

# **BT193C motherboard**

**(PCB Rev:1.00)**

**Manual Version 1.00**

**2017.10.19**

## 1 简介

BT193C mainboard is a Standard 3.5" low power consumption industrial motherboard. Adopt Intel Atom Baytrail-D/I/M processor . The feature as follows:

### 1.1 Main Feature

- 1.1.1 onboard CPU, support Baytrail-I/D/M Processor
- 1.1.2 onbaord 2/4/8GB DDR3L 1066/1333 memory (optional) .
- 1.1.3 Onboard 2\* Gigabit Ethernet LAN(Optional rear 4 USB, one network card)。
- 1.1.4 Onboard HDA ALC662 with 3.5mm aperture for Phonejack support MIC/LINE-OUT , 1 SPDIF digital audio output interface.
- 1.1.5 2\*Mini-PCIE socket (One of them is a half card) 。
- 1.1.6 1\*Mini-SATA socket.
- 1.1.7 1\* SATA 2.0 port.
- 1.1.8 7\*USB 2.0 port, Four of them are pin headers (6 are pin headers when they are dual lan).
- 1.1.9 1\*USB3.0 port.
- 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 Supports dual 24-bit LVDS output and EDP output (only one of two).
- 1.1.14 2\*3-Pin FAN connector.
- 1.1.15 Provide 8 GPIOs for users to choose.
- 1.1.16 support 225 level watchdog.
- 1.1.17 Support Touch Screen (4wire 5wire 8wire).
- 1.1.18 1\*switch button with indicator light.
- 1.1.19 1\*reset button.
- 1.1.20 1\*hard disk indicator, 1\*power indicator.

### 1.2 Power Supply

Single input DC power supply 12V power supply, +/- 5% (if 12V is not used to power the hard disk, +/-10%).

Support AT/ATX power on mode selection.

