



HU-803 Motherboard

(PCB Rev:1.10)

Manual Version 1.10

2015.03.19



1 Introduction

HU803 motherboard is our standard 3.5" industrial motherboard. Adopt Intel HASWELL-ULT chipsets. Support BGA Intel Core G4 Haswell Soc i3/i5/i7 processors

1.1 Main Features

- 1.1.1 Onboard CPU, support Intel Mobile 4th Haswell-U/Y CPU (BGA1168) .
- 1.1.2 1*DDR3 SODIMM 204 Socket, maximum up to 8GB DDR3L, 1066/1333/1600MHz.
- 1.1.3 Onboard 2GB/4GB DDR3L memory(optional)
- 1.1.4 Onboard 32G/64G SSD(optional)
- 1.1.4 Onboard 2*RTL8111E Gigabit Ethernet controller.
- 1.1.5 Onboard HD ALC662, provide MIC-IN/LINE-OUT and expansion header.
- 1.1.6 Onboard dual channel audio power amplifier. Support 6W/8Ω horn for each channel.(optional); 3-pin SPDIF connector.
- 1.1.7 1*Mini-PCIE socket.
- 1.1.8 1*Mini-SATA socket.
- 1.1.9 2*SATA 3.0 connector.
- 1.1.10 2*USB 3.0/2.0 ports
- 1.1.11 5*USB 2.0 connector(pins)
- 1.1.12 Provide 5*RS232 pin header, 1*RS485/RS422 pin header.
- 1.1.13 Support HDMI output.
- 1.1.14 Support RGB & CRT output.
- 1.1.15 Support dual channel 24bit LVDS output.
- 1.1.16 2*3-Pin FAN connectors.
- 1.1.17 Provide 8bit*GPIO.

1.2 Power Supply

Single input DC power, DC12V (+/-5%) .
(If don't use 12V for the HDD, +/-10%).
Support AT/ATX starting mode.

