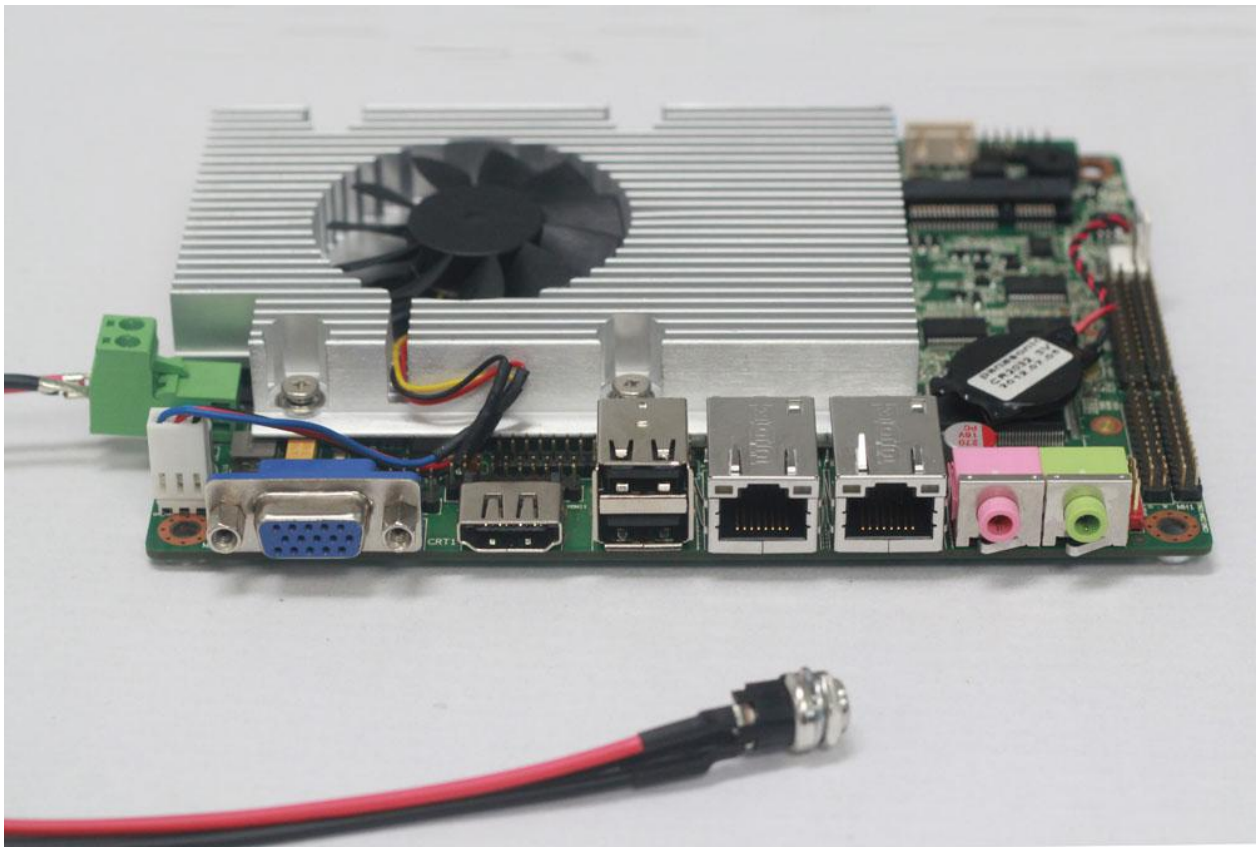


HM67-3 Mainboard

(PCB Rev:1.00)

Manual Version 1.00

2012.10.25



1 Introduction

HM67-3 mainboard is a 3.5" low power consumption industrial motherboard. Adopt RPGA988B CPU socket and HM67/HM65/WM67 chipset. Support Intel Mobile 2nd i3-i5-i7 CPU.

