

TOP37B Motherboard

(PCB Rev:1.00)

Manual Version 1.00

2018.02.28

1 Introduction

TOP37B is a low power consumption Mini-ITX industrial motherboard , With Braswell series processors, the main features are as follows.

1.1 Main Feature

- 1.1.1 Onboard CPU,support Braswell processors.
- 1.1.2 Onboard 2/4GB DDR3L 1066/1333/1600Mhz RAM (optional)
- 1.1.3 1 个 DDR3 SODIMM 204 Socket , Max support 8GB DDR3L RAM , 1066/1333/1600MHz
- 1.1.4 Onboard 2 个 RTL8111E 1000M LAN (When the I/O interface is 4 USB, the network card only can use one) 。
- 1.1.5 Onboard HDA ALC662, Support LINE-OUT and Onboard Dual channel power amplifier, support 3-Pin SPDIF。
- 1.1.6 Onboard Dual channel power amplifier,6W/8 Ω speakers supported per channel (optional)
- 1.1.7 1* Mini-PCIE socket
- 1.1.8 1* Mini-SATA socket
- 1.1.9 1*NGFF socket
- 1.1.9 1*SATA 3.0 Hard disk socket
- 1.1.10 5*USB 2.0 socket(When 2 LAN, All five are platoon needles, When 1 LAN, 4 for row needles, 2 for I/O socket)
- 1.1.11 2 个 USB3.0 socket
- 1.1.12 2 个 RS422/RS485 and 4 个 RS232 (Optional 6*RS232, Choose one)
- 1.1.13 Support HDMI export
- 1.1.14 Support RGB CRT export
- 1.1.15 dual channel 24bit LVDS or EDP export (Choose one)
- 1.1.16 2*3-Pin FAN socket
- 1.1.17 Support 8* GPIO, For users to choose from
- 1.1.18 Support 255 sec watchdog

1.2 Power Supply

Input DC power connector,DC_12V (If you don't use 12V to power your hard drive,, +/-10%)