1.3 Size

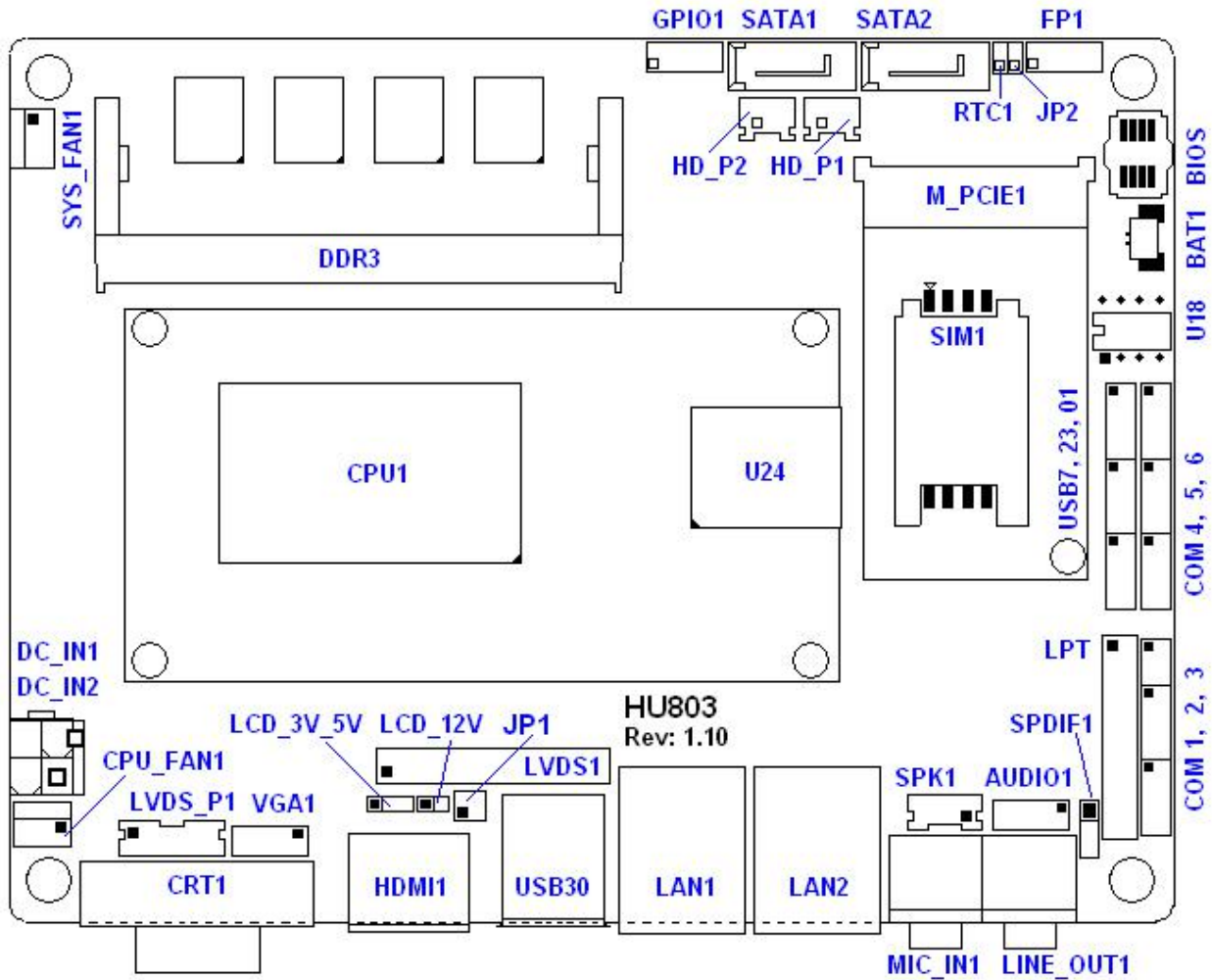
154.8mm×117.4mm

1.4 Working Environment

Working Temp: -20°C~60°C (-32°F~140°F)
Storage Temp: -40°C~85°C (-104°F~185°F)

2 HU803 Front side interfaces layout

Motherboard TOP floor layout as below:

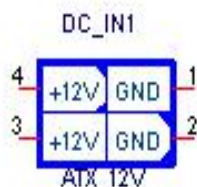


Remark: Interfaces in the above picture, **Pin 1** are in square shape.

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,as Regular production.



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

HDMI1 is standard HDMI output interface.

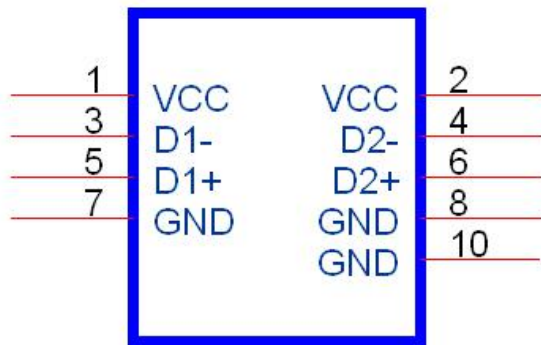
2.4 USB3.0

2×USB3.0 ports,support 2×USB3.0 devices, it is Compatible with USB 1.0/1.1/2.0 devices.

2.5 USB01、USB23& USB7

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

USB01、USB23、USB7 are 2×5,2mm expansion headers,definition as below:



Remark: USB7 only have 1*USB port, Pin4/6 have no definition.