1.1 Main Features

- 1.1.1 RPGA988B Socket, support Intel Mobile 2nd i3-i5-i7 CPU.
- 1.1.2 1*DDR3 SODIMM 204 Socket, maximum up to 8GB DDR3 memory, 1066/1333MHz.
- 1.1.3 Onboard 2*Gigabit Ethernet controller.
- 1.1.4 Onboard HDA ALC662, provide MIC-IN/LINE-OUT and expansion header.
- 1.1.5 Onboard dual channel audio power amplifier. Support 6W/8Ω horn for each channel. (optional)
- 1.1.6 1*Mini-PCIE socket.
- 1.1.7 1*Mini-SATA socket.
- 1.1.8 2*SATA 3.0
- 1.1.9 8*USB 2.0
- 1.1.10 Provide 5*RS232 pin header, 1*RS485/RS422 pin header.
- 1.1.11 Support HDMI output.
- 1.1.12 Support RGB & CRT output.
- 1.1.13 Support dual channel 24bit LVDS output.
- 1.1.14 2*3-Pin FAN connectors.
- 1.1.15 Provide 8bit*GPIO.

1.2 Power Supply

Single input DC power, DC12V (+/-2%) .

(If don't use 12V for the HDD, +/-10%) .

Support AT/ATX starting mode.

