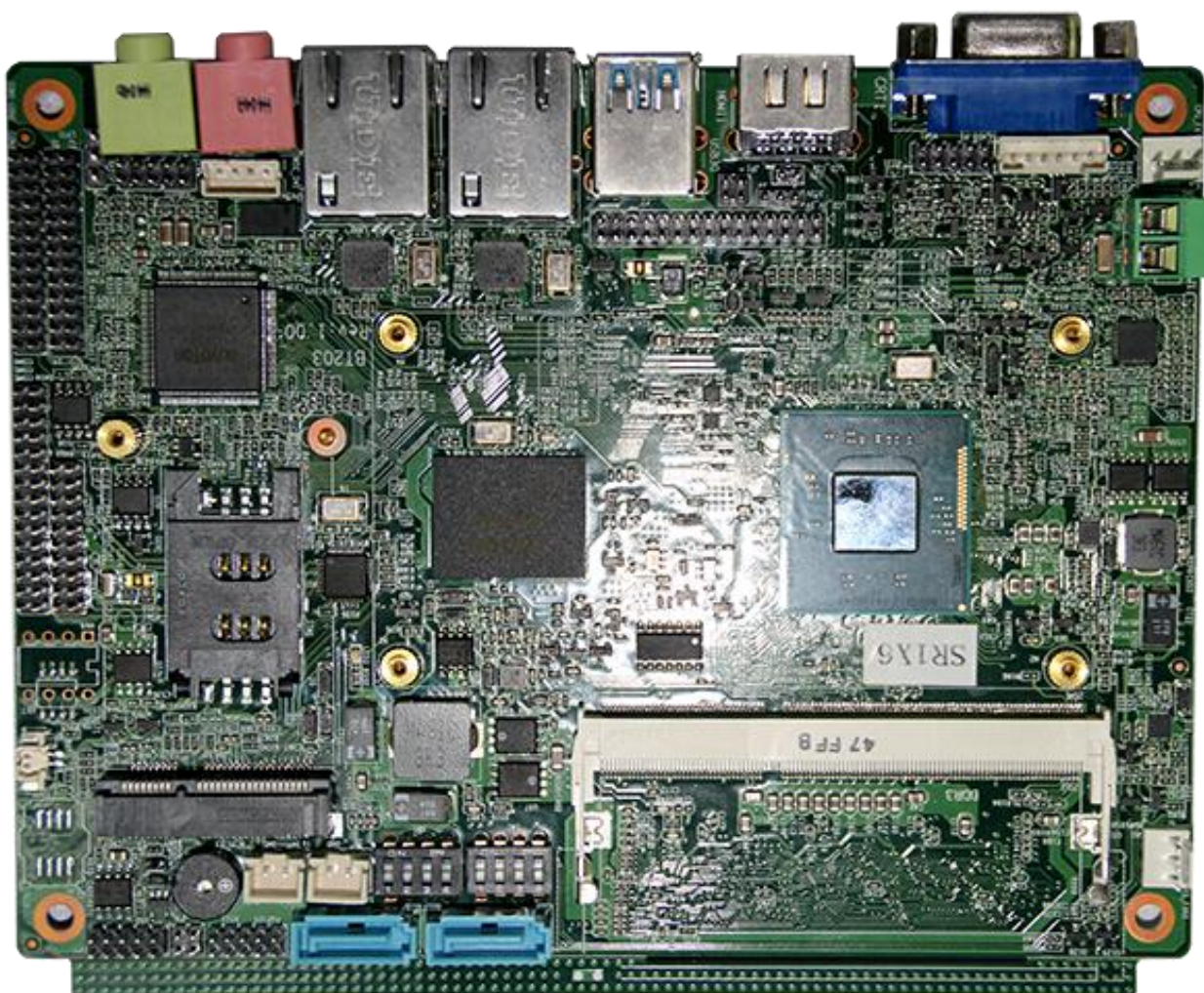# BT203 Mainboard

（PCB Rev:2.00）

Manual Version 2.00

2015.06.03

1   Introduction

BT203 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 Intel AtomN2806 /J1800/N2900/J1900 Processor .

