WAVESHARE
share awesome hardware

OPS-I5-1135G7 & OPS-I7-1165G7

User Manual

Contents

1. INTRODUCTION

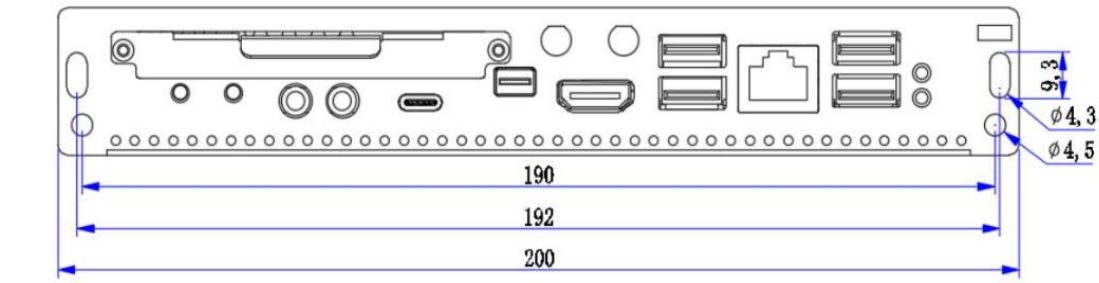
1.1 PRODUCT SHOW

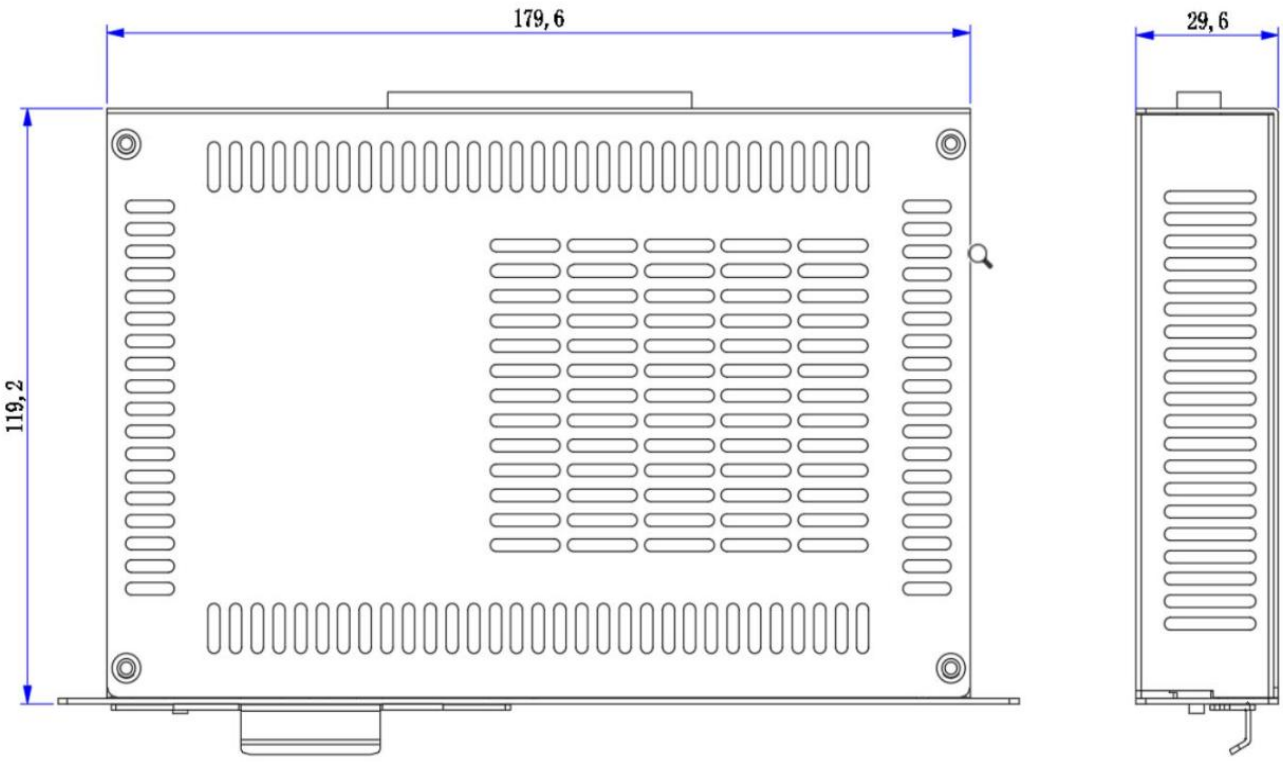
1.2 SPECIFICATIONS

Processor	Onboard Intel 11 generation Tiger Lake-U series processor, TDP 28W
	EFI BIOS
TPM 2.0	Built in the CPU by default, customizable for external TPM2.0
RAM	1*DDR4 SO-DIMM, up to 32GB
Storage	1*M.2 M-Key 2280, default NVMe-PCIe 3.0x4 protocol, optional SATA3.0 protocol
	1*2.5 inch HDD interface
	1 × SATA3.0 interface, 2Pin 5V
Display	1*HDMI2.0 interface, supports 4096×2160@60hz;
	1*Mini DP port, supports 4096×2160@60hz;
	1*Type-C port, supports USB3.1, 4K and 5V 3A output
	Supports synchronous or asynchronous display
I/O	1*Mini DP, 1*HDMI2.0, 2*USB3.0, 2*USB2.0
	1*LAN (RTL8111 Network, optional Intel219)
	1*Power indicator, 1*HDD indicator, 1*Switch, 1*Reset button
	1*Type-C
	1*Mic-in, 1*Line-out
	1*DC Jack power port
Expansion Interface/Function	1*M.2 E-Key (PCIe 3.0 + USB2.0 protocol, support WiFi/BT module)
	1*M.2 B-Key (USB2.0 + USB3.0 protocol, support 4g/5G module)
	1 set*RS232 pin headers, 2x5Pin, 2.00mm pitch
	1*3Pin SYS FAN, 1*3Pin CPU FAN
Power	DC 12-19V, 90W
JAE80PIN Interface Expansion	HDMI2.0/DP1.4 output, automatic identification and switching
	2 × USB2.0, 1 × USB3.0, 1 × TTL
System Support	Windows 10, Windows11, Linux
Dimensions	165x114mm
Weight	120g (heatsink NOT included); 220g (heatsink included)