1.3 Size

154.8 mm × 117.4 mm

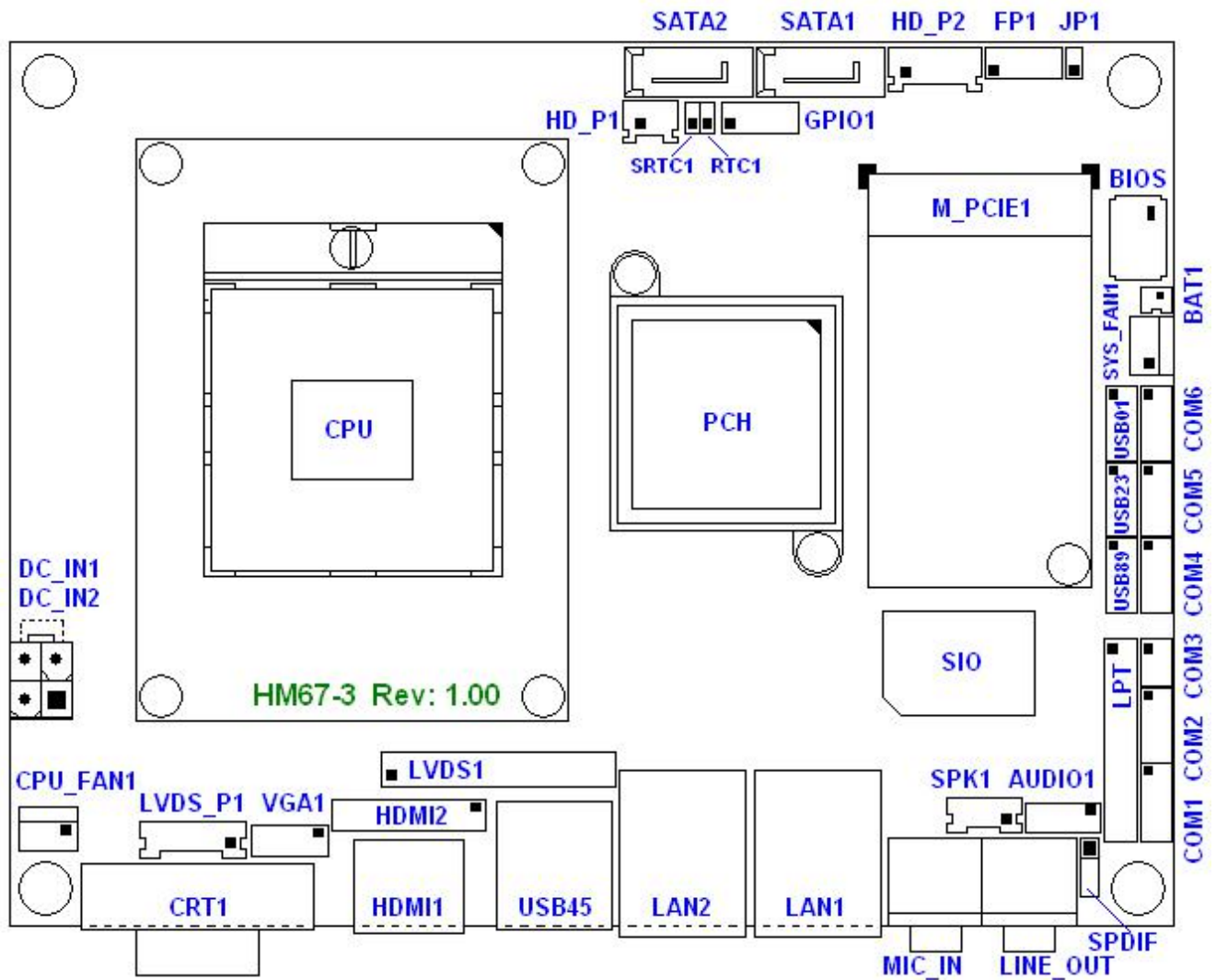
1.4 Working Environment

Working Temp: -20°C ~ +60°C

Storage Temp: -40°C ~ +85°C

2 HM67-3 Front side interfaces layout

TOP floor layout as below:



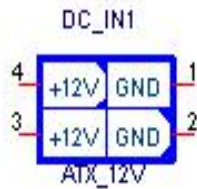
Remark: Interfaces in the above picture, **Pin 1** are in square shape.

Mainboard Interface Description

2.1 DC_IN1 & DC_IN2

Motherboard input power connectors, the same application can only choose to plug one input power.

DC_IN1 adopt ATX_12V interface,same definition.



DC_IN2 is DT-126RP-02P Terminal Blocks interface. Please pay attention to the Positive/Negative electrode of power.

(please input the power,after devices,cables all installed.)

2.2 CRT1 & VGA1

CRT1 is a standard CRT monitor output interface.

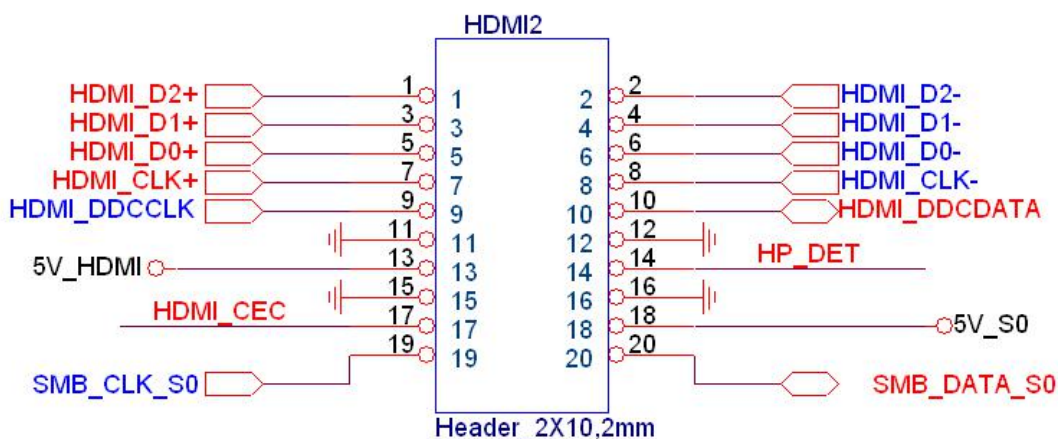
VGA1 is 2×5,2mm expansion header,can not use at the same time.



2.3 HDMI1 和 HDMI2

HDMI1 is standard HDMI output interface.

