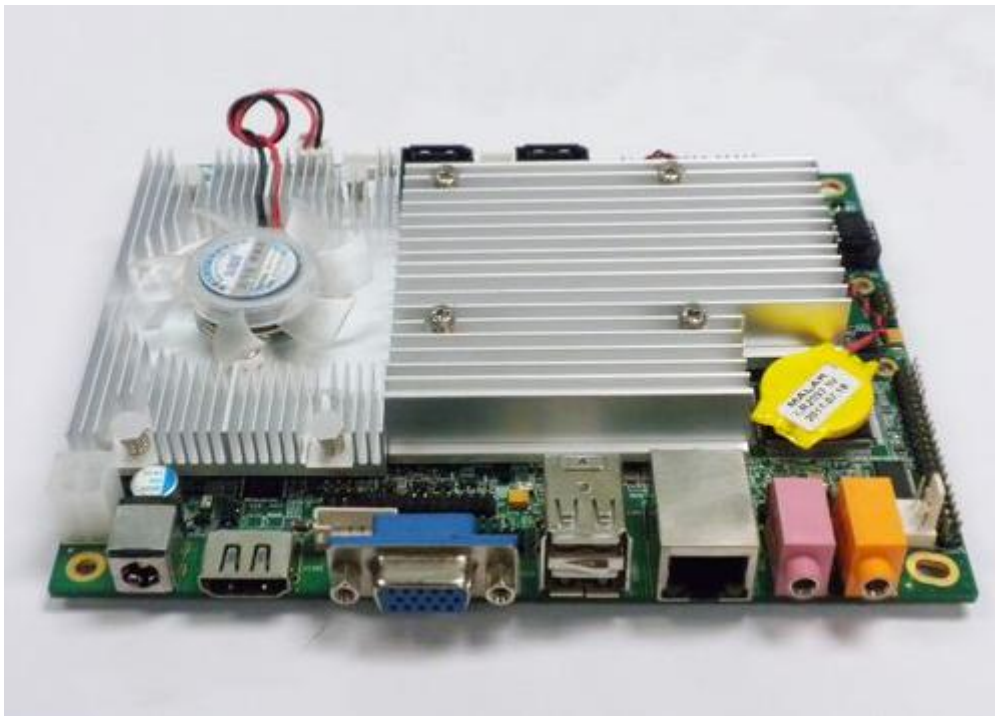


GM45-3 Mainboard

(PCB Rev:2.10)

Manual Version 2.10

2012.01.08



1 Introduction

GM45-3 mainboard is a 3.5" low power consumption industrial motherboard. Adopt INTEL Core2 Duo CPU and GM45 chipsets, support Intel Core2 Duo, Core2 Solo, Celeron M CPU, FSB 667/800/ 1066MHz.

1.1 Main Feature

- 1.1.1 Socket 478, support uFCPGA CPU or onboard uFCBGA CPU.
- 1.1.2 DDR3 SO-DIMM 204 Socket, maximum up to 4GB DDR3 memory, 800/1066/1333MHz.
- 1.1.3 Onboard 1*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 2.0
- 1.1.9 8*USB 2.0
- 1.1.10 Provide 3*RS232 pin header, 1*RS485 pin header(combined with PS/2).
- 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 Provide PS/2 Keyboard、Mouse pin header.
- 1.1.15 Provide 8*GPIO.
- 1.1.16 Support AT power starting mode.