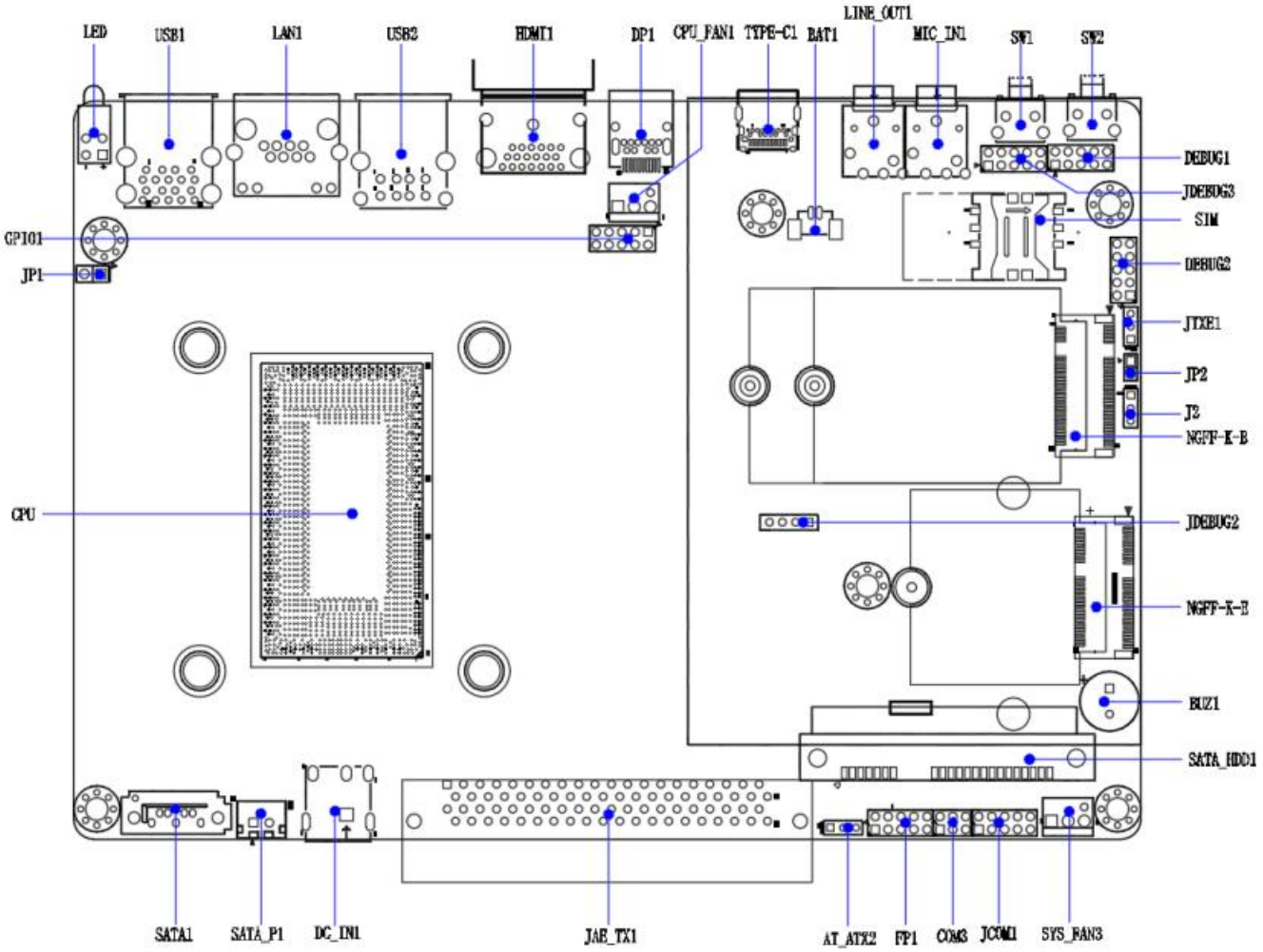
2. INSTALLATION INSTRUCTION

2.1 OVERALL DIMENSIONS

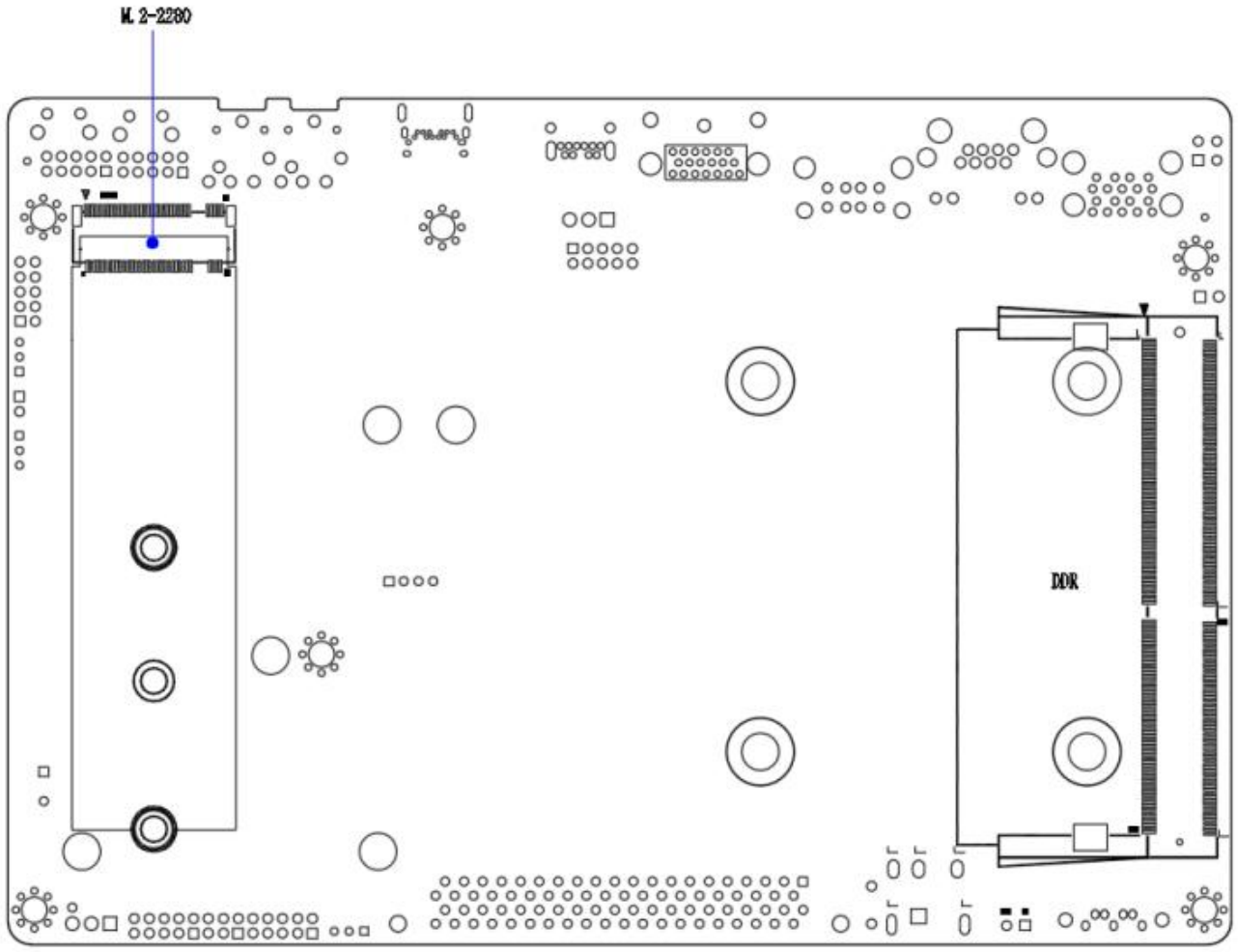




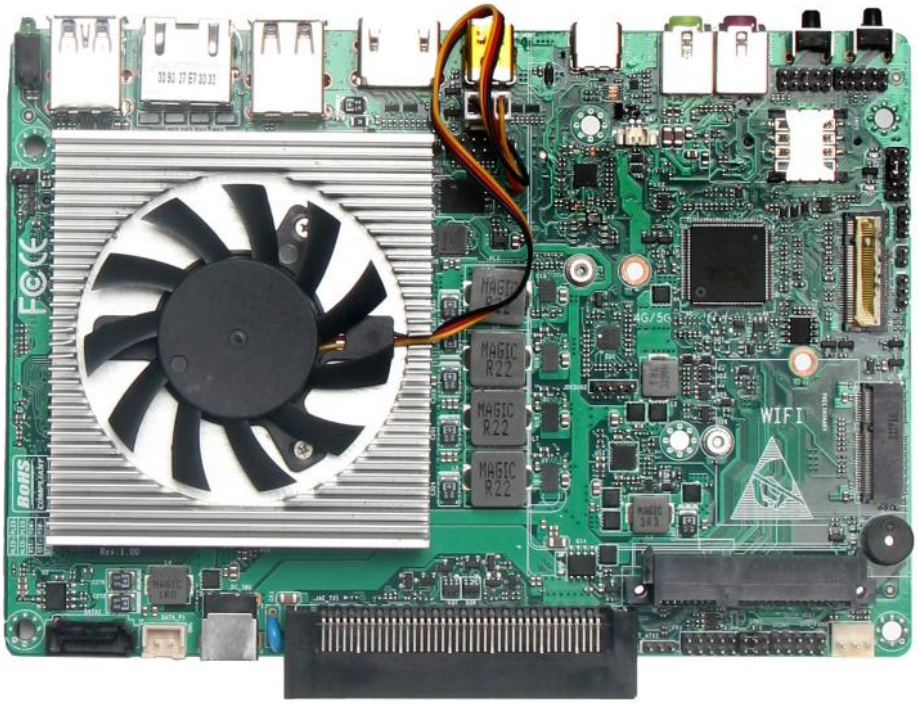
2.2 ONBOARD RESOURCES-FRONT SIDE



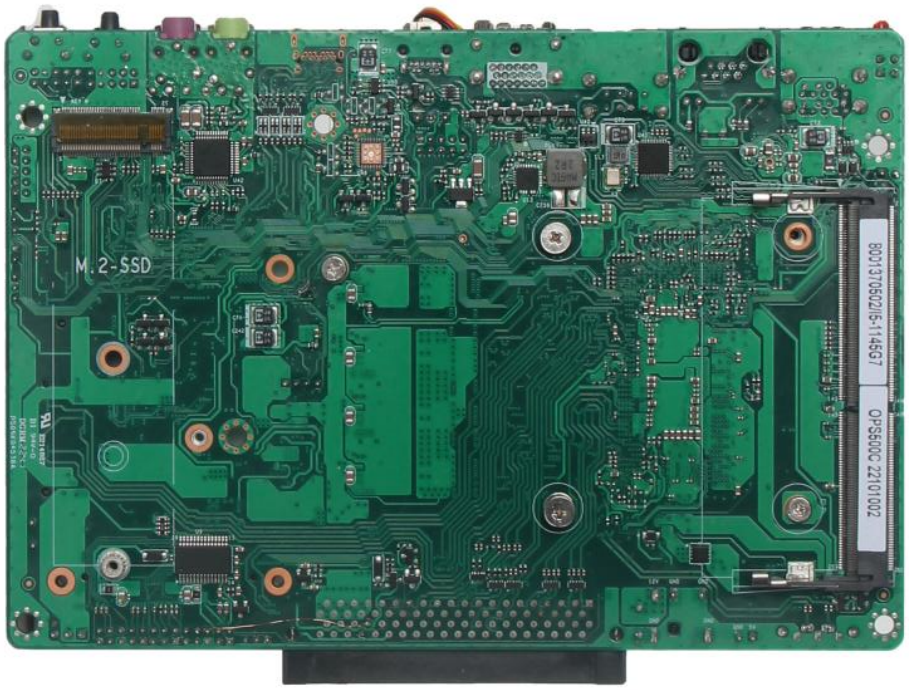
2.3 ONBOARD RESOURCE-BACK SIDE



2.3 PRODUCT SHOW-FRONT SIDE



2.4 PRODUCT SHOW-BACK SIDE



3. PIN DEFINITION

3.1 JP1

JP1 is the CMOS clear jumper, using a 1x2 pin with a 2.54mm pitch.

RTC1	Functions
Close	Clear RTC CMOS
Open	Default setting

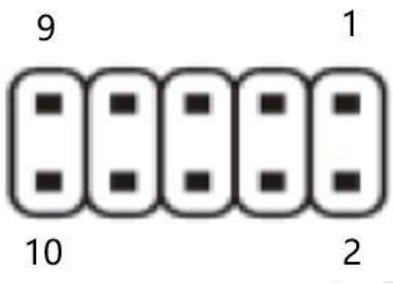
3.2 AT/ATX2

AT/ATX is the jumper for selecting the power-on mode. When Pins 1-2 are closed, upon powering up the supply, the board is on.

