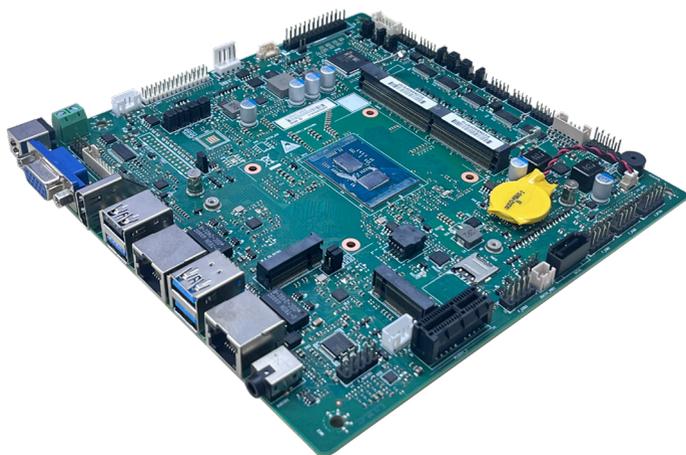


AIOT7-EHL

用户手册



Version 1.0

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第1章 综述

1.1 包装清单

感谢您选用我们的产品。

请确认您所购买的产品包装是否完整，如果有包装损坏或是有任何配件短缺的情形，请尽快与您的经销商联系。

- ★ 主板 X 1
- ★ 电子档说明书 X 1
- ★ 专用 I/O 挡片 X 1

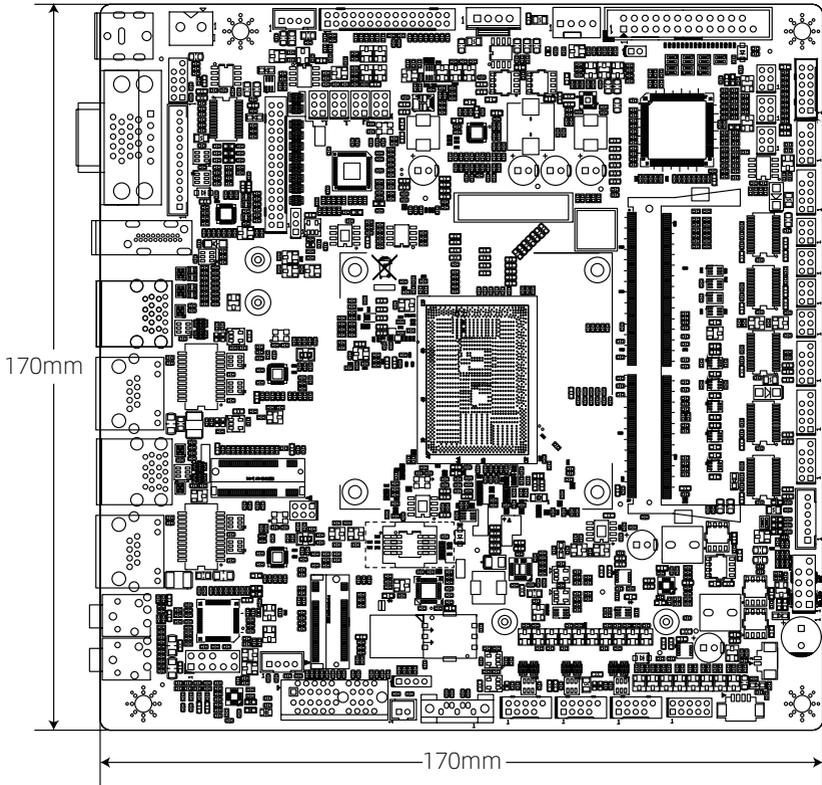


上述附带配件规格仅供参考，实际规格以实物为准，本公司保留修改之权利。

1.2 主板规格

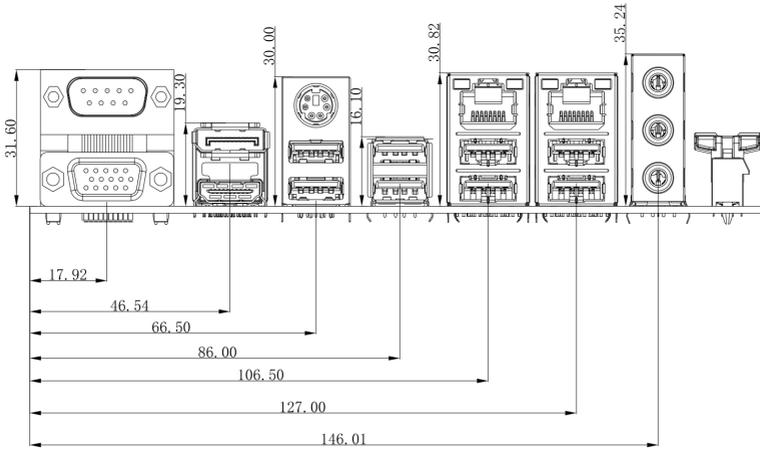
处理器	- Intel J6412 板贴 CPU, J6412 2.0~2.6GHz
芯片组	- Intel Elkhart Lake SOC
内存	- 1 条 DDR4 SODIMM 内存插槽, 最高支持 DDR4-3200, 最大 32GB
显示控制器	- Intel CPU 集成显示控制器
显示接口	- 三显示输出 HDMI + VGA + eDP 或 LVDS (默认 eDP), 支持三显模式 - VGA 支持最大分辨率: 1920x1200@60Hz; - HDMI 最大分辨率: 4096x2160@30Hz; - eDP 支持最大分辨率: 4096x2160@60Hz; - LVDS 最佳分辨率: 1920x1080
存储	- 1 个 SATA 3.0 - 1 个 M.2 支持 2242/2280 的 SSD (SATA 协议)
音频	- 后 IO 支持 Mic-in, Line-out 二合一 - 支持机箱前面板 Audio 输出, 支持带功放数字音频输出 (3W, 4Pin 插针)
网络	- 2 个 Intel RTL8111H 千兆网口
USB	- 3 个 USB3.0 Type-A, 1 个 USB2.0 Type-A - 6 个 USB2.0 接口 (其中一个 USB2.0 信号与 M.2 接口用跳线可选)
I ² C/SMBus接口	- 1 个 4Pin SM Bus 接口
串口	- 6 个串口, COM1 支持 RS232/485, COM2~COM6 支持 RS232 - COM2&COM3 支持 Pin9 +5/12V 供电, COM3 可选 TTL 电平
键鼠接口	- 1 个 PS/2 键盘鼠标板内 wafer
数字 I/O	- 8 位数字 I/O, 提供电源和地, +3.3V 电平
eSPI 总线接口	- 提供 1 个 eSPI 总线接口 (2x6Pin wafer, 可扩展四个 RS232 或 RS422/485 串口)
TPM/TCM 接口	- 板载加密芯片 SLB9670VQ2.0 或 SLB 9672VU2.0 支持 TPM2.0
LPT	- 1 个 LPT 并口插针
电源	- DC-Jack 单电压 +12V 输入, 另配 2Pin 凤凰端子 - 供电 DC-Out 接口支持主板取 +12v 和 5V 电 500mA
扩展总线	- 1 个 M.2 Key-B 3042/3052 (全总线 PCIeX1 + USB3.0 + USB2.0) 支持 4G/5G 无线模块 (可通过 M2-3042to2230 转接卡支持 WiFi 和 BT) - 1 个 PCIe 3.0 x1 插槽
工作环境大气条件	- 温度: 0°C ~ 60°C, 相对湿度: 10% ~ 90%
储存环境大气条件	- 温度: -25°C ~ 75°C, 相对湿度: 5% ~ 95%
Watch Dog	- 255 级可编程秒/分, 支持超时中断或系统复位
BIOS	- AMI UEFI BIOS
操作系统	- Win10, Win11, Linux Ubuntu 20.04
PCB 尺寸	- 170mm X 170mm

1.3 主板结构图

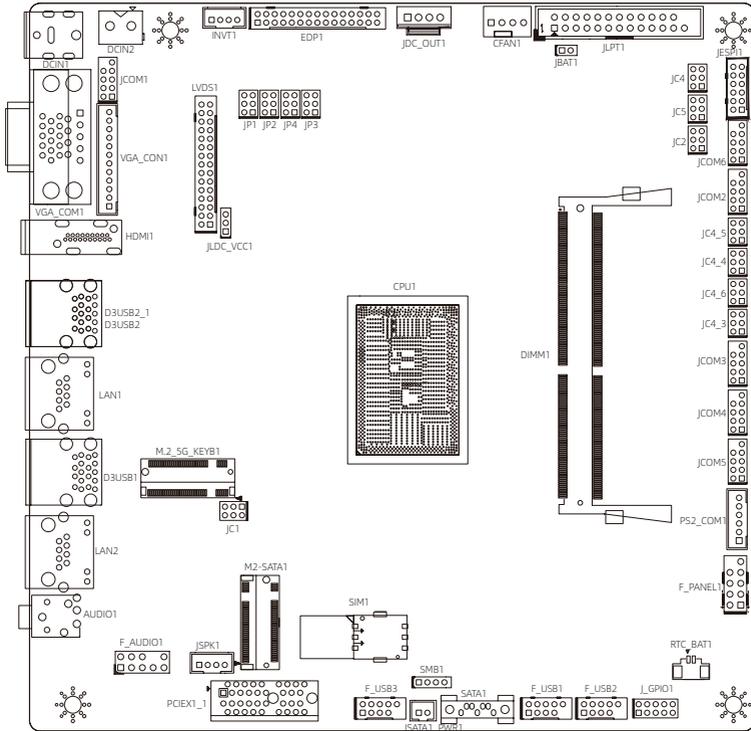


(此图片仅供参考，请以实物为准)

1.4 主板IO接口结构图



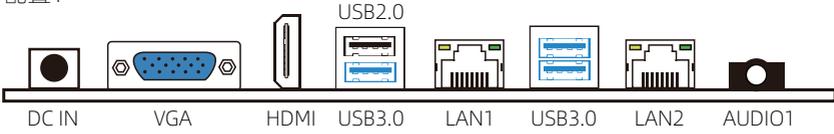
1.5 主板布局图



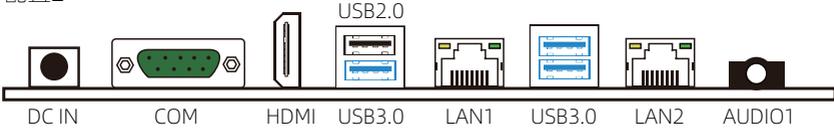
(此图片仅供参考, 请以实物为准)

1.6 IO面板接口

配置1



配置2



(此图片仅供参考，请以实物为准)

- COM: COM接口
- VGA: VGA显示接口
- DP: DP显示接口
- HDMI: 高清多媒体显示接口
- PS2: 鼠标键盘接口
- USB2.0: USB2.0接口
- USB3.0: USB3.0接口
- LAN1/2: RJ45 以太网接口
- AUDIO: 音频接口

第2章 硬件安装

2.1 安装内存

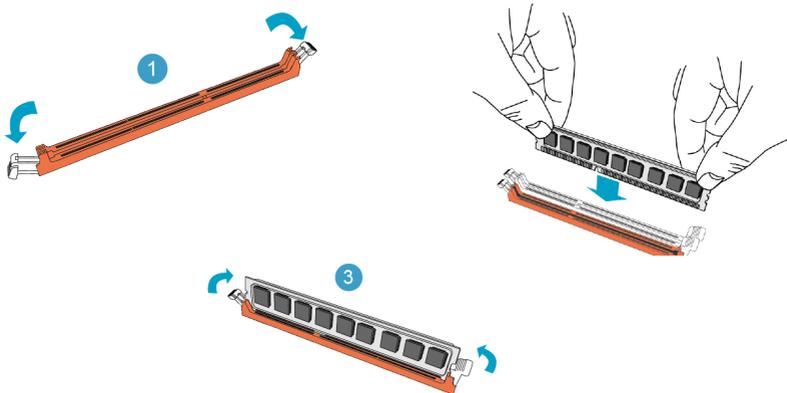
在开始安装内存前，请遵守以下的警告信息：

1. 请先确认您所购买的内存适用本主板所支持的规格。
2. 在安装或移除内存之前，请先确定电脑的电源已经关闭以免造成损毁。
3. 内存设计有防呆标示，若您插入方向错误，内存就无法插入，此时请立刻更改插入方向。

安装内存：

1. 在安装或移除内存之前请先关掉电源，并且拨下AC电源线。
2. 小心握住内存条的两端，不要触碰到上面的金属接点。
3. 将内存条的金手指对齐内存条插槽，并且在方向上要注意金手指凹孔对上插槽的凸起点；
4. 将内存条斜30度插入内存槽处，然后将内存条往下压，压至可以听到“咔”的声响,说明内存已安装成功，可以使用。（注意：将内存条下压的力度，不可过大，以免损坏内存）
5. 要移除内存条，请将DIMM插槽两端的卡榫同时向外推，然后拿出内存条。

