

AIOT0-W680

AIOT0-W680D



Version 1.0

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Chapter 1 Summary

1.1 Packing list

Thank you for choosing our products.

Please kindly confirm the integrity of the packaging of the motherboard you purchased. If there is any packaging damage or any shortage of accessories, please contact your dealer as soon as possible.

- ★ **1 * motherboard**
- ★ **1 * driver disc (industrial packaging: 1PCS/box)**
- ★ **1 * SATA HDD adapter cable**
- ★ **1* special I/O baffle**



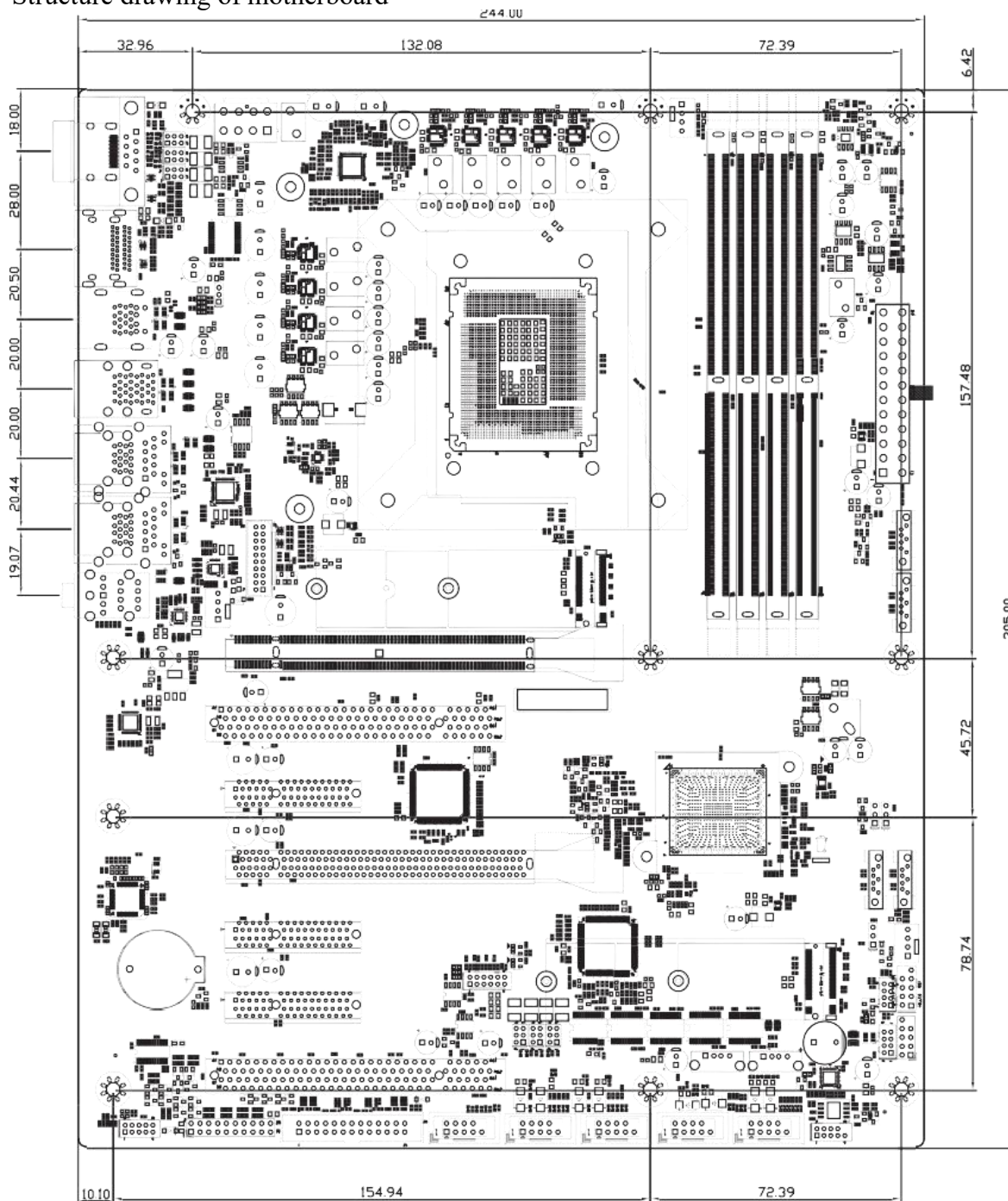
The specifications of the accompanying accessories above are provided for reference only, the actual specifications are subject to the actual product, and the Company reserves the right to modify.

1.2 Motherboard specifications

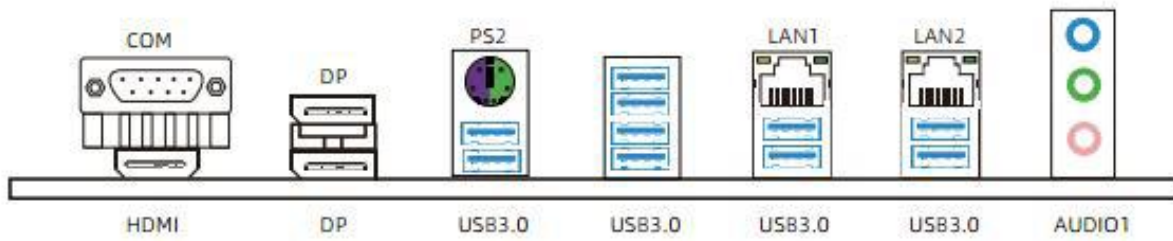
| | |
|--|---|
| Processor | - Supports all series of LGA1700 packaged Gen12&13 i9/i7/i5/i3 CPU, TDP up to 125W |
| Chipset | - Intel® W680 chipset, supports vPro |
| Memory | - 4 * DDR5 memory slot, supports up to 128GB (single memory slot of 32GB). W680 supports ECC memory, and the memory size DDR5-4400/4800/5200/5600 based on the installed CPU |
| Display controller | - Intel CPU integrated display controller (different based on the installed CPU) |
| Storage | - 4 * SATA 3.0 (6 Gb/s) Ports - 2 * M.2 2242/2280 Key-M, supports Nvme (M2-KEYM2 supports SATA/Nvme adaptive function) |
| Audio | - Back-end IO, supports MIC-In, Speaker-Out and Line-In audio interfaces |
| Network | - 2 * Intel Fast Ethernet ports: LAN1: i226-LM/V2.5Gb; LAN2: i219V |
| USB | - 10 * USB3.2 Type A directly wired from back-end IO (2 * Gen2, 8 *Gen1) - 2 * USB2.0, built-in vertical, preset for USB Dongle; 2 * USB2.0 pin (computer case front panel expansion reserved near board edge) |
| Serial port | - 6 * serial port (COM1& 2 that support RS232/422/485, and COM3-6 that support RS232) |
| Digital I/O | - 1 * 16-bit digital I/O with isolation, provides power source and ground circuit, +5V level |
| Power source | - ATX power source, supports ATX/AT On/Off mode |
| Expansion bus | - W680: 1 * PCIe x16 slot, supports PCIe 5.0 Maximum data bandwidth is 64GB/s; 1 * PCIe x16 slot, (x4 signals), supports PCIe 4.0 Maximum data bandwidth up to 8GB/s 1 * PCIe x4 slot, supports PCIe 4.0 Maximum data bandwidth up to 8GB/s 2 * PCIe x4 slot, supports PCIe 3.0 Maximum data bandwidth up to 4GB/s 2 * standard PCI slot (32bit); W680D: 1 * PCIe x16 slot, (x8 signals), supports PCIe 5.0 Maximum data bandwidth up to 32GB/s 1 * PCIe x16 slot, (x8 signals), supports PCIe 5.0 Maximum data bandwidth up to 32GB/s 2 * PCIe x4 slot, supports PCIe 4.0 Maximum data bandwidth up to 8GB/s 2 * PCIe x4 slot, supports PCIe 3.0 Maximum data bandwidth up to 4GB/s 1 * standard PCI slot (32bit) |
| Atmospheric conditions of working environment | - Temperature -10°C-60°C, RH 10%-85%, BP 85-105kPa |

| | |
|--|---|
| Atmospheric conditions of storage environment | - Temperature -40°C-85°C; RH 5%-95% (40°C), BP 85-105kPa |
| Watch Dog | - 255-level programmable in the mode of seconds/minutes, supports timeout interrupt or system reset |
| BIOS | - AMI UEFI BIOS |
| Operating System | - Win10 x 64, Win11 x 64, Linux Ubuntu 22.04 |
| PCB size | - 305mm x 244mm |

1.3 Structure drawing of motherboard



1.6 IO panel interface



(This image is for reference only, please prevail in kind)

- COM: Serial port
- HDMI: HDMI display interface
- DP: DP display interface
- PS2: Keyboard & mouse interface
- USB3.0: USB3.0 interface
- LAN: RJ45 Ethernet interface
- AUDIO1: Audio interface

Chapter 2 Hardware installation

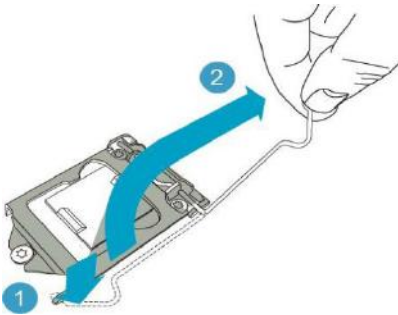
2.1 Install CPU

Before installing memory, please observe the following warning information:

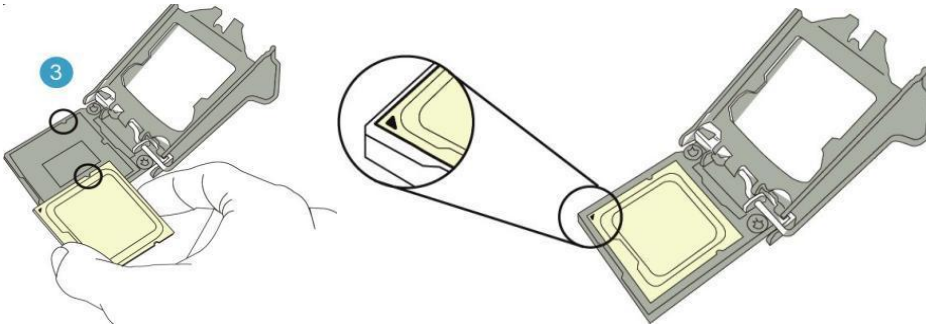
1. Please make sure that the CPU you purchased is compatible with the specifications supported by this motherboard.
2. Before installing or removing the CPU, please make sure that the computer power is turned off to prevent damage.
3. CPU is designed with fool-proof mechanism. If you insert it in the wrong direction, CPU cannot be inserted. In such case, do not forcibly install to prevent pin breakage or deformation.