PS_ON	Power-on Mode
Pin 1-2, Close	AT power-on mode
Pin 2-3, Open	ATX power-on mode
Pin3	NC

3.3 FP1

FP1 is the controller board interface, adopts 2x5Pin with 2mm pitch. Pin definition is shown below:



F_PANEL1	Pin Definition
1,3	Hard flash drive read/write indicator positive and negative signal pin
2, 4	Main power indicator positive and negative signal pin
5, 7	Main board reset signal positive and negative pin
6, 8	Main board power on/off signal positive and negative pin
9, 10	Buzzer interface

3.4 CPU_FAN1, SYS_FAN1

FAN interface supports up to 0.3A. The pin definition is shown below:

PIN	Signal Name	PIN	Signal Name
1	GND	2	5VCC
3	SPEED		

Note: CPU_FAN supports 5V and SYS_FAN supports 12V. CPU_FAN supports automatic speed adjustment. The maximum fan voltage is equal to the input power supply voltage. When the input power supply voltage is high, pay attention to choose the appropriate fan. SYS_FAN does not support automatic speed adjustment.

3.5 HD_P1

1x SATA device power port, adopts CJT company A2501WV-2P device or other compatible devices. The pin definition is shown below:

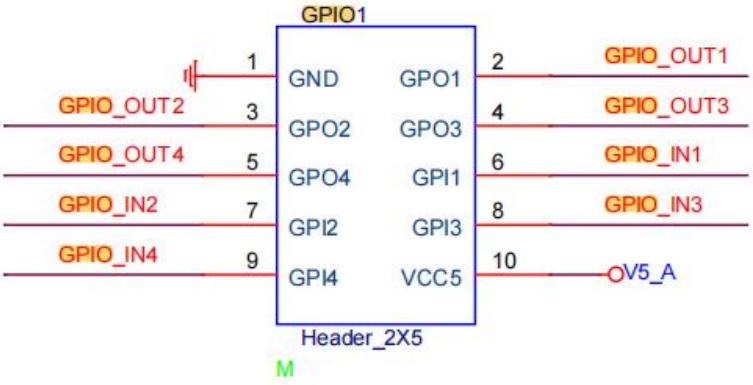
PIN	Signal Name	PIN	Signal Name
1	VCC	2	GND