1.1.2 Onboard 2GB DDR3L memory;DDR3L onboard   4GB DDR3L memory(optional).

1.1.3   Onboard 2* Gigabit Ethernet LAN。

1.1.4   Onboard HDA ALC662,provide MIC-IN/LINE-OUT and expansion header.

1.1.5   1*Mini-PCIE socket。

1.1.6   1*Mini-SATA socket。

1.1.7   2*SATA 2.0 port。

1.1.8   5*USB 2.0 port。

1.1.9   Provide 5*RS232 expansion header,1*RS485 /RS422 expansion header.

1.1.10   Provide 8*GPIO

1.1.11   Support RGB,CRT output。

1.1.12   Support dual ICH 24bit LVDS output.

1.1.13   support HDMI output 。

1.1.14   Support RGB CRT output。

1.1.15   2*3-Pin FAN connector 。

1.1.16   support 225 level watchdog。

1.2   Power Supply

Single input DC 12V（+/-5%）。

Support AT/ATX starting mode.

1.3   Size

154.8 x 117.4 mm

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 BT203   Front side interfaces layout
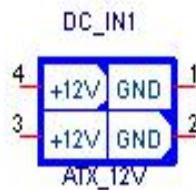
TOP floor layout as below: - 3 -

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

2.1 DC_IN1 & DC_IN2

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

When adoption of DC_IN2 is the input power, DC_IN1 available to supply the same power to other devices in the system.

DC_IN1 adopt ATX_12V interface,same definition.

DC _IN2 adopt DC-JACK interface，power in the center。

2.2 CRT1 & VGA1

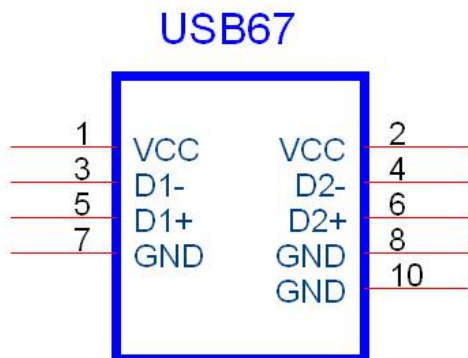CRT1 is a standard CRT monitor output interface。

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

2.3 USB30、USB56、USB78

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 is 2×5,2mm expansion header,definition as below:
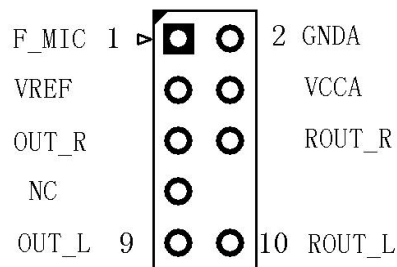
2.4 LAN1,LAN2

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

2.5 MIC_IN、LINE_OUT and F_AUDIO

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:

```
F_MIC  1 ▷ ■  O   2  GNDA
VREF        O  O      VCCA
OUT_R       O  O      ROUT_R
NC          O
OUT_L  9    O  O   10 ROUT_L
```