2.6 LAN1 & LAN2

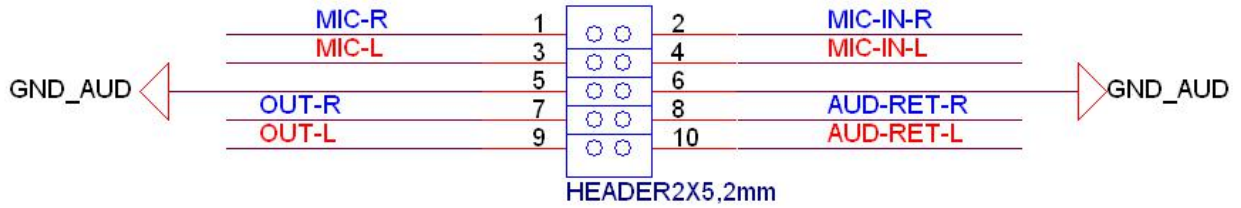
10/100/1000 M LAN is standard RJ45 port,chipset is Realtek RTL8111E.

2.7 MIC_IN、LINE_OUT and AUDIO1

MIC_IN is Microphone input port,adopt general connector.

LINE_OUT is audio output port,adopt general connector.

AUDIO1 is 2×5,2mm expansion header,definition as below:

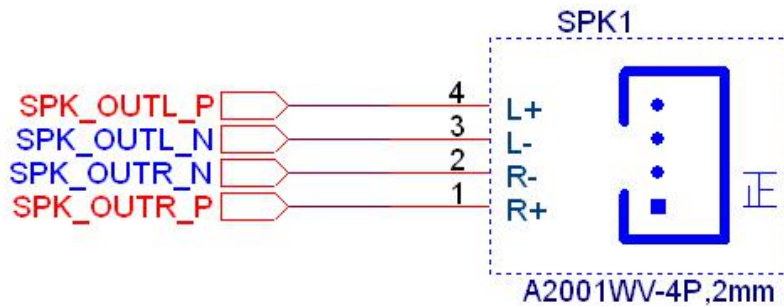


(1: If AUDIO1 have not connect with the AUDIO device in the front panel,have to catch Jumper 1-2、3-4、7-8、9-10.

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

2.8 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.

2.9 SPDIF (optional)

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

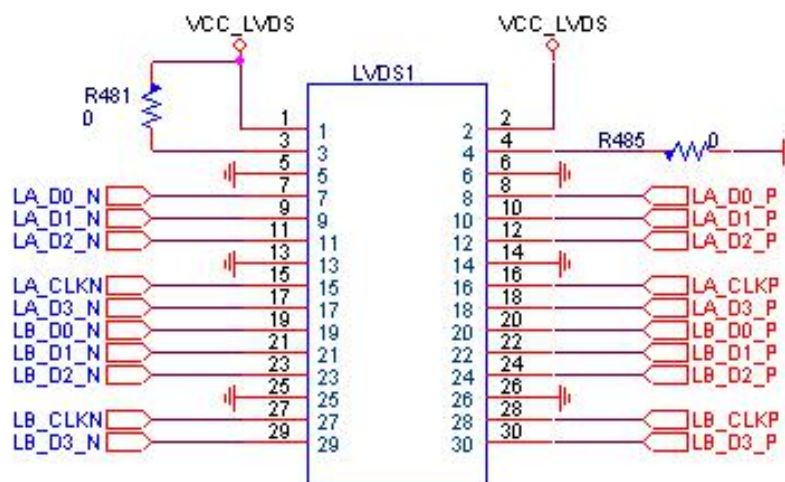
Pin1----5V;

Pin2----SPDIF;

Pin3----GND。

2.10 LVDS1

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



VCC_LVDS is the power for screen,LCD_3V_5V or LCD_12V ,choose through the jumper.

2.11 LCD_3V_5V & LCD_12V

LVDS1 power:VCC_LVDS power selection:

selection mode	VCC_LVDS Voltage
LCD_3V_5V(1-2)、LCD_12V (Open)	3.3V (default setting)
LCD_3V_5V(2-3)、LCD_12V (Open)	5V
LCD_3V_5V(Open)、LCD_12V (Close)	12V