1.2 Power Supply

Single input DC power, DC12V (+/-2V)。

1.3 Size

154.8 mm×117.4 mm

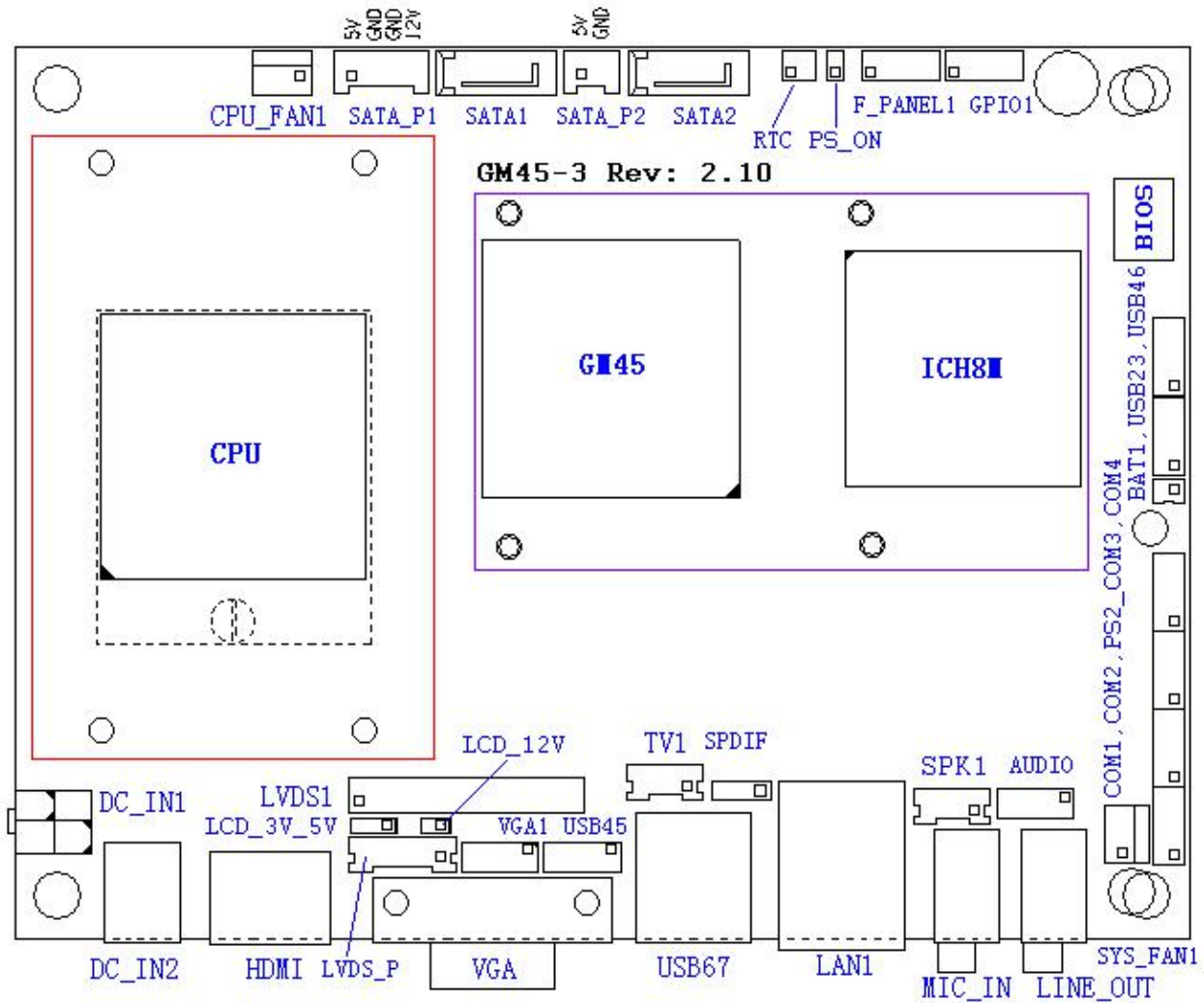
1.4 Working Environment

Working Temp:-20℃ ~ +60℃

Storage Temp:-40℃ ~ +85℃

2 GM45-3 Front side interfaces layout

TOP floor layout as below:



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

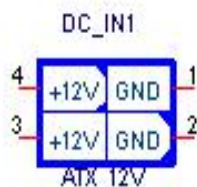
Mainboard Interface Description

2.1 DC_IN1 & DC_IN2

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

When adopt DC_IN2 as 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.

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

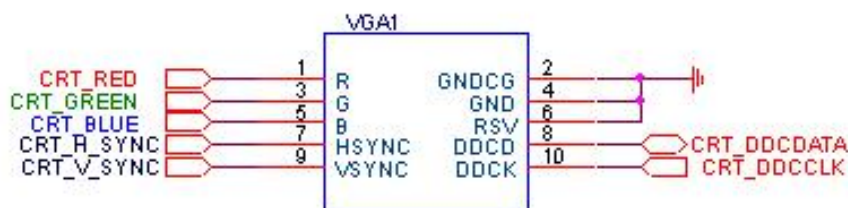
2.2 HDMI

Standard HDMI output interface.

2.3 VGA and VGA1

VGA is a standard CRT monitor output interface.

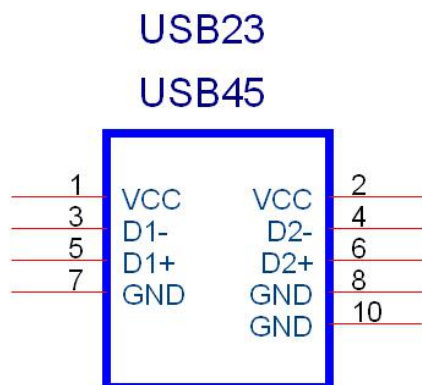
VGA1 is 2×5,2mm expansion header,can not use at the same time.