Install CPU:

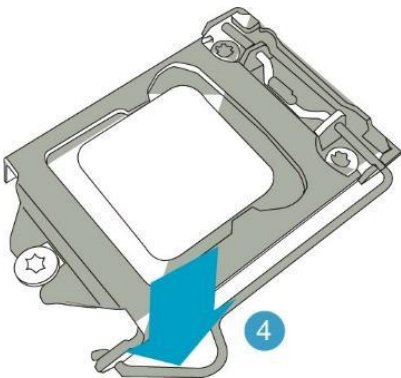
1. When installing CPU, firstly pull up the lever on the edge of CPU socket at the angle of 90°.



2. In the lower left corner of the front side of the CPU, there will be an arrow that corresponds to the position of the missing pin on the CPU socket.



3. Confirm that the CPU has been fully inserted into the CPU socket, and then lower the lever to the sound of "Click".



4. Apply an appropriate amount of thermally conductive silicone grease to the surface of the CPU core to prevent the silicone grease from overflowing onto the socket.



2.2 Install memory

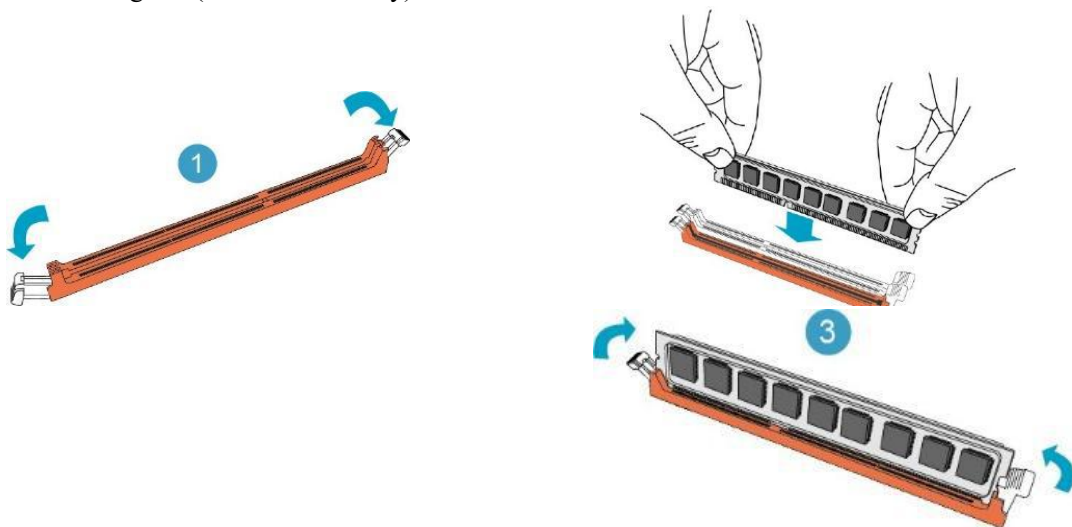
Before installing memory, please observe the following warning information:

1. Please make sure that the memory you purchased is compatible with the specifications supported by this motherboard.
2. Before installing or removing memory, please make sure that the computer power is turned off to prevent damage.
3. The memory is designed with fool-proof mechanism. If you insert the memory in the wrong direction, the memory cannot be inserted. In such case, please change the insertion direction immediately.

Install memory:

1. Before installing or removing memory, please turn off the power and unplug the AC power cord.
2. Be careful to hold both edges of the memory module, and do not touch its metal contacts.
3. Align the gold fingers of the memory module with the memory module slot, and pay attention to the convex point of the gold finger socket to the upper slot in the direction.
4. Insert the memory module into the memory slot at an angle of 30°, and then press down the memory module to the sound of “Click”, indicating that the memory has been successfully installed and can be used. (Note: Do not use excessive force when you pressing down the memory module, so as not to damage the memory)
5. To remove the memory module, push the retaining clips on both ends of the DIMM slot outward at the same time, and then remove the memory module.

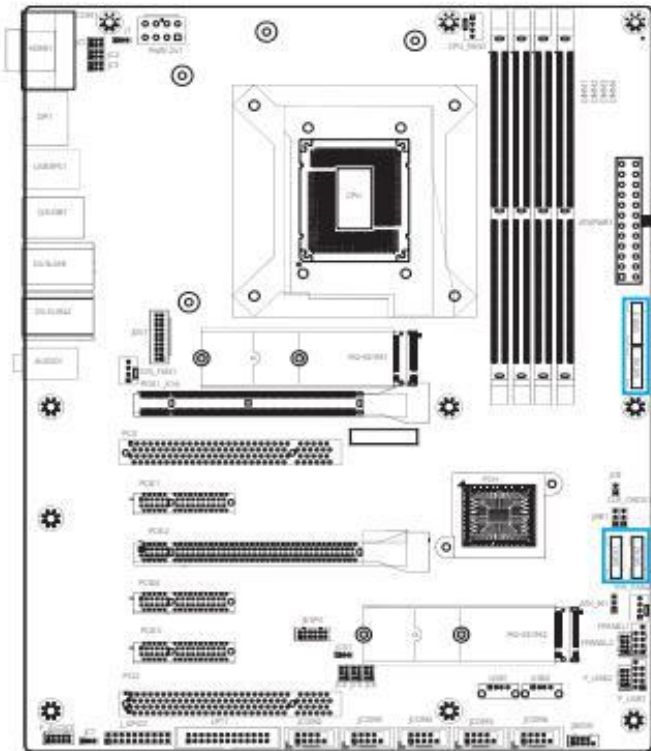
Memory installation diagram (for reference only):



⚠ Note: Static electricity can damage the electronic components of the computer or memory, so before performing the above steps, be sure to briefly touch the grounded metal objects to remove static electricity from your body.

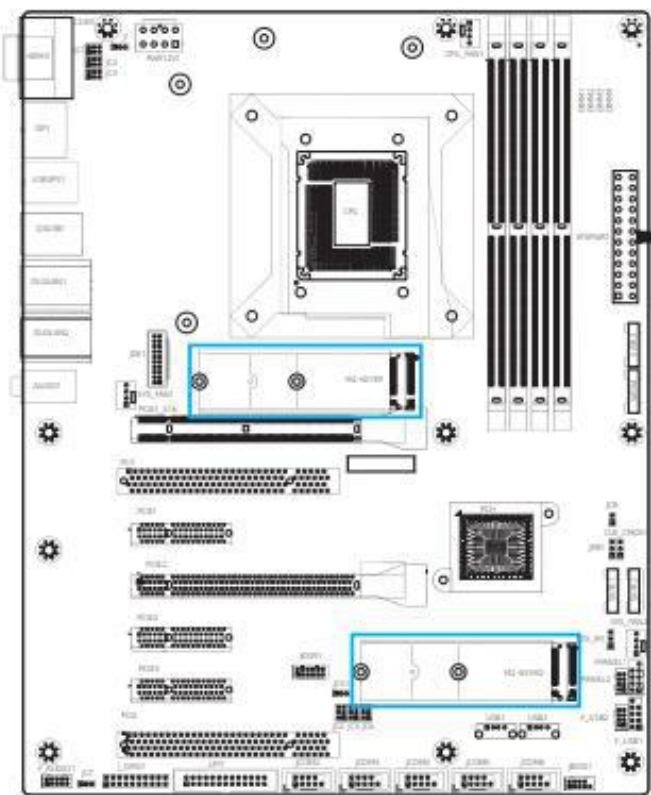
2.3 Connect peripherals

2.3.1 Serial ATA connector



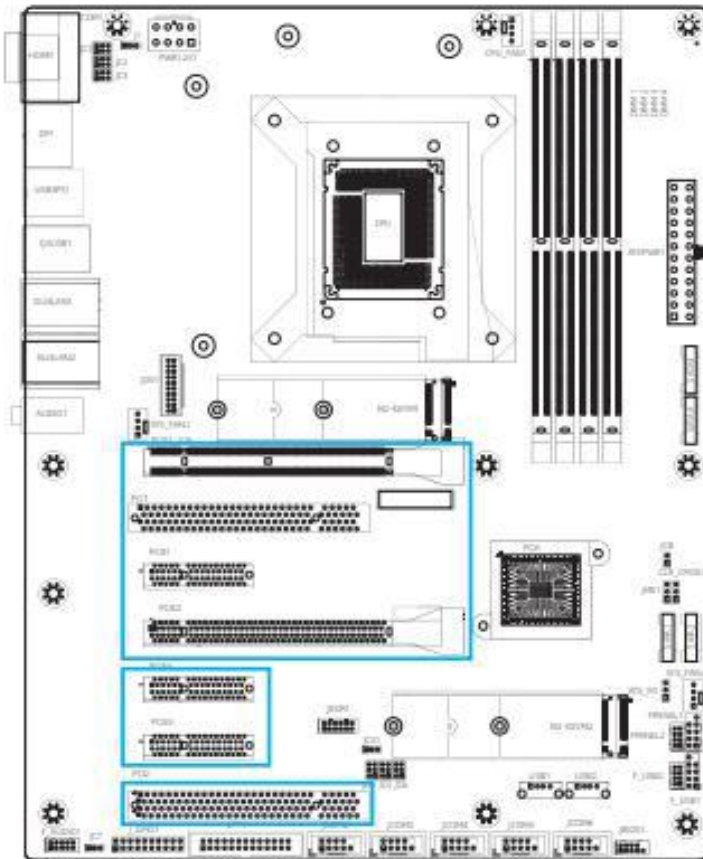
The interface supports the connection to Serial ATA hard disk or other devices that comply with the Serial ATA specification with Serial ATA flat cable.

2.3.2 M2-KEYM1/2 slot



M.2 slot, supports SSD. When installing this card, please insert the card at an angle of 30°, press down to the stud, and then fix it with screws.

2.3.3 PCIE1/2/3/4/5/PCI1/2 slots



- 1 * PCIe x16 slot , supports PCIe 5.0
- 1 * PCIe x16 slot, (x4 signals), supports PCIe 4.0
- 1 * PCIe x4 slot , supports PCIe 4.0
- 2 * PCIe x4 slot , supports PCIe 3.0
- 2 * standard PCI slot (32bit)

Chapter 3 Installation and setup of jumpers & connectors

3.1 Setup description of each jumper

2-pin connector: Inserting the jumper cap into two pins will close (short) the connection. Removing the jumper cap or inserting it into other pins (reserved for future expansion) will open the connection.

3-pin connector: The jumper cap can be inserted into pins 1-2 or 2-3 to close (short) the connection.



How to identify the first pin position of a jumper?

1. Please carefully examine the motherboard. Any pin marked with “1” or with white bold line is the first pin position.
2. Examine the solder pads on the back panel. Usually, the square-shaped pad is the first pin.