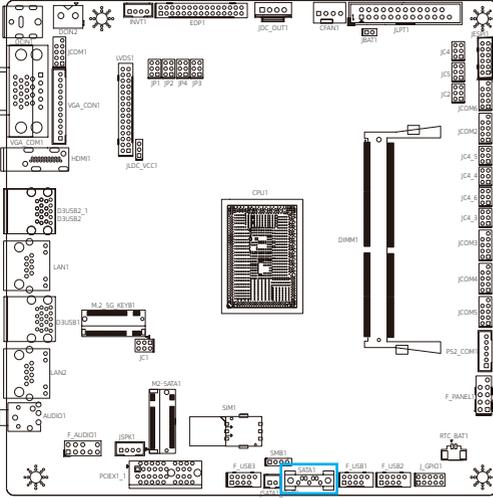
内存安装图示（仅供参考）：



⚠ 注意：静电会损坏电脑或内存的电子元件，所以在进行以上步骤之前，请务必先短暂接触接地金属物体，以去除身上的静电。

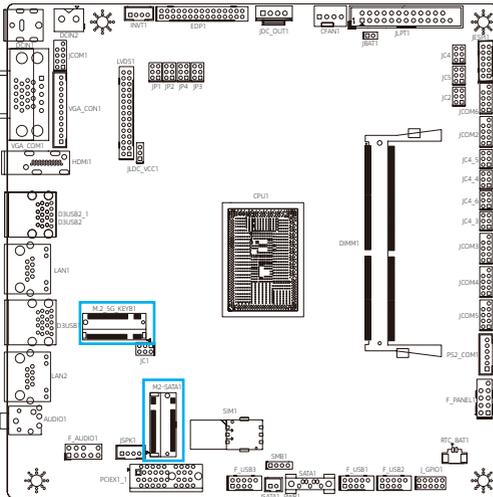
2.2 连接外部设备

2.2.1 Serial ATA 连接器



这接口可支持使用 Serial ATA 排线来连接 Serial ATA 硬盘或是其它符合 Serial ATA 规范的设备。

2.3.2 M2 插槽



M.2 插槽，支持 SSD 固态硬盘；安装此卡时，请将卡斜 30° 插入，然后向下压至螺柱处，再用螺丝将其固定。

M.2-SATA1：1个M.2 2242/2280 支持 SSD；

M.2_5G_KEYB1：1个M.2 支持 4G/5G 无线模块。

第3章 跳线&接头安装与设置

3.1 各跳线设置说明

2针脚的接头：将跳线帽插入两个针脚将使其关闭（短路）。移除跳线帽或是插入其它针脚（为未来扩充预留）将会使其开启。

3针脚的接头：跳线帽可插入针脚1~2或针脚2~3使其关闭（短路）。

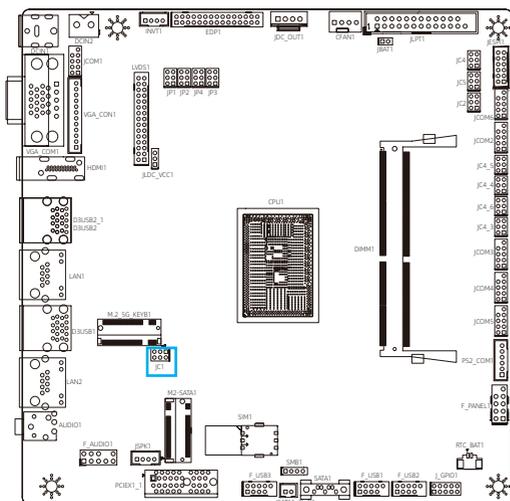


怎么辨认跳线的第1脚位置？

- 1.请仔细查看主板，凡有标明"1"或是有白色粗线标记的接脚即为1脚位置。
- 2.观看背板的焊盘，通常方型焊盘为第一脚。

3.2 跳线设置

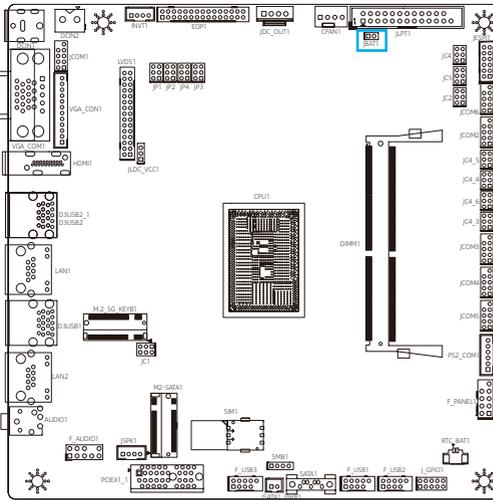
3.2.1 Jc1 跳线设置



F_USB3	M.2_5G_KEYB1
JC1(1-3)	JC1(3-5)
JC1(2-4)	JC1(4-6)

注：JC1 跳线为 F_USB3 时，F_USB3 可以支持两路 USB2.0；JC1 跳线为 M.2_5G_KEYB1 时，M.2_5G_KEYB1 插槽支持 4G 和 5G 模块。

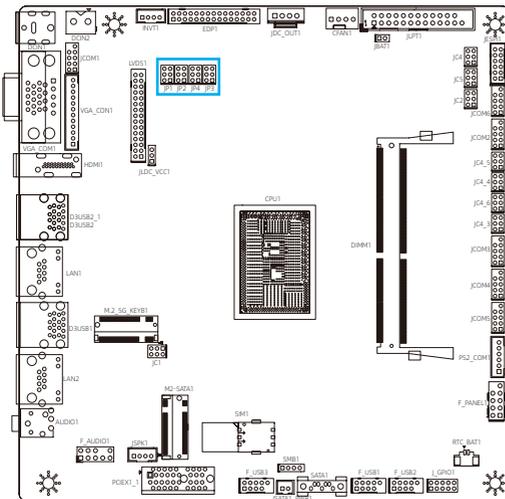
3.2.2 JBT1 跳线设置



脚脚	定义
1-2 OPEN	NORMAL
1-2 SHORT	CLEAR_COMS

注：JBAT1 可以通过 PIN1-2 SHORT 来 CLEAR CMOS 信息。

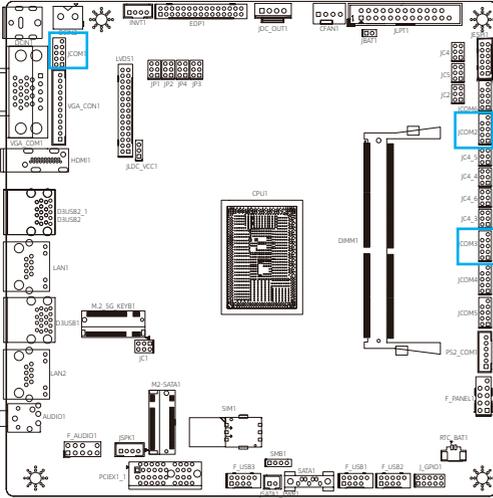
3.2.3 JP1/2/3/4 跳线设置



EDP	LVDS
JP1(1-3)	JP1(3-5)
JP1(2-4)	JP1(4-6)
JP2(1-3)	JP2(3-5)
JP2(2-4)	JP2(4-6)
JP3(1-3)	JP3(3-5)
JP3(2-4)	JP3(4-6)
JP4(1-3)	JP4(3-5)
JP4(2-4)	JP4(4-6)

注：JP 跳线用来切换 EDP 与 LVDS 显示输出，当使用 LVDS1 接口时，JP 跳到 LVDS 模式；使用 EDP1 接口时，跳到 EDP 模式。

3.2.4 COM1/JCOM1/2/3设置



JCOM3 设置

RS232	TTL
JC4_4(3-5)	JC4_4(1-3)
JC4_4(4-6)	JC4_4(2-4)
JC4_6(3-5)	JC4_6(1-3)
JC4_6(4-6)	JC4_6(2-4)

COM1/JCOM1 设置

RS232	RS485
JC2(1-2)	JC2(3-4)
JC4(1-3)	JC2(5-6)
JC4(2-4)	JC4(3-5)
JC5(1-2)	JC5(3-4)

COM1/JCOM1 支持 RS-232/485 模式，JCOM3 支持 RS-232/TTL 模式，可通过以上跳帽的选择去实现这两种模式的切换。

JCOM2 电压设置

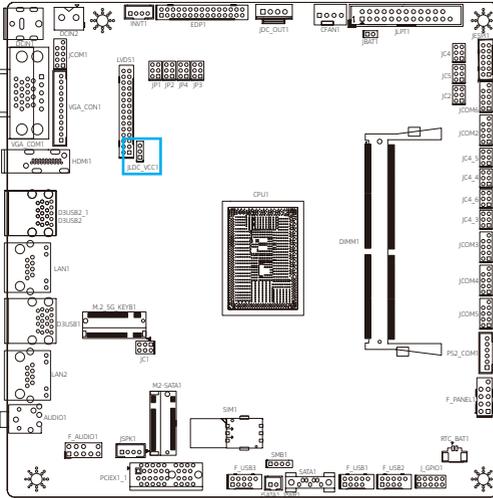
接脚	定义
JC4_5(1-2)	5V
JC4_5(3-4)	Normal
JC4_5(5-6)	12V

JCOM3 电压设置

接角	定义
JC4_3(1-2)	5V
JC4_3(3-4)	Normal
JC4_3(5-6)	12V

JCOM2、JCOM3 支持 Pin9 5V/12V 模式，可通过以上跳帽的选择去实现。

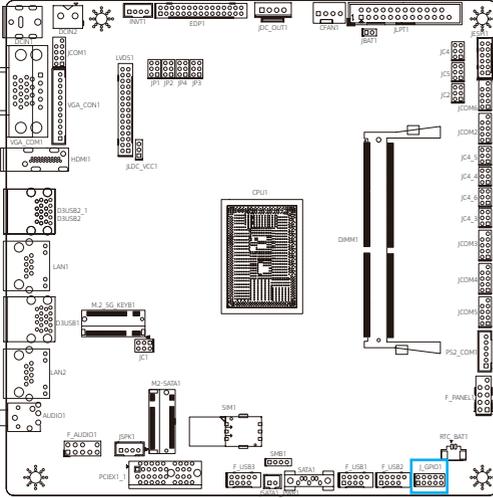
3.2.5 JLVDC_VCC1 跳线设置



接脚	定义
1-2	3.3V
2-3	5V

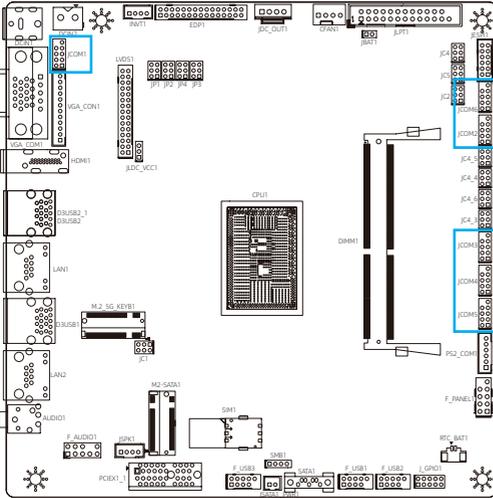
注：JLVDC_VCC1 跳线用来切换 EDP/LVDS 的 LCD 电压，当搭配 3.3V LCD 时，pin1-2 short；当搭配 5V LCD 时，pin2-3 short。

3.3 J_GPIO1 插针接口



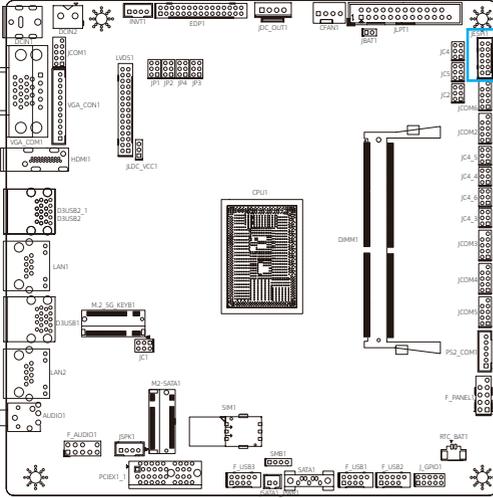
接脚	接脚定义	接脚	接脚定义
1	GPIO1	2	GPIO2
3	GPIO3	4	GPIO4
5	GND	6	GPIO5
7	GPIO6	8	GPIO8
9	GPIO9	10	3.3V

3.4 JCOM1/2/3/4/5/6 插针接口



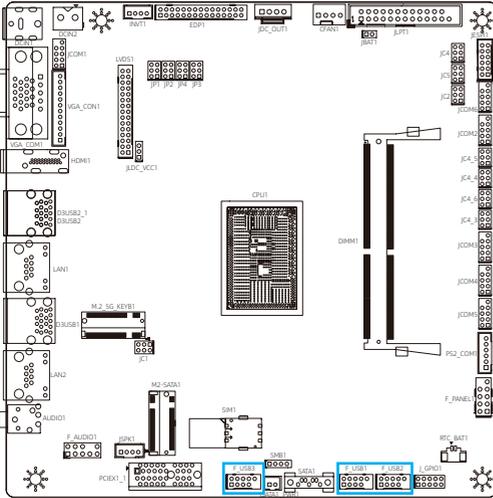
接脚	接脚定义	接脚	接脚定义
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

3.5 JESPI1 插针接口



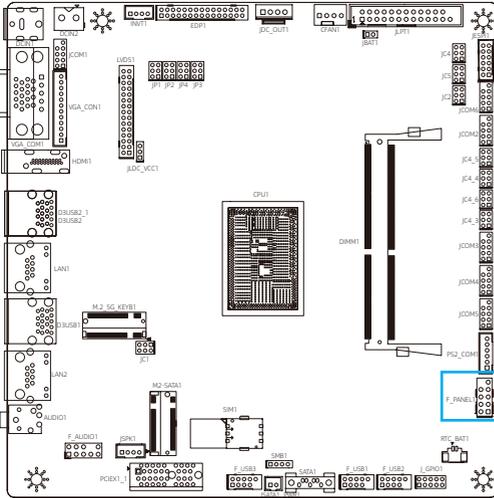
接脚	接脚定义	接脚	接脚定义
1	VCC3	2	GND
3	IO0	4	CS0
5	IO1	6	CLK
7	IO2	8	ESPI_RST
9	IO3	10	PLTRST
11	ALERT	12	VCC5

3.6 F_USB1/2/3 2.54mm 插针接口



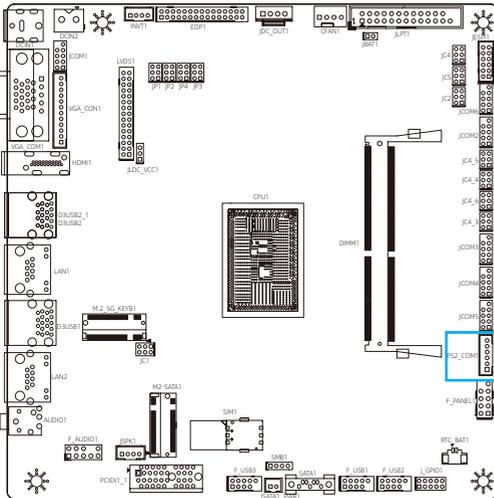
接脚	接脚定义	接脚	接脚定义
1	5V	2	5V
3	D1-	4	D2-
5	D1+	6	D2+
7	GND	8	GND
		10	NC

3.7 FPANEL1 2.54mm 插针接口（电源按键/电源/硬盘指示灯/复位按键）



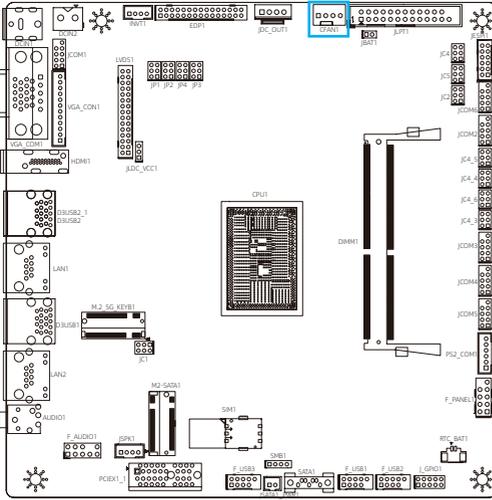
接脚	接脚定义	接脚	接脚定义
1	HDD_LED+	2	PWR_LED+
3	HDD_LED-	4	PWR_LED-
5	GND	6	PWR_ON
7	RST	8	GND
9	NC	10	NC

3.8 PS2_COM1 插针接口



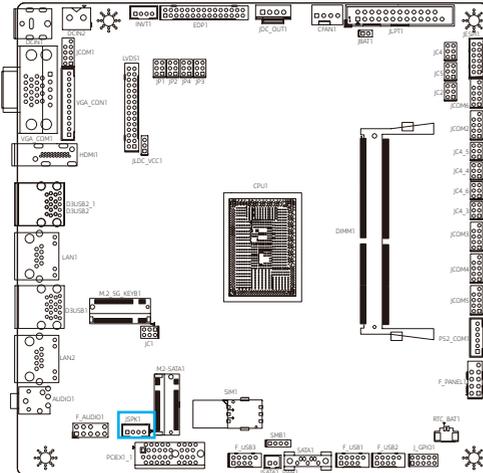
接脚	接脚定义
1	KCLK
2	KDAT
3	MCLK
4	GND
5	VCC
6	MDAT