HDMI2 is user-defined HDMI pin header,definition as below:

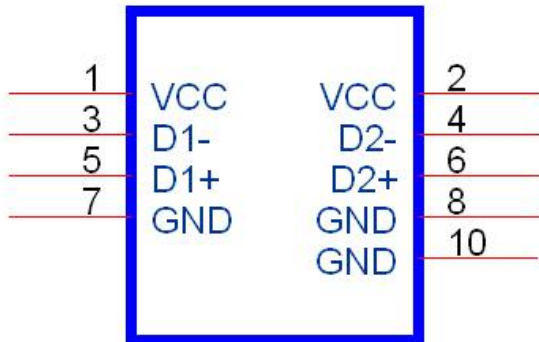


Mainboard Interface Description

2.4 USB01、USB23、USB45 & USB89

All are USB interfaces,support USB 1.0/1.1/2.0 devices.

USB45 is standard USB Type A interface;USB01 、 USB23 、 USB89 2 × 5,2mm are expansion headers,definition as below:



2.5 LAN1 & LAN2

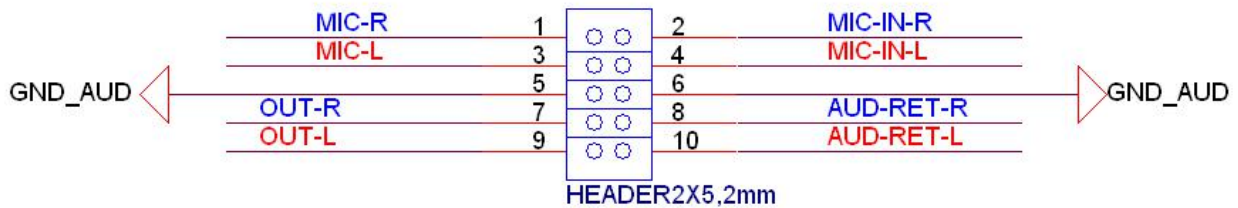
10/100/1000 M LAN is standard RJ45 port,chipset is Realtek RTL8111E.

2.6 MIC_IN、LINE_OUT and AUDIO1

MIC_IN is Microphone input port,adopt general connector.

LINE_OUT is audio output port,adopt general connector.

F_AUDIO is 2 × 5,2mm expansion header,definition as below:

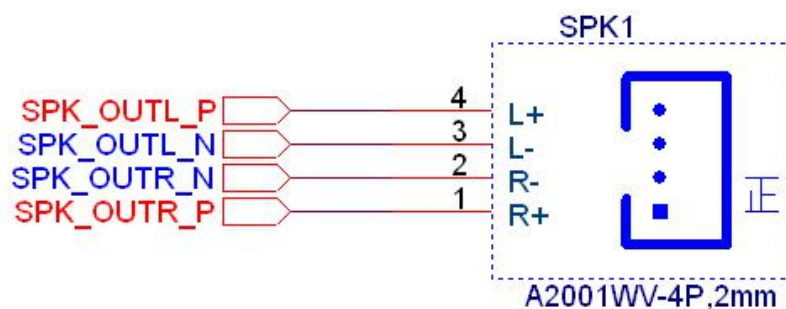


(1: If AUDIO1 have not connect with the AUDIO Cable in the front panel,have to catch Jumper 1-2、 3-4、 7-8、 9-10.

(2: 1、 3、 5、 7、 9 pins are the output signal for front panel;2、 4、 6、 8、 10 pins are return signal.

2.7 Audio power amplifier output interface SPK1 (optional)

Dual channel power amplifier,support 6W/8Ω horn for each channel.Definition as below:



Attention: The front panel AUDIO1 has priority.MIC_IN、LINE_OUT can not work,if the front panel AUDIO1 connected.The SPK1 can not output,if the LINE_OUT connected.

2.8 SPDIF (optional)

Adopt 1×3,2.54mm expansion header,interface optional.