### 1.3 Size

146\*102mm

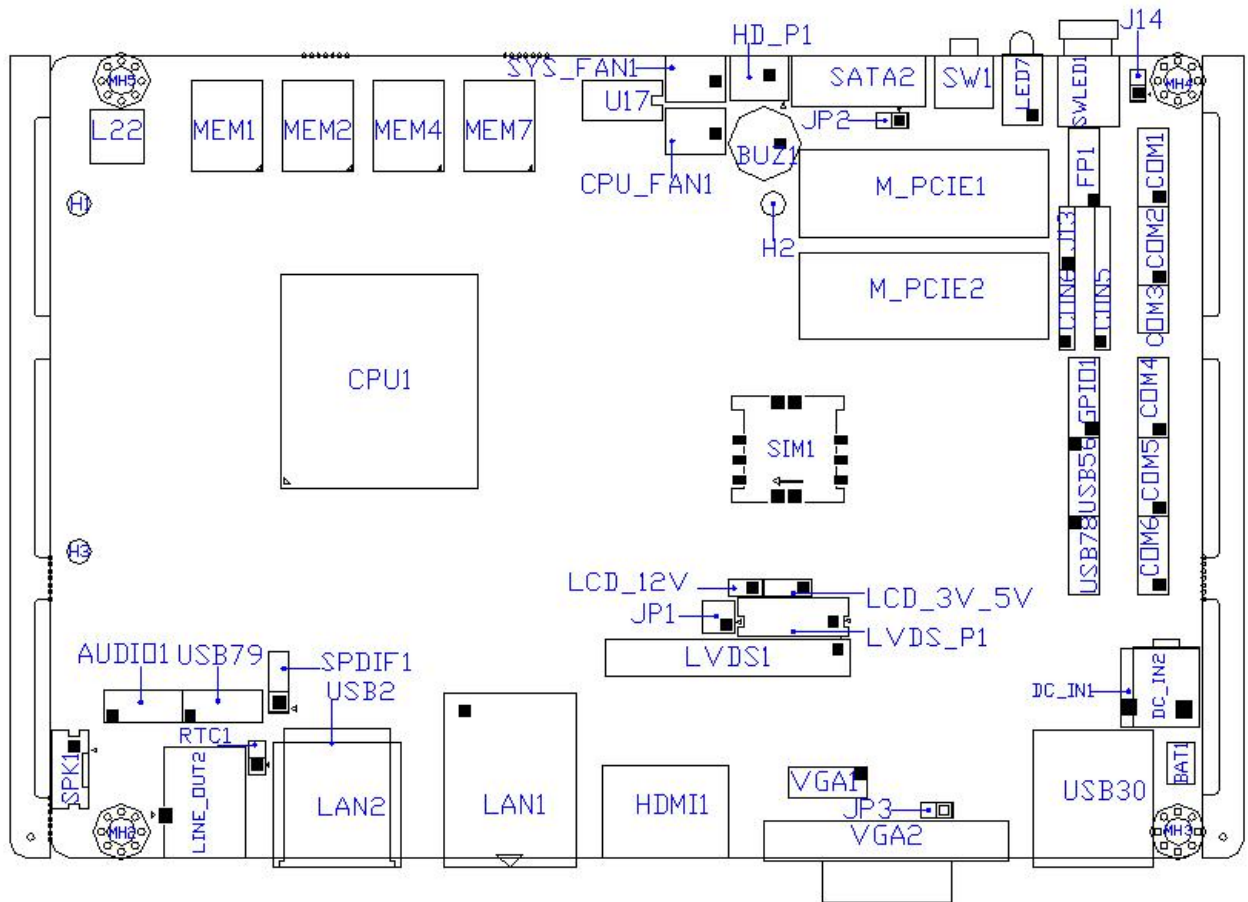
### 1.4 Working Environment

Working Temp: -20°C ~ +60°C

Storage Temp: -40°C ~ +85°C

## 2 BT193C Front side interfaces layout

TOP floor layout as below:



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

## 2.1 DC\_IN1 and DC\_IN2

The same as the motherboard input power interface, only one interface can be selected during production, customers on demand.

DC\_IN1 is the standard DC-JACK port, and DC\_IN2 is the DT-126RP-02P type Terminal Blocks interface. Pay special attention to the positive and negative poles of the power supply.

Note: When assembling, testing, and using, the equipment and cables must be installed before they can be powered on.

VGA2 is the standard CRT monitor output connector.

VGA1 is a 2x5, 2mm pin header interface, and the two cannot be connected at the same time



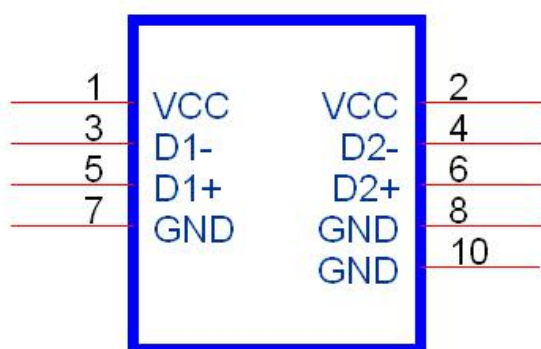
## 2.3 HDMI1

Standard HDMI output interface.

## 2.4 USB30,USB56、USB78 、USB79

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

USB30 is standard USB Type A interface; the lower layer is USB3.0 Interface. USB56 、USB78 、USB79 is 2x5,2mm expansion header,definition as below:



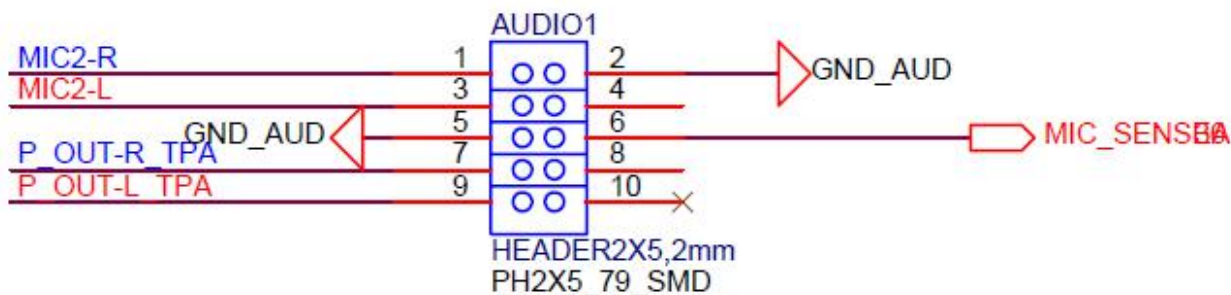
## 2.5 LAN1 and LAN2

10/100/1000 M LAN is standard RJ45 port,chipset is Intel I211AT(LAN2can choose)

## 2.6 LINE\_OUT2 and AUDIO1

LINE\_OUT is audio output port, adopt general connector.