3.2 Jumper setup

JME1 jumper setup (disabled ME, if ME needs to be updated, short circuit 1-2)

| Pin | Definition |
|-----|------------|
| 1-2 | Disable ME |
| 2-3 | NORMAL |

CLR_COMS1 jumper setup (short circuit 2-3, clear BIOS settings, and restore the default factory settings)

| Pin | Definition |
|-----|------------|
| 1-2 | NORMAL |
| 2-3 | CLEAR_COMS |

ATX-M1 jumper setup (1-2: normal mode, press the power button to boot after being electrified; 2-3: automatically boot after being electrified)

| Pin | Definition |
|-----|------------|
| 1-2 | ATX Mode |
| 2-3 | AT Mode |

COM1 setup

JC1/JC2/JC3 jumper setup

| RS232 | RS485 | RS422 |
|----------|----------|----------|
| JC1(1-2) | JC1(3-4) | JC1(5-6) |
| JC2(1-3) | JC2(3-5) | JC2(3-5) |
| JC2(2-4) | JC2(4-6) | JC2(4-6) |
| JC3(1-3) | | JC3(3-5) |
| JC3(2-4) | | JC3(4-6) |

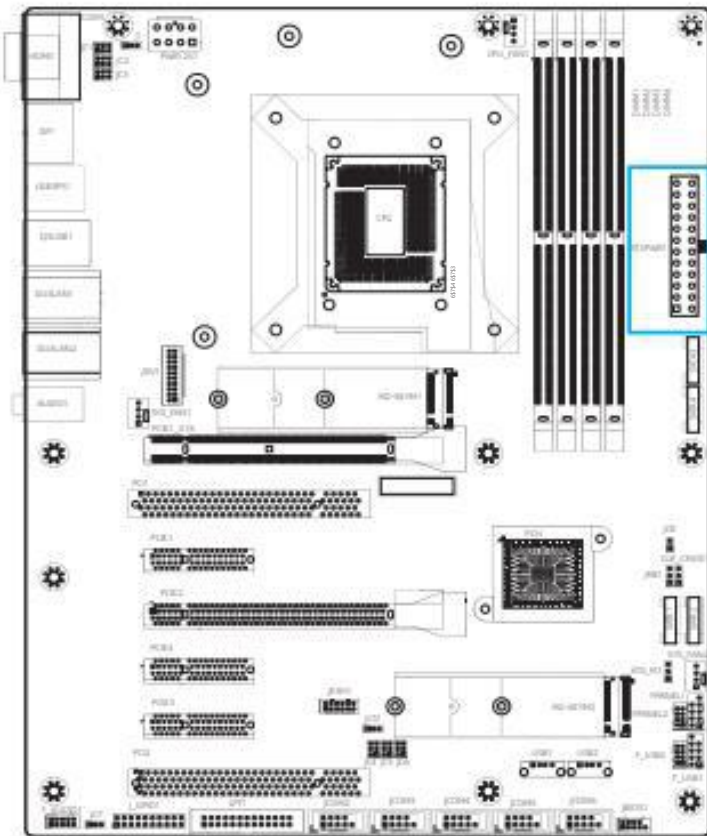
JCOM2 setup

JC4/JC5/JC6 jumper setup

| RS232 | RS485 | RS422 |
|----------|----------|----------|
| JC4(1-2) | JC4(3-4) | JC4(5-6) |
| JC5(1-3) | JC5(3-5) | JC5(3-5) |
| JC5(2-4) | JC5(4-6) | JC5(4-6) |
| JC6(1-3) | | JC6(3-5) |
| JC6(2-4) | | JC6(4-6) |

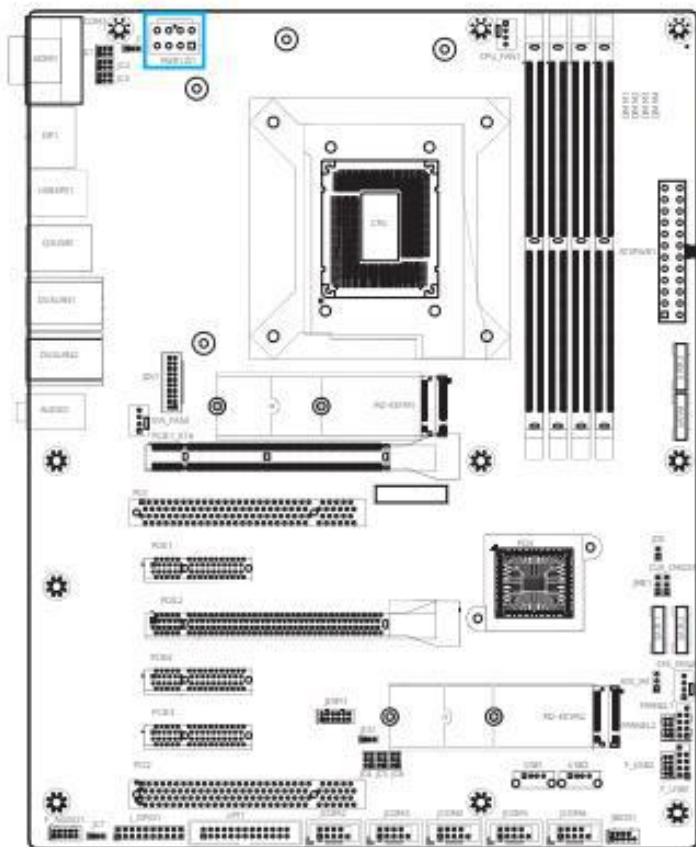
COM1 and JCOM2 support RS-232/422/485 mode. Three modes can be switched by selecting the above jumper caps.

3.3 ATXPWR1 power interface (standard 24Pin power interface)



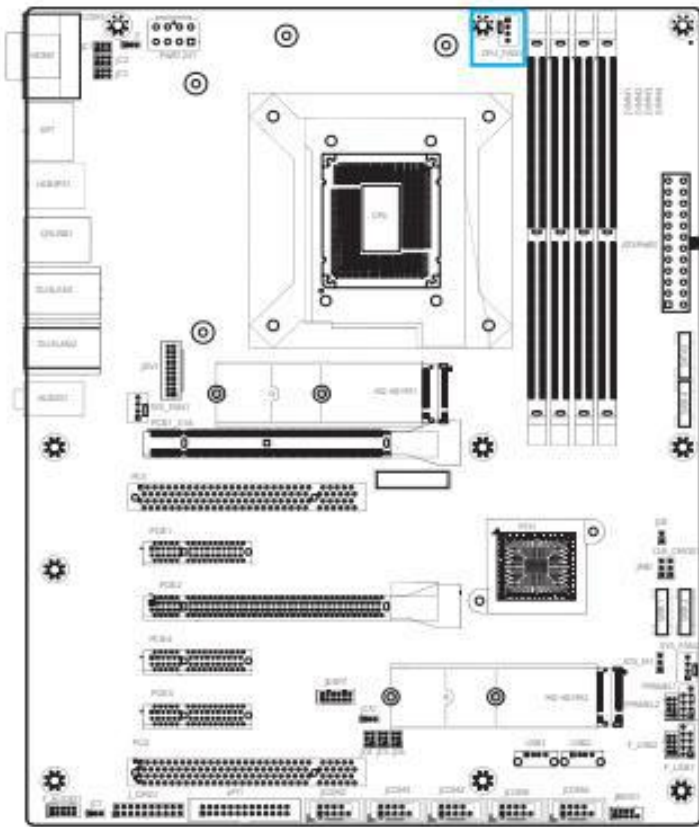
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | +3.3V | 13 | +3.3V |
| 2 | +3.3V | 14 | -12V |
| 3 | GND | 15 | GND |
| 4 | +5V | 16 | PSON# |
| 5 | GND | 17 | GND |
| 6 | +5V | 18 | GND |
| 7 | GND | 19 | GND |
| 8 | POK | 20 | NC |
| 9 | 5VSB | 21 | +5V |
| 10 | +12V | 22 | +5V |
| 11 | +12V | 23 | +5V |
| 12 | +3.3V | 24 | GND |

3.4 PWR12V1 power interface (standard 8Pin power interface)



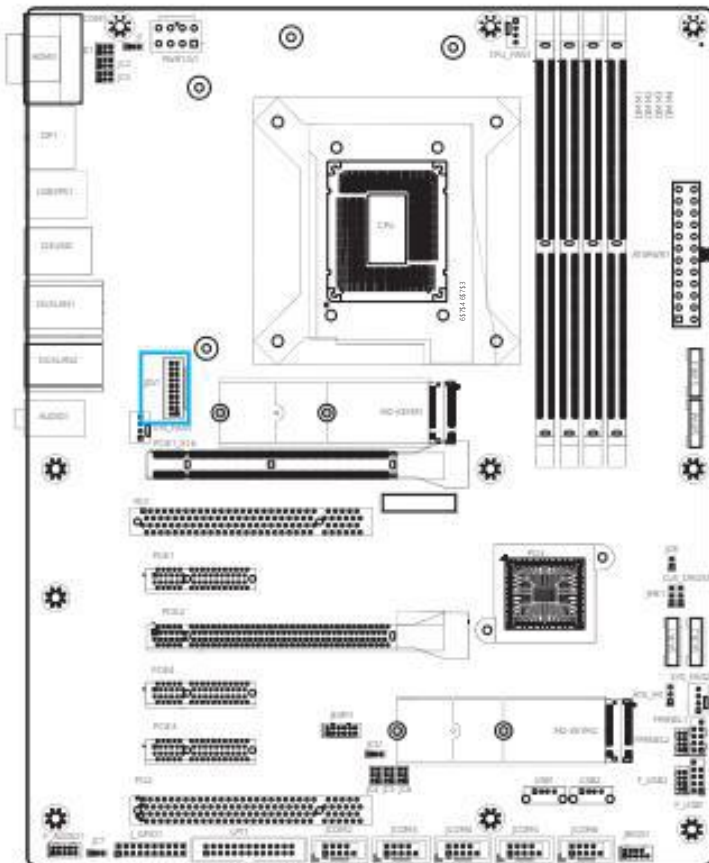
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | GND | 2 | +12V |
| 3 | GND | 4 | +12V |
| 5 | GND | 6 | +12V |
| 7 | GND | 8 | +12V |

3.5 CPU_FAN1 interface (CPU fan interface)



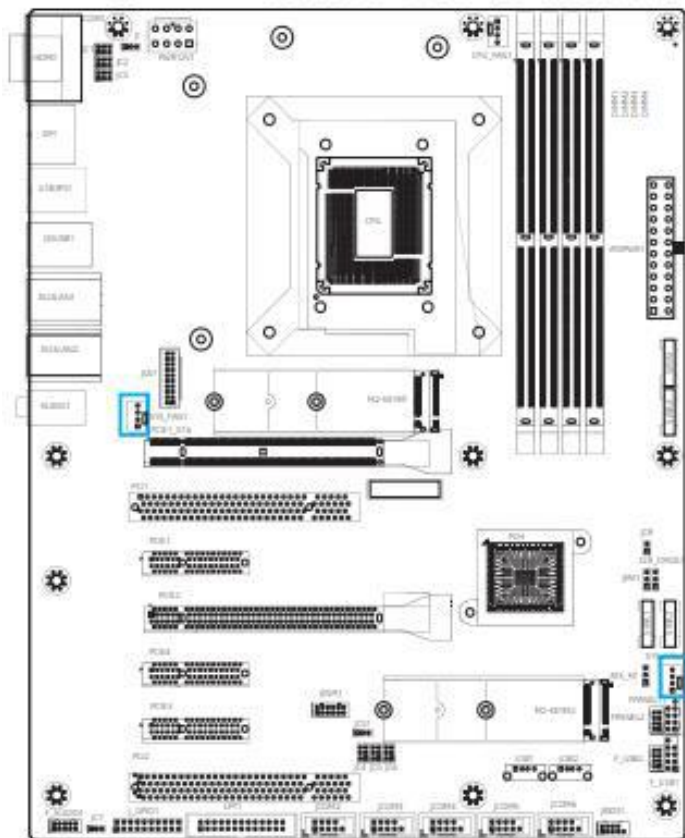
| Pin | Definition of pin |
|-----|-------------------|
| 1 | GND |
| 2 | +12V |
| 3 | FAN_TAC |
| 4 | FAN_CTL |