3.9 CFAN1 插针接口



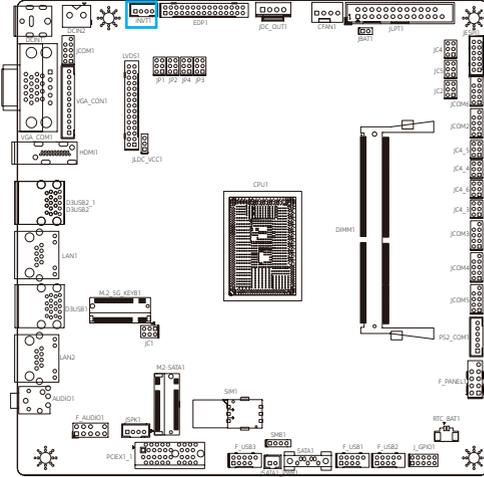
接脚	接脚定义
1	GND
2	VCC5
3	FAN_TAC1
4	FAN_CLT1

3.10 JSPK1 插针接口



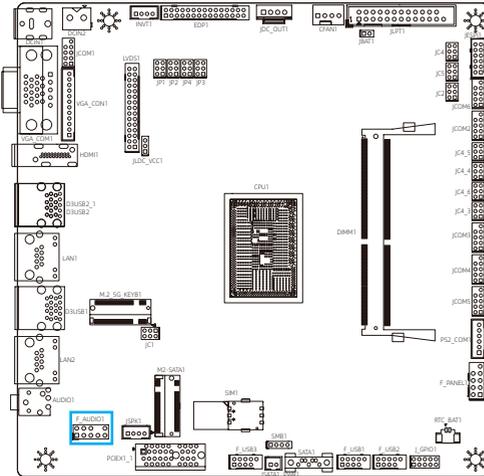
接脚	接脚定义
1	R-
2	R+
3	L-
4	L+

3.11 INVT1 插针接口



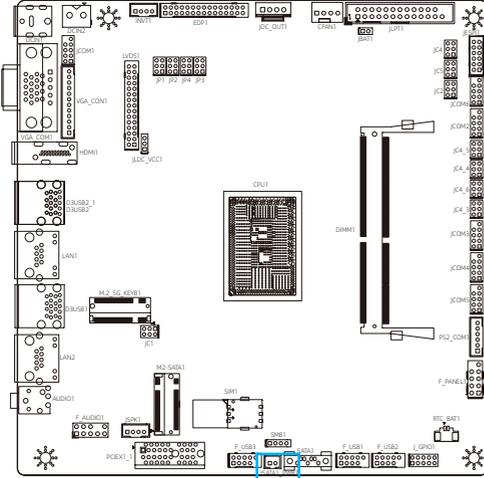
接脚	接脚定义
1	VCC12
2	BKL_EN
3	PWM_OUT1
4	GND

3.12 F_AUDIO1 插针接口



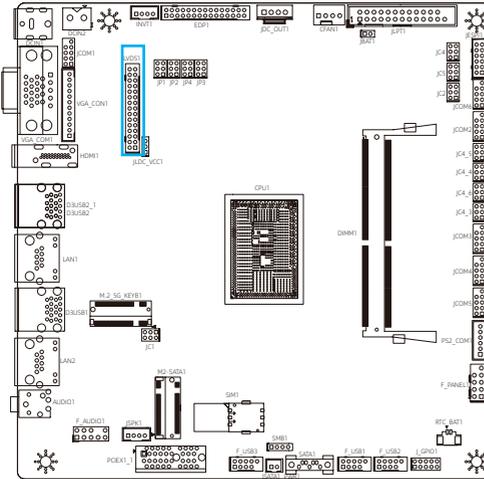
接脚	接脚定义	接脚	接脚定义
1	MIC_L	2	AGND
3	MIC_R	4	
5	LINE_R	6	MIC_JD
7	AGND	8	
9	LINE_L	10	LINE_JD

3.13 JSATA_PWR1 插针接口



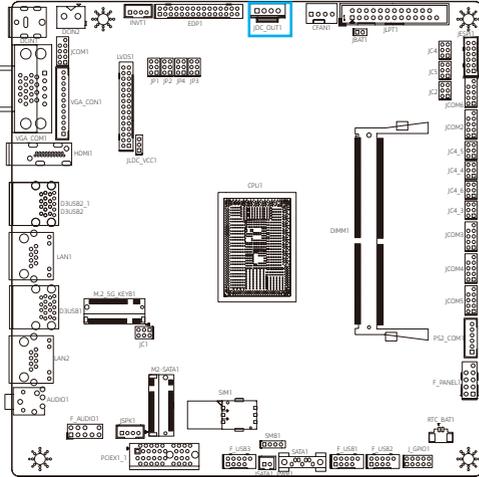
接脚	接脚定义
1	VCC5
2	GND

3.14 LVDS1 插针接口



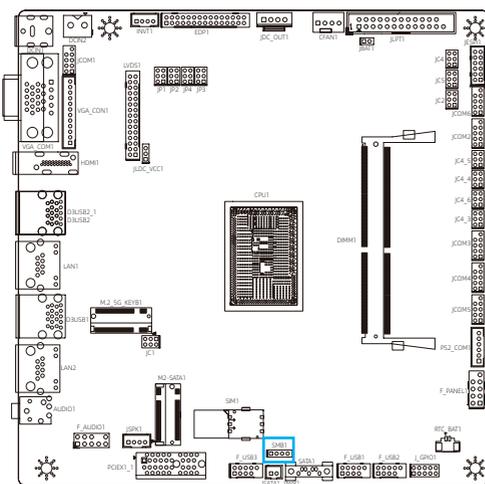
接脚	接脚定义	接脚	接脚定义
1	LCD_VCC	2	LCD_VCC
3	LCD_VCC	4	GND
5	GND	6	GND
7	DATA0N	8	DATA0P
9	DATA1N	10	DATA1P
11	DATA2N	12	DATA2P
13	GND	14	GND
15	CLK1N	16	CLK1P
17	DATA3N	18	DATA3P
19	DATA4N	20	DATA4P
21	DATA5N	22	DATA5P
23	DATA6N	24	DATA6P
25	GND	26	GND
27	CLK2N	28	CLK2P
29	DATA7N	30	DATA7P

3.15 JDC_OUT 插针接口



接脚	接脚定义
1	12V
2	GND
3	GND
4	5V

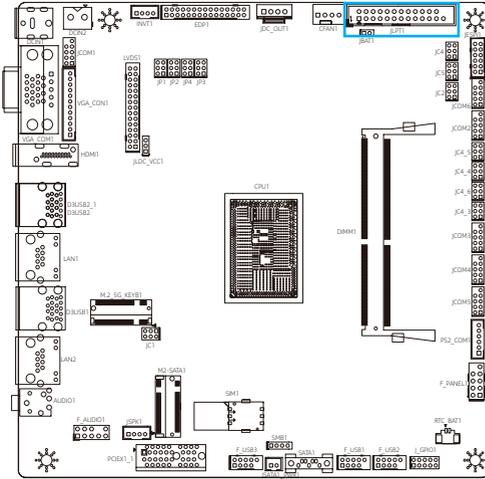
3.16 SMB1 插针接口



接脚	接脚定义
1	PWR
2	SDA
3	SCL
4	GND

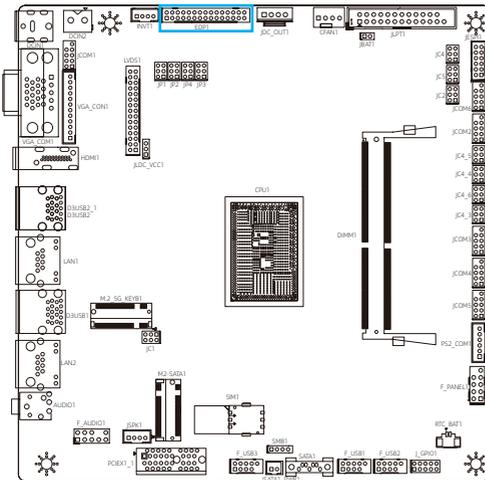
注：引脚1可以通过BOM切换3V/5V

3.17 JLPT1 插针接口（打印机接口）



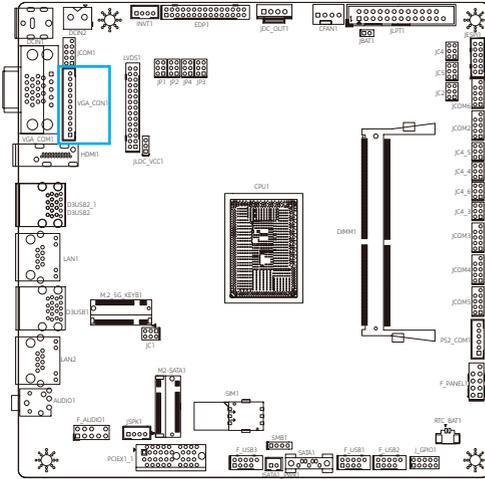
接脚	接脚定义	接脚	接脚定义
1	LPT_STB	2	LPT_AFD
3	LPT_PD0	4	LPT_ERR
5	LPT_PD1	6	LPT_INT
7	LPT_PD2	8	LPT_SLIN
9	LPT_PD3	10	GND
11	LPT_PD4	12	GND
13	LPT_PD5	14	GND
15	LPT_PD6	16	GND
17	LPT_PD7	18	GND
19	LPT_ACK	20	GND
21	LPT_BUSY	22	GND
23	LPT_PE	24	GND
25	LPT_SLCT	26	NC

3.18 EDP1 插针接口（显示接口）



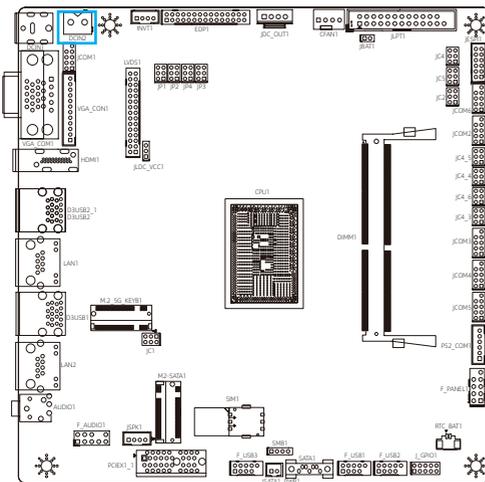
接脚	接脚定义	接脚	接脚定义
1	BKL_12V	2	LCD_VCC
3	BKL_12V	4	GND
5	GND	6	NC
7	NC	8	NC
9	LCD_VCC	10	NC
11	LCD_VCC	12	EDP_BKLCTRL
13	GND	14	GND
15	EDP_BKLEN	16	EDP_AUXP
17	EDP_HPDP	18	EDP_AUXN
19	GND	20	GND
21	EDP_TXP3	22	EDP_TXN3
23	EDP_TXP2	24	EDP_TXN2
25	GND	26	GND
27	EDP_TXP1	28	EDP_TXN1
29	EDP_TXP0	30	EDP_TXN0

3.19 VGA_CON1 插针接口



接脚	接脚定义
1	GND
2	CRT_VSYNC
3	CRT_HSYNC
4	GND
5	IO_RED
6	GND
7	IO_GREEN
8	GND
9	IO_BLUE
10	GND
11	CRT_SDA
12	CRT_SCL

3.20 DCIN2 插针接口



接脚	接脚定义
1	12V
2	GND

第4章 BIOS 设置

4.1 BIOS解释说明

本主板使用AMI BIOS。BIOS全称为Basic Input Output System(基本输入输出系统)。它是存储在电脑主板上的一块ROM (Read-Only Memory)芯片中。当您开启电脑时，BIOS是最先运行的程序，它主要有以下几项功能：

- a.对您的电脑进行初始化和检测硬件，这个过程叫POST(Power On Self Test)。
- b.加载并运行您的操作系统。
- c.为您的电脑硬件提供最底层、最基本的控制。
- d.通过SETUP管理您的电脑。

被修改的BIOS会被存在一个以电池维持的CMOS RAM中，在电源切断时所存的资料不会被丢失。一般情况下，系统运行正常时，无需修改BIOS。如果由于其他原因导致CMOS丢失时，须重新设定BIOS值。

4.2 BIOS设定

本章提供了BIOS Setup程序的信息，让用户可以自己配置优化系统设置。BIOS中一些未做过多说明的项目，属于非常用项目，在未完全了解其功能之前建议保持默认设置，不要随意更改。

如下情形您需要运行SETUP程序：

- a.系统自检时屏幕上出现错误信息，并要求进入SETUP程序；
- b.您想根据客户特征更改出厂时的默认设置。

注意：由于主板的BIOS版本在不断的升级，所以，本手册中有关BIOS的描述仅供参考。我们不保证本说明书中的相关内容与您所获得的信息的一致性。

4.2.1 进入BIOS设定程序

打开电源或重新启动系统，在自检画面可看到如下信息，按键即可进入BIOS设定程序。

Press <Delete> to enter SETUP

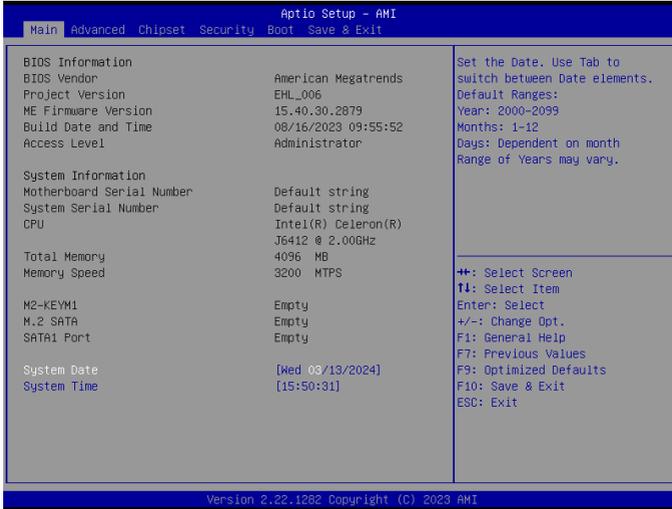
Press <F11> to enter Boot Menu

4.2.2 控制键位

您可以用箭头键移动高亮度选项，按<Enter>键进行选择，按<F1>键寻求帮助，按<Esc>键退出。下列表格将详细列出如何运用键盘来引导系统程序设定。

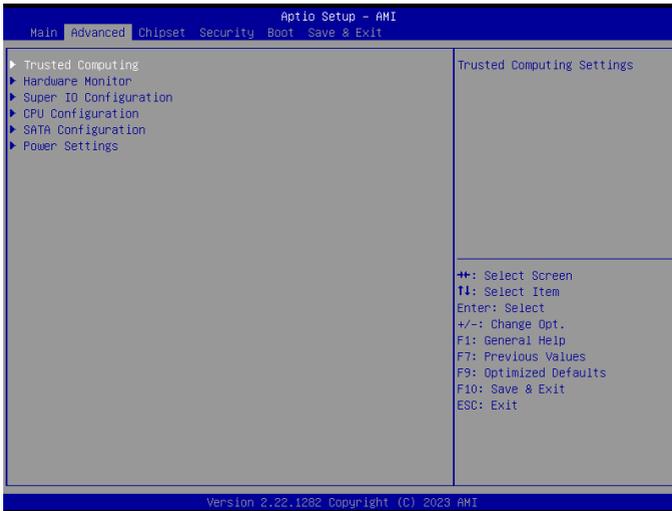
控制键	功能描述
← / →	移动左右箭头选择屏幕
↑ / ↓	移动上下箭头选择上下项目
+ / -	增加/减少数值或改变选择项
<Enter>	选定此选项，进入子菜单
<ESC>	返回主画面，或由主画面中结束CMOS SETUP程序
<F1>	显示相关辅助说明
<F7>	之前设定值
<F9>	载入最优化值的设定
<F10>	保存改变后的CMOS设定值并重启