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



## 2.7 SPDIF(option)

Adopt 1x3, 2.54mm pin, optional interfaces Optional

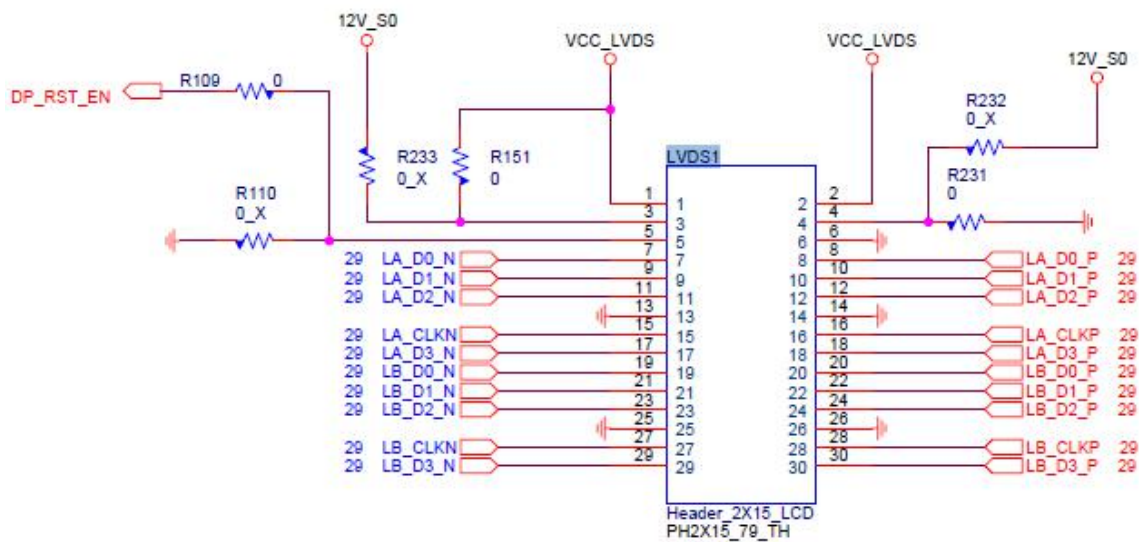
Pin1----5V;

Pin2----SPDIF;