3.6 J2

PIN	Signal Name	PIN	Signal Name	PIN	Signal Name
1	CLK	2	GND	3	DATA

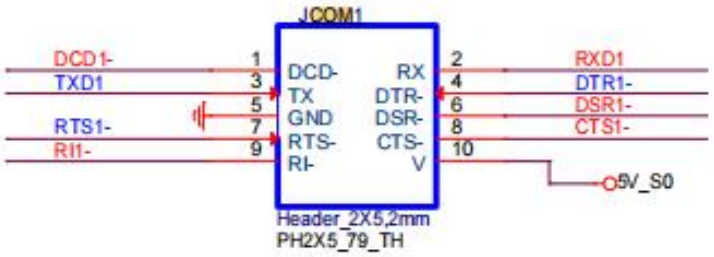
3.7 GPIO

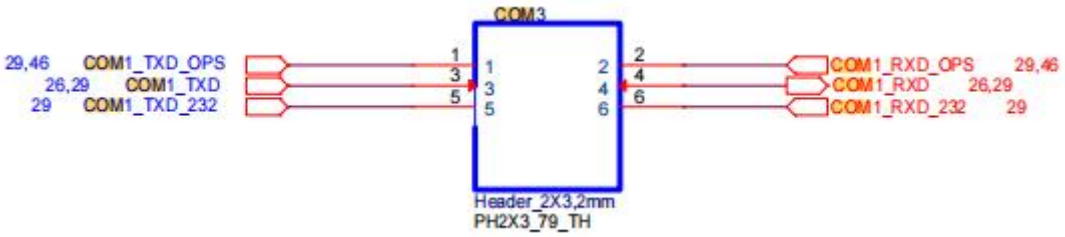
2x5Pin, with a 2.00mm pitch, the pin definition is show below:



3.8 COM

Default JAE interface COM function. If it is switched to COM function on the board, 1-3 jumper should be modified to 3-5, 2-4 jumper should be modified to 4-6.



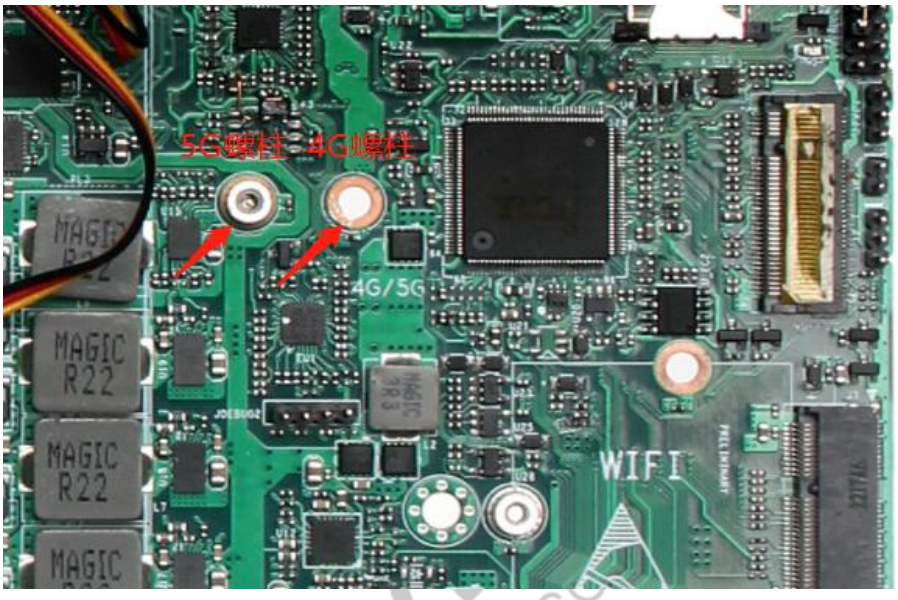


3.9 DC-IN

DC IN, external power input for stand-alone use (not connected via JAE connector), DC JACK 12-19V, 90W.

3.10 M-KEY SLOT

NGFF-Key-B Slot, Supports 4G and 5G Modules. When using a 5G module, the 4G screw must be removed.



4. BIOS PARAMETER SETTING

4.1 HOW TO ENTER BIOS

1. Open the system power or restart the system.
2. After booting, when the screen displays self-test information, press F2 to enter BIOS SETUP interface. Press F12 to start disk selection interface.