4.3 Main



- BIOS Information(BIOS相关信息)
- System Date (系统日期设置)
设置电脑的日期,格式为“星期,月/日/年”。
- System Time (系统时间设置)
时间格式为<时><分><秒>。

4.4 Advanced

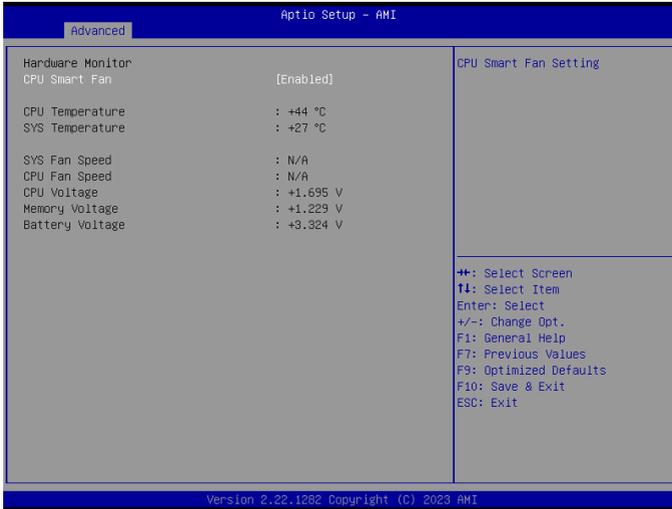


► Trusted Computing 按<Enter>键进入子菜单



- Security Device Support
设置安全设备的 BIOS 支持
选项: Enabled, Disabled.

► Hardware Monitor 按<Enter>键进入子菜单



- CPU Smart Fan

此项表示 CPU 智能风扇转速控制。

选项： Full on Mode, Automatic Mode, Manual Mode.

- 按 <Esc> 键返回 “Advanced” 主菜单

► Super IO Configuration 按<Enter>键进入子菜单

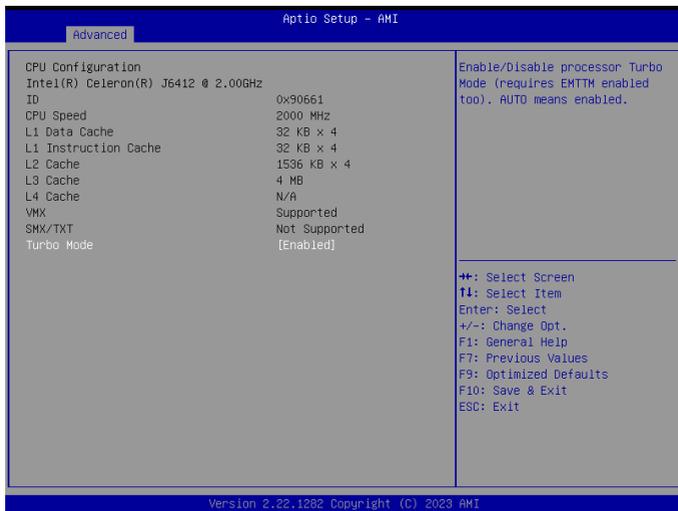


- Serial Port 1/2/3/4/5/6 Configuration

此项为串口设置。

- 按 <Esc> 键返回 “Advanced” 主菜单

- ▶ CPU Configuration 按<Enter>键进入子菜单。



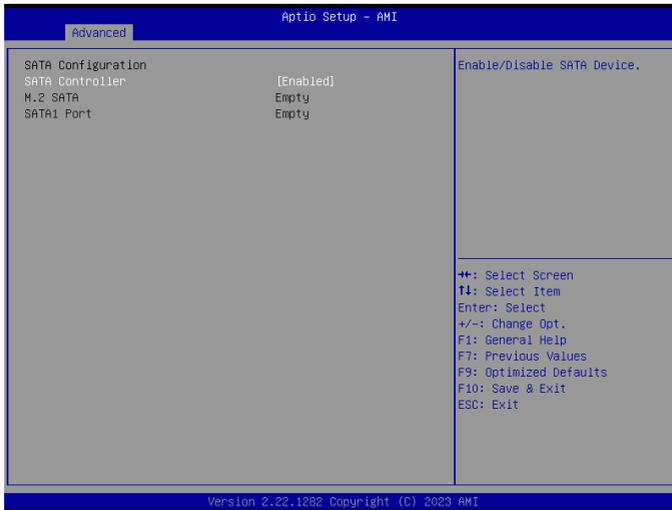
- Turbo Mode

启用或禁用Turbo模式。

选项: Enabled,Disabled.

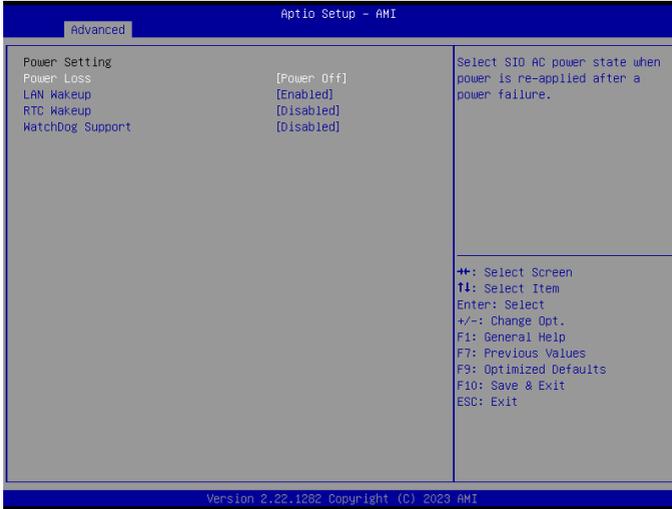
- 按 <Esc> 键返回 “Advanced” 主菜单

- ▶ SATA Configuration 按<Enter>键进入子菜单。



- **SATA Controller**
启用或禁用SATA控制器。
选项: Enabled,Disabled.
- 按 <Esc> 键返回 “Advanced” 主菜单

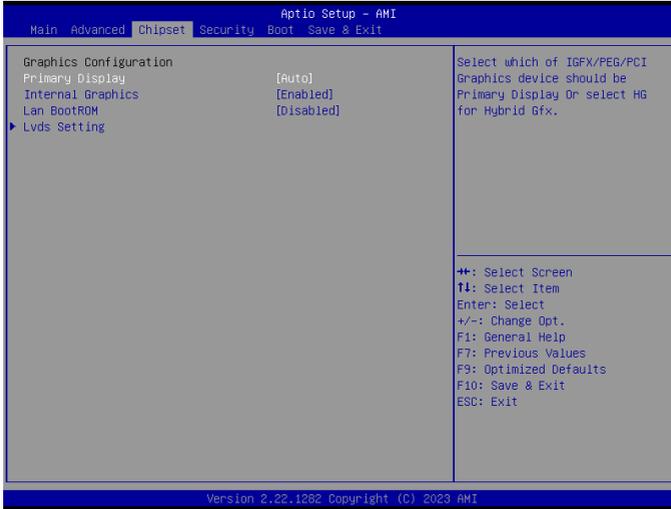
► Power Settings 按<Enter>键进入子菜单



- **Power Loss**
当电源故障后重新通电时，选择 SIO 电源状态。
选项：Enabled,Disabled.
- **LAN Wakeup**
启用或禁用网络唤醒。
选项：Enabled,Disabled.
- **RTC Wakeup from S5**
启用或禁用电池唤醒。
选项：Enabled,Disabled.
- **WatchDog Support**
启用或禁用看门狗支持。
选项：Enabled,Disabled.

- 按 <Esc> 键返回 “Advanced” 主菜单

4.5 Chipset



- **Primary Display**
此项表示面板类型。
- **Internal Graphics**
此项为启用或禁用内部显示。
选项： Disabled,Enabled.
- **Lan BootROM**
此项为启用或禁用 Lan BootROM。
选项： Disabled,Enabled.

4.6 Security



- **Administrator Password**

设该选项被用来设置系统管理员密码，有以下这些步骤：

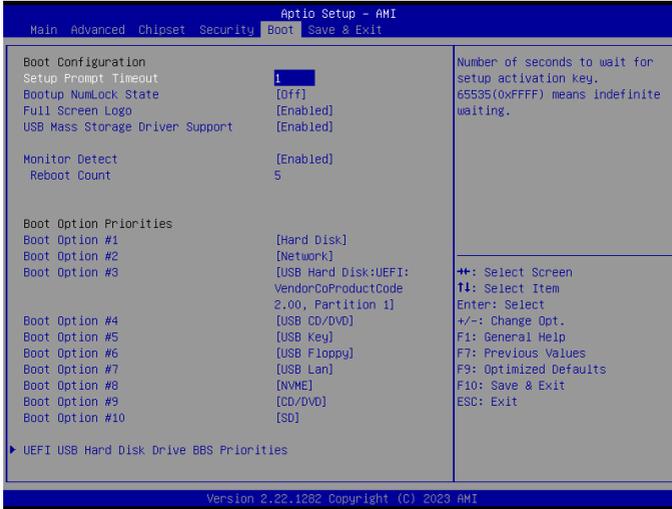
1. 选择Administrator Password设置项，按<Enter>键。
2. 在“Create New Password”对话框中输入3~20位要设定的字符或数字密码，输入完成按<Enter>键后，出现“Confirm Password”对话框，再一次输入密码以确认密码正确。若提示“Invalid Password!”，表示两次输入密码不匹配，请重新再输入一次。若要清除系统管理员密码，请选择“Administrator Password”，出现“Enter Current Password”对话框时，输入旧密码后出现“Create New Password”<Enter>密码即清除。

- **BIOS Password**

此项为密码检查。

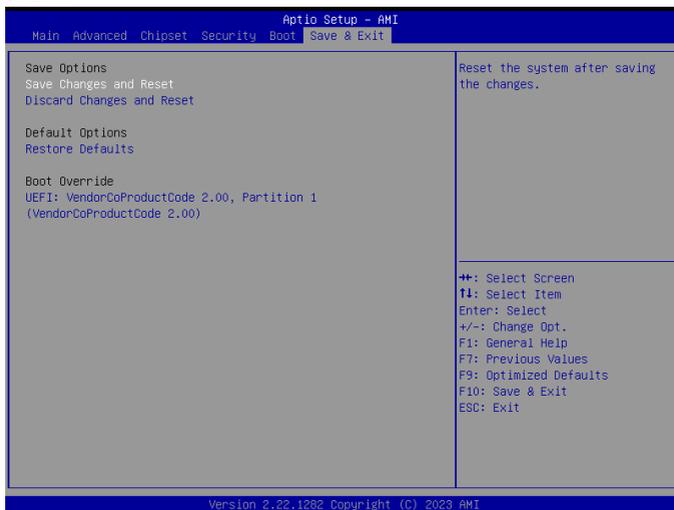
选项：Setup,Setup&Post.

4.7 Boot



- **Setup Prompt Timeout**
设置开机界面停留的时间。
- **Bootup NumLock State**
设置系统启动后，Numlock的状态。当设定为On时，系统启动后将打开NumLock，小键盘的数字键有效。当设定为Off的时候，系统启动后Numlock关闭，小键盘方向键有效。
选项： On,Off.
- **Full Screen Logo**
此项为全屏标志显示设置。
选项： Enabled,Disabled.
- **USB Mass Stroage Driver Support**
此项为USB Mass Storage 驱动程序支持。
选项： Enabled,Disabled.
- **Monitor Detect**
此项表示启用或禁用监视器检测。
选项： Enabled,Disabled.
- **Boot Option #1/2/3/4/5/6/7/8/9/10**
该项允许选择优先引导设备，显示在屏幕上的设备种类取决于系统所安装的设备种类。
选项： NVMe,Hard Disk,CD/DVD,USB Hard Disk,USB Key,USB CD/DVD,Net work,UEFI AP.