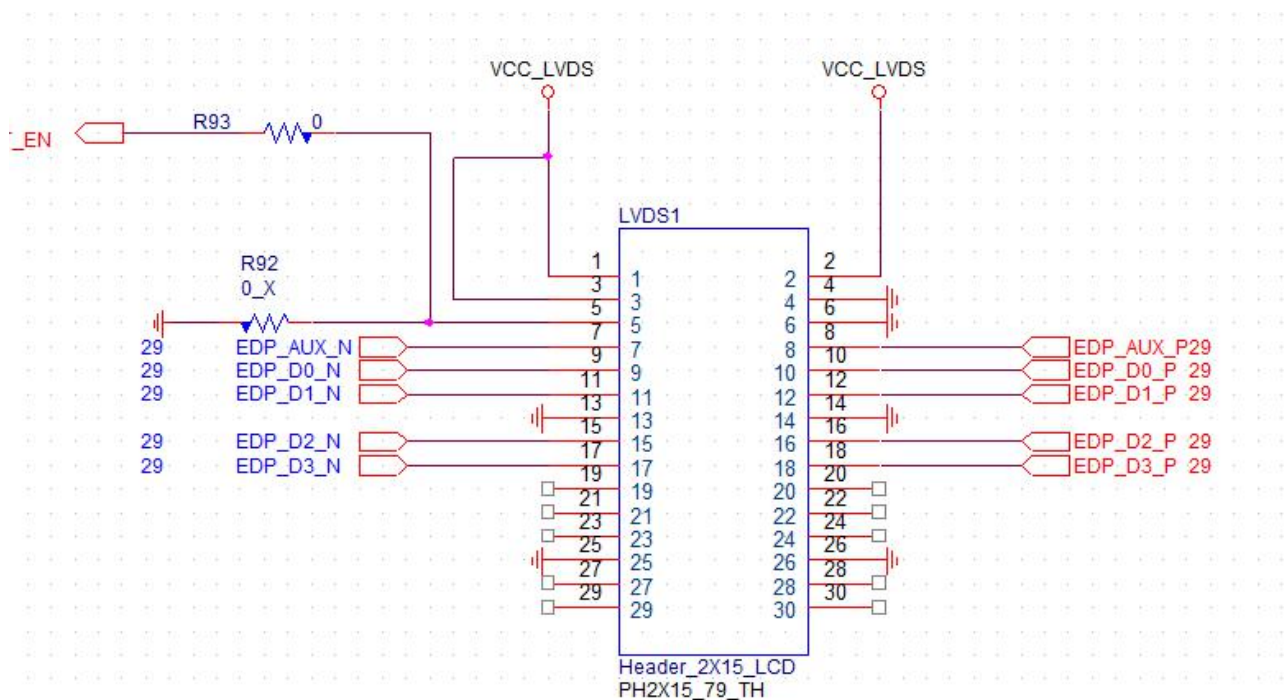
Pin3----GND。

## 2.8 LVDS1 and EDP (only one choice)

24-bit dual channel LVDS screen interface, using 2x15, 2mm pin header interface, as defined below.



The EDP is defined as follows:



## 2.9 LCD\_3V\_5V and LCD\_12V

LVDS1 Power VCC\_LVDS power optional 。

Choose way	VCC_LVDS Voltage
LCD_3V_5V(1-2)、LCD_12V (Open)	3.3V (default)
LCD_3V_5V(2-3)、LCD_12V (Open)	5V
LCD_3V_5V(Open)、LCD_12V (Close)	12V

## 2.10 JP1 and U17

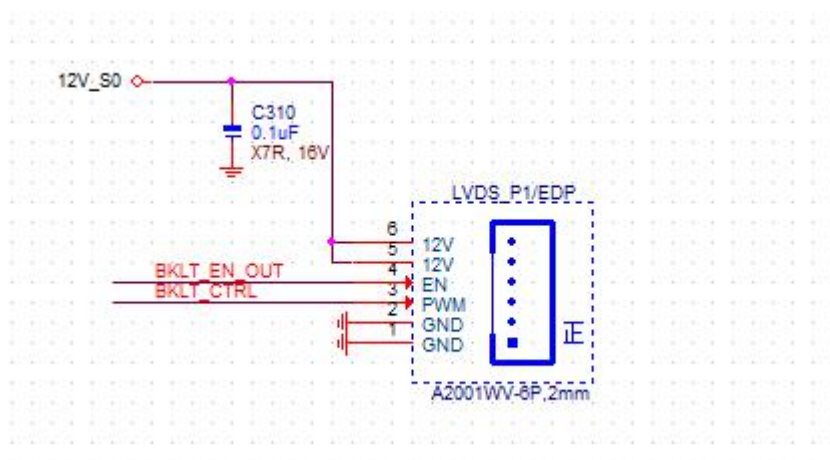
JP1 is used to set the number of channels and bit LVDS; U17 storage LVDS screen resolution parameters.

JP1 configuration parameter settings to be consistent with the U29.