2.4 USB23、USB45、USB67、USB46

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

USB67 is standard USB Type A interface; USB23、USB45、USB46 are 2×5,2mm expansion header,definition as below:



2.5 LAN1

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

2.6 MIC_IN、LINE_OUT & AUDIO

MIC_IN is Microphone input port,adopt general connector.

LINE_OUT is audio output port,adopt general connector.

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



The signal of Pin3/4 in AUDIO are connected with the LINE_OUT,can not plug the audio device at the same time;

The signal of Pin7/8 in AUDIO are connected with the MIC_IN,can not plug the audio device at the same time;

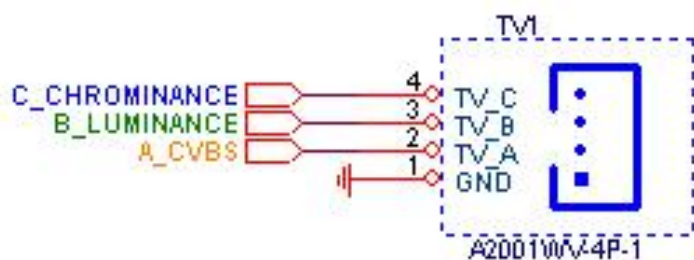
2.7 SPDIF (optional)

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

2.8 TV1 (optional)

CVBS & S-Video are video output interface,interface optional.

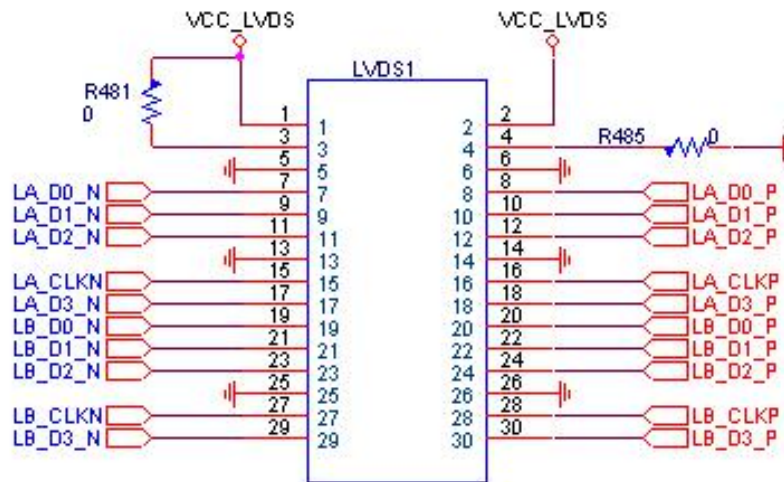
Adopt CJT A2001WR-4P-1 connector or other compatible connectors.Definition as below:



Mainboard Interface Description

2.9 LVDS1

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



2.10 LCD_3V_5V、LCD_12V

LVDS screen power selection jumper.Adopt1×3 and 1×2 pin header.

Jumper cap (choose 1 only)	VCC_LVDS voltage
LCD_3V_5V (1-2)	3.3V (default setting)
LCD_3V_5V (2-3)	5V
LCD_12V (Close)	12V

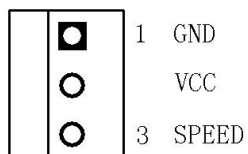
2.11 LVDS_P

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

2.12 CPU_FAN1、SYS_FAN1

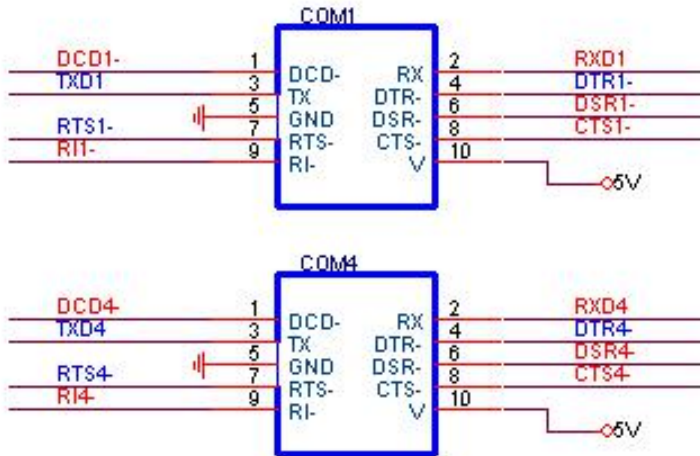
FAN interface support maximum current 0.3A,definition as below:



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.