Support AT/ATX power supply

1.3 Size

170*170mm

1.4 Working Environment

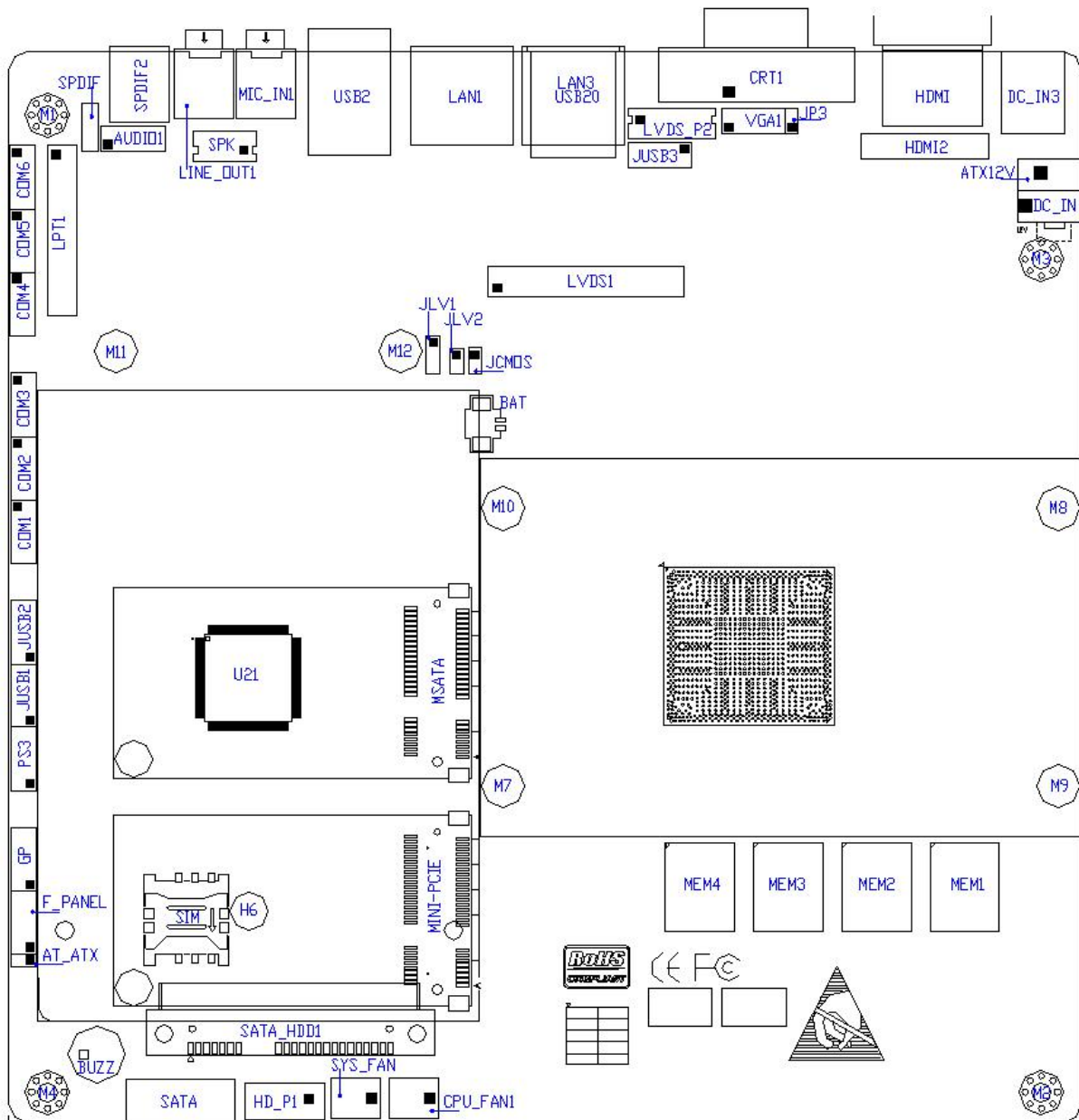
Working Temp:--20°C~70°C (-4°F~158°F)

Storage Temp:-20°C~80°C (-4°F~176°)

Operating Humidity: 10%~90% (non-condensing)

2 TOP37B-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_IN 和 DC_IN3

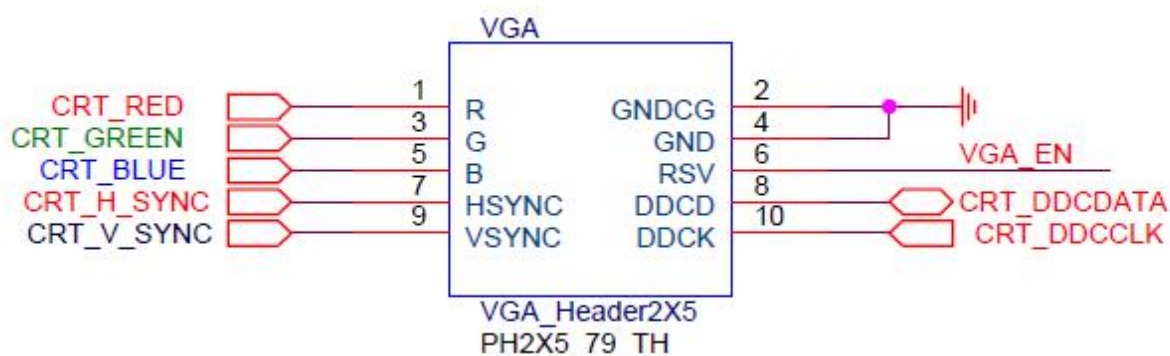
Motherboard input power connectors, Production can only choose one interface, customer connections as needed.

DC_IN3 for DC-JACK connector , DC _IN is DT-126RP-02P Terminal Blocks interface. Please pay more attention to the Positive/Negative pole of the power.
(please input the power, after devices, cables all installed.)