If F_AUDIO have not connect with the AUDIO Cable in the front panel，Pin5-6、Pin9-10 have to catch Jumper。Note 2: 5,9 pin is output to the front panel of the signal, the signal returned 6,10 feet.
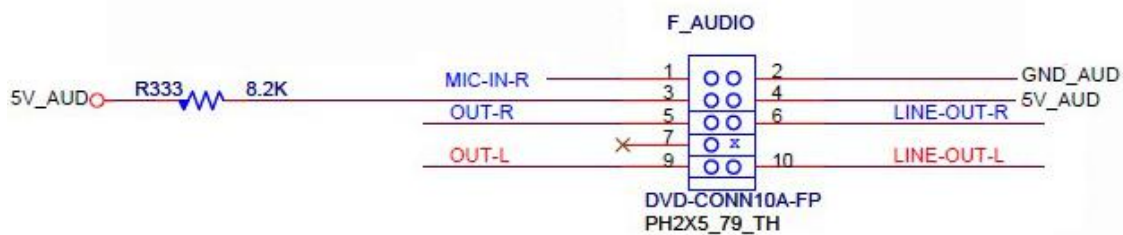
2.6 SPDIF(option)
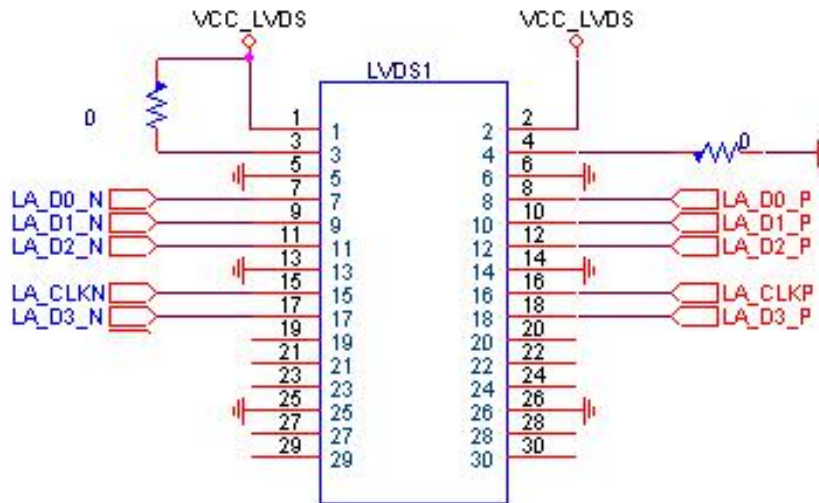
Adopt 1x3,2.54mm pin, optional interfaces Optional

Pin1 ---- 5V;

Pin2 ---- SPDIF;

Pin3 ---- GND

2.7 LVDS1

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

2.8 LCD_3V_5V 和 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

2.9 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

2.10 LVDS_P1

LVDS backlight screen interface, using CJT company A2001WR-6P-1 connectors or other compatible connectors, the pin is defined as follows
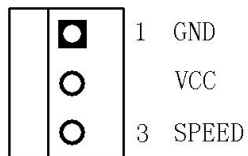
A2001WV-6P,2mm
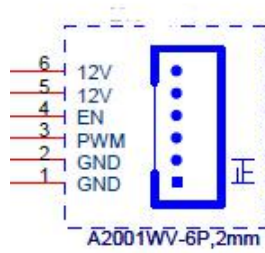
| LVDS_P1	LVDS_PPin Definitions
1	Ground
2	Ground
3	Backlight brightness control
4	Backlit panels open
5	12V
6	12V

2.11 CPU_FAN1、SYS_FAN1

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

1 GND

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.
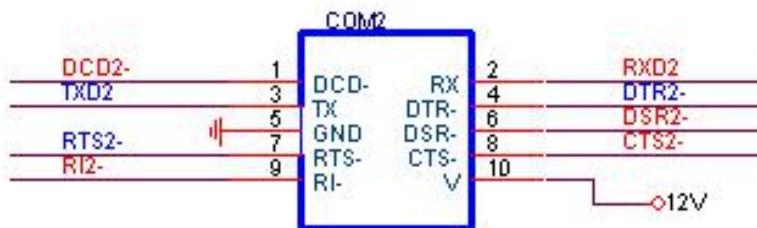
2.12 COM1、COM4、COM5