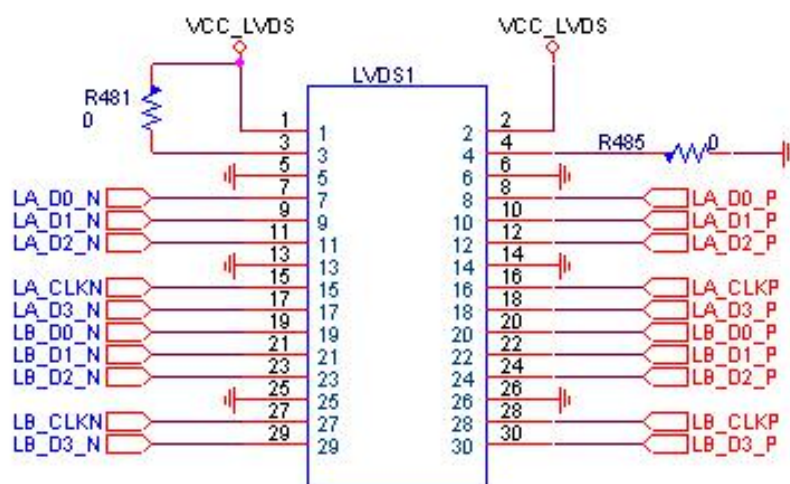
Pin1----5V;

Pin2----SPDIF;

Pin3----GND。

2.9 LVDS1

24bit dual CH LVDS interface,adopt 2×15,2mm pin header,definition as below:



VCC_LVDS is the power for screen,default setting is 3.3V,choose through the capacitor.

Capacitor Selection	VCC_LVDS voltage
R243	3.3V (default setting)
R244	5V
R215	12V

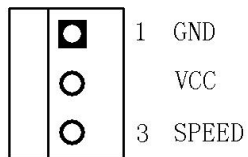
2.10 LVDS_P1

LVDS screen back light interface,adopt CJT A2001WR-6P-1connector or other compatible connector.Definition as below:

LVDS_P	LVDS_P definition
1	Ground
2	Ground
3	Back light luminance control
4	Back light-ON
5	12V
6	12V

2.11 CPU_FAN1、SYS_FAN1

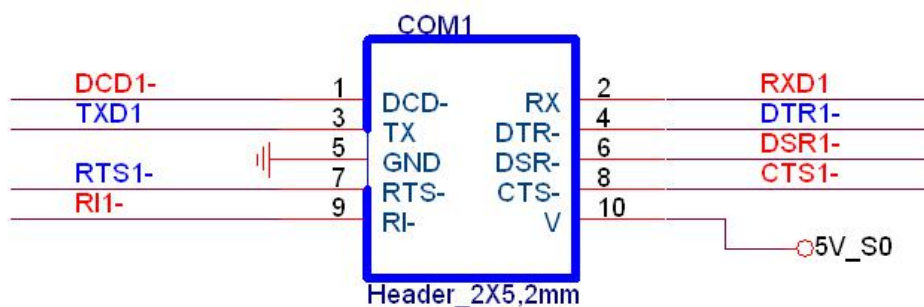
FAN interface support maximum current 0.3A,definition as below:



CPU fan connector,rotational speed adjust automatically.The maximum voltage is the power input voltage.Please choose a suitable fan,when the input voltage is higher.SYS fan does not support adjust automatically.

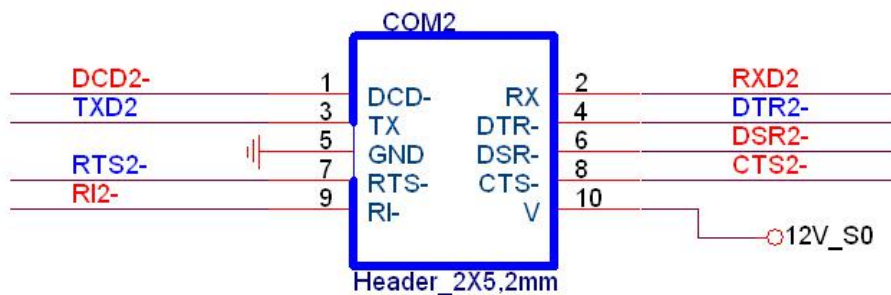
2.12 COM1、COM4、COM5

RSR232 pin header,adopt $2 \times 5,2\text{mm}$ pin, Pin10 is for power 5V.



