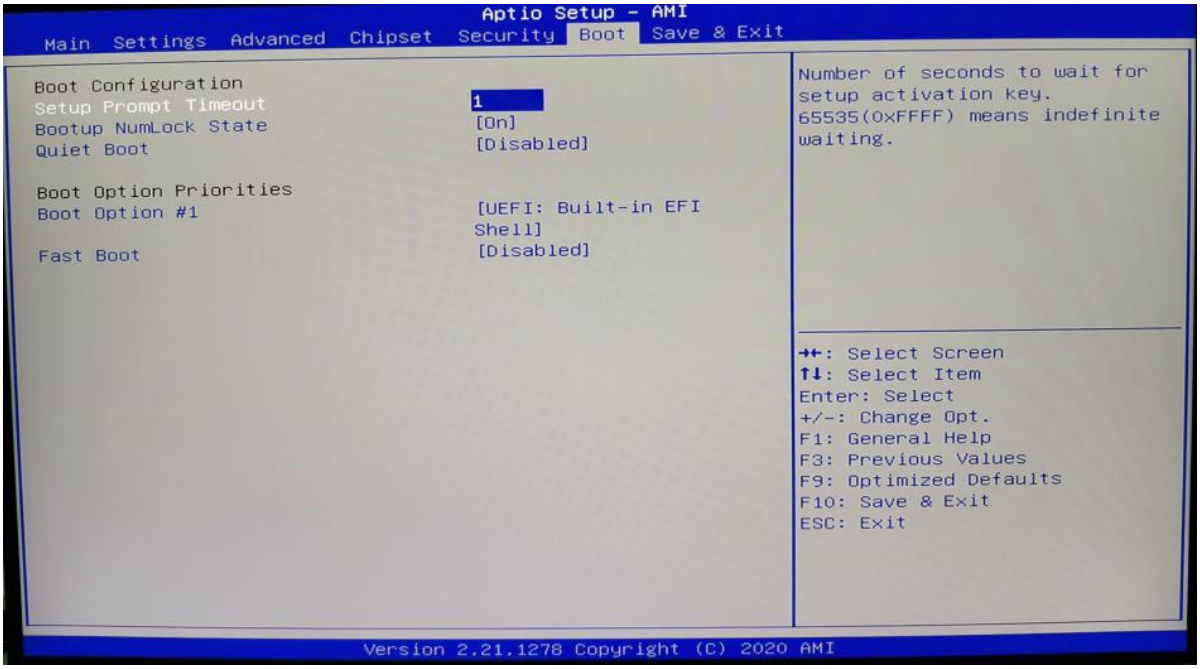
Tip: The minimum length of the password is 3

digits and the maximum length is 20 digits

If you forget the password; short the pin JCMOS for 5 seconds or unplug the BAT1, short the positive and negative poles for 5 seconds to clear the password

4.63 Secure Boot menu: Safe Boot Menu

4.7 Boot



4.71 Setup Prompt Timeout: Self-check interface dwell time setting

4.72 Bootup Numlock state: Keypad light switch option after power on

4.73 Quiet Boot：This item allows you to display the supplier logo on the startup screen

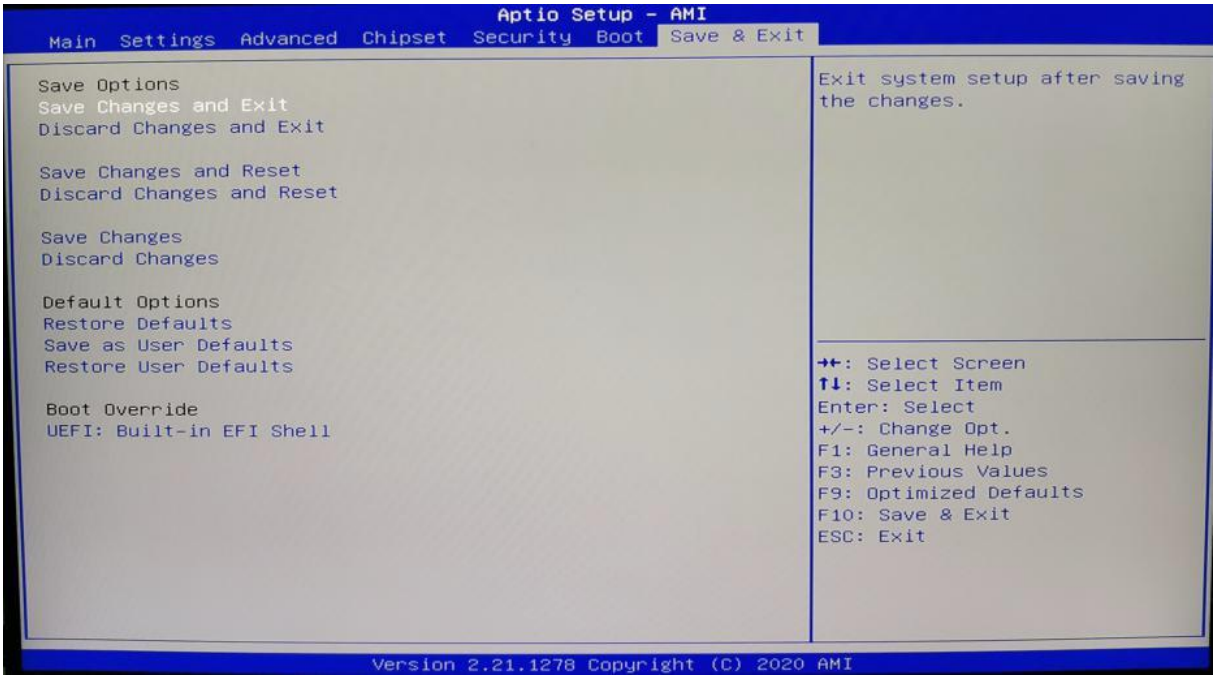
4.74 Boot Option Priorities：Boot priority options

Boot Option # 1：First startup item settings

Boot Option # 2：Second startup item settings

Fast Boot：Quick Start

4.8 Save & Exit



4.81 Save Changes and Exit：save changes and exit

4.82 Discard Changes and Exit：discard changes and exit

4.83 Save Changes and Reset：save changes and restart

4.84 Discard Changes and Reset：discard the changes and restart the computer

4.85 Save Changes：save changes

4.86 Discard Changes：discard changes

4.87 Restore Defaults：restore default settings

4.88 Save as User Defaults：save as user defaults

4.89 Restore User Defaults：restore user defaults

4.8.10 Boot Override：start overlay

FCC Caution:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no
guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different
from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.