JP1	Feature set
1-2	Close expressed support for single channel LVDS screen; Open expressed support for dual-channel screen 。
3-4	Close expressed support for the 24-screen panel; Open support for 18 screen panel

## 2.11 LVDS\_P1 and EDP

LVDS and EDP backlight screen interface, using CJT company A2001WR-6P-1 connectors or other compatible connectors, the pin is defined as follows



LVDS_P1	LVDS_PPIn Definitions
1	Ground
2	Ground
3	Backlight brightness control
4	Backlit panels open
5	12V
6	12V

## 2.12 CPU\_FAN1、SYS\_FAN1

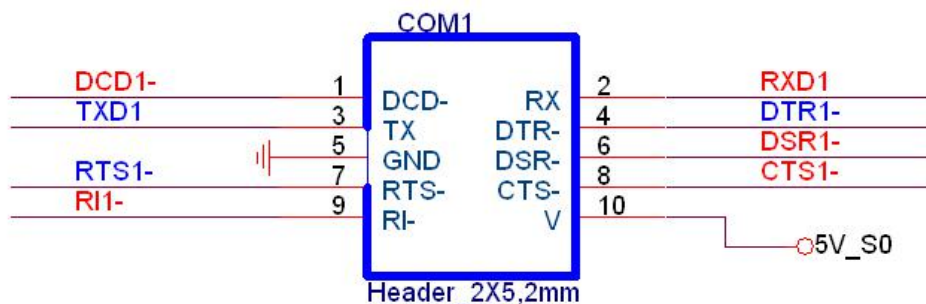
FAN interface support maximum current 0.3A,definition as below:

1	GND
2	VCC
3	SPEED

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.

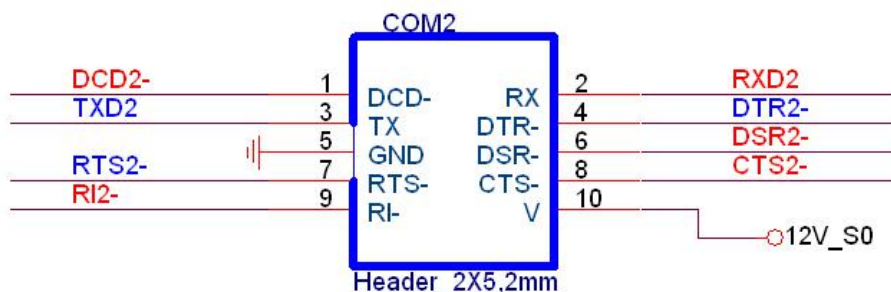
### 2.13 COM1、COM4、COM5

RSR232 pin header,adopt 2×5,2mm pin, Pin10 is for power 5V.



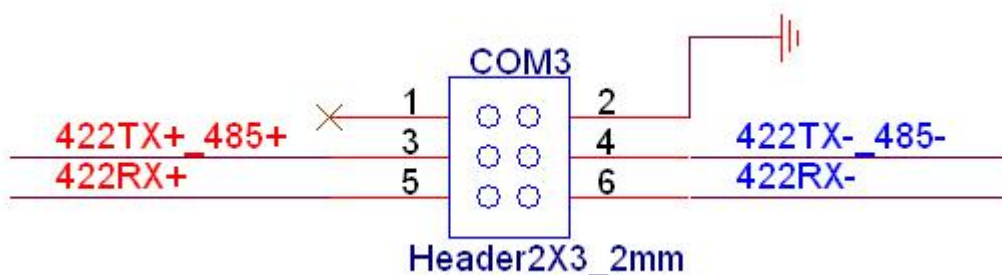
### 2.14 COM2、COM6

RSR232 pin header,adopt 2×5,2mm pin, Pin10 is for power 12V.



### 2.15 COM3

RS485/RS422 optional interface,adopt 2×3,2mm pin,The type of COM3 must be selected in accordance with the settings of COM3 in CMOS.definition as below:



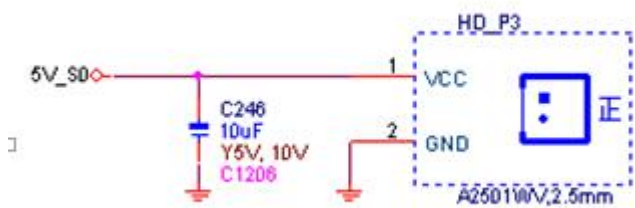
### 2.16 SATA1

Standard SATA device interface, supports SATA2.0 and below.

### 2.17 HD\_P1

One SATA device power connector with CJT A2501WV-2P device or other compatible device. The definition is similar to the following figure.