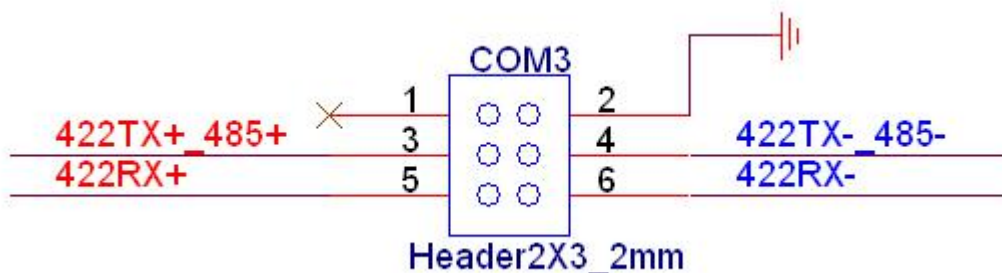
2.13 COM2、COM6

RSR232 pin header,adopt $2 \times 5,2\text{mm}$ pin, Pin10 is for power 12V.



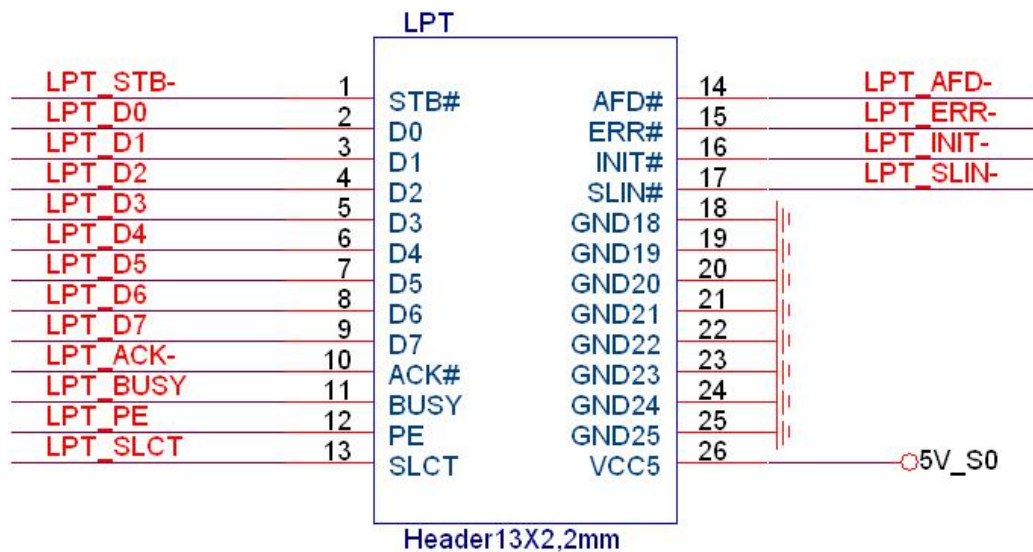
2.14 COM3

RS485/R422 can use the same interface,adopt $2 \times 3,2\text{mm}$ pin header,must comply with the setting and type of COM3 in CMOS.Definition as below:



2.15 Parallel Port LPT

Adopt 13×2,2mm pin header.Definition as below:

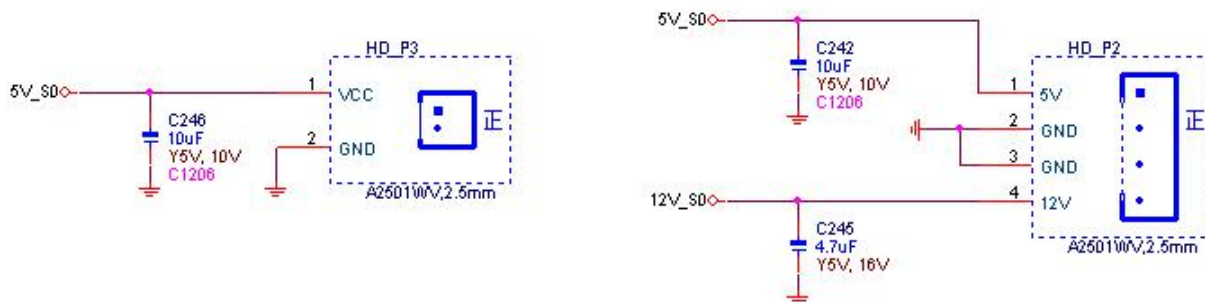


2.16 SATA1、SATA2

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

2.17 HD_P1、HD_P2

2*SATA power interface,adopt CJT A2501WV-4P,A2501WV-2P device or other compatible devices,definition as below:



HD_P2 with 2 more pin than HD_P1,bring in 12V power for the hard disk of commercial computer.The 12V is coming from DC power.If there is a big voltage deviation with the DC power,please do not choose a hard disk with voltage 12V/5V.

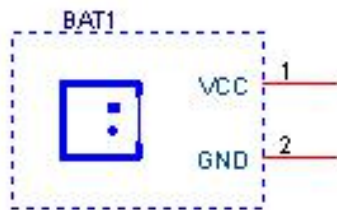
2.18 RTC1 和 SRTC1

RTC1、SRTC1 is main/sub RTC clear jumper line,adopt 1×2,2mm pin,definition as below:

RTC1	Function introduction
Close	Clear RTC CMOS
Open	default setting

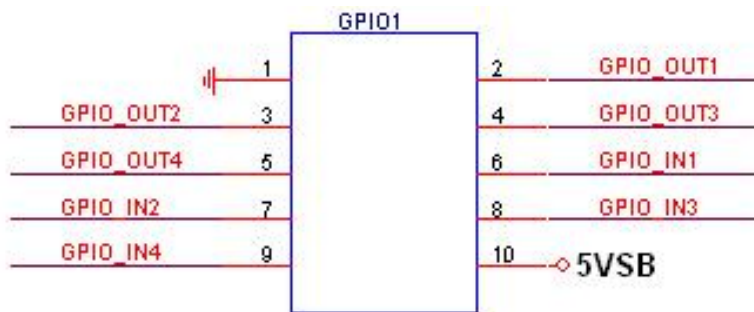
2.19 BAT1

Battery interface,for battery changing.Adopt CJT A1251WV-2P connector or other compatible connector.



2.20 GPIO1

Spare GPIO interface,adopt $2 \times 5,2\text{mm}$ pin,definition as below:

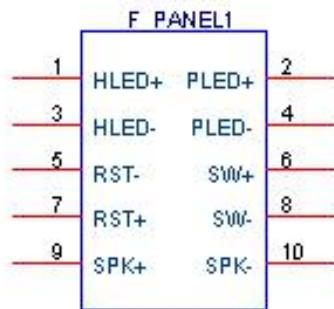


The I/O features of GPIO can be amend through BIOS.

Mainboard Interface Description

2.21 FP1

Control panel interfaces, adopt $2 \times 5, 2\text{mm}$ pin, integrated HDD_LED、PWR_LED、on/off、reset switch、SPEAKER function. Pin definition as below:



F_PANEL1	Pin Definition
1, 3	Hard disk access lamp positive and negative signal pins.
2, 4	Main power indicator light positive and negative signal pins.
5, 7	Mainboard reset positive and negative signal pins.
6, 8	Mainboard on/off positive and negative signal pins.
9, 10	Spare buzzer connector.

2.22 JP1

AT starting mode jumper line. When you choose “Close”, the DC power plug, then the board electrifies at the same time.