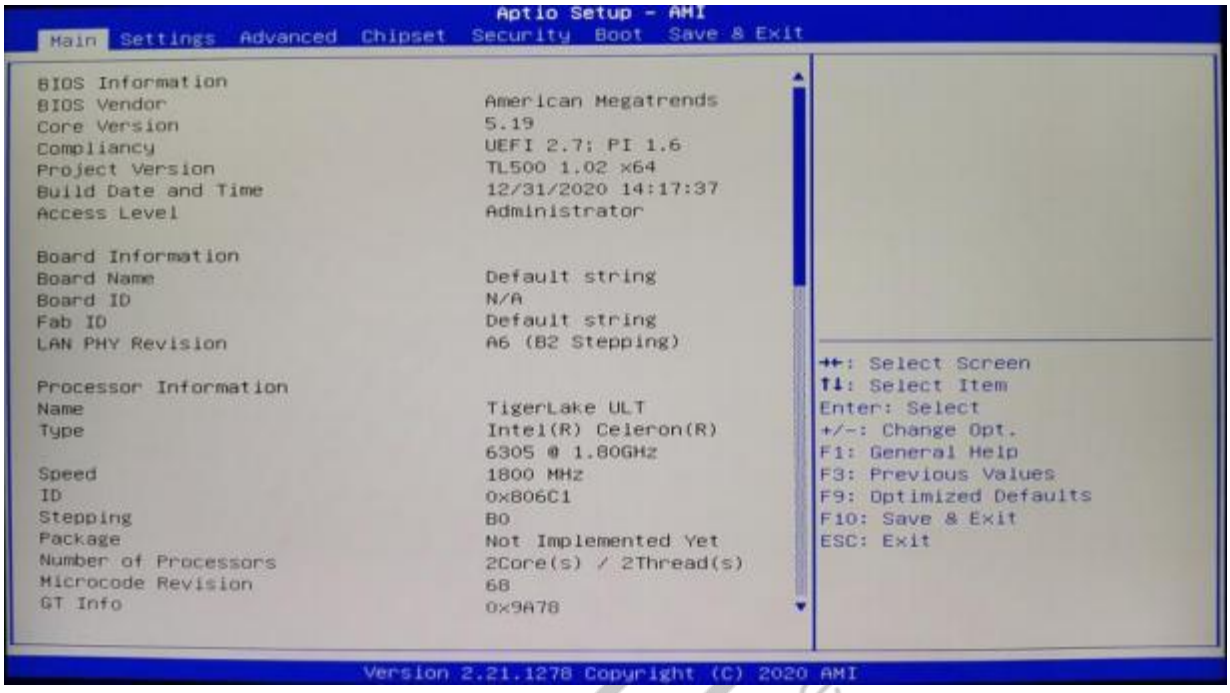
4.1.1 KEY FUNCTIONS IN BIOS

- →←: select screen
- ↑↓: select item
- Enter: select
- +/-: change Opt.
- F1: general help
- F3: previous values
- F9: optimized defaults
- F10: save & exit
- ESC: exit

4.1.2 PRECAUTIONS

1. BIOS setting can directly affect the computer's functions and using.
2. Setting incorrect parameters can cause malfunctions, damage, or even prevent the computer from booting.
3. In case of boot failure due to incorrect settings, please restore to factory mode.

4.2 MAIN



- System date: set the system date
- System time: set the system time

The black font section contains read-only information, including BIOS ID, version, and manufacturer. Detailed CPU information includes the CPU manufacturer, model, frequency, as well as memory information and more.

4.3 SETTINGS

- SS RTC Wake Setting: S5 real-time wake setting
- AC Power Loss Setting: Auto power-on upon incoming call.
- Special Setting

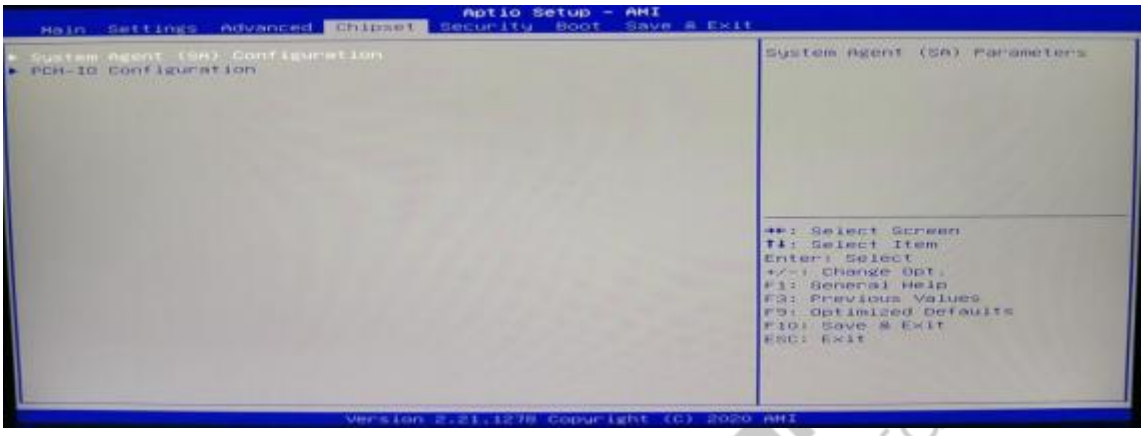
4.4 ADVANCED

- RC ACPI Settings: RC ACPI setting

- Connectivity Configuration
- CPU Configuration: CPU model, frequency, threads, cache, and related information and settings.
- Power & Performance: Common configuration options for CPU Turbo Boost, power consumption, etc.
- PCIE Configuration
- PCH-FM Configuration
- Thermal Configuration
- Platform Settings: Serial console redirection
- ACPI D3Cold Settings
- OverClocking Performance Menu
- AMT Configuration Release
- BCLK Configuration
- Debug Settings
- Debug Configuration
- Trusted Computing: computing configuration
- ACPI Settings: advanced configuration and power management port
- IT8613 Super IO Configuration: Super IO configuration
- Hardware Monitor: display CPU temperature, fan speed and the auto-setting of the fan speed
- IT8786SEC Super IO Configuration: Super IO configuration