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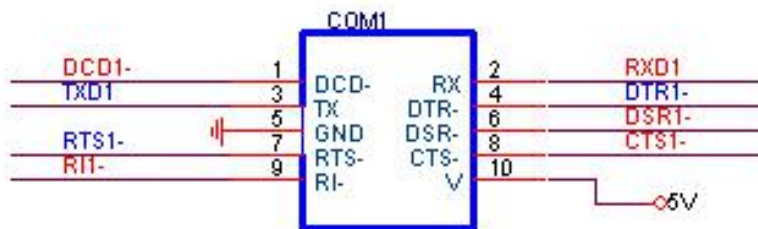
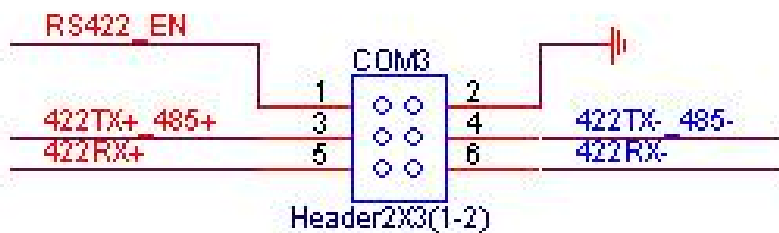

2.13 COM2、COM6

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

2.14 COM3

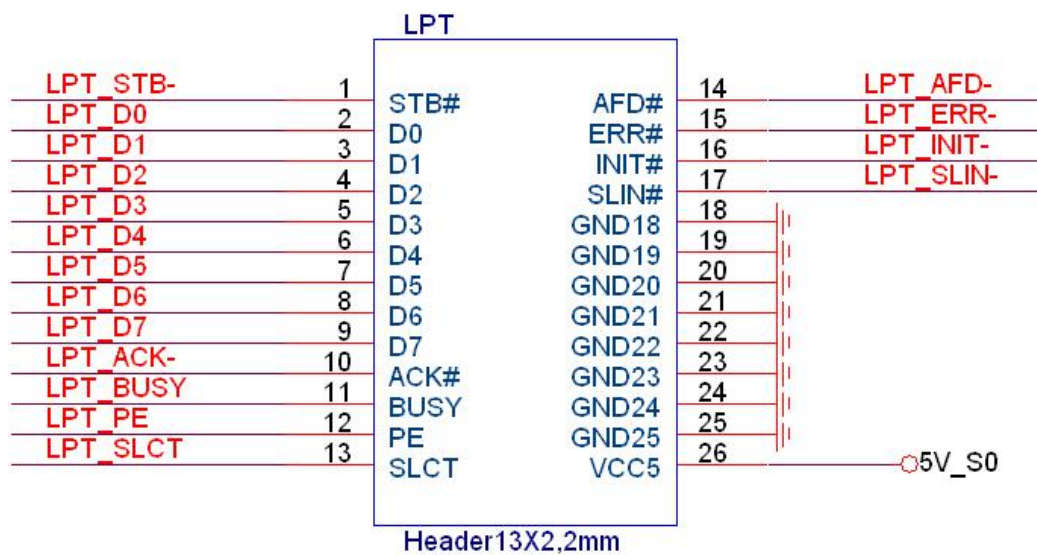RS485/RS422 optional interface,adopt 2×3,2mm pin,definition as below:

It's need to choose the corresponding working mode of COM3 in the CMOS.

2.15: LPT parallel port   - 9 -

Using 13X2 pin, 2mm, as defined below

LPT

LPT_STB-	1	STB#	AFD#	14	LPT_AFD-
LPT_D0	2	D0	ERR#	15	LPT_ERR-
LPT_D1	3	D1	INIT#	16	LPT_INIT-
LPT_D2	4	D2	SLIN#	17	LPT_SLIN-
LPT_D3	5	D3	GND18	18	
LPT_D4	6	D4	GND19	19	
LPT_D5	7	D5	GND20	20	
LPT_D6	8	D6	GND21	21	
LPT_D7	9	D7	GND22	22	
LPT_ACK-	10	ACK#	GND23	23	
LPT_BUSY	11	BUSY	GND24	24	
LPT_PE	12	PE	GND25	25	
LPT_SLCT	13	SLCT	VCC5	26	5V_S0