2.2 CRT1 和 VGA1

CRT1 is a standard CRT Display output interface.

VGA1 is 2x5、2mm Pin interface, Both can not be used at the same time.



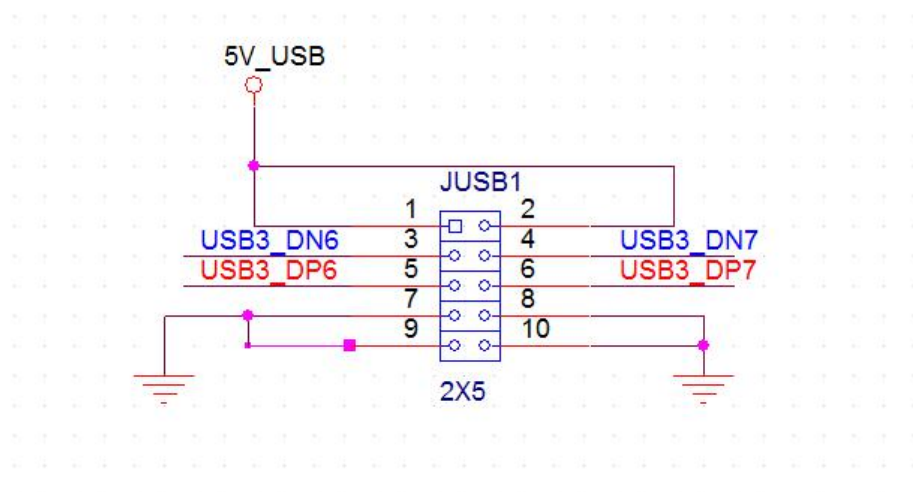
2.3 HDMI1

HDMI1 is a standard HDMI output interface.

2.4 USB2、JUSB1、JUSB2、JUSB3

Both USB interface, support USB 1.0/1.1/2.0 /3.0 equipment

USB2 is standard USB Type A interface, is USB3.0 interface; JUSB1、JUSB2、JUSB3 is 2x5、2mm Pin interface, The definitions are as follows:



2.5 LAN1 and LAN2 (1 network card when I/O interface is 4 USB)

10/100/1000 M LAN standard RJ45 interface, Master chips are RTL8111E

Mainboard Interface Description

2.6 MIC_IN、LINE_OUT 和 AUDIO1

MIC_IN is MICPHONE Input interface, Adopt universal connector.

LINE_OUT is Audio output interface, using universal connector.

2.7 SPDIF (option)

use 1x3、2.54mm Row needle, Optional interface。

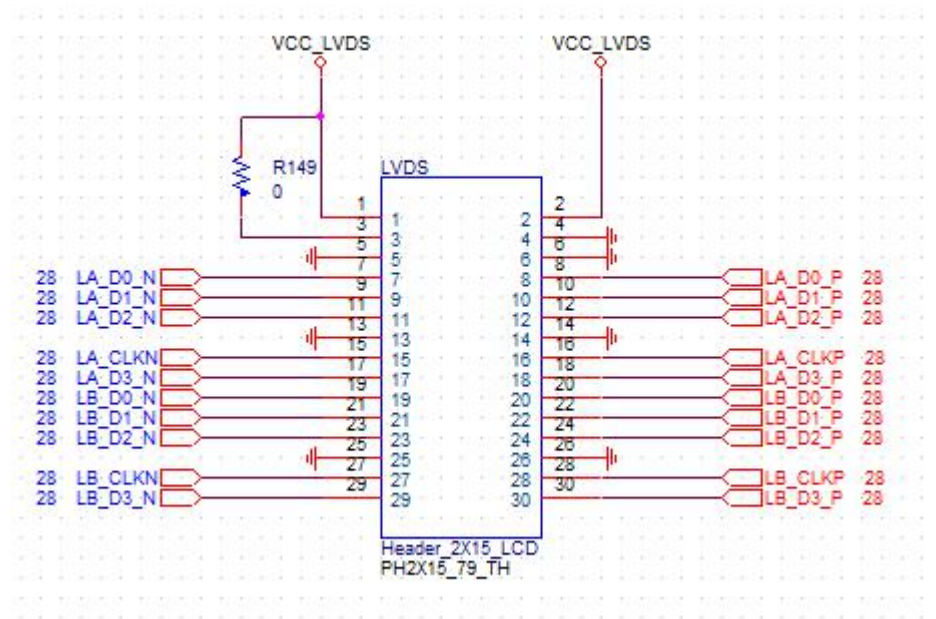
Pin1----5V;