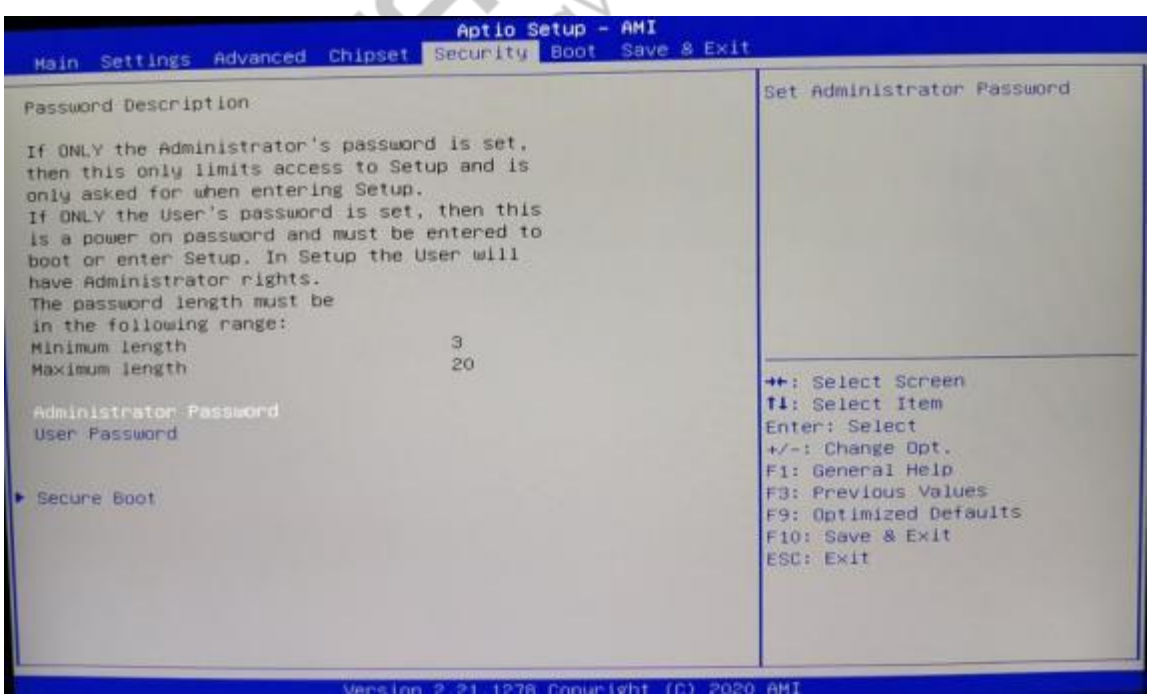
- UEFI Variables Protection

4.5 CHIPSET



- System Agent (SA) Configuration
- PCH-IO Configuration

4.6 SECURITY



- Administrator password: This command line is used to set the superuser

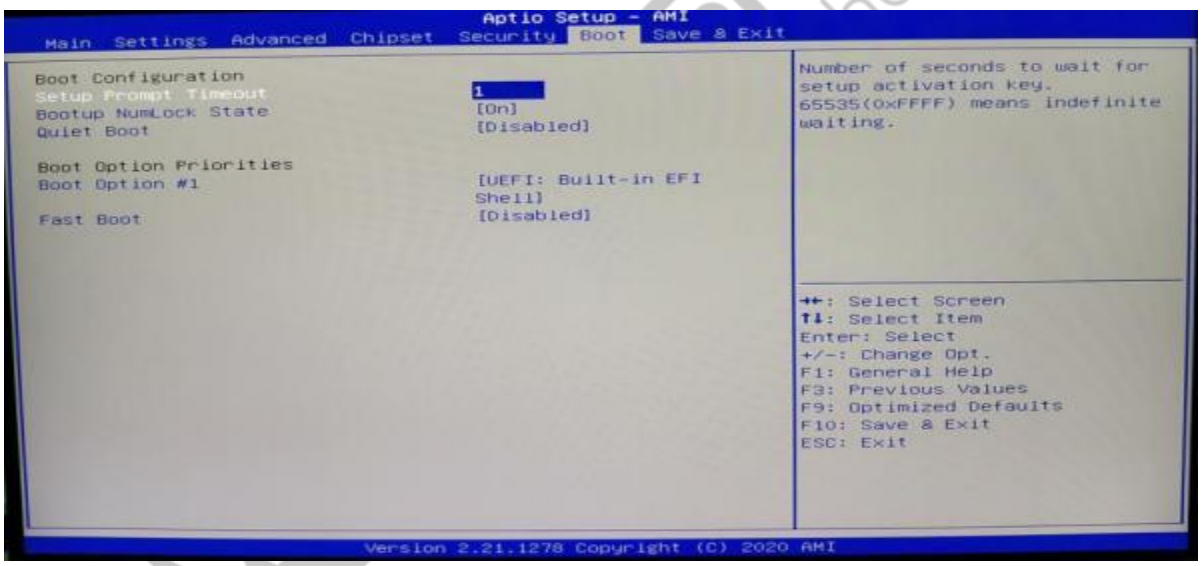
password.

- User password: set the password for regular users.

Note: The password must be a minimum of 3 characters and a maximum of 20 characters. In case of a forgotten password, short-circuit the JCMOS pins for 5 seconds or remove the BAT1, short-circuiting the positive and negative terminals for 5 seconds to clear the password.