3.6 JDV1 pin interface



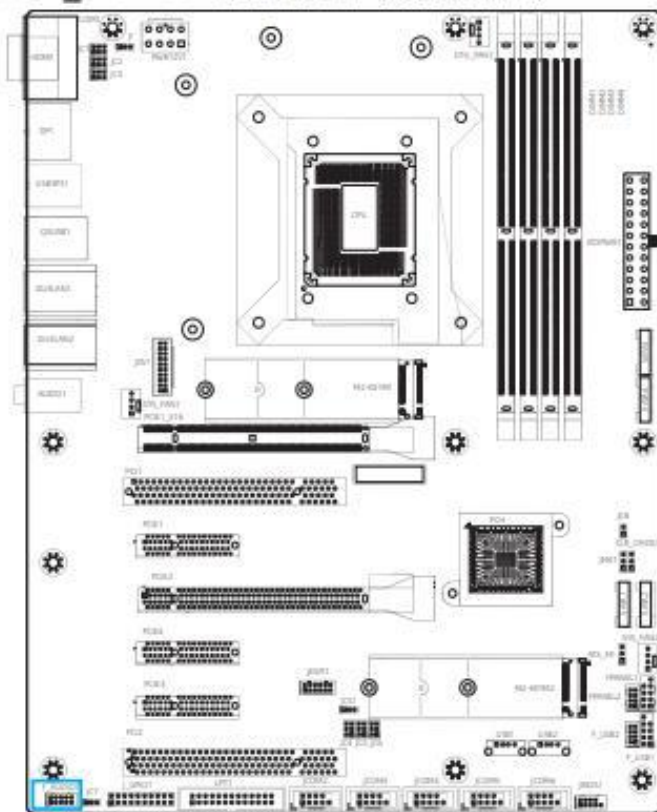
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | D2- | 2 | D2+ |
| 3 | GND | 4 | GND |
| 5 | D1- | 6 | D1+ |
| 7 | GND | 8 | GND |
| 9 | D0- | 10 | D0+ |
| 11 | GND | 12 | GND |
| 13 | CLK+ | 14 | CLK- |
| 15 | 5V | 16 | HDP |
| 17 | DDC SDA | 18 | DDC CLK |
| 19 | GND | 20 | GND |

3.7 SYS_FAN1/2 pin interface (system fan interface)



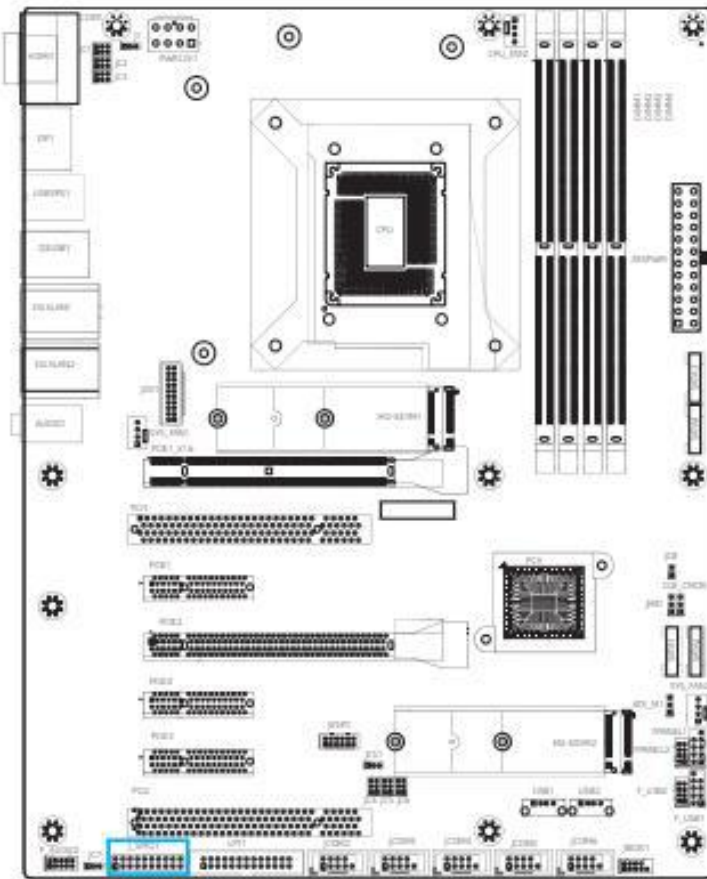
| Pin | Definition of pin |
|-----|-------------------|
| 1 | GND |
| 2 | +12V |
| 3 | FAN_TAC |
| 4 | FAN_CTL |

3.8 F_AUDIO1 pin interface (audio interface)



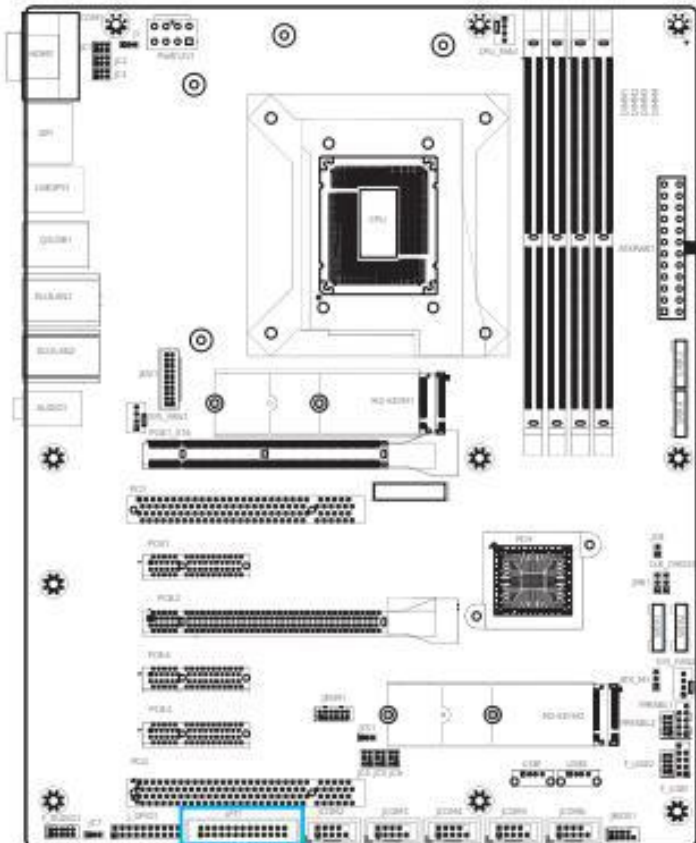
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | MIC2_IN_L | 2 | GND |
| 3 | MIC2_IN_R | 4 | NC |
| 5 | LINE2_OUT_R | 6 | MIC2_JD |
| 7 | GND | 8 | NC |
| 9 | LINE2_OUT_L | 10 | LINE2_JD |

3.9 J_GPIO1 pin interface (GPIO interface)



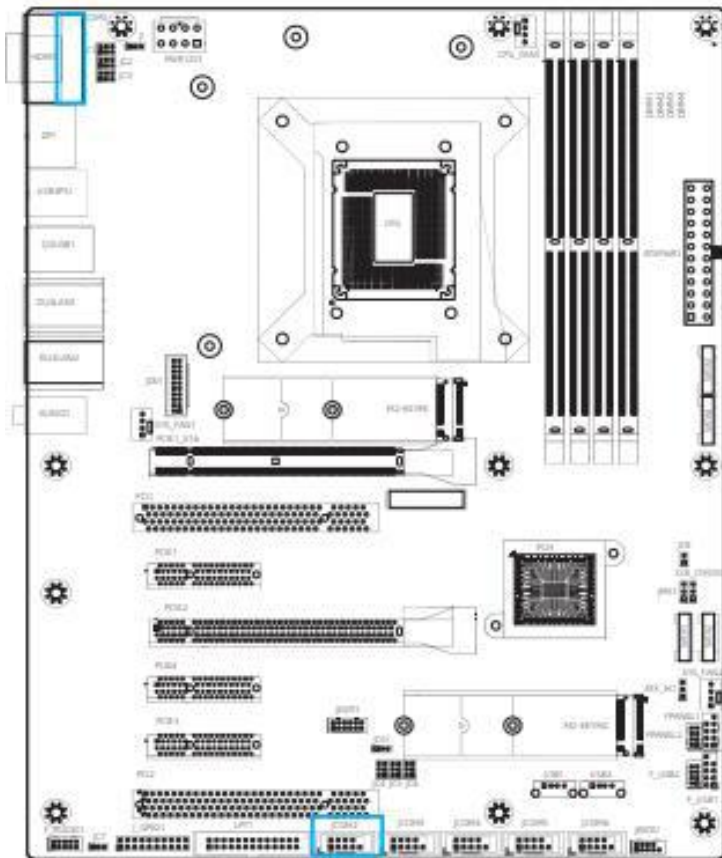
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | 5V | 2 | GND |
| 3 | GPIO1 | 4 | GPIO2 |
| 5 | GPIO3 | 6 | GPIO4 |
| 7 | GPIO5 | 8 | GPIO6 |
| 9 | GPIO7 | 10 | GPIO8 |
| 11 | GPIO9 | 12 | GPIO10 |
| 13 | GPIO11 | 14 | GPIO12 |
| 15 | GPIO13 | 16 | GPIO14 |
| 17 | GPIO15 | 18 | GPIO16 |
| 19 | GND | 20 | 5V |

3.10 LPT1 pin interface (printer interface)



| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | LPT_STB | 2 | LPT_AFD |
| 3 | LPT_PD0 | 4 | LPT_ERR |
| 5 | LPT_PD1 | 6 | LPT_INT |
| 7 | LPT_PD2 | 8 | LPT_SLIN |
| 9 | LPT_PD3 | 10 | GND |
| 11 | LPT_PD4 | 12 | GND |
| 13 | LPT_PD5 | 14 | GND |
| 15 | LPT_PD6 | 16 | GND |
| 17 | LPT_PD7 | 28 | GND |
| 19 | LPT_ACK | 20 | GND |
| 21 | LPT_BUSY | 22 | GND |
| 23 | LPT_PE | 24 | GND |
| 25 | LPT_SLCT | 26 | NC |