Header13X2,2mm

2.16 SATA1, SATA2

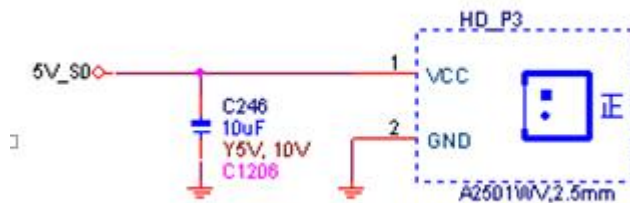Standard SATA device interface, supports SATA2.0 and below.

SATA2 can be replaced by a 90-degree bend in the SATA interface to meet the low height of the structure

2. 17 U24

Onboard SSD, 16G / 32 / 64G capacity Optional

2.18 HD_P1、HD_P2

Two SATA device power connector, use CJT company A2501WV-2P device or other compatible devices. Defined like the image。

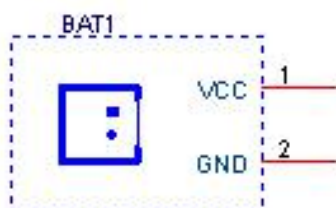### 2.19 RTC1

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

RTC1	Function Description
Close	Clear RTC CMOS
Open	default

2.20 IDE1

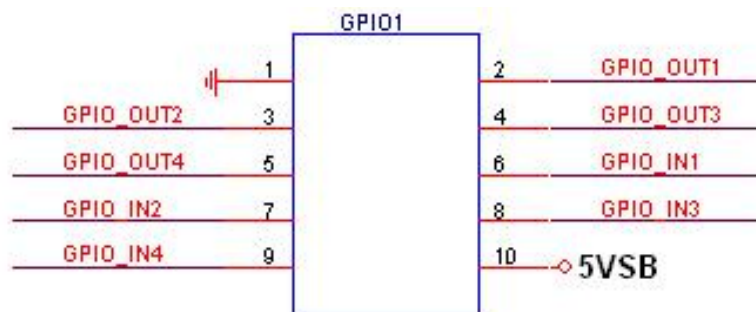Standard 44-Pin IDE hard disk interface.

2.21 BAT1

Battery interface,for battery changing.BAT1、BAT2 in parallel,just choose one of them.Adopt CJT A1251WV-2P connector or other compatible connector.
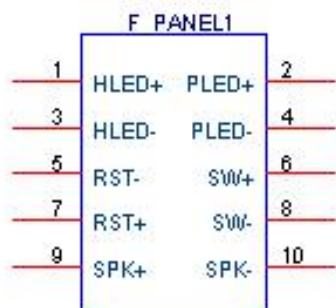
2.22 GPIO1

Spare GPIO interface,adopt 2×5,2mm pin,definition as below:

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

2.23 F_PANEL1

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
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 JP1

RTC clear jumper line,adopt 1×2,2mm pin,definition as below:

JP1	Function introduction
Close	Clear RTC CMOS
Open	Normal working condition,default setting

2.25 JP5

AT starting mode jumper line.Adopt 1×2,2mm pin,definition as below:

JP5	Function introduction
Close	AT power starting mode
Open	ATX power starting mode

2.26 DDR3

Standard SO-DIMM-204 DDR3L socket.Support 4GB DDR3 without onboard memory;Maximum up to 2GB DDR3 memory with onboard 4GB memory.

2.27 SIM1

MPCIE1 affiliated SIM card holder.