- Secure Boot menu

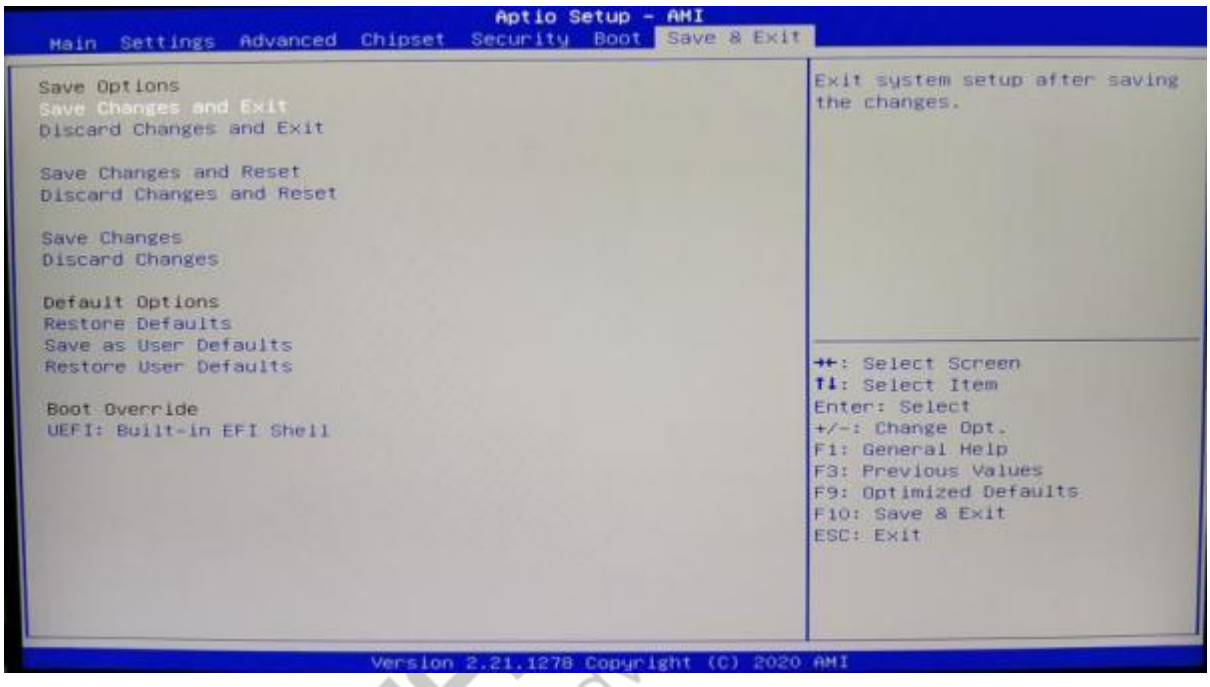
4.7 BOOT



- Setup Prompt Timeout: Self-check interface stay time settings
- Bootup Numlock State: Option to turn on the Num Lock light upon startup
- Quiet Boot: this project allows you to display the supplier logo on the startup screen.
- Boot Option Priorities

- Boot Option #1: The setting for the first boot option.
- Boot Option #2: The setting for the second boot option.
- Fast Boot

4.8 SAVE&EXIT



- Save Changes and Exit
- Discard Changes and Exit
- Save Changes and Reset
- Discard Changes and Reset
- Save Changes
- Discard Changes
- Restore Defaults
- Save as User Defaults
- Restore User Defaults

- Boot Override

Appendix: Troubleshooting Analysis and Solutions

Failure	Solutions
Failure to Power On After Powering Up	1. Check if the power connection cable is properly connected. 2. Verify if the power supply meets the board's power requirements. 3. Plug the memory module again. 4. Replace the memory module. 5. Try clearing the board CMOS following the manual instructions. 6. Check for any external cards. Remove them and check if the system boots normally.
Monitor Not Displaying After Powering On	1. Check if the monitor is powered on. 2. Ensure the power cables are correctly connected to both the monitor and the system unit. 3. Check if the monitor cable is properly connected to the system unit and the monitor. 4. Check the brightness control of the display. Increase brightness using the control. Refer to the monitor manual for detailed instructions. The monitor might be in "power-saving" mode. Press any key on the keyboard.
BIOS Setup Settings Cannot Be Saved	1. Check if the CMOS battery voltage is below 2.8V. If it is low, replace the battery and reconfigure the settings. 2. If the BIOS settings are incorrect, adjust the time and date in the BIOS Setup as indicated by the boot screen (DEL key).
Boot Device Not Found Error	1. Ensure the hard drive power and data cables are properly connected. 2. Check if the hard drive has any physical damage. 3. Verify if the operating system is correctly installed on the hard drive
Blue Screen or System Freeze During System Startup	1. Check if the memory modules and external cards are loose. 2. Try removing newly installed hardware, uninstalling drivers, or software. 3. Attempt to replace the memory.
Slow System Startup	1. Use third-party software to check for bad sectors on the hard drive.

	2. Check if the remaining space in the system partition is insufficient. 3. Verify if the CPU cooling fan is functioning properly.
Automatic System Restart	1. Check if the CPU cooling fan is operating properly. 2. Verify if the industrial computer's reset button was accidentally triggered. 3. Use antivirus software to check for virus infections in the system. 4. Check if the memory modules and external cards are loose. 5. Confirm if the power supply's load capacity is adequate, try replacing the power supply if necessary.
USB Device Not Detected	1. Check if the USB device requires separate power. 2. Ensure there are no poor contacts in the USB interface. 3. Verify if the USB controller is enabled in the BIOS Setup.