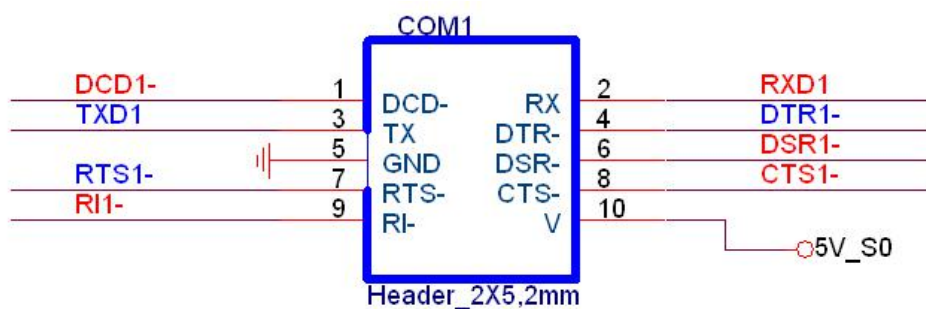
2.12 LVDS_P1

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

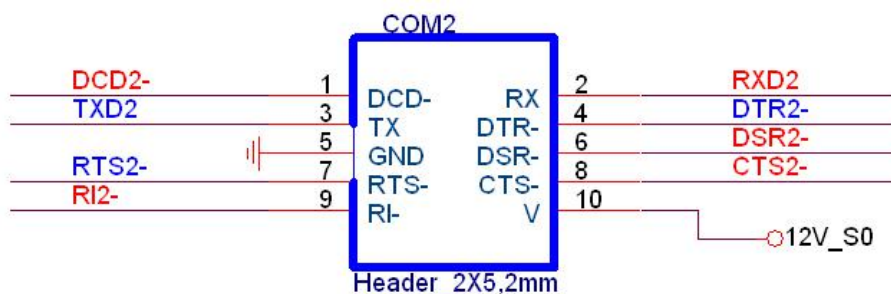
2.13 COM1、COM4、COM5

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



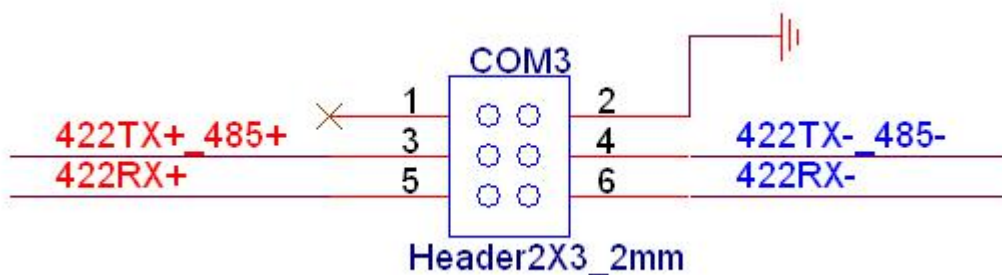
2.14 COM2、COM6

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



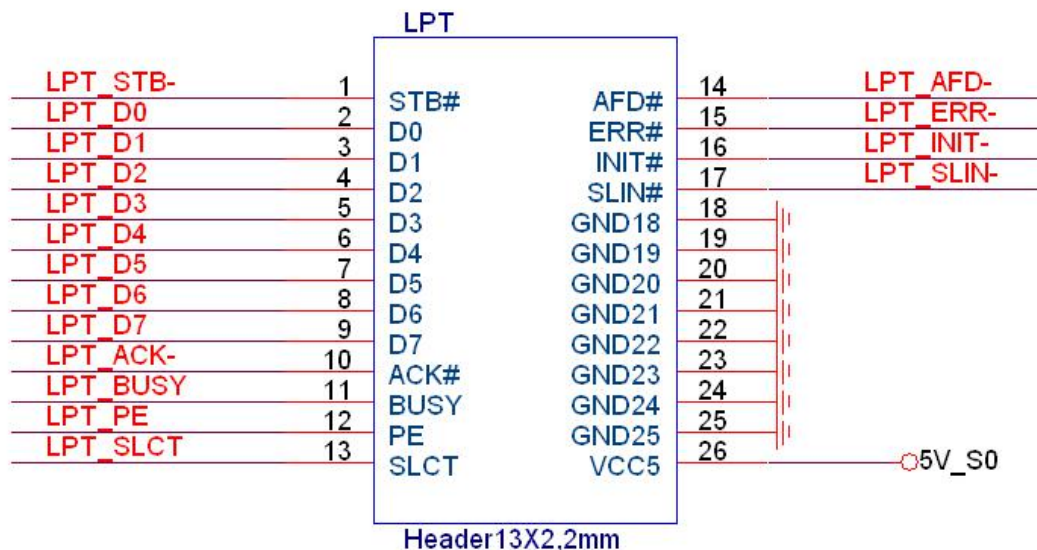
2.15 COM3

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



2.16 Parallel Port LPT

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



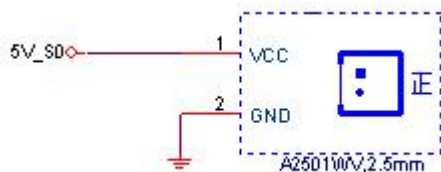
2.17 SATA1、SATA2

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

SATA2 can be change to a bend 90 degree SATA connector,suitable for low height structure.

2.18 HD_P1、HD_P2

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



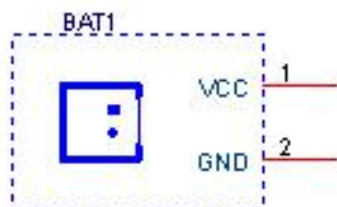
2.19 RTC1

RTC1 is RTC clear jumper line,adopt 1×2,2mm pin,definition as below:

RTC1	Function introduction
Close	Clear RTC CMOS
Open	default setting