4.8 Save & Exit



- **Save Changes and Reset**
保存更改并重启系统。
- **Discard Changes and Reset**
不保存更改并重启系统。
- **Restore Defaults**
还原加载所有选项默认值。

第5章 安装驱动

请将主板驱动光盘放入光驱，光盘将自动运行，并弹出如下图所示界面。如果此界面没有出现，请双击运行X:\AUTORUN.EXE（假设光驱盘符为X:）。



(此图片仅供参考，请以实物为准)

请在以上界面依次点击您所需要安装的驱动，根据提示进行安装即可。

第6章 WDT编程指导

6.1 编程指导文档说明

WDT 控制寄存器位于SIO芯片的LDN DEV7,其中0X72 BIT7 为秒和分钟控制 1为秒, 0为分钟 0XF3 为填写时间, 例如0X72 BIT7 为1, 0XF3 填0X20 为溢出时间32秒

6.1.1 开启看门狗伪代码如下:

```
//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 清除看门狗

```
//wdt stop
if(ite_watch_dog_element->wdt_operator==STOP_WDT){
    loWrite8(SioIndexPort, 0x74);
    loWrite8(SioDataPort, 0x0);
    loWrite8(SioIndexPort, 0x73);
    loWrite8(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

第7章 GPIO编程指导

7.1 GPIO控制

硬件使用PCH H610 GPIO GPP_F0,GPP_F1, ,GPP_F2,GPP_F3,GPP_F4,GPP_F5,GPP_F6,GPP_F7
通过访问内存空间

- 0XE06A09E0 -- GPIO GPP_F0
- 0XE06A09F0 -- GPIO GPP_F1
- 0XE06A0A00 -- GPIO GPP_F2
- 0XE06A0A10 -- GPIO GPP_F3
- 0XE06A0A20 -- GPIO GPP_F4
- 0XE06A0A30 -- GPIO GPP_F5
- 0XE06A0A40 -- GPIO GPP_F6
- 0XE06A0A50 -- GPIO GPP_F7

Sample code请参考：AioT0_H610_ite_pch_gpio_c_v0.1函数Handle_Pch_GPIO

订购信息

产品型号	CPU	内存	显示	存储	USB3	COM	LAN	SSD	PCIe
Alot7-EHL12-1	J6412	1	HDMI+Edp+VGA	1	10	6	2	1	1
Alot7-EHL12-2	J6412	1	HDMI+LVDS	1	10	6	2	1	1

产品中有害物质的名称及含量

部件名称	有毒有害物质或元素					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板组件	X	O	O	O	O	O
CPU	X	O	O	O	O	O
电池	O	O	O	O	O	O
线材	O	O	O	O	O	O

O：表示部件的有害物质含量符合GB/T 26572 《电子电气产品中限用物质的限量要求》的限值要求。

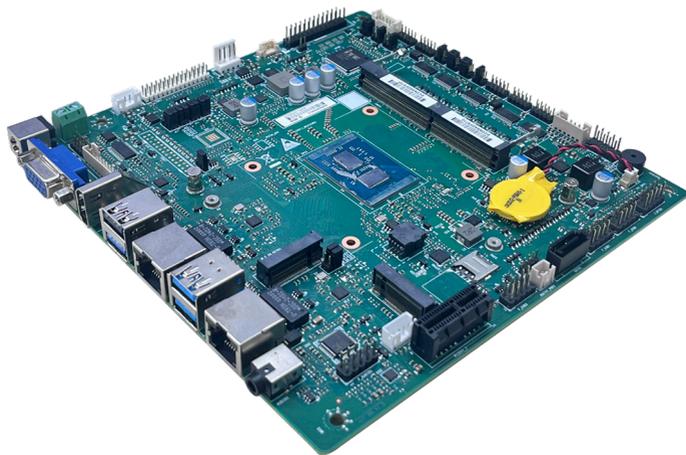
X：表示部件的有害物质含量超出GB/T 26572 《电子电气产品中限用物质的限量要求》的限值要求，但是符合《达标管理目录限用物质应用例外要求》。

*：电路板组件包括印刷电路板及其构成的零部件，如电阻、电容、集成电路、连接器等。

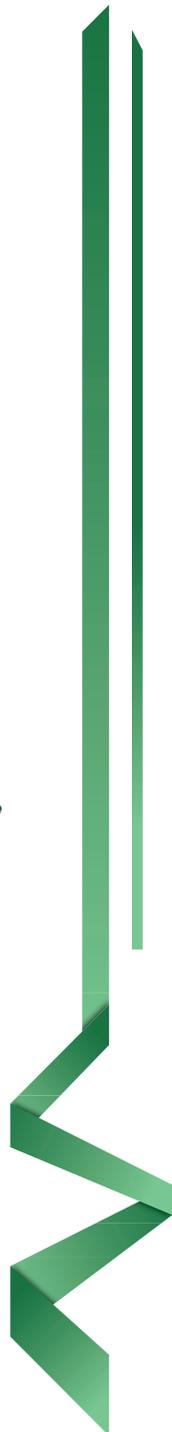


AIOT7-EHL

User's Manual



Version 1.0



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Chapter 1 Review

1.1 Packing List

Thank you for choosing our product.

Please confirm whether the packaging of your motherboard is complete, if the packaging is damaged or there is any shortage of accessories, please contact your dealer as soon as possible.

- ★ Motherboard X 1
- ★ User's Manual X 1
- ★ Dedicated I/O block X 1



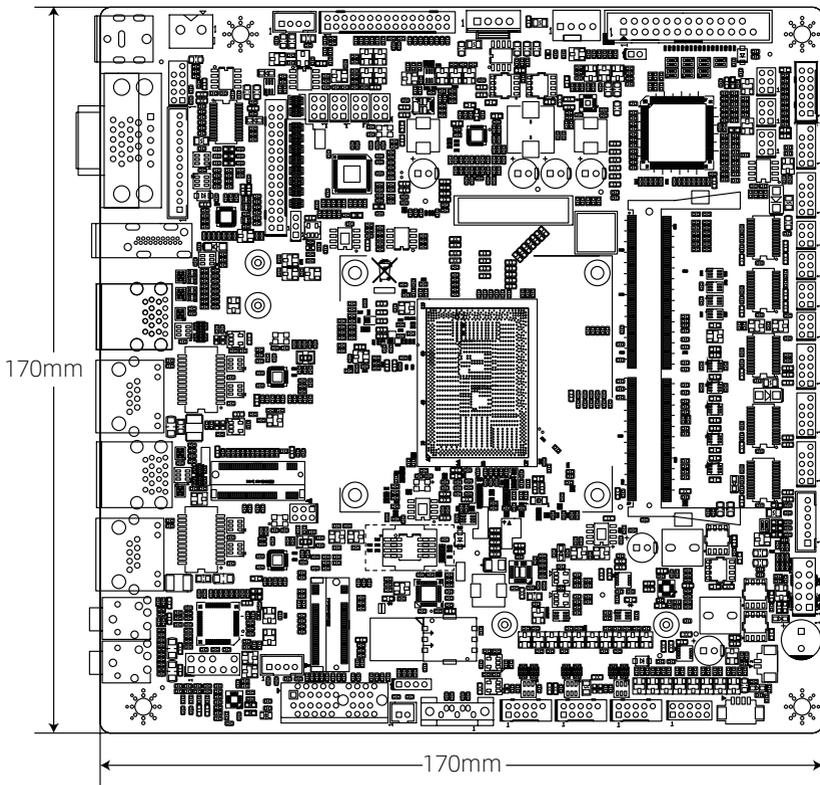
The above accessories are for reference only, the actual specifications are subject to physical, and the company reserves the right to modify.

1.2 Motherboard Specifications

CPU	- Intel J6412 Board Mount CPU, J6412 2.0-2.6GHz
Chipset	- Intel Elkhart Lake SOC
Memory	- 1 X DDR4 SODIMM memory slot, up to DDR4-3200 support, up to 32GB
Display Controllers	- Intel CPU Integrated display controller
Display Interface	- 3 X displays: HDMI+VGA+eDP or LVDS (default eDP) - VGA supports maximum resolution: 1920x1200@60Hz - HDMI maximum resolution: 4096x2160@30Hz - eDP supports maximum resolution: 4096x2160@60H - LVDS best resolution: 1920x1080
Storage	- 1 X SATA 3.0 - 1 X M.2 supports 2242/2280 SSD (SATA protocol)
Audio	- Post-IO support for Mic-in and Line-out two in one - Support chassis front panel Audio output and support digital audio output with power amplifier (3W, 4 Pin pin)
Network	- 2 X Intel RTL8111H gigabit network ports
USB	- 3 X USB3.0 Type-A, 1 X USB2.0 Type-A - 6 X USB2.0 (One of the USB2.0 signals is optional to interface with M.2)
I ² C/SMBus	- 1X 4Pin SM Bus
COM	- 6 X Serial ports (COM1 supports RS232/485, and COM2 ~ COM6 supports RS232, COM2&COM3 supports Pin9 + 5/12V power supply, and COM3 has an optional TTL)
PS/2	- 1 X PS/2
I/O	- 1 X 8-bit isolation digital I/O, providing power and ground, +3.3V level
eSPI	- 1 X eSPI bus interface (2x6Pin wafer extended to four more RS232 or RS422/485 serial port)
LPT	- 1 X LPT
TPM/TCM	- On-board encryption chip SLB9670, Support TPM2.0
Power Supply	- DC-Jack single voltage +12V input, also equipped with 2 Pin, phoenix terminal - Power supply DC-Out interface supports the motherboard take +12v and 5V power 500mA
Extended Ports	- 1 X M.2 Key-B 3042/3052 (all-bus PCIeX1+USB3.0+USB2.0) supports 4G/5G wireless module (WiFi and BT via M2-3042 to 2230 transfer card)) - 1 X PCIe 3.0 x1

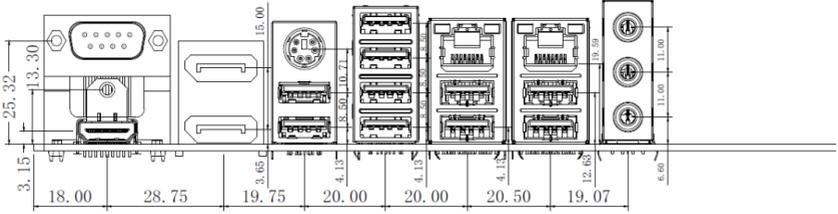
Working Environment	- Temperature: 0°C ~60°C, Relative humidity: 10%~90%
Storage Environment	- Temperature: -25°C ~75°C, Relative humidity: 5%~95%
Watch Dog	- Level 255 is programmable in seconds/minutes, and support timeout interruption or system reset
BIOS	- AMI UEFI BIOS
OS	- Win10, Win11, Linux Ubuntu 20.04
Dimension	- 170mm X 170mm

1.3 Motherboard Structure Diagram

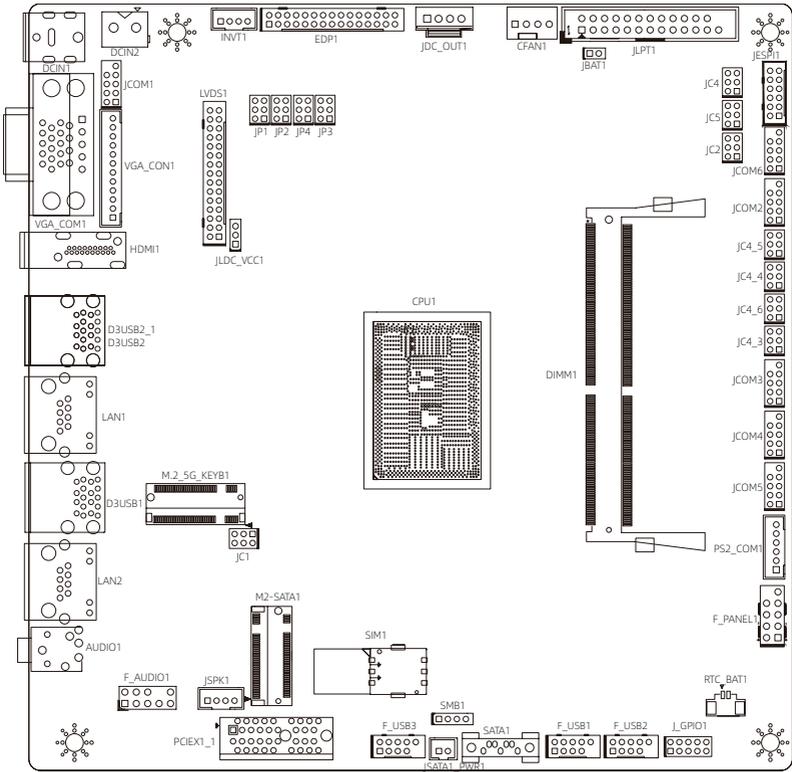


(This picture is for reference only, please refer to the actual product)

1.4 Motherboard IO Interface Structure Diagram



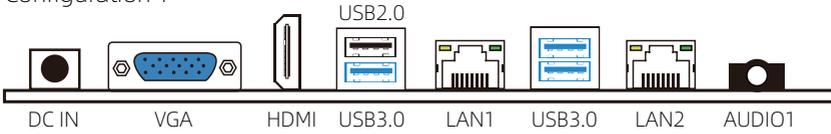
1.5 Motherboard Layout



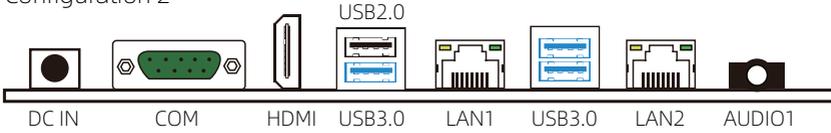
(This picture is for reference only, please refer to the actual product)

1.6 IO Interface

Configuration 1



Configuration 2



(This picture is for reference only, please refer to the actual product)

- COM: Serial port
- VGA: VGA display interface
- DP: DP display interface
- HDMI: High definition multimedia display interface
- PS2: Keyboard and mouse interface
- USB2.0: USB2.0 interface
- USB3.0: USB3.0 interface
- LAN1/2: The RJ45 Ethernet interface
- AUDIO: Audio interface

Chapter 2 Hardware Installation

2.1 Install Memory

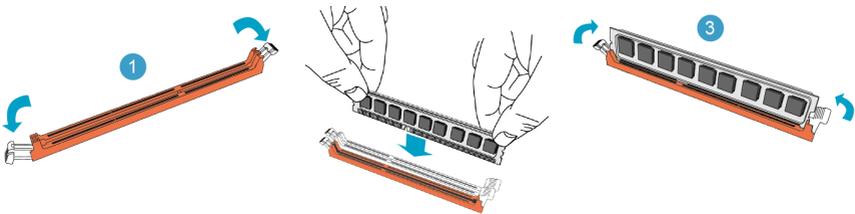
Before starting the memory installation, follow the following warnings:

1. Please confirm that the memory you purchased applies to the specifications supported by this motherboard.
2. Before installing or removing the memory, make sure that the power of the computer is turned off to avoid damage.
3. The memory design has an anti-stay sign. If you insert the wrong direction, the memory cannot be inserted, please change the insertion direction immediately.

Install memory:

1. Turn off the power supply and dial down the AC power cord before installing or removing the memory.
2. Carefully hold both ends of the memory bar and do not touch the metal contact on it.
3. Align the gold finger of the memory bar to the memory bar slot, and pay attention to the bulge point of the gold finger concave hole on the upper slot in the direction;
4. Insert the memory bar into the memory slot 30 degrees, and then press the memory bar down to hear the sound of "click", indicating that the memory has been installed successfully and can be used.(Note: press the memory down, not too much to damage the memory)
5. To remove the memory, please push the tenon at both ends of the DIMM slot outward at the same time, and then take out the memory.

Memory installation diagram (for reference only):



⚠ Note: The static electricity will damage the electronic components of the computer or memory, so before doing the above steps, be sure to briefly contact the ground metal object to remove the static electricity from the body.

Chapter 3 Jumper&Connector Installation

3.1 Description Of Each Jumper Setting

2 pin pin: Inserting the jumper cap into both pins will turn it off (short circuit). Removing the jump cap or inserting other pins (reserved for future expansion) will turn it on.

3 pin connector: the jumper cap can be inserted into pin 1~2 or pin 2~3 to close it (short circuit).

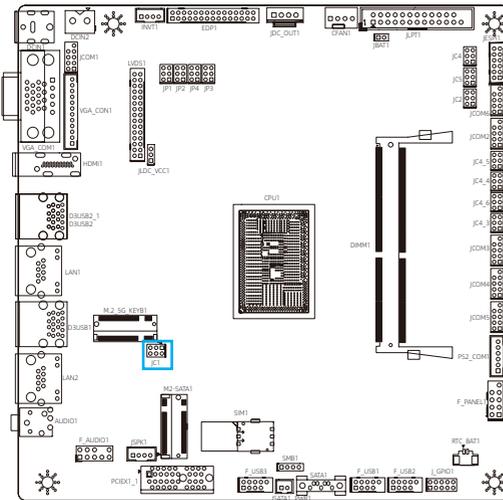


How to identify the first foot position of the jumper?

1. Please check the motherboard carefully. Any foot marked with "1" or white thick line is the 1 foot position.
2. Watch the pan of the back plate, usually the square pad is the first pin.