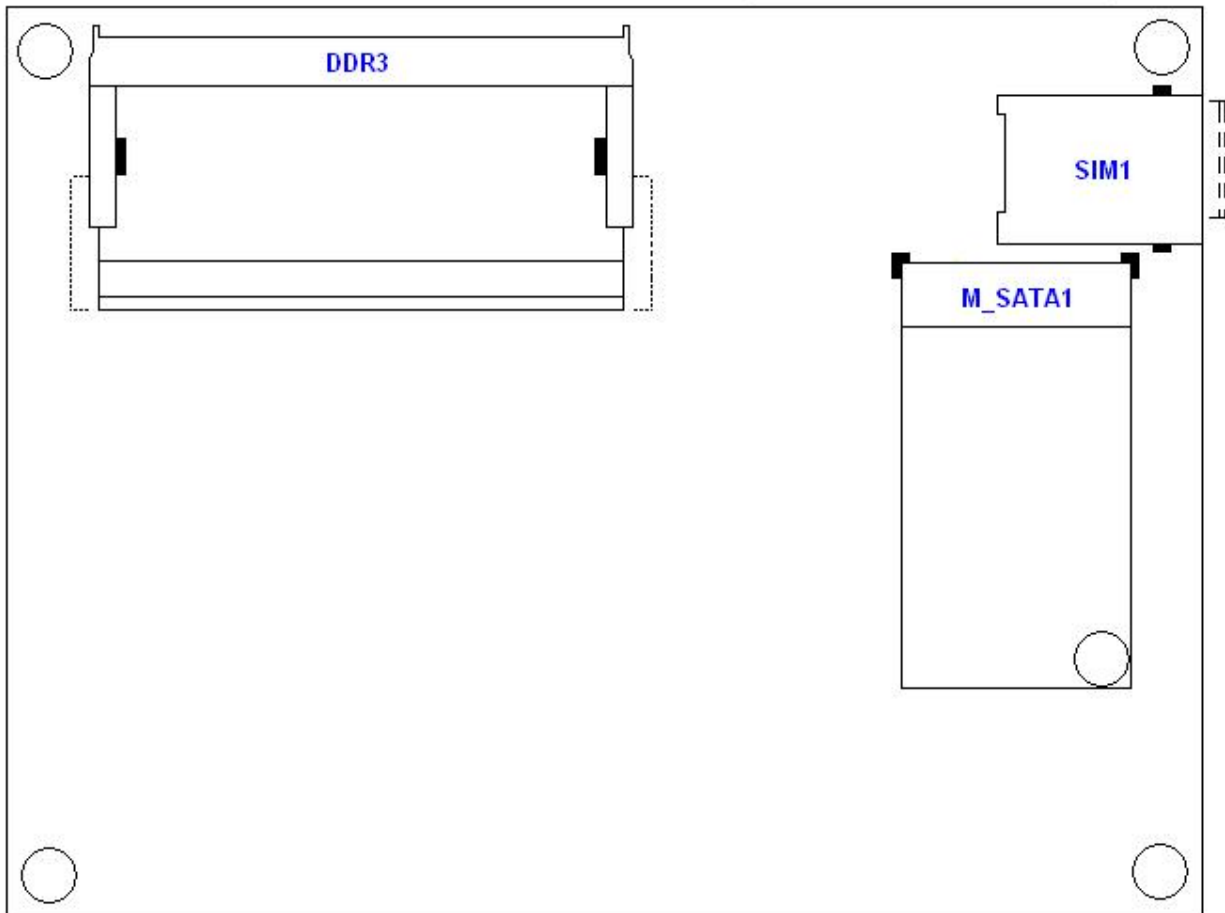
PS_ON	Starting Mode Selection
Close	AT power starting mode
Open	ATX power starting mode

2.23 MPCIE1

MPCIE1 is standard Mini-PCIE socket, suit for full-size card. The half-size card Mini-PCIE card, must be fixed with an extended card.

3 Rear Side Interface Layout

Mainboard rear side layout as below:



3.1 DDR3

Standard DDR3 memory socket,maximum up to 8GB DDR3(800/1066/1333MHz).

3.2 M_SATA

Support Mini-SATA SSD.This motherboard support most of the large company's Mini-SATA card.For detailed informations.please contact with our salesman and technician.

3.2 SIM1

MPCIE1 affiliated SIM card slot.