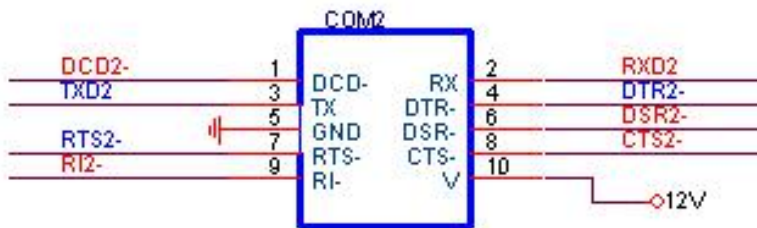
2.13 COM1、COM4

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



2.14 COM2

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



2.15 PS2_COM3

PS/2 keyboard, mouse and R485 can use the same interface, adopt $2 \times 5, 2\text{mm}$ pin header, definition as below:



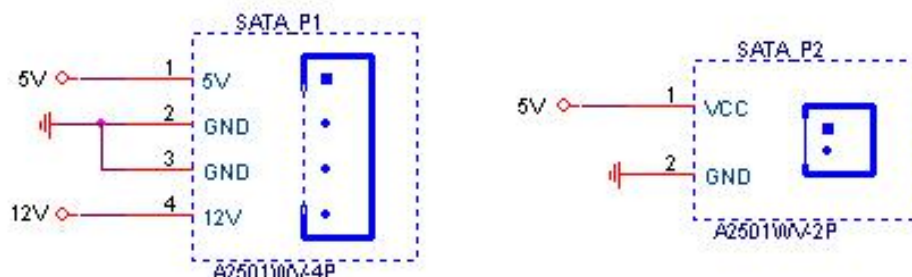
Mainboard Interface Description

2.16 SATA1、SATA2

Standard SATA interface.

2.17 SATA_P1、SATA_P2

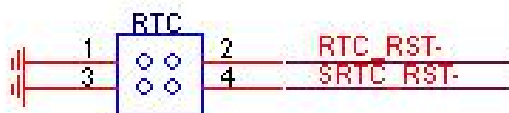
2*SATA power interface,adopt CJT A2501WV-4P,A2501WV-2P device or other compatible devices,definition as below:



SATA_P1 with 2 more pin than SATA_P2,bring in 12V power for the hard disk of commercial computer.

2.18 RTC

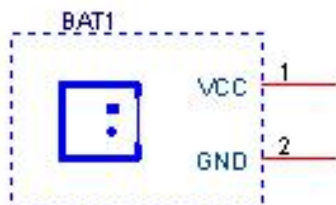
RTC、SRTC main/sub RTC clear jumper line,adopt 2×2,2mm pin,definition as below:



RTC	Function introduction
1-2	Clear RTC CMOS
3-4	Clear SRTC CMOS
1-3	default setting

2.19 BAT1

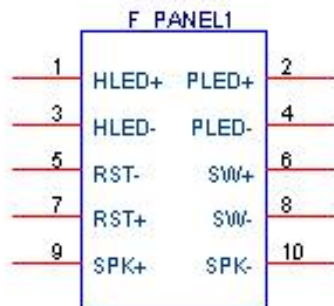
Battery interface,for battery changing.Adopt CJT A1251WV-2P connector or other compatible connector.



Mainboard Interface Description

2.20 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:

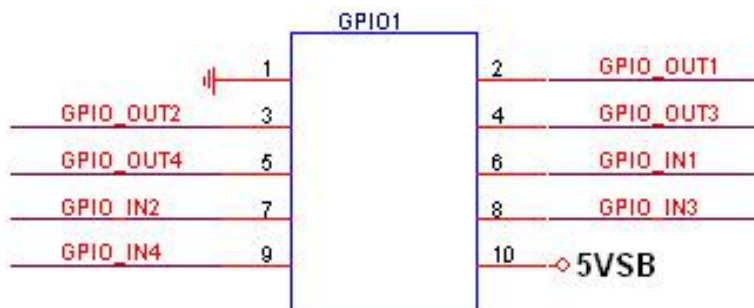


F_PANEL1	Pin Definition
1, 3	Hard disk access lamp positive and negative signal pins.
2, 4	Main power indicator light positive and negative signal pins.
5, 7	Mainboard reset positive and negative signal pins.
6, 8	Mainboard on/off positive and negative signal pins.
9, 10	Spare buzzer connector.

2.21 GPIO1

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

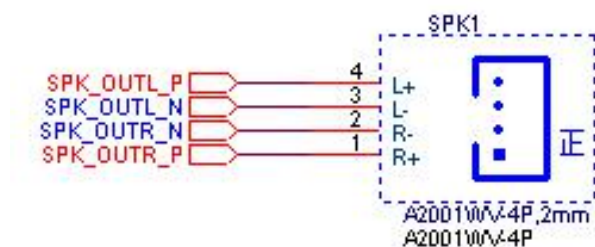
The I/O features of GPIO can be amend through BIOS.