Pin2----SPDIF;

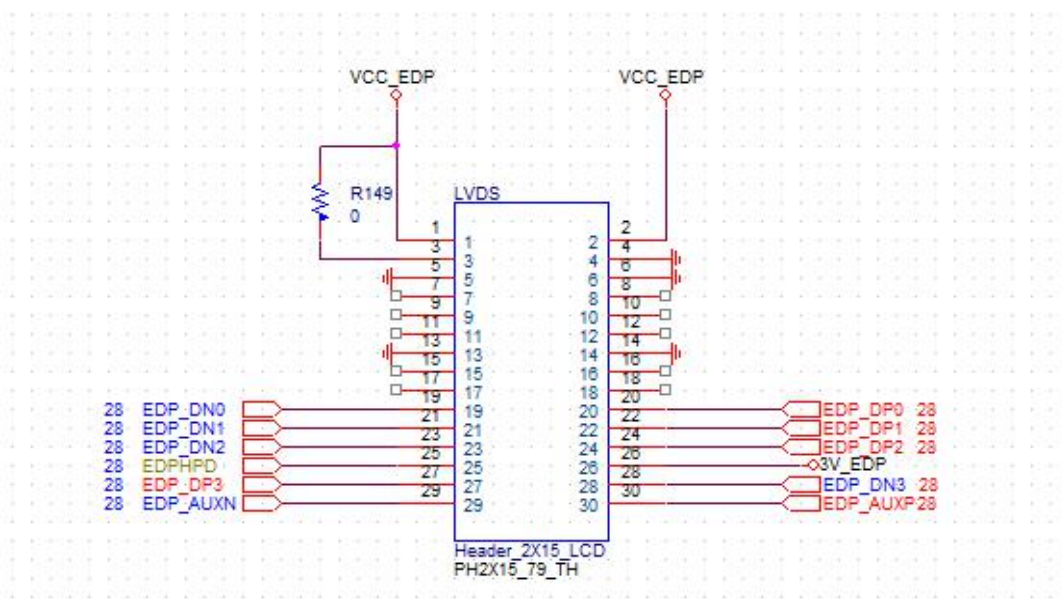
Pin3----GND。

2.8 LVDS and EDP (choose one)

dual channel 24bit LVDS Screen interface, use 2x15、2mm Pin interface, The definitions are as follows



EDP The definitions are as follows:



2.9 JLV1 and JLV2

LVDS and EDP Power supply VCC Power selection.

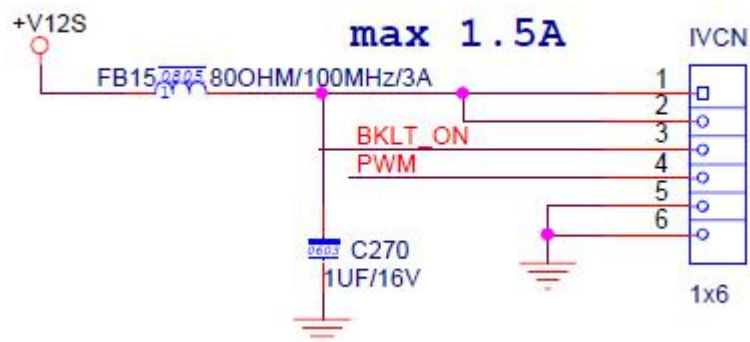
selective mode	VCC_LVDS voltage
JLV1(1-2)、JLV2 (Open)	3.3V(default settings)
JLV1(2-3)、JLV2 (Open)	5V
JLV1(Open)、JLV2 (Close)	12V

2.10 U18

U17 memory LVDS Screen resolution parameters

2.11 LVDS_P2

LVDS_P2 is LVDS Screen board interface based on , use CJT company A2001WR-6P-1Connectors or other compatible connectors, each pin is defined as follows.