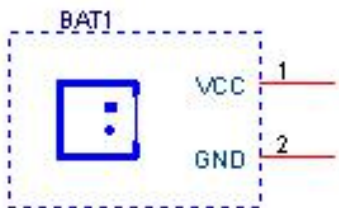
2.18 RTC1

RTC1 cleared the RTC jumper pin using 1x2,2mm。

RTC1	Function Description
Close	Clear RTC CMOS
Open	default

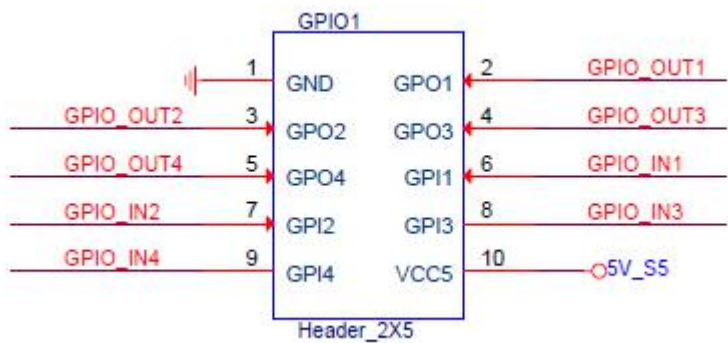
2.19 BAT1

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

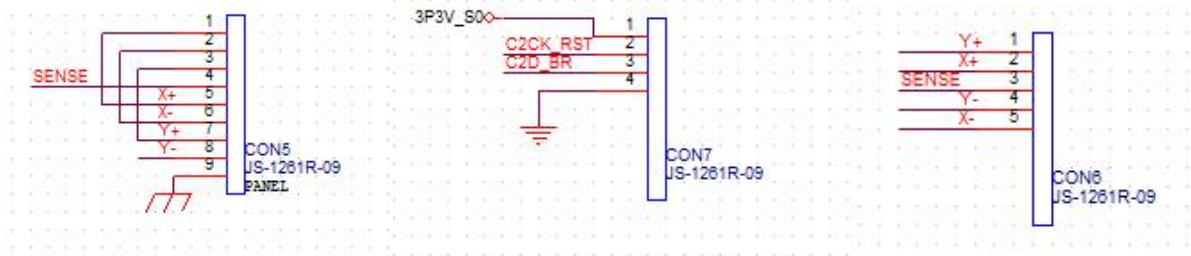


2.20 GPIO1

Spare GPIO interface,adopt 2×5,2mm pin,definition as below 。 The input and output characteristics of GPIO can be modified by the BIOS. Please contact the FAE for the GPIO address entry.

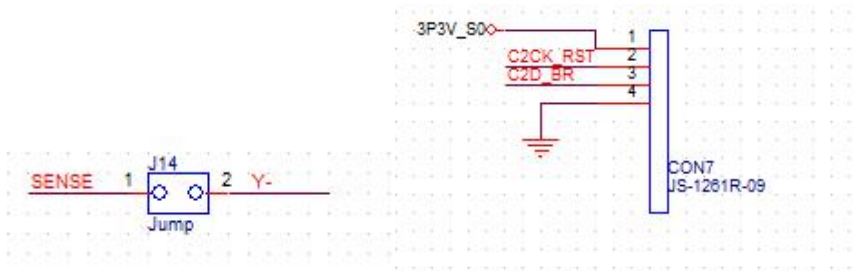


2.21 CON5 ,CON6,CON7



Touch screen interface definition			
	CON5	CON6	
	8-Wire	4-Wire	5-Wire
PIN1	Right sense	Right	LR (X)
PIN2	Left Sense	Left	LL (L)
PIN3	Bottom Sense	Bottom	Sense (S)
PIN4	TOP Sense	TOP	UR (H)
PIN5	Right Excite	GND	UL (Y)
PIN6	Left Excite	N/A	GND
PIN7	Bottom Excite	N/A	N/A
PIN8	Top Excite	N/A	N/A
PIN9	GND	N/A	N/A

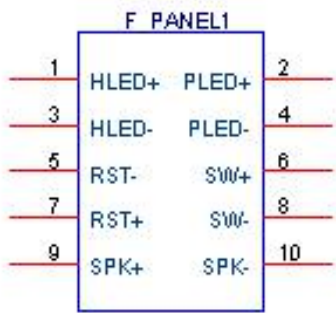
2.22 J13, CON7



CON7 can be connected to write touch screen chip data equipment

2.23 FP1

Mainboard control interfaces, adopt 2×5, 2mm pin, integrated HDD\_LED、PWR\_LED、on/off、reset switch、SPEAKER function. Pin definition as below:



F_PANEL1	Pin Definition
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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.