Mainboard Interface Description

2.22 SPK1 (optional)

Onboard dual channel audio power amplifier.Support 6W/8Ω horn for each channel.(optional),output interface SPK1 definition as below:



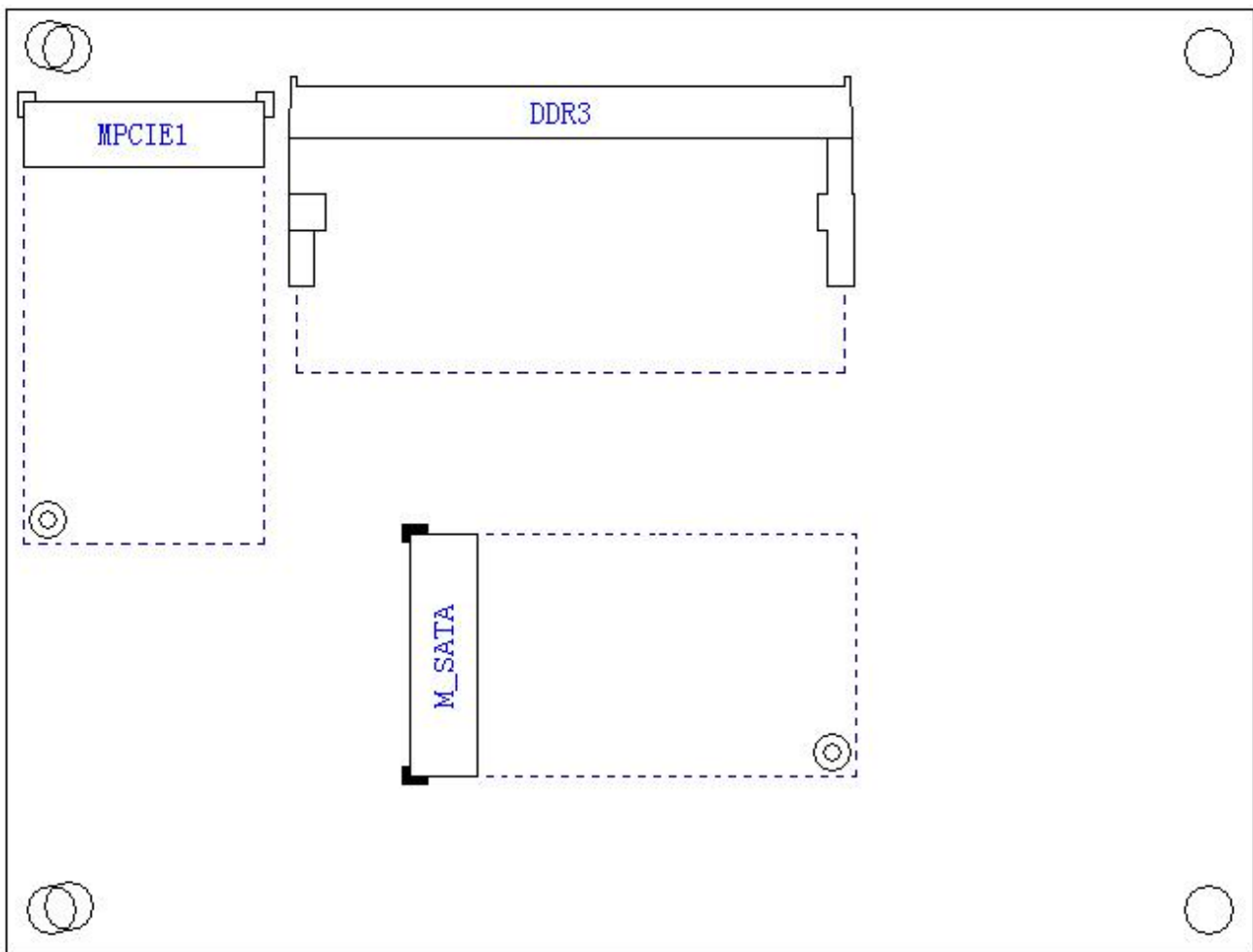
2.23 PS_ON

AT power 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

3 Rear Side Interface Layout

Mainboard rear side layout as below:



3.1 DDR3

Standard DDR3 memory socket, maximum up to 4GB DDR3(800/1066/1333MHz).

3.2 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.

3.3 MPCIE1

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