LVDS_P2	LVDS_P2 Pin definition
1	Ground
2	Ground
3	Backlight brightness control
4	Backlight plate open
5	12V
6	12V

2.12 CPU_FAN1、SYS_FAN

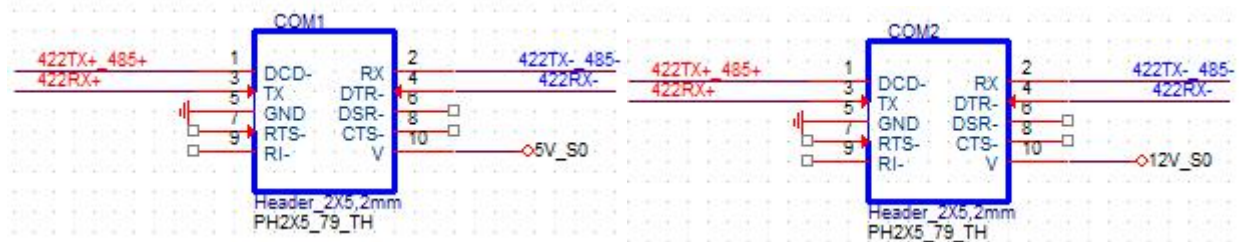
FAN The interface supports maximum current of 0.3 A, as defined below.

1	GND
2	VCC
3	SPEED

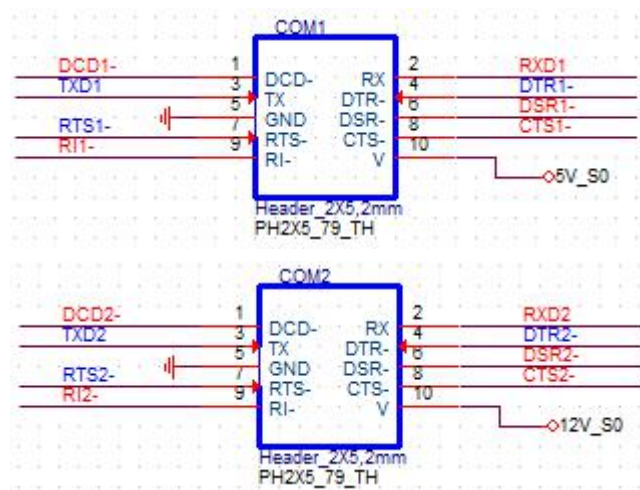
CPU The fan interface supports automatic speed regulation. The maximum voltage of fan is equal to the input power supply voltage. When the input power supply voltage is high, we should pay attention to selecting the right fan.SYS fan, which does not support the automatic speed regulation.

2.13 COM1、COM2(Choose one of two for RS232 or RS485/RS422)

Adopt needle arrangement interface, use 2x5、2mmRow needle, when COM1, COM2 is RS422/RS485 The definitions are as follows:

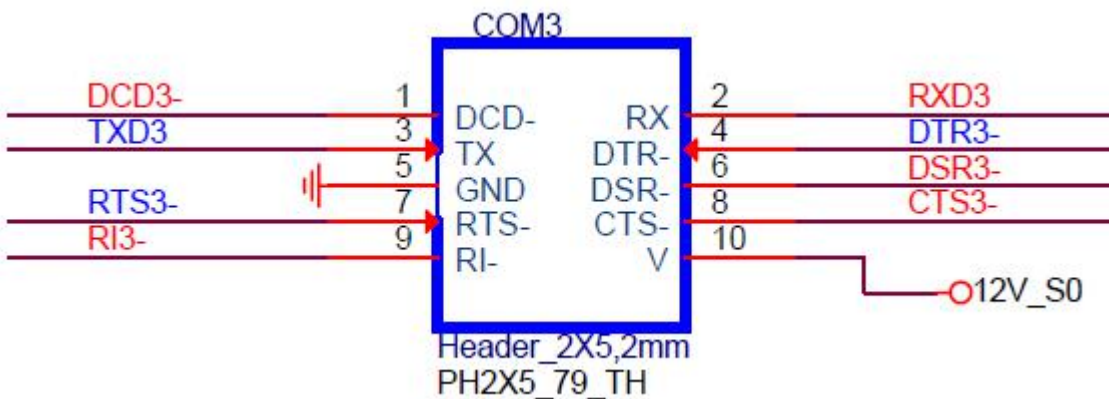


When COM1, COM2 is RS232 The definitions are as follows:



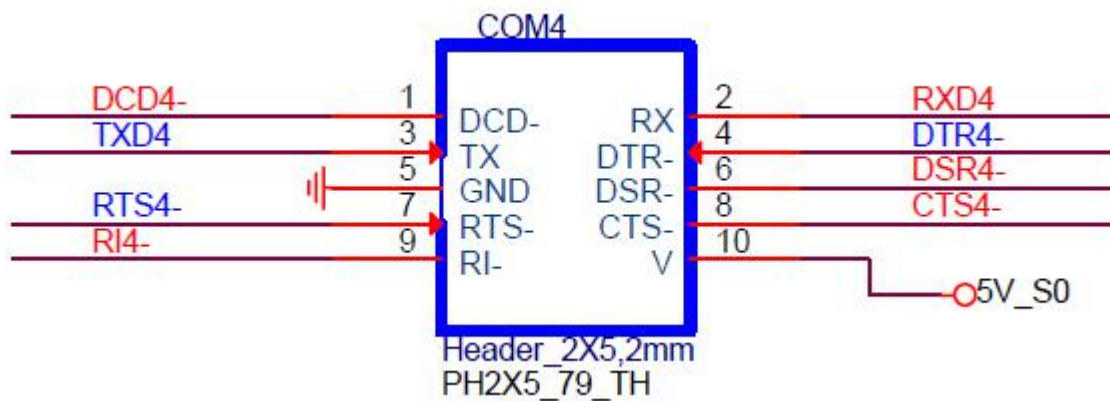
2.14 COM3、COM6

RSR232 Needle arrangement interface, use 2x5、2mm Row needle, Pin10 is 12V power source

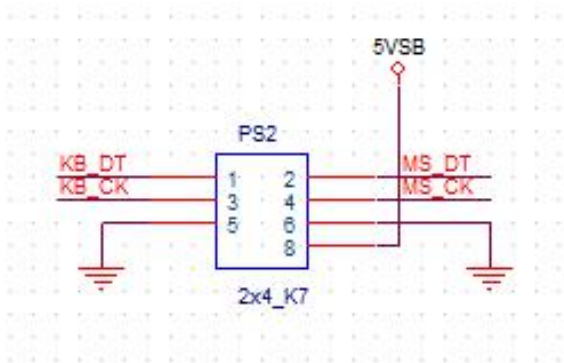


2.15 COM4、COM5

RSR232 Needle arrangement interface, use 2x5、2mmRow needle, Pin10 is 5V power source



2.16 PS2 interface is 2×5 2mm Row needle, The definitions are as follows:

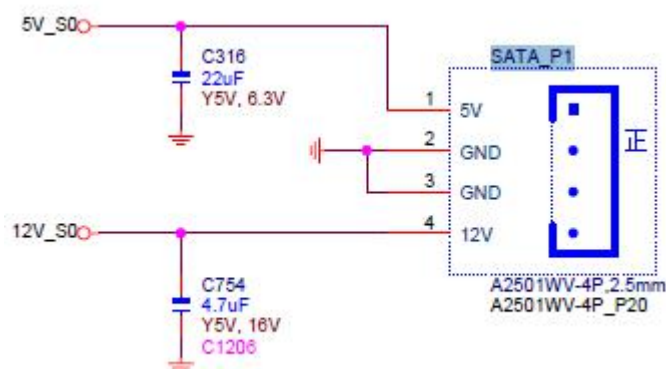


2.17 SATA

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

2.20 SATAPWR

1*SATA Equipment power interface, use CJT company A2501WV-2P Device or other compatible device. The definition is similar to the figure below.