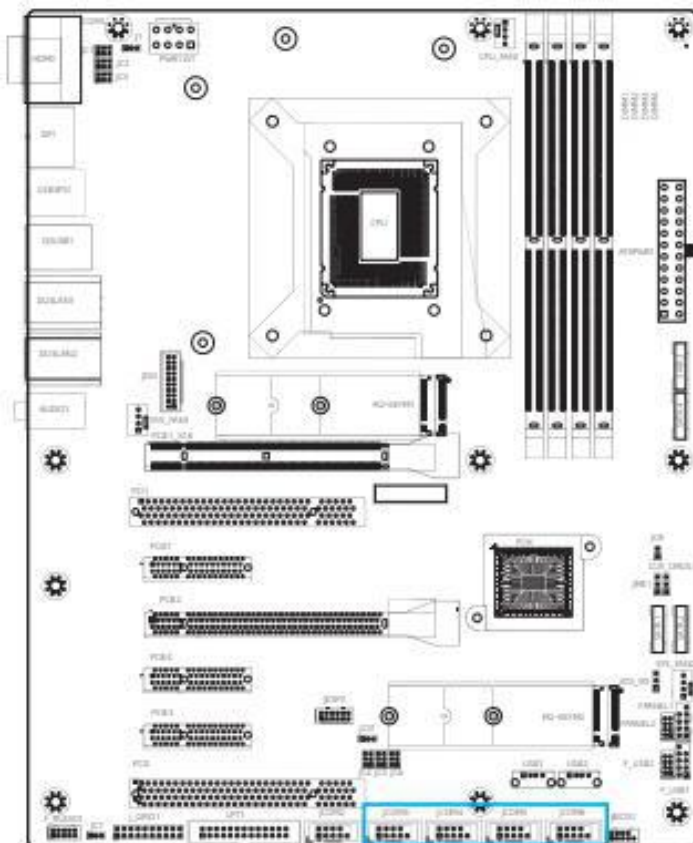
3.11 COM1 pin interface (serial port)



| Pin | RS232 | RS422 | RS485 |
|-----|-------------------|-------------------|-------------------|
| | Definition of pin | Definition of pin | Definition of pin |
| 1 | DCD# | TX- | DATA- |
| 2 | RXD | TX+ | DATA+ |
| 3 | TXD | RX+ | NC |
| 4 | DTR# | RX- | NC |
| 5 | GND | GND | GND |
| 6 | DSR# | NC | NC |
| 7 | RTS# | NC | NC |
| 8 | CTS# | NC | NC |
| 9 | RI# | NC | NC |

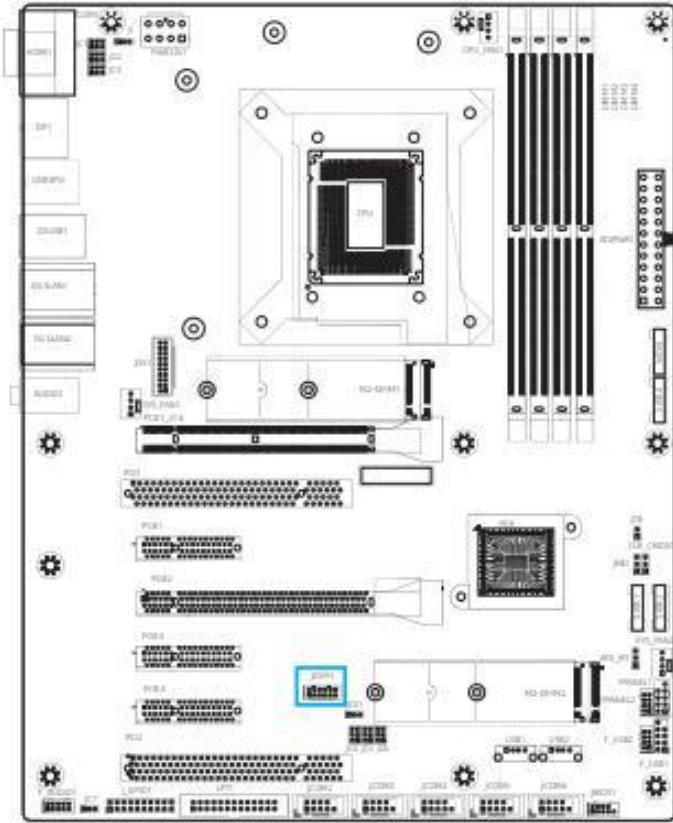
Note: COM1, and JCOM2 serial ports need to be switched among RS232, RS422 or RS485 through the jumper setup. Users can refer to “3.2 Jumper setup” for its jumper setup.

3.12 JCOM3/4/5/6 pin interface (RS232 serial port)



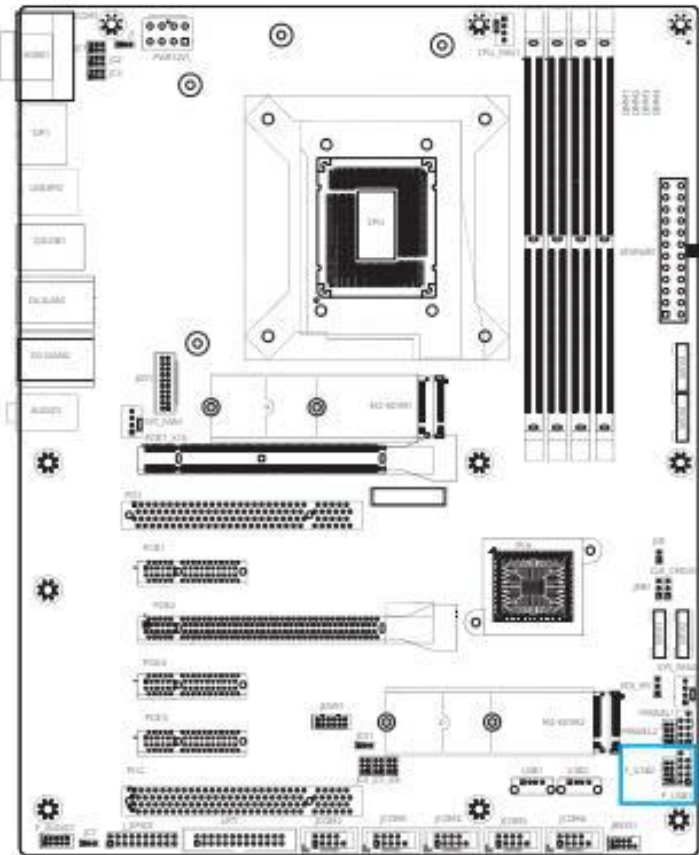
| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | DCD | 2 | RXD |
| 3 | TXD | 4 | DTR |
| 5 | GND | 6 | DSR |
| 7 | RTS | 8 | CTS |
| 9 | RI | | |

3.13 JESPI1 pin interface



| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | +3.3V | 2 | GND |
| 3 | ESPI_IO0 | 4 | ESPI_CS |
| 5 | ESPI_IO1 | 6 | ESPI_CLK |
| 7 | ESPI_IO2 | 8 | ESPI_RST |
| 9 | ESPI_IO3 | 10 | PLTRST |
| 11 | ESPI_ALERT | 12 | +5V |

3.14 F_USB1/2 pin interface (USB interface)



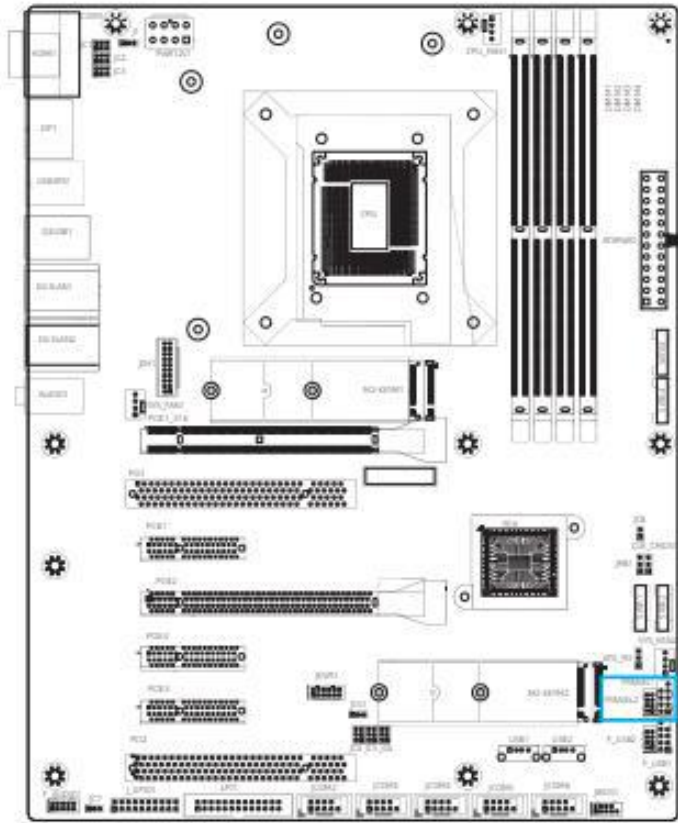
F_USB1 2.54 mm pin interface

| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | VCC | 2 | VCC |
| 3 | D- | 4 | D- |
| 5 | D+ | 6 | D+ |
| 7 | GND | 8 | GND |
| | | 10 | KEY |

F_USB2 2.00 mm pin interface

| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | VCC | 2 | VCC |
| 3 | D- | 4 | D- |
| 5 | D+ | 6 | D+ |
| 7 | GND | 8 | GND |

3.15 FPANEL1/2 pin interface



FPANEL1 2.54 mm pin interface

| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | HDD_LED+ | 2 | PWR_LED+ |
| 3 | HDD_LED- | 4 | PWR_LED- |
| 5 | GND | 6 | PWR_SW |
| 7 | SYS_RST | 8 | GND |
| 9 | NC | | |

FPANEL2 2.00 mm pin interface

| Pin | Definition of pin | Pin | Definition of pin |
|-----|-------------------|-----|-------------------|
| 1 | PWR_ON | 2 | GND |
| 3 | GND | 4 | RST |
| 5 | HD_LED- | 6 | HD_LED+ |
| 7 | PWR_LED- | 8 | PWR_LED+ |

Chapter 4 BIOS settings

4.1 BIOS explanation

This motherboard uses AMI BIOS. The full name of BIOS is Basic Input Output System. It is stored in a ROM (Read-Only Memory) chip on the computer motherboard. When you turn on your computer, BIOS is the first program to run. It mainly has the following functions:

- a. Initialize your computer and detect hardware, this process is called POST (Power On Self Test).
- b. Load and run the operating system.
- c. Provide the lowest and most basic control over your computer hardware.
- d. Manage your computer through SETUP.

The modified BIOS data will be stored in a battery-maintained CMOS RAM, and the stored data area will not be lost when the power is cut off. Generally, there is no need to modify the BIOS when the system is running normally. If the CMOS data is lost due to other reasons, the BIOS value must be reset.