3.2 Jump Setting

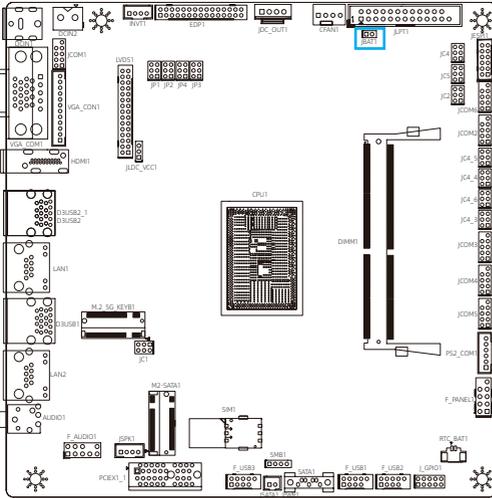
3.2.1 JC1 Jump Setting



F_USB3	M.2_5G_KEYB1
JC1(1-3)	JC1(3-5)
JC1(2-4)	JC1(4-6)

Note: When JC1 jumper is F_USB3, F_USB3 can support two USB2.0; when the jumper is M.2_5G_KEYB1, M.2_5G_KEYB1 slot supports 4G/5G module.

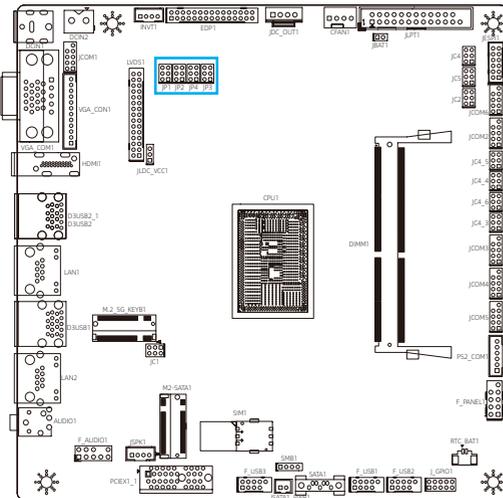
3.2.2 JBT1 Jump Setting



Pin	Definition
1-2 OPEN	NORMAL
1-2 SHORT	CLEAR_COMS

Note: JBAT1 can CLEAR CMOS information via PIN 1-2 SHORT.

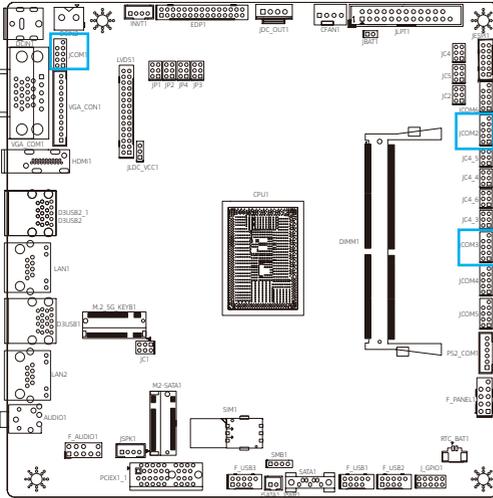
3.2.3 JP1/2/3/4 Jump Setting



EDP	LVDS
JP1(1-3)	JP1(3-5)
JP1(2-4)	JP1(4-6)
JP2(1-3)	JP2(3-5)
JP2(2-4)	JP2(4-6)
JP3(1-3)	JP3(3-5)
JP3(2-4)	JP3(4-6)
JP4(1-3)	JP4(3-5)
JP4(2-4)	JP4(4-6)

Note: JP jumper is used to switch EDP and LVDS display output. When using LVDS1 interface, JP jumps to LVDS1 mode; when using EDP 1 interface, JP jumps to EDP mode.

3.2.4 COM1/JCOM1/2/3 Setting



JCOM3 Setting

RS232	TTL
JC4_4(3-5)	JC4_4(1-3)
JC4_4(4-6)	JC4_4(2-4)
JC4_6(3-5)	JC4_6(1-3)
JC4_6(4-6)	JC4_6(2-4)

COM1/JCOM1 Setting

RS232	RS485
JC2(1-2)	JC2(3-4)
JC4(1-3)	JC2(5-6)
JC4(2-4)	JC4(3-5)
JC5(1-2)	JC5(3-4)

COM1/JCOM1 supports RS-232/485 mode, and COM3 supports RS-232 /TTL mode, so the two modes can be switched through the selection of the cap above.

JCOM2 Voltage Setting

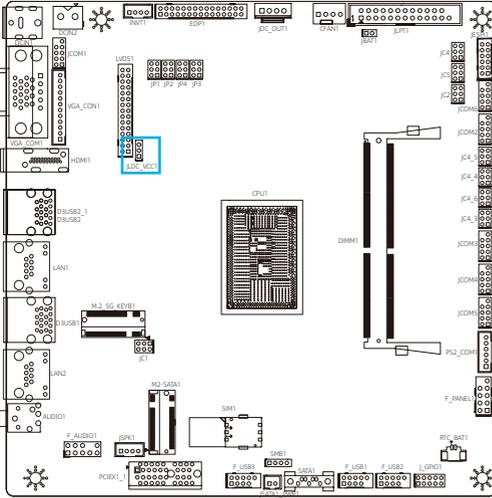
Pin	Definition
JC4_5(1-2)	5V
JC4_5(3-4)	Normal
JC4_5(5-6)	12V

JCOM3 Voltage Setting

Pin	Definition
JC4_3(1-2)	5V
JC4_3(3-4)	Normal
JC4_3(5-6)	12V

JCOM2、JCOM3 support Pin9 5V / 12V mode, which can be achieved through the selection of the above jump cap.

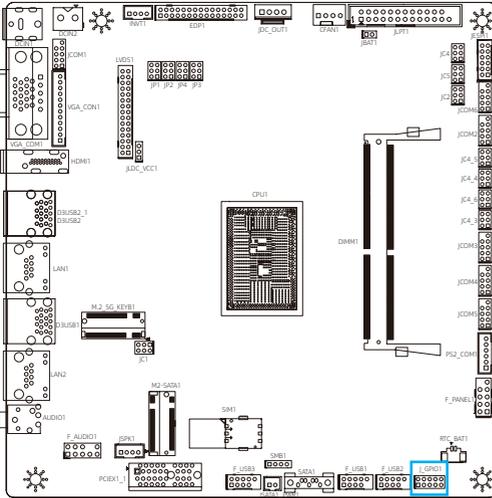
3.2.5 JLVDC_VCC1 Jump Setting



Pin	Definition
1-2	3.3V
2-3	5V

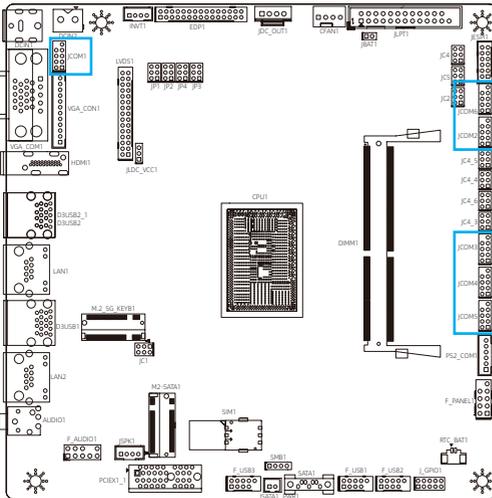
Note: JLVDC_VCC1 jumper is used to switch the LCD voltage of EDP/LVDS with 3.3V LCD, pin1-3 short; pin2-3 short with 5V LCD.

3.3 J_GPIO1 Interface



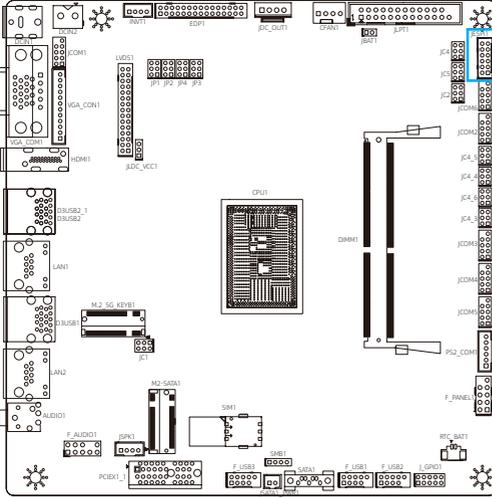
Pin	Definition	Pin	Definition
1	GPIO1	2	GPIO2
3	GPIO3	4	GPIO4
5	GND	6	GPIO5
7	GPIO6	8	GPIO8
9	GPIO9	10	3.3V

3.4 JCOM1/2/3/4/5/6 Interface



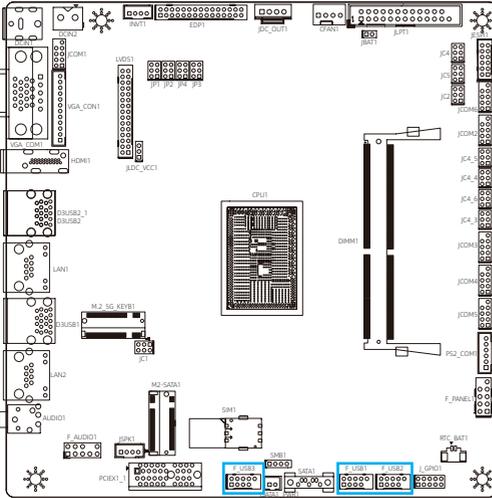
Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

3.5 JESPI1 Interface



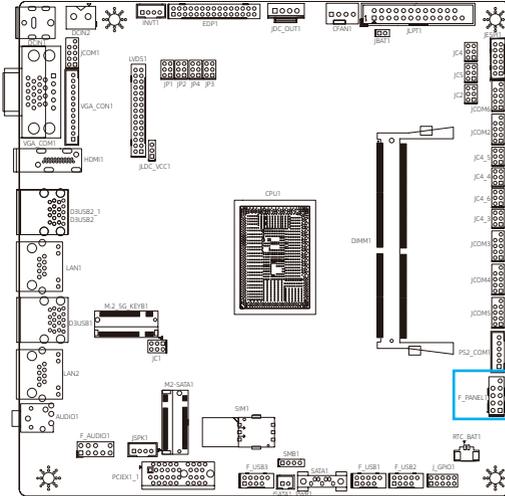
Pin	Definition	Pin	Definition
1	VCC3	2	GND
3	IO0	4	CS0
5	IO1	6	CLK
7	IO2	8	ESPI_RST
9	IO3	10	PLTRST
11	ALERT	12	VCC5

3.6 F_USB1/2/3 2.54mm Interface



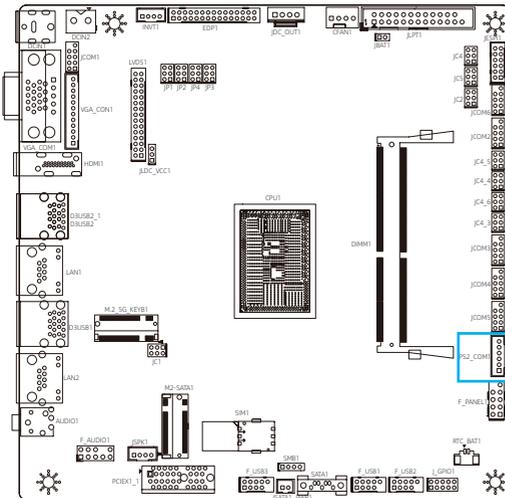
Pin	Definition	Pin	Definition
1	5V	2	5V
3	D1-	4	D2-
5	D1+	6	D2+
7	GND	8	GND
		10	NC

3.7 FPANEL1 2.54mm Interface (Power button/Power button/Hard disk indicator/Reset button)



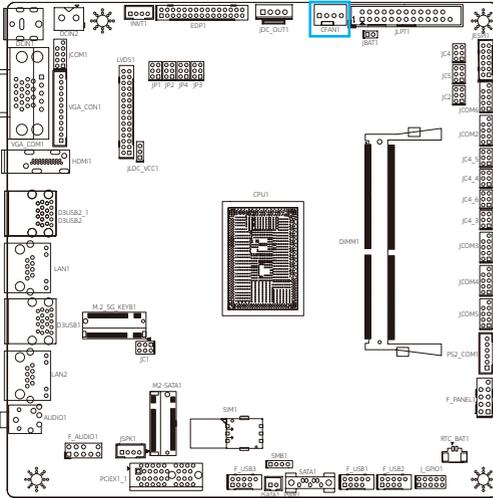
Pin	Definition	Pin	Definition
1	HDD_LED+	2	PWR_LED+
3	HDD_LED-	4	PWR_LED-
5	GND	6	PWR_ON
7	RST	8	GND
9	NC	10	NC

3.8 PS2_COM1 Interface



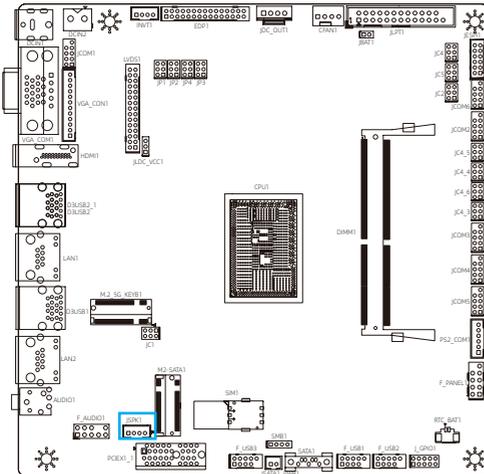
Pin	Definition
1	KCLK
2	KDAT
3	MCLK
4	GND
5	VCC
6	MDAT

3.9 CFAN1 Interface



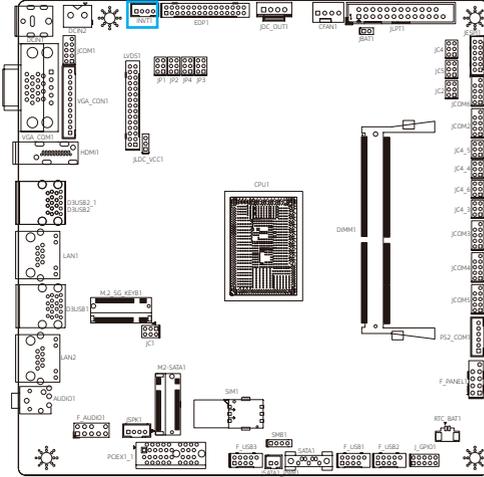
Pin	Definition
1	GND
2	VCC5
3	FAN_TAC1
4	FAN_CLT1