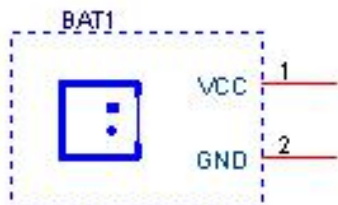
2.21 JCMOS

JCMOS is RTC Zero jumper, use 1x3、2mm Row needle。

JCMOS1	function declaration
1, 2	Noraml
2, 3	Clear RTC CMOS

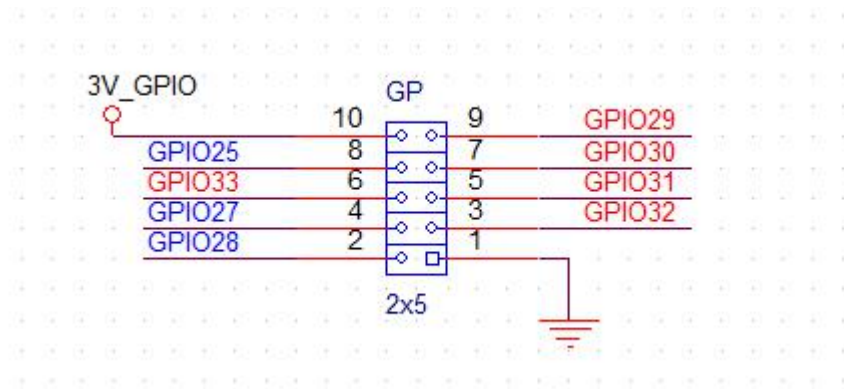
2.22 BAT

Battery interface, using CJT A1251WV-2P interface or other compatible interfaces.



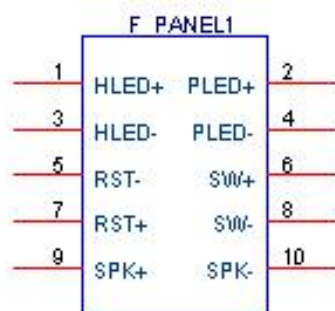
2.23 GP

Alternate GPIO interface, using 2x5t2mm pin arrangement, define the following. GPIO input and output characteristics can be modified by BIOS. GPIO address entry please contact FAE.



2.24 F_PANEL

Control panel interface, 2x5mm needle arrangement, onboard HDD_LED、PWR_LED、Switch on, reset switch on the SPEAKER function. The pin is defined as follows.



F_PANEL1	Pin definition
1, 3	Hard disk read and write indicator, negative signal pin.
2, 4	Main power indicator lamp positive, negative signal pin.
5, 7	Main board reset signal positive, negative signal pin.
6, 8	Main board switch machine signal positive, negative signal pin.
9, 10	Standby buzzer interface.

2.25 AT_ATX

When Close is selected, DC power supply is turned on and the main board is powered on.

AT_ATX1	Boot mode selection
1, 2	Power on automatic boot mode
2, 3	ATX boot mode

2.26 MINI-PCIE

MPCIE is standard Mini-PCIE card holder, can plug full length card. Half-length card Mini-PCIE card, must be attached to the extended card fixed.

2.27 DDR3

Standard DDR3 memory socket, maximum support for 4GB DDR3L (1366/1066MHz).

2.28 SIM

MINI-PCIE subsidiary SIM card holder.

3.1 M_SATA

Support Mini-SATA memory card, due to industry standards are unclear, this board supports some large companies defined by the MINI-SATA card, specific models please consult the company business and technical support personnel.