4.2 BIOS setting

This chapter provides information about the BIOS Setup program, allowing users to configure and optimize system settings by themselves. Some items in the BIOS that have not been explained too much are not commonly used items. It is recommended to keep the default settings and not change them arbitrarily before fully understanding their functions.

You need to run the SETUP program under the following cases:

- a. An error message appears on the screen during the system self-test, and it is required to enter the SETUP program;
- b. You want to change the factory default settings according to customer characteristics.

Note: Since the BIOS version of the motherboard is constantly being upgraded, the description of the BIOS in this manual is for reference only. We do not guarantee that the relevant content in this manual is consistent with the information you have obtained.

4.2.1 Enter the BIOS setup program

Turn on the power or restart the system, you can see the following information on the self-test screen, press key to enter the BIOS setup program.

Press <Delete> to enter SETUP

Press <F11> to enter Boot Menu

4.2.2 Control the keys

You can use the arrow key to move the highlighted option, and press <Enter> key to select, <F1> key for help, and <Esc> key to exit. The following table will detail how to use the keyboard to boot the program settings of system.

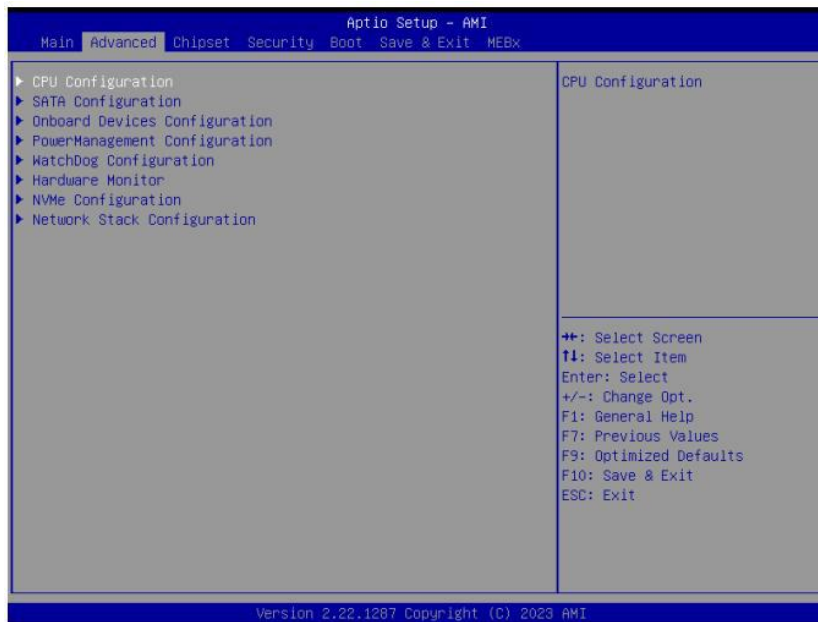
| Control key | Functional description |
|-------------|---|
| ←/→ | Move the left and right arrows to select the screen |
| ↑/↓ | Move the up and down arrows to select the items up and down. |
| +/- | Increase/decrease value or change option |
| <Enter> | Select this option to enter the sub-menu |
| <ESC> | Return to the main screen, or end the CMOS SETUP program from the main screen |
| <F1> | Show the related help |
| <F7> | Previous settings |
| <F9> | Load the optimized settings |
| <F10> | Save the modified CMOS settings and reboot |

4.3 Main



- **BIOS Information (BIOS related information)**
- **System Date (system date setting)**
Set the date of the computer in the format of “day of the week, month/day/year”.
- **System Time (system time setting)**
Time format is <hour><minute><second>.

4.4 Advanced

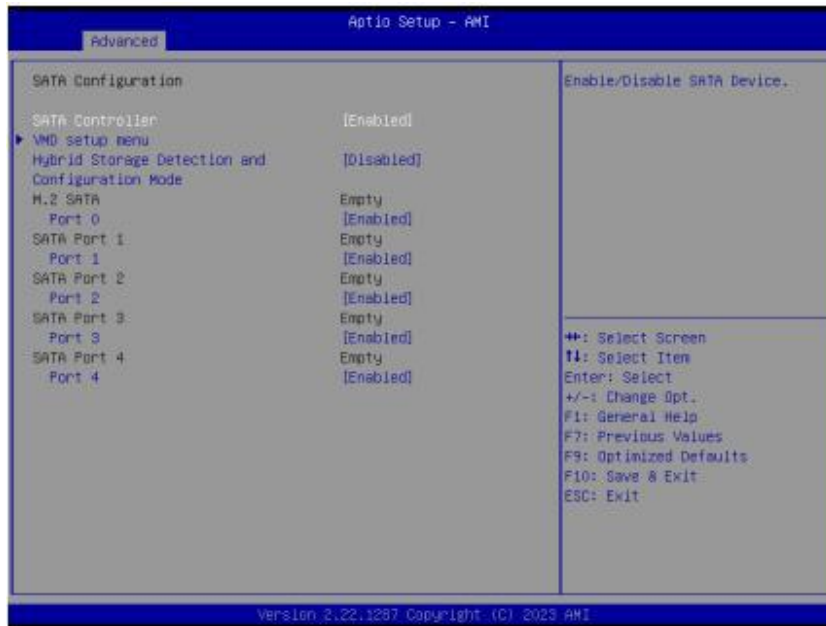


► **CPU Configuration** Press <Enter> key to enter the sub-menu



- **Intel(R) SpeedStep(tm)**
Allow or not allow to support more than two frequency ranges.
Options: Enabled,Disabled.
- **Turbo Mode**
Set Turbo mode of professor.
Options: Enabled,Disabled.
- **Intel (VMX) Virtualization Technology**
Enable or disable Intel MVX technology.
Options: Enabled,Disabled.
- **VT-d**
VT performance.
Options: Enabled,Disabled.
- **C states**
Enable or disable CPU power source management.
Options: Enabled,Disabled.

- ▶ **SATA Configuration** Press <Enter> key to enter the sub-menu.



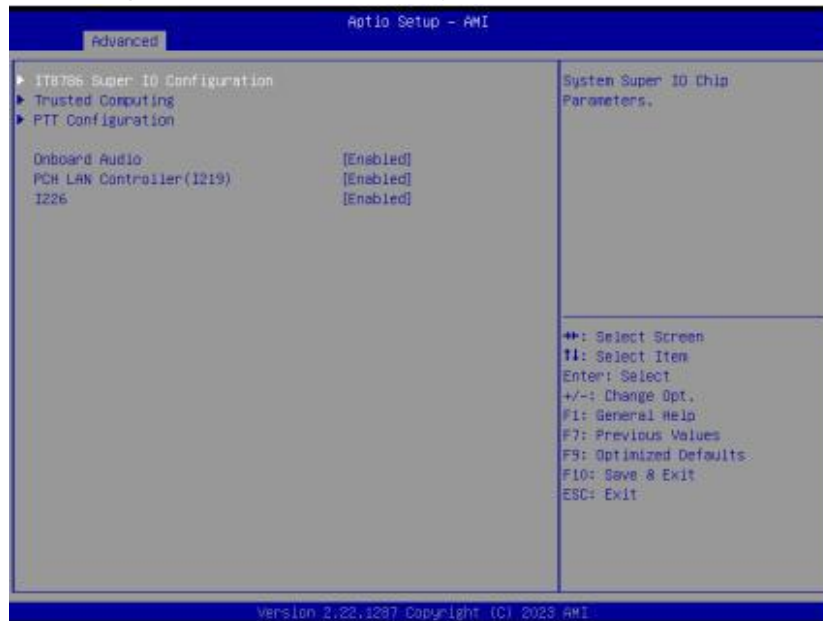
- **SATA Controller**
Enable or disable Intel MVX technology.
Options: Enabled, Disabled.
- **VMD setup menu**
Setup menu for VMD.
- **Hybrid Storage Detection and Configuration Mode**
Set the hybrid storage detection and configuration mode
Options: Dynamic Configuration for Hybrid storane Enable, Disabled.
- Press <Esc> key to return to “Advanced” main menu

- ▶ **VMD setup menu Press <Enter> key to enter the sub-menu.**



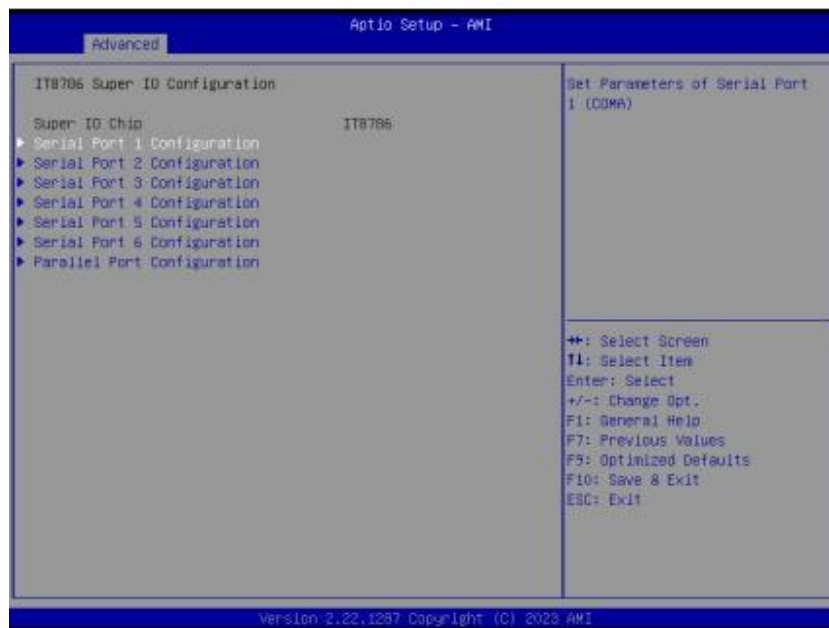
- **Enable VMD controller**
Enable or disable VMD controller.
Options: Enabled,Disabled.
- Press <Esc> key to return to “Advanced” main menu

- ▶ **Onboard Devices Configuration Press <Enter> key to enter the sub-menu.**



- **IT8786 Super IO Configuration**
Configure IT8786 super IO.
- **Trusted Computing**
Configure the trusted computing.
- **PPT Configuration**
Configure the PPT.
- **Onboard Audio**
Enable or disable audio interface of motherboard.
Options: Enabled,Disabled.
- **PCH LAN Controller(I219)**
Set the PCH LAN controller.
Options: Enabled,Disabled.
- **I226**
Enable or disable onboard network board.
Options: Enabled,Disabled.
- Press <Esc> key to return to “Advanced” main menu

► **IT8786 Super IO Configuration Press <Enter> key to enter the sub-menu**



- **Serial Port 1/2/3/4/5/6 Configuration**
Configure the serial port.
- **Parallel Port Configuration**
Configure the parallel port.