2.28   MPCIE1

Standard Mini PCIE socket,support Rev1.00 Mini-PCIE standard，support SIM card,SIM card slot in the rear side.
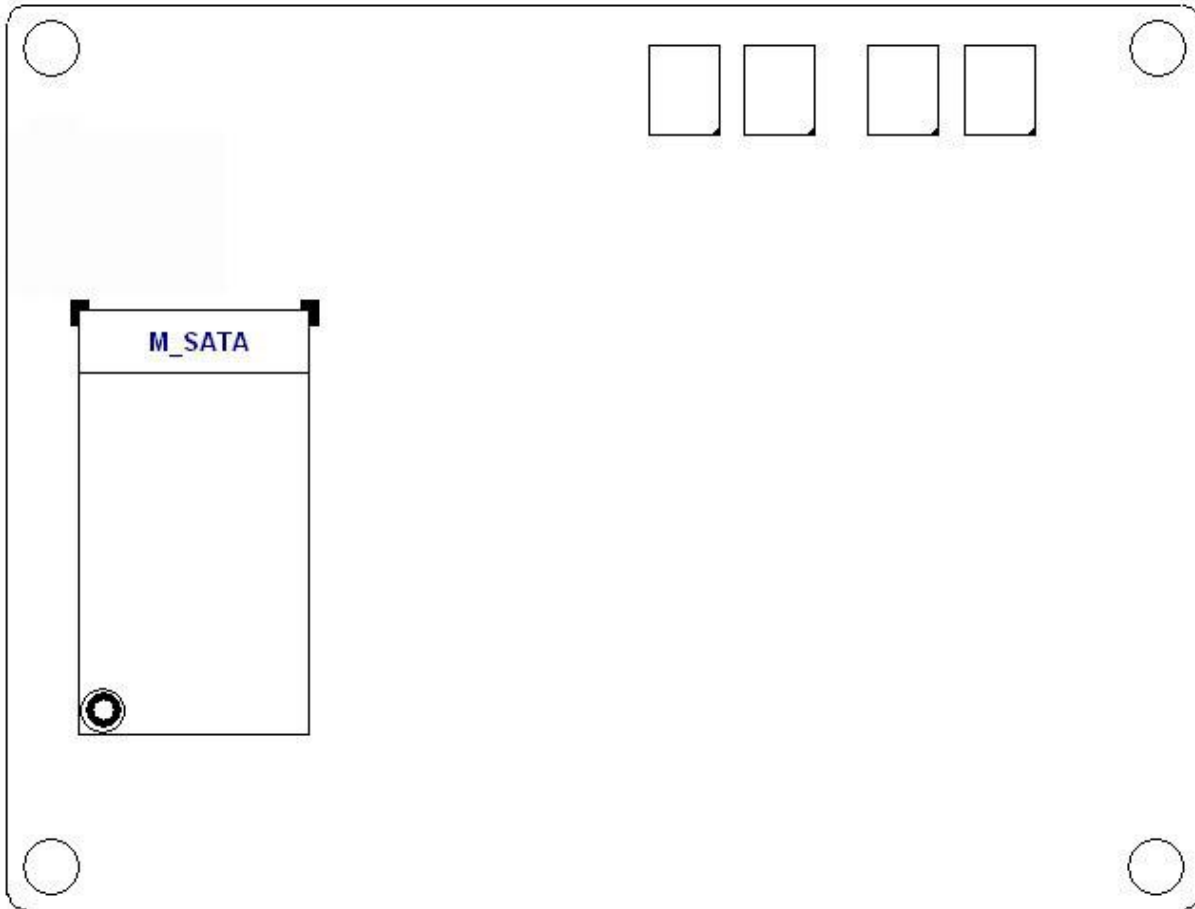
2.29   SW1 and SW2

As SATA and MSATA switch.
When SW1 pulled to "ON" time, MSATA effective, whereas SATA1 effective;
When SW2 pulled to "ON", the onboard SSD effective, otherwise SATA2 effective;

3   Rear Side Interface Layout

Mainboard rear side layout as below:

3.1   SIM1

SIM card slot.

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.