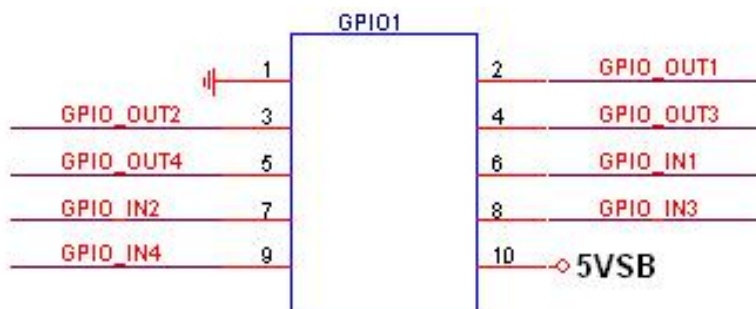
2.20 BAT1

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



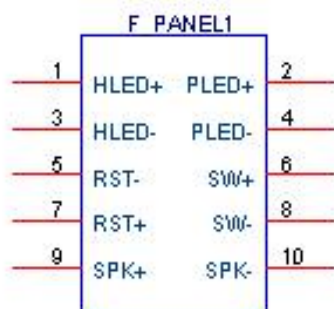
2.21 GPIO1

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



2.22 FP1

Control panel 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	Motherboard reset positive and negative signal pins.
6, 8	Motherboard on/off positive and negative signal pins.
9, 10	Spare buzzer connector.

2.23 JP2

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

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

2.24 MPCIE1

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

2.25 SIM1

3G card SIM card slot

2.26 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.

2.27 DDR3&Onboard Ram

DDR3 is DDR3/DDR3L RAM socket, Standard DDR3 SODIMM204 RAM socket, maximum up to 8GB DDR3L(1066/1333/1600MHz)

Onboard 2GB/4GB DDR3L RAM(optional)

DDR3 RAM socket and onboard RAM use at the same time, pls use the same chipset and capacity. Otherwise the motherboard will work instability.