3.10 JSPK1 Interface



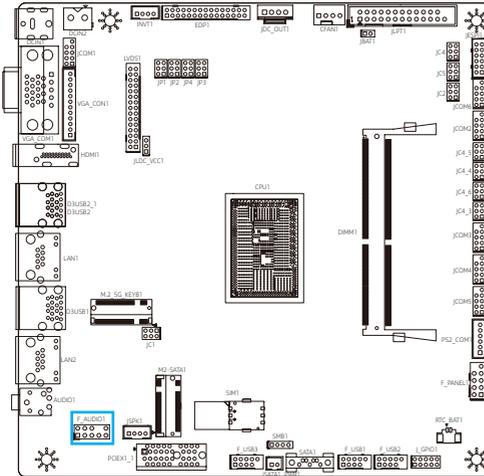
Pin	Definition
1	R-
2	R+
3	L-
4	L+

3.11 INVT1 Interface



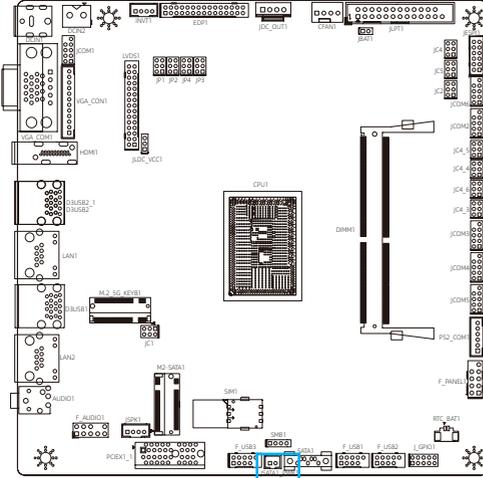
Pin	Definition
1	VCC12
2	BKL_EN
3	PWM_OUT1
4	GND

3.12 F_AUDIO1 Interface



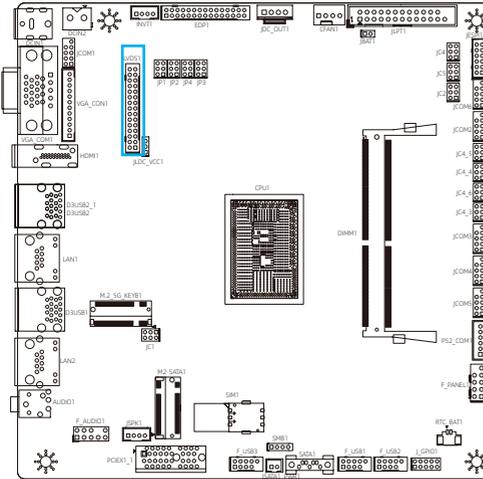
Pin	Definition	Pin	Definition
1	MIC_L	2	AGND
3	MIC_R	4	
5	LINE_R	6	MIC_JD
7	AGND	8	
9	LINE_L	10	LINE_JD

3.13 JSATA_PWR1 Interface



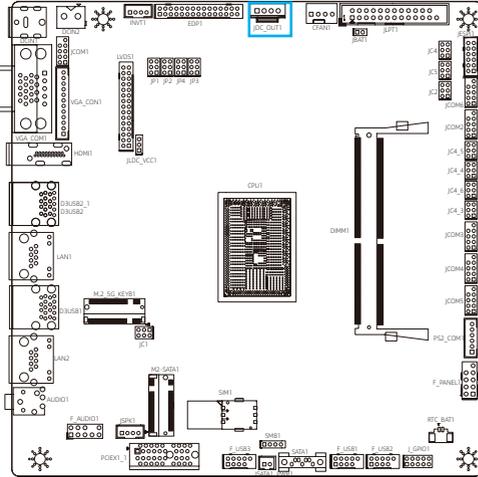
Pin	Definition
1	VCC5
2	GND

3.14 LVDS1 Interface



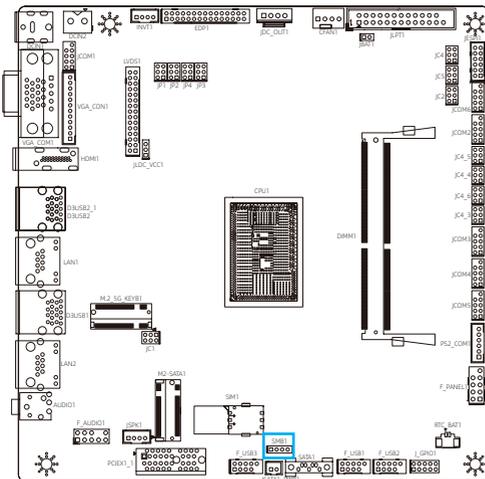
Pin	Definition	Pin	Definition
1	LCD_VCC	2	LCD_VCC
3	LCD_VCC	4	GND
5	GND	6	GND
7	DATA0N	8	DATA0P
9	DATA1N	10	DATA1P
11	DATA2N	12	DATA2P
13	GND	14	GND
15	CLK1N	16	CLK1P
17	DATA3N	18	DATA3P
19	DATA4N	20	DATA4P
21	DATA5N	22	DATA5P
23	DATA6N	24	DATA6P
25	GND	26	GND
27	CLK2N	28	CLK2P
29	DATA7N	30	DATA7P

3.15 JDC_OUT Interface



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

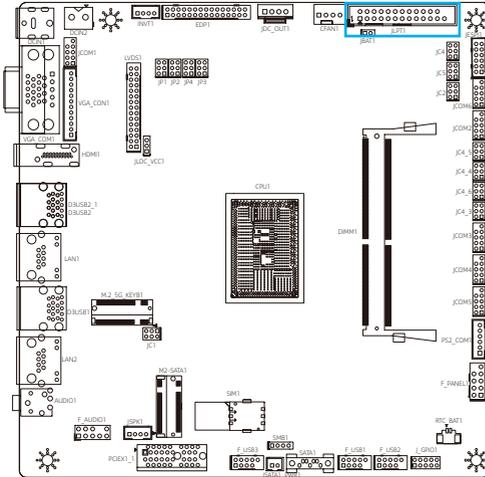
3.16 SMB1 Interface



Pin	Definition
1	PWR
2	SDA
3	SCL
4	GND

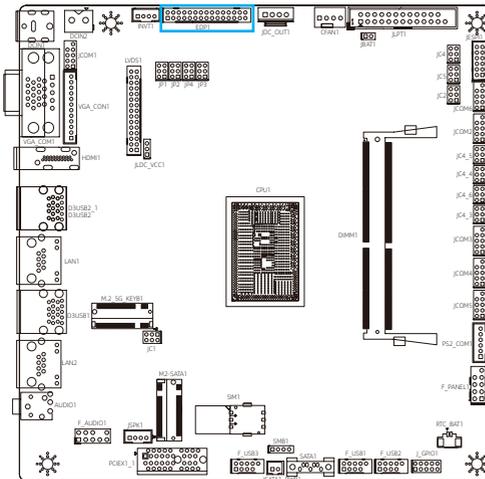
Note: Pin 1 can switch to 3V/5V via the BOM.

3.17 JLPT1 Interface (Printer Interface)



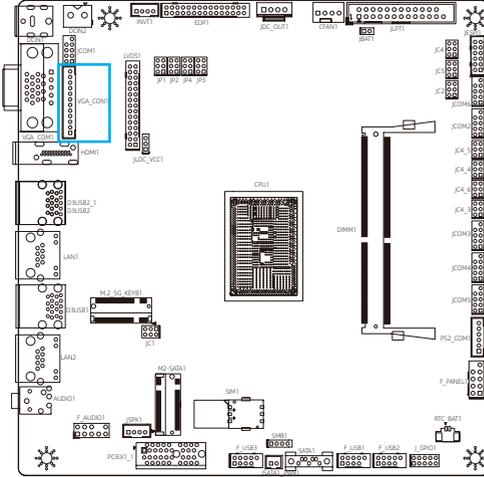
Pin	Definition	Pin	Definition
1	LPT_STB	2	LPT_AFD
3	LPT_PD0	4	LPT_ERR
5	LPT_PD1	6	LPT_INT
7	LPT_PD2	8	LPT_SLIN
9	LPT_PD3	10	GND
11	LPT_PD4	12	GND
13	LPT_PD5	14	GND
15	LPT_PD6	16	GND
17	LPT_PD7	18	GND
19	LPT_ACK	20	GND
21	LPT_BUSY	22	GND
23	LPT_PE	24	GND
25	LPT_SLCT	26	NC

3.18 EDP1 Interface (Displays Interface)



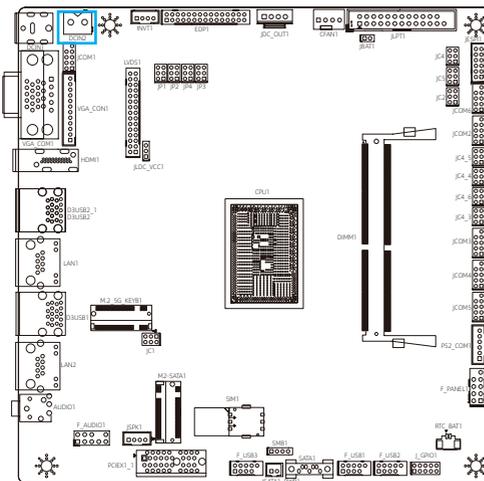
Pin	Definition	Pin	Definition
1	BKL_12V	2	LCD_VCC
3	BKL_12V	4	GND
5	GND	6	NC
7	NC	8	NC
9	LCD_VCC	10	NC
11	LCD_VCC	12	EDP_BKLCTRL
13	GND	14	GND
15	EDP_BKLEN	16	EDP_AUXP
17	EDP_HPDP	18	EDP_AUXN
19	GND	20	GND
21	EDP_TXP3	22	EDP_TXN3
23	EDP_TXP2	24	EDP_TXN2
25	GND	26	GND
27	EDP_TXP1	28	EDP_TXN1
29	EDP_TXP0	30	EDP_TXN0

3.19 VGA_CON1 Interface



Pin	Definition
1	GND
2	CRT_VSYNC
3	CRT_HSYNC
4	GND
5	IO_RED
6	GND
7	IO_GREEN
8	GND
9	IO_BLUE
10	GND
11	CRT_SDA
12	CRT_SCL

3.20 DCIN2 Interface



Pin	Definition
1	12V
2	GND

Chapter 4 BIOS Setting

4.1 BIOS Explanation

This motherboard uses the AMI BIOS. The BIOS is called Basic Input Output System (basic input / output system). It is stored in a ROM (Read-Only Memory) chip stored on a computer motherboard. When you turn on the computer, BIOS is the first program to run, which mainly has the following functions:

- A. Initialize and detect hardware on your computer in a process called POST (Power On Self Test).
- B. Loading and running your operating system.
- C. Provide the lowest level, the most basic control for your computer hardware.
- D. Manage your computer via SETUP.

The modified BIOS is stored in a battery-maintained CMOS RAM, and the library stored during the power cut off is not lost. Generally, the BIOS does not need to be modified when the system runs normally. If the CMOS 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 the system settings themselves. Some projects in BIOS that have not been too much are very useful projects. It is recommended to keep the default Settings and do not change them before fully understanding their functions.

You will need to run the SET UP program as described below

- a. An error message appears on the screen during the system self-test and requires entering the SETUP program;
- b. You want to change the default setting at the factory based on customer characteristics.

Note: Since the motherboard BIOS version is constantly updated, the BIOS description in this manual is for reference only. We do not guarantee the consistency of the relevant content in this specification with the information you obtain.

4.2.1 Enter The BIOS Setup Program

Turn on the power supply or restart the system, see the following information in the self-test screen, and press the key to enter the BIOS Settings program.

Press <Delete> to enter SETUP

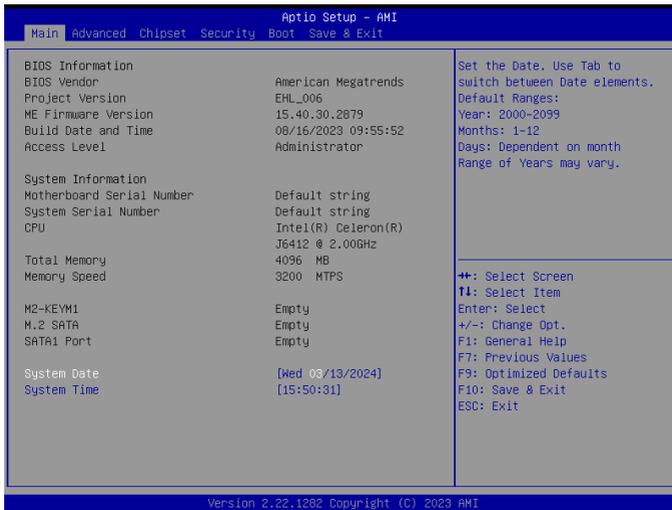
Press <F11> to enter Boot Menu

4.2.2 Control Key Position

You can use the arrow key to move the high brightness option, press <Enter>, key to select, press <F1> key for help, and press <Esc> key to exit. The following table details how the keyboard to guide the system programming.

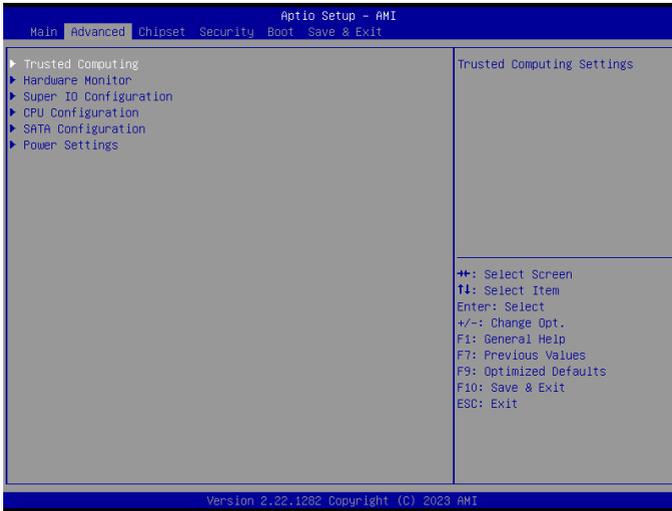
Control Key	Functional Description
← / →	Move the left and right arrows to select the screen
↑ / ↓	Move the up and down arrow to select the up and down items
+ / -	Increase / decrease the values or change the selection items
<Enter>	Select this option to enter the submenu
<ESC>	End the CMOS SETUP program in the main screen
<F1>	Show the relevant auxiliary instructions
<F7>	Before setting the value
<F9>	Load the setting of the optimized values
<F10>	Save the changed CMOS settings and restart

4.3 Main



- BIOS Information
- System Date
Set the date of the computer in the format of "week, month / day / year".
- System Time
The time format is <time> <minutes> <seconds>.

4.4 Advanced

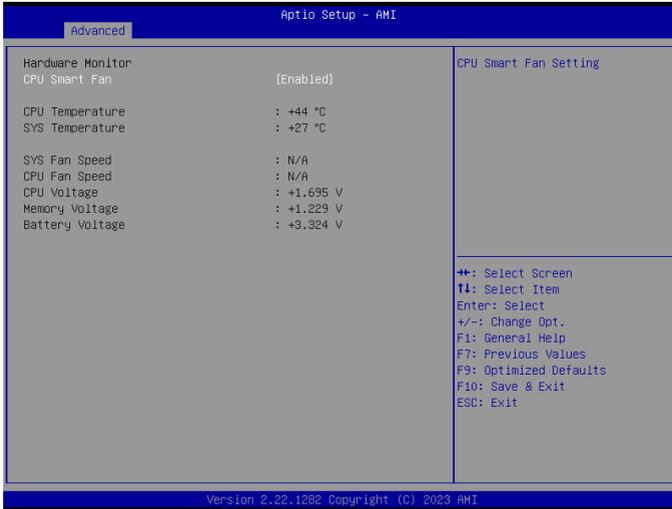


- ▶ Trusted Computing Press the<Enter>key to enter the submenu.