► **Trusted Computing Configuration Press <Enter> key to enter the sub-menu**



- **Security Device Support**
Set the BIOS support of security device.
Options: Enabled, Disabled.
- **SHA256 PCR Bank**
Enable or disable SHA256 PCR Bank.
Options: Enabled, Disabled.
- **Pending operation**
Set the pending operation.
Options: None, TPM Clear.
- **Platform Hierarchy**
Enable or disable the platform hierarchy.
Options: Enabled, Disabled.
- **Storage Hierarchy**
Enable or disable the storage hierarchy.
Options: Enabled, Disabled.
- **Endorsement Hierarchy**
Enable or disable the endorsement hierarchy.
Options: Enabled, Disabled.
- **Physical Presence Spec Version**
Set the physical presence specification version.
Options: 1.2, 1.3.
- **Device Select**
Set the device selection.
Options: TPM 1.2, TPM 2.0, Auto.

► **PTT Configuration** Press <Enter> key to enter the sub-menu



- **TPM Device Selection**
Select the TPM device.
Options: dTPM,PTT,Auto.

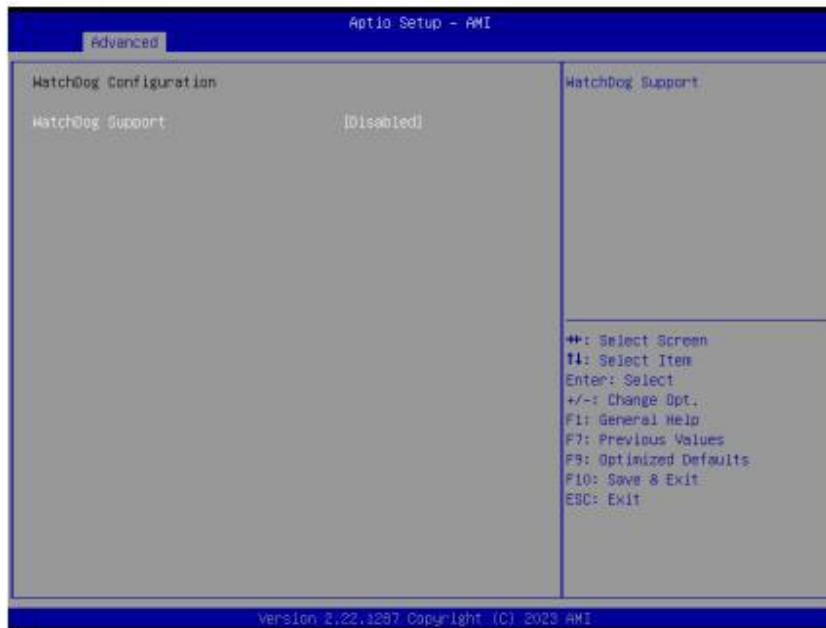
- Press <Esc> key to return to “Advanced” main menu

► **Power Management Configuration** Press <Enter> key to enter the sub-menu.



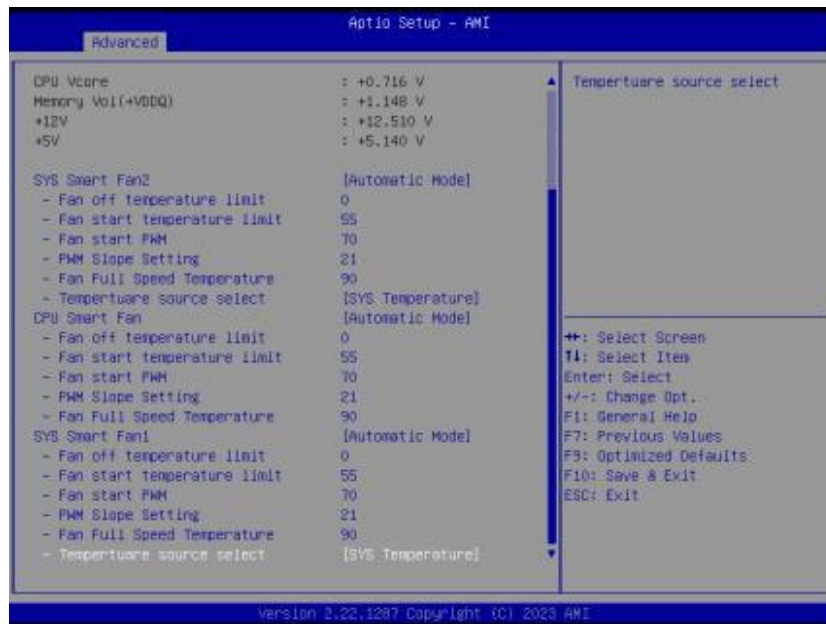
- **Restore AC Power Loss**
Set the status of AC power.
Options: Power Off,Power On,Last State.
 - **WakeonLAN**
Enable or disable LAN.
Options: Enabled,Disabled.
 - **PS/2KeyboardWakeUp**
Enable or disable PS/ 2 keyboard.
Options: Enabled,Disabled.
 - **PS/2MouseWakeUp**
Enable or disable PS/ 2 mouse.
Options: Enabled,Disabled.
 - **RTCWakesystemfromS5**
Set the RTC wake-up.
Options: Disabled, Fixed Time, Dynamic Time.
 - **EUP Function**
Enable or disable the wake events of system alarm.
Options: Enabled,Disabled.
- Press <Esc> key to return to “Advanced” main menu

► **Watch Dog Configuration Press <Enter> key to enter the sub-menu**



- **WatchDog Support**
Enable or disable watch dog.
Options: Enabled,Disabled.

- Press <Esc> key to return to “Advanced” main menu
- ▶ **Hardware Monitor** Press <Enter> key to enter the sub-menu



- **SYS Smart Fan2/1**
Smart fan speed control of the system.
Options: Full on Mode, Automatic Mode, Manual Mode.
- **Temperature source select**
Select the tempering source.
Options: CPU Temp, SYS Temperature.
- **CPU Smart Fan**
CPU smart fan speed control.
Options: Full on Mode, Automatic Mode, Manual Mode.
- Press <Esc> key to return to “Advanced” main menu

► **NVMe Configuration** Press <Enter> key to enter the sub-menu



Note: When the motherboard is connected to NVMe, there is device displayed on the configuration interface of NVMe.

- Press <Esc> key to return to “Advanced” main menu

► **Network Stack Configuration** Press <Enter> key to enter the sub-menu



- **Network Stack**
Enable or disable UEFI network stack.
Options: Enabled,Disabled.

4.5 Chipset



- **Internal Graphics**
Set the internal graphics.
Options: Auto,Disable,Enable.
- **Primary Display**
Display the default settings of onboard integrated and independent graphics.
Options: Auto,IGFX,PEG Slot.
- **Memory Configuration**
Set the memory.

4.6 Security



- **Administrator Password**

If this option is used to set the system administrator password, there are the following steps:

1. Select the Administrator Password setting item, and press <Enter> key.
2. Enter 3 to 20 character or numeric passwords to be set in the “Create New Password” dialog box. After the input is completed, press <Enter> key, and then enter the password again to confirm that the password is correct in the “Confirm Password” dialog box. If the screen shows “Invalid Password!”, it indicates that the passwords entered twice are different, please enter them again. To delete the system administrator password, please select “Administrator Password”, and complete deletion when the “Create New Password” dialog box appears after entering the old password in the “Enter Current Password” dialog box and pressing <Enter>.

- **Administrator Password**

Password check.

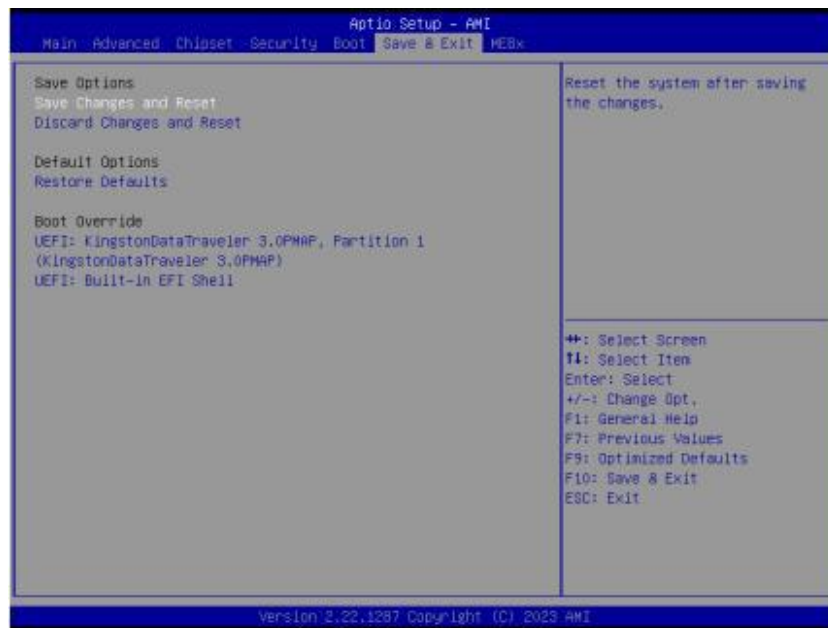
Options: Setup, Setup&Post.

4.7 Boot



- **Setup Prompt Timeout**
Set the time of stay on the power-on screen.
- **Bootup NumLock State**
Set the Numlock state after the system is started. When set to On, NumLock will be enabled and the number keys on the small keyboard will be valid after the system is started. When set to Off, NumLock will be disabled and the direction keys on the small keyboard will be valid after the system is started.
Options: On, Off.
- **Full Screen Logo**
Set the full screen logo display.
Options: Enabled, Disabled.
- **Boot Option #1/2**
It allows to select the boot device with priority, and the devices displayed on the screen depend on that installed on the system.
Options: NVMe, Hard Disk, CD/DVD, USB Hard Disk, USB Key, USB CD/DVD, Network, UEFI AP.

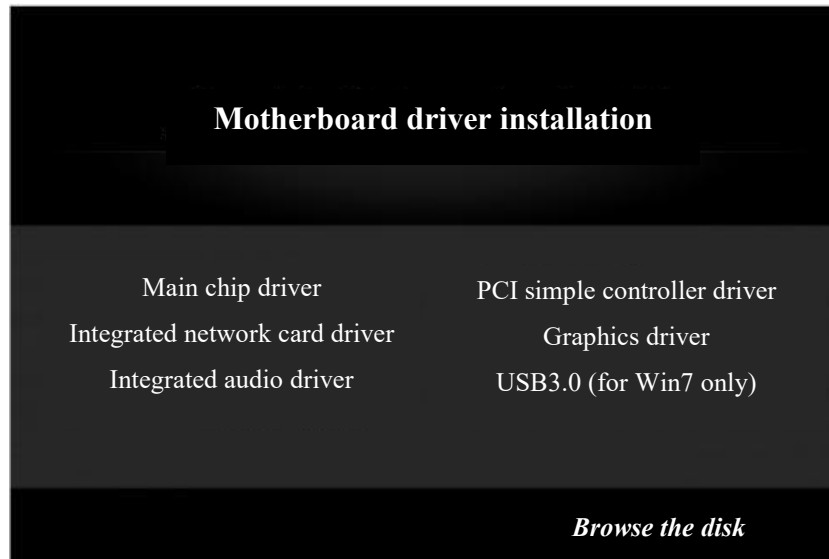
4.8 Save & Exit



- **Save Changes and Reset**
Save the changes and reboot the system.
- **Discard Changes and Reset**
Discard the changes and reboot the system.
- **Restore Defaults**
Restore and load all option defaults.