2.28 JP1&U18

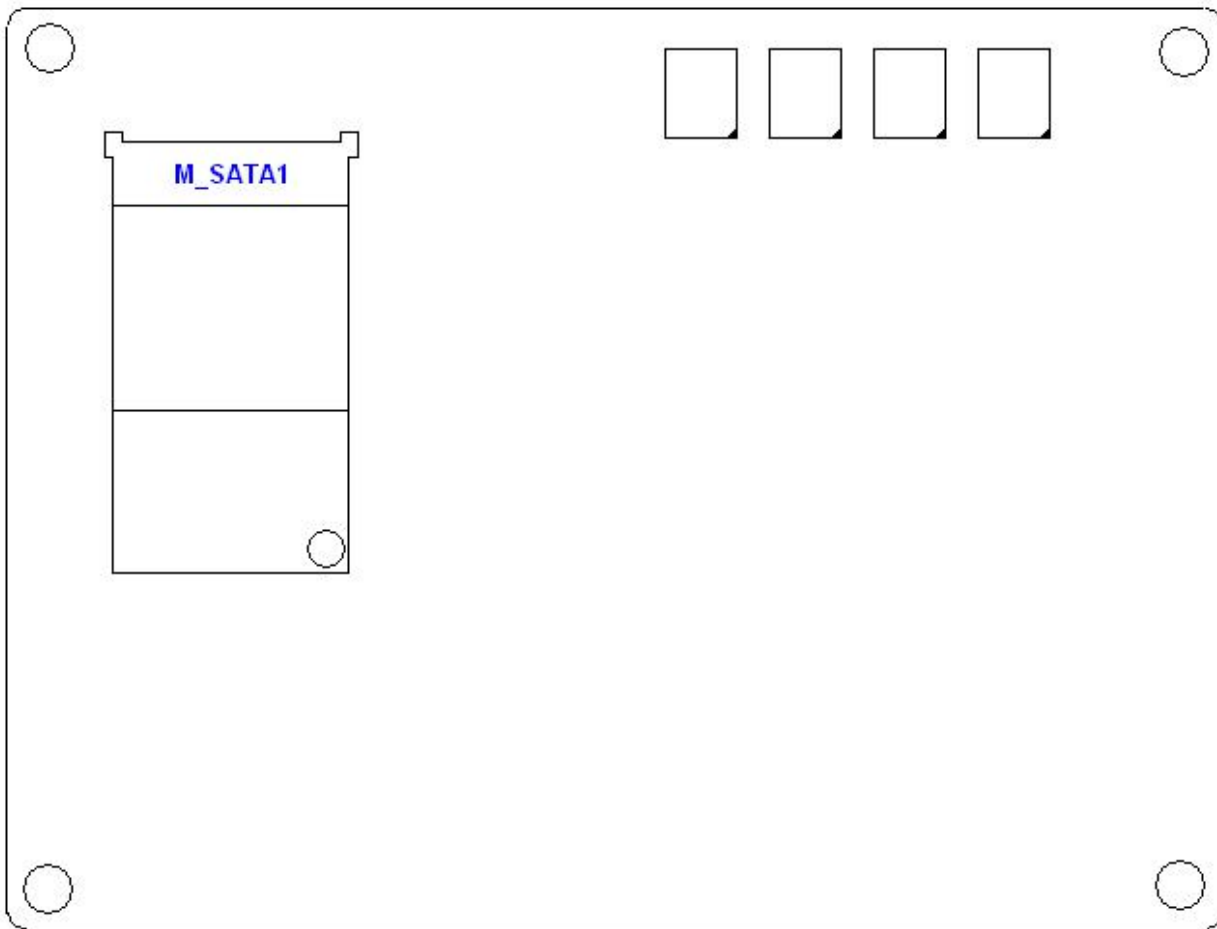
JP1 can set LVDS's channels number and LVDS's bits. U18 save resolution parameter of LVDS screen.

JP1's setting must be same with U18's configuration parameter.

JP1	Function setting
1-2	Close express to support single channel LVDS screen; Open express to support dual channel screen.
3-4	Close express to support 24bit screen; Open express to support 18bit screen.

3 Rear Side Interface Layout

Motherboard rear side layout as below:



3.1 M_SATA

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