## 2.24 JP2

The AT power-on mode selects the jumper. When Close is selected, the DC power is turned on and the motherboard is powered.

PS_ON	Boot mode selection
Close	AT power on mode
Open	ATX power on mode

## 2.25 MPCIE1

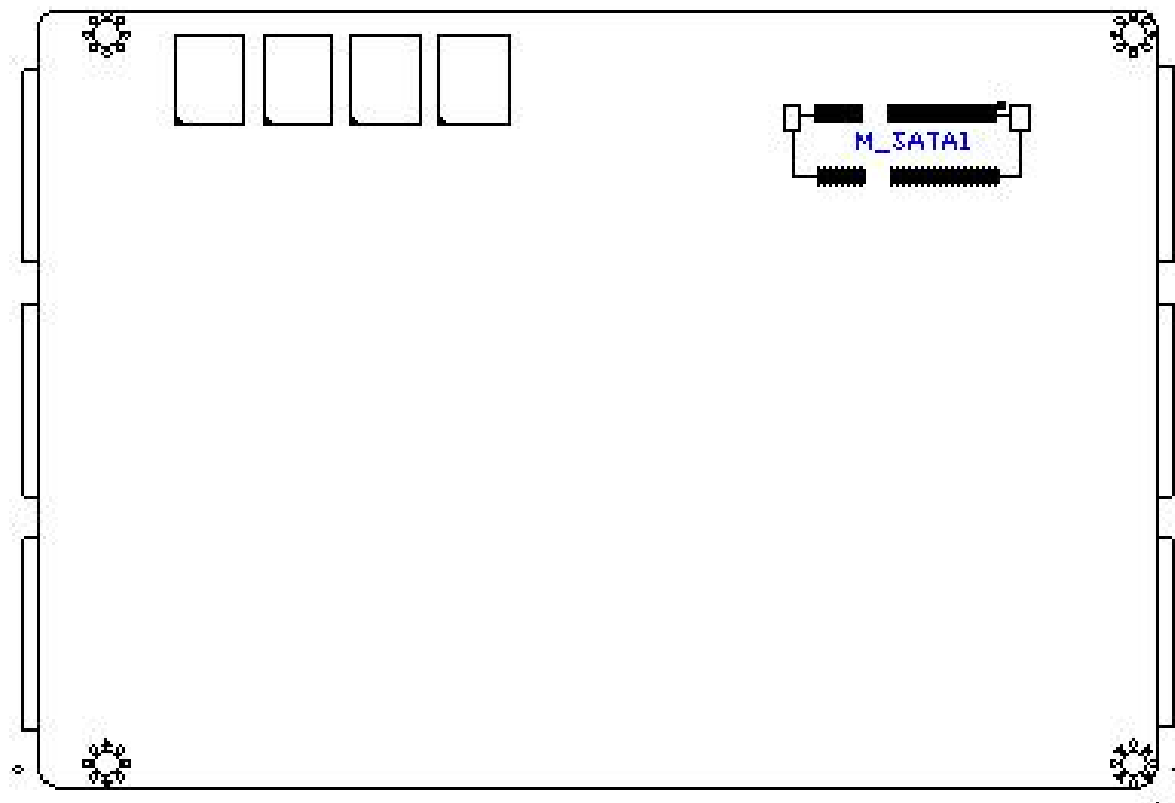
The MPCIE1 is a standard Mini-PCIE deck that accepts full-length cards. The half-length card Mini-PCIE card must be attached to the extension card.

## 2.26 SIM1

MPCIE1 affiliated SIM card holder.

# 3 Rear Side Interface Layout

Mainboard rear side layout as below:



### 3.1 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.