- Security Device Support
Enables or Disables BIOS support for security device.
Option: Enabled,Disabled.
- Press <Esc> to return to the Advanced main menu

- ▶ Hardware Monitor Press the<Enter>key to enter the submenu.



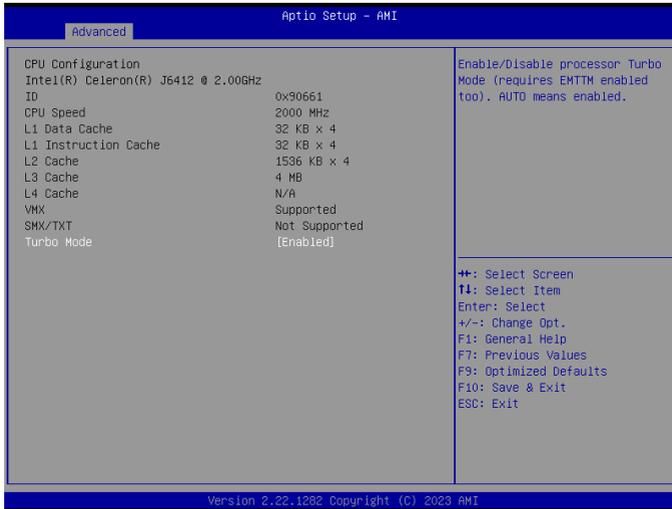
- CPU Smart Fan
CPU Smart Fan Setting
Option: Full on Mode, Automatic Mode, Manual Mode.
- Press <Esc> to return to the Advanced main menu

- ▶ Super IO Configuration Press the<Enter>key to enter the submenu.



- **Serial Port 1/2/3/4/5/6 Configuration**
This item is a serial port setting.
- Press <Esc> to return to the Advanced main menu

- ▶ CPU Configuration Press the<Enter>key to enter the submenu.



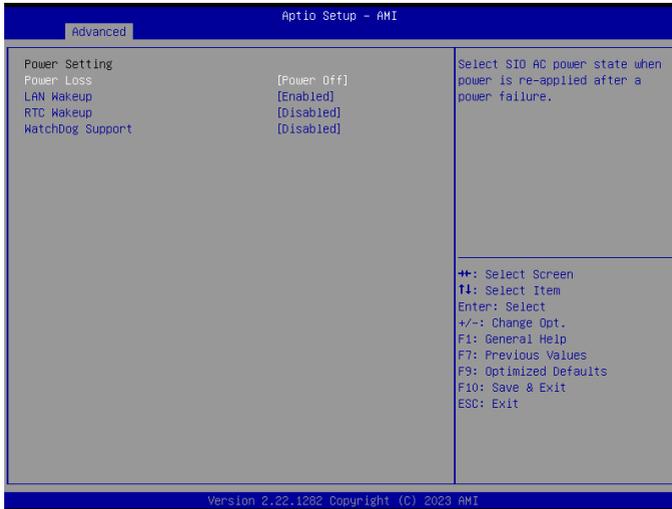
- Turbo Mode
Enable/Disable processor Turbo Mode
Option: Enabled, Disabled.
- Press <Esc> to return to the Advanced main menu

- ▶ SATA Configuration Press the<Enter>key to enter the submenu.



- **SATA Controller**
Enable or disable SATA device.
选项： Enabled,Disabled.
- Press <Esc> to return to the Advanced main menu

- ▶ Power Settings Press the<Enter>key to enter the submenu.



- **Power Loss**
When repowered after power failure, select SIO power status.
Option: Enabled,Disabled.
- **LAN Wakeup**
Enable or disable the LAN Wakeup.
Option: Enabled,Disabled.
- **RTC Wakeup from S5**
Enable or disable the RTC Wakeup from S5.
Option: Enabled,Disabled.
- **WatchDog Support**
Enable or disable the WatchDog Support.
Option: Enabled,Disabled.
- Press <Esc> to return to the Advanced main menu

4.5 Chipset



- **Primary Display**
This item represents the panel type.
- **Internal Graphics**
This item is to enable or disable the internal display.
Option: Disabled,Enabled.
- **Lan BootROM**
This item is to enable or disable Lan BootROM.
Option: Disabled,Enabled.

4.6 Security



- **Administrator Password**

Let this option is used to set the system administrator password with the following steps:

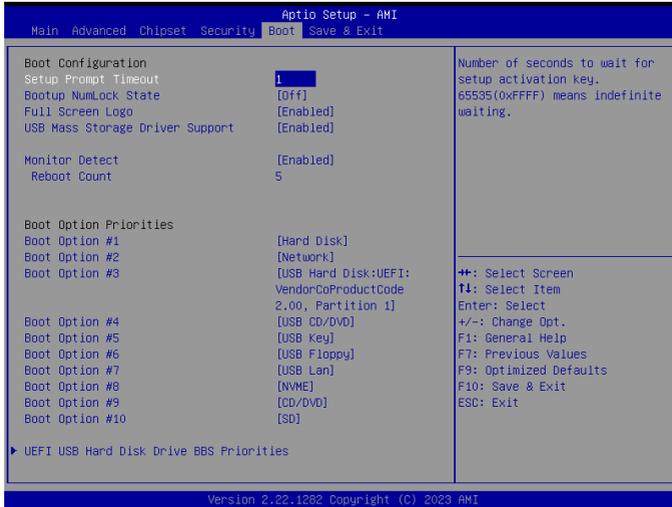
1. Select the Administrator Password settings item and press the <Enter> key.
2. Enter the 3 or 20 digit password to set in the "Create New Password" dialog box. After pressing "<Enter>", the "Confirm Password" dialog box appears and enter the password again to confirm that the password is correct. If the prompt is given, "Invalid Password!", Indicates that the password does not match twice, please enter it again. To clear the system administrator password, select Administrator Password. When the Enter Current Password dialog box appears, the Create New Password <Enter> password appears when the old password is entered.

- **BIOS Password**

This is the password check setting.

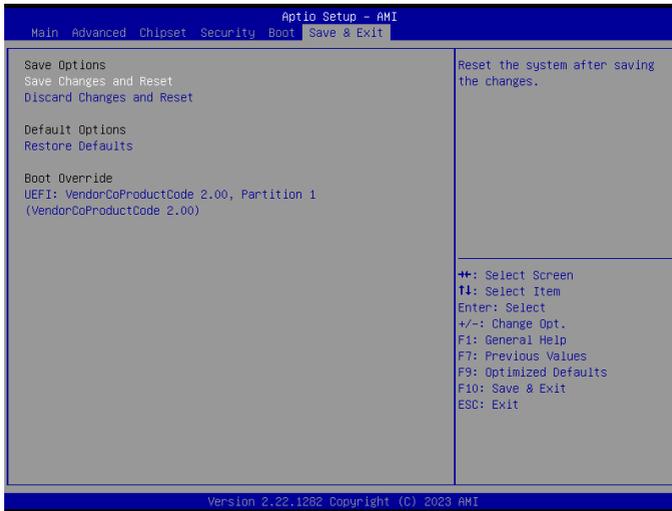
Option: Setup,Setup&Post.

4.7 Boot



- **Setup Prompt Timeout**
Set the residence time of the open machine interface.
- **Bootup NumLock State**
Set the state of the Numlock after the system is started. When set to On, the NumLock will be opened after the system starts, and the number key of the keypad is valid. When set to Off, the Numlock is turned off after the system is started, and the keypad direction key is valid.
Options: On, Off.
- **Full Screen Logo**
This item is a full-screen Logo display switch.
Option: Enabled, Disabled.
- **USB Mass Storage Driver Support**
This item is the USB Mass Storage driver support.
Option: Enabled, Disabled.
- **Monitor Detect**
This item indicates that monitor detection is enabled or disabled.
Option: Enabled, Disabled.
- **Boot Option #1/2/3/4/5/6/7/8/9/10**
This item is to set up the system startup sequence.
Option: NVMe, Hard Disk, CD/DVD, USB Hard Disk, USB Key, USB CD/DVD, Net work, UEFI AP.

4.8 Save & Exit



- **Save Changes and Reset**
Save the changes and restart the system.
- **Discard Changes and Reset**
Do not save the changes and restart the system.
- **Restore Defaults**
Restore loads all options defaults.

Chapter 5 Installation Drive

Please put the motherboard drive CD into the optical drive, the CD will run automatically, and the interface shown in the figure below. If this interface does not appear, double-click to run X:\AUTORUN.EXE (assuming the optical drive character is X:).



(This picture is for reference only, please refer to the actual product)

Please click the driver you need to install in the above interface, and install it according to the prompts.

Chapter 6 WDT Programming Guide

6.1 The WDT Control

The WDT control register is located in the LDN DEV8 of SIO chip, where 0XF0 BIT3 is seconds and minute control 0 is seconds, 1 is minute 0 XF 1 is filling time, for example 0XF0 BIT3 is 0,0 XF 1 filling 0X20 is overflow time 32 seconds.

6.1.1 Set The Watchdog Pseudo-code Is As Follows:

```
// Enter the SIO control
    IoWrite8(0x2E,0x87);
IoWrite8(0x2E,0x87);

IoWrite8(0x2E,0x07);
IoWrite8(0x2F,0x08); //select Logic Device 8

IoWrite8(0x2E,0x30);
Data8 = IoRead8(0x2F);
Data8 |= 0x1;
IoWrite8(0x2F,Data8);

IoWrite8(0x2E,0xf1);
IoWrite8(0x2F,0x00);

IoWrite8(0x2E,0xf2);
IoWrite8(0x2F,0x00);

IoWrite8(0x2E,0xf0);
Data8 = IoRead8(0x2F);
//WdtCountMode =1 select minutes unit
if(SetupData.WdtCountMode == 1){
Data8 = Data8 | 0x08;
}
else{
Data8 = Data8 & (~0x08);
}

IoWrite8(0x2F,Data8);
IoWrite8(0x2E,0xf1);
//WDT overflow time
IoWrite8(0x2F,SetupData.WdtTimeOut);
//Exit the SIO control
IoWrite8(0x2E,0xaa);
```

6.1.2 Clear Watchdog

```
// Enter the SIO control
    IoWrite8(0x2E,0x87);
IoWrite8(0x2E,0x87);

IoWrite8(0x2E,0x07);
IoWrite8(0x2F,0x08); //select Logic Device 8

IoWrite8(0x2E,0x30);
Data8 = IoRead8(0x2F);
Data8 |= 0x1;
IoWrite8(0x2F,Data8);

IoWrite8(0x2E,0xf1);
IoWrite8(0x2F,0x00);

//Exit the SIO control
IoWrite8(0x2E,0xaa);
```

CR F0h. Watchdog Timer I(WDT1) and KBC P20 Control Mode Register

Location: Address F0h

Attribute: Read/Write

Power Well: VSB

Reset by: LRESET# or PWROK

Default : 00h

Size: 8 bits

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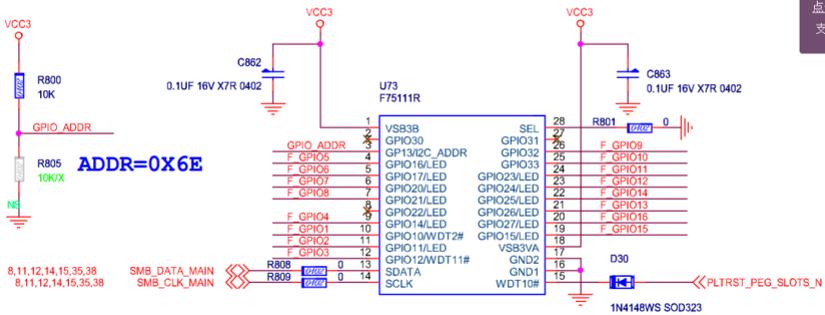
BIT	READ / WRITE	DESCRIPTION
7-4	Reserved	
3	R / W	Select Watchdog Timer I count mode. 0: Second Mode. 1: Minute Mode.
2	R / W	Enable the rising edge of a KBC reset (P20) to issue a time-out event. 0: Disable. 1: Enable.
1	R / W	Disable / Enable the Watchdog Timer I output low pulse to the KBRST# pin (PIN15) 0: Disable. 1: Enable.
0	R / W	Watchdog Timer I Pulse or Level mode select 0: Pulse mode 1: Level mode

Chapter 7 GPIO Programming Guidance

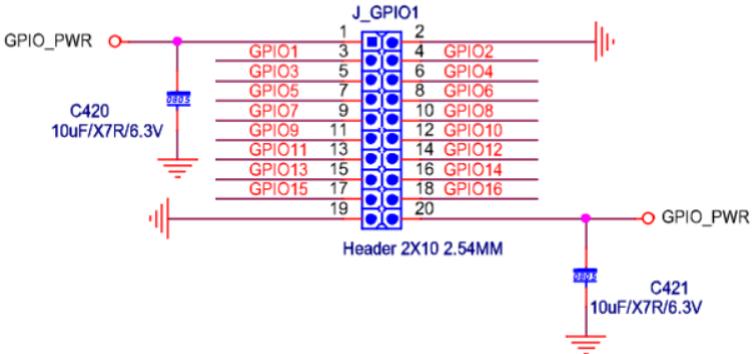
7.1 GPIO Control

Hardware uses FINTEK 7511 to extend GPIO pin, 7511 is shown in the following figure, and the communication control mode is PCH SMBUS control FINTEK 7511.

7.1.1 FINTEK 7511 SPEC (See Attachment)



点击编辑支持链



Order Information

Product Model	Chipset	Memory	Display	Storage	USB3	COM	LAN	SSD	PCIe
AIoT7-EHL12-1	J6412	1	HDMI+Edp+VGA	1	10	6	2	1	1
AIoT7-EHL12-2	J6412	1	HDMI+LVDS	1	10	6	2	1	1

The Name And Content Of The Hazardous Substance In The Product

Part Name	Toxic and harmful substances or elements					
	Pb	Hg	Cd	Cr(VI)	(PBB)	(PBDE)
Circuit board assembly	X	O	O	O	O	O
CPU	X	O	O	O	O	O
Battery	O	O	O	O	O	O
Wire Rod	O	O	O	O	O	O
<p>O: It indicates that the hazardous substance content of the component meets the limit requirements of GB/T 26572 "Limit Requirements for Restricted Substances in Electrical and Electronic Products".</p> <p>X: It means that the content of hazardous substances in the component exceeds the limit requirements of GB/T 26572 "Limit Requirements for Restricted Substances in Electrical and Electronic Products", but meets the "Exception Requirements for the Application of Restricted Substances in the Compliance Management Catalog".</p> <p>*: Circuit board components include printed circuit boards and their components, such as resistors, capacitors, integrated circuits, connectors, etc.</p>						