Chapter 5 Install driver

Please insert the motherboard driver disk into the CD-ROM drive, the driver disk will run automatically and then a pop-up interface will appear as shown below. If this interface does not appear, please double click to run X:\AUTORUN.EXE (assuming the symbol of driver disk is X:).



(This image is for reference only, please prevail in kind)

Please click the drivers you need to install in the above interface in turn, and follow the prompts to install them.

Chapter 6 WDT programming guide

6.1 Description about programming guide document

WDT control registers are located in LDN DEV7 of the SIO chip, where 0X72 BIT7 refers to the control by second and minute, 1 represents second and 0 represents minute, 0XF3 is filled with the time. For example, 0X72 BIT7 is 1, and 0XF3 is filled with 0X20, representing the overflow time of 32 seconds.

6.1.1 The pseudo-code of Watch Dog is set as follows:

```
//enter ite config
    IoWrite8(SioIndexPort,0x87);
    IoWrite8(SioIndexPort,0x01);
    IoWrite8(SioIndexPort,0x55);
    IoWrite8(SioIndexPort,0x55);

//select watchdog device
    IoWrite8(SioIndexPort,0x07);
    IoWrite8(SioDataPort,0x07);

IoWrite8(SioIndexPort, 0xF1);
temp_data = IoRead8(SioDataPort);
temp_data &= 0xBB;
temp_data |= 0x44;
IoWrite8(SioIndexPort, 0xF1);
IoWrite8(SioDataPort, temp_data);
//MAP to GP40
IoWrite8(SioIndexPort, 0xF4);
temp_data = IoRead8(SioDataPort);
temp_data &= 0xC0;
temp_data |= 0x20;
IoWrite8(SioIndexPort, 0xF4);
IoWrite8(SioDataPort, temp_data);
//wdt start
if(ite_watch_dog_element->wdt_operator==START_WDT){

//clear status
IoWrite8(SioIndexPort, 0x71);
temp_data = IoRead8(SioDataPort);
temp_data &= 0xfe;
IoWrite8(SioIndexPort, 0x71);
IoWrite8(SioDataPort, temp_data);

IoWrite8(SioIndexPort, 0x72);
temp_data = IoRead8(SioDataPort);

temp_data &= 0x1f;
temp_data |= 0xC0;
//minute or second BIT7 1->second 0->minute
if(ite_watch_dog_element->wdt_unit == 1){
temp_data &= 0x7f;
}
}
```

```
IoWrite8(SioIndexPort, 0x72);
IoWrite8(SioDataPort, temp_data);

//Clear Status
IoWrite8(SioIndexPort, 0x71);
temp_data = IoRead8(SioDataPort);
temp_data &= 0xfe;
IoWrite8(SioIndexPort, 0x71);
IoWrite8(SioDataPort, temp_data);

//Count
IoWrite8(SioIndexPort, 0x74);
IoWrite8(SioDataPort, 0x0);
IoWrite8(SioIndexPort, 0x73);
IoWrite8(SioDataPort, ite_watch_dog_element->wdt_time);
    //printf("wdt start:%x\n",IoRead8(data));
}
```


6.1.2 Clear watch dog

```
//wdt stop
if(ite_watch_dog_element->wdt_operator==STOP_WDT){
IoWrite8(SioIndexPort, 0x74);
IoWrite8(SioDataPort, 0x0);
IoWrite8(SioIndexPort, 0x73);
IoWrite8(SioDataPort, 0x0);
}
```

8.10.6 Watch Dog Timer Control Register (Index=71h, Default=00h)

| Bit | Description |
|-----|--|
| 7 | WDT is reset upon a CIR interrupt. |
| 6 | WDT is reset upon a KBC(Mouse) interrupt. |
| 5 | WDT is reset upon a KBC(Keyboard) interrupt. |
| 4 | WDT Status will not be cleared by VCCOK or LRESET#, and be cleared only when one is written to the WDT status 1: Enable 0: Disable |
| 3 | Reserved |
| 2 | 5VSB_CTRL# Timing Select 0: 5 seconds 1: 10 seconds |
| 1 | Force Time-out This bit is self-cleared. |
| 0 | WDT Status 1: WDT value is equal to 0. 0: WDT value is not is equal to 0. |

8.10.7 Watch Dog Timer Configuration Register (Index=72h, Default=001s0000b)

| Bit | Description |
|-----|---|
| 7 | WDT Time-out Value Select 1 1: Second 0: Minute |
| 6 | WDT Output through KRST (pulse) Enable 1: Enable 0: Disable |
| 5 | WDT Time-out Value Extra Select 1: 62.5ms x WDT Timer-out value (default = 3.5s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register) |
| 4 | Reserved |
| 3-0 | Interrupt Level Select for WDT Please refer to Table 8-15. Interrupt Level Mapping Table on page 83. |

8.10.8 Watch Dog Timer Time-out Value (LSB) Register (Index=73h, Default=38h)

| Bit | Description |
|-----|-------------------------------|
| 7-0 | WDT Time-out Value 7-0 |

8.10.9 Watch Dog Timer Time-out Value (MSB) Register (Index=74h, Default=00h)

| Bit | Description |
|-----|--------------------------------|
| 7-0 | WDT Time-out Value 15-8 |

Chapter 7 GPIO programming guide

7.1 GPIO control

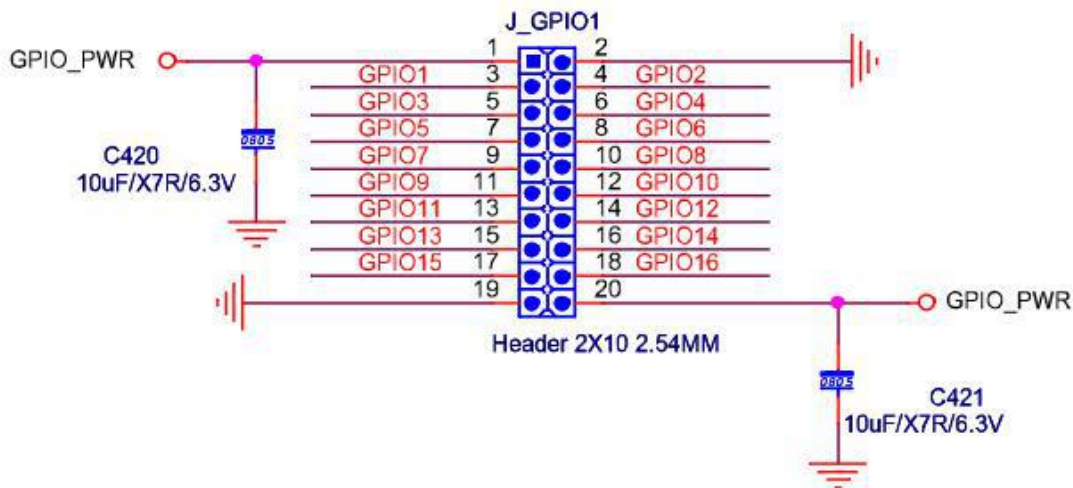
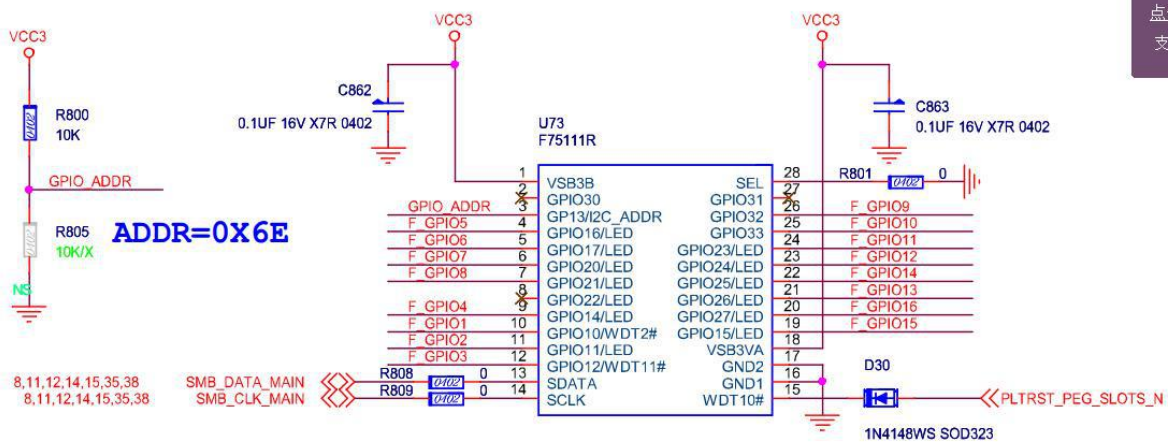
The hardware uses the GPIO pins with FINTEK 7511 expansion, the pins corresponding to 7511 are shown in the blow figure, and the communication is subject to PCHSMBUS control based on FINTEK 7511.

7.1.1 FINTEK 7511 SPEC



F75111_V027P.p
df

7.2



Order information

| Product model | Chipset | Memory | Display | Storage | USB3 | USB2 | COM | LAN | PCI | PCIe |
|---------------|---------|--------|---------|---------|------|------|-----|-----|-----|------|
| AIoT0-W680 | W680 | 4 DDR5 | 4(4) | 4SATA | 10 | 4 | 6 | 2 | 2 | 5 |
| AIoT0-W680D | W680 | 4 DDR5 | 4(4) | 4SATA | 10 | 4 | 6 | 2 | 1 | 6 |



According to the requirements of SJ/T11364-2014 *Measures for the Control of Pollution from Electronic Information Products* issued by the Ministry of Information Industry of the People's Republic of China, the marking for the pollution control of this product and the marking for toxic and harmful substances or elements in this product are as follows:

Marking for toxic and harmful substances or elements in this product:

Name and content of toxic and harmful substances or elements in this product

| Part Name | Toxic and harmful substances or elements | | | | | |
|---|--|----|----|---------|-----|------|
| | Pb | Hg | Cd | Cr (VI) | PBB | PBDE |
| PCB board | X | O | O | O | O | O |
| Structural part | O | O | O | O | O | O |
| Chip | O | O | O | O | O | O |
| Connector | O | O | O | O | O | O |
| Passive electronic parts and components | X | O | O | O | O | O |
| Welded metal | X | O | O | O | O | O |
| Wire rod | O | O | O | O | O | O |
| Other consumables | O | O | O | O | O | O |

O: It means that the content of this toxic and harmful substance in all homogeneous materials of this part is below the limit requirement specified in GB/T 26572.

X: It means that the content of this toxic and harmful substance in all homogeneous materials of this part exceeds the limit requirement specified in GB/T 26572.

Note: The lead content at position X exceeds the limit specified by GB/T 26572, but complies with the exemption clause of the EU RoHS directive.