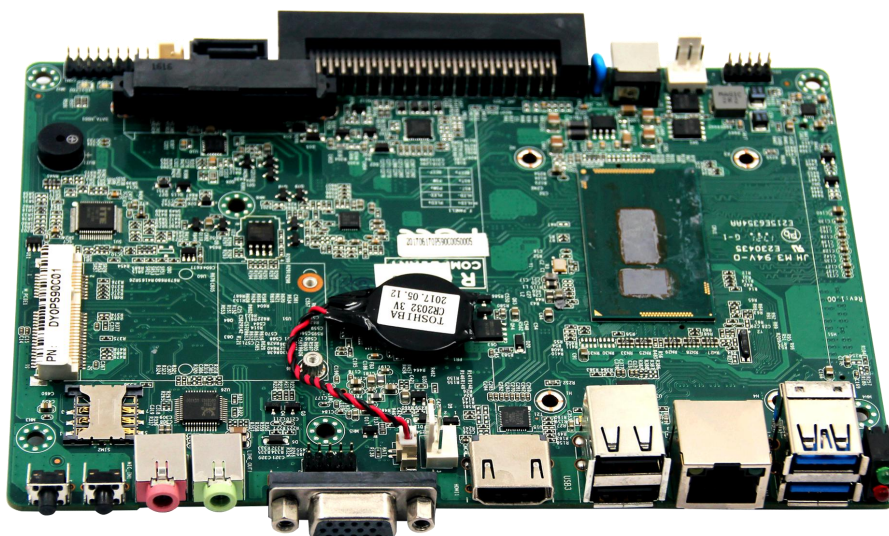# OPS90C Motherboard

（**PCB Rev:1.00**）

Manual Version 1.00

2017.07.03

1 Introduction

OPS90C Motherboard is Standard OPS education motherboard，with Intel Mobile 5th Broadwell-U Single chipset CPU. Main features as follow:

1.1 Main features

1.1.1 Onboard Cpu，Support Intel Mobile 5th Broadwell-U/CPU（BGA1168）。

1.1.2 1 *DDR3 SODIMM 204 Socket，Max support 8GB DDR3L ram，1066/1333/1600MHz。

1.1.3 Onboard 1*gigabit Ethernet

1.1.4 Onboard HDA ALC662，support MIC/LINE-OUT and Pin Port

1.1.5 1* Mini-PCIE socket

1.1.6 1*Mini-SATA socket

1.1.7 1*SATA 3.0 HDD Interface

1.1.8 1*SATA_HDD Interface

1.1.9 2*USB 3.0 ports

1.1.10 Provide 1* RS232 Pin Port

1.1.11 Support HDMI display，Support 4K display

1.1.12 Support RGB CRT output。

1.1.13 2*3-Pin FAN Port。

1.1.14 Support OPS Expansion

1.1.15 1*Switch button，1*Reset button

1.1.16 1*Power indicator，1*hard disk indicator

1.2 Power Supply

Single input DC power supply, DC12-19V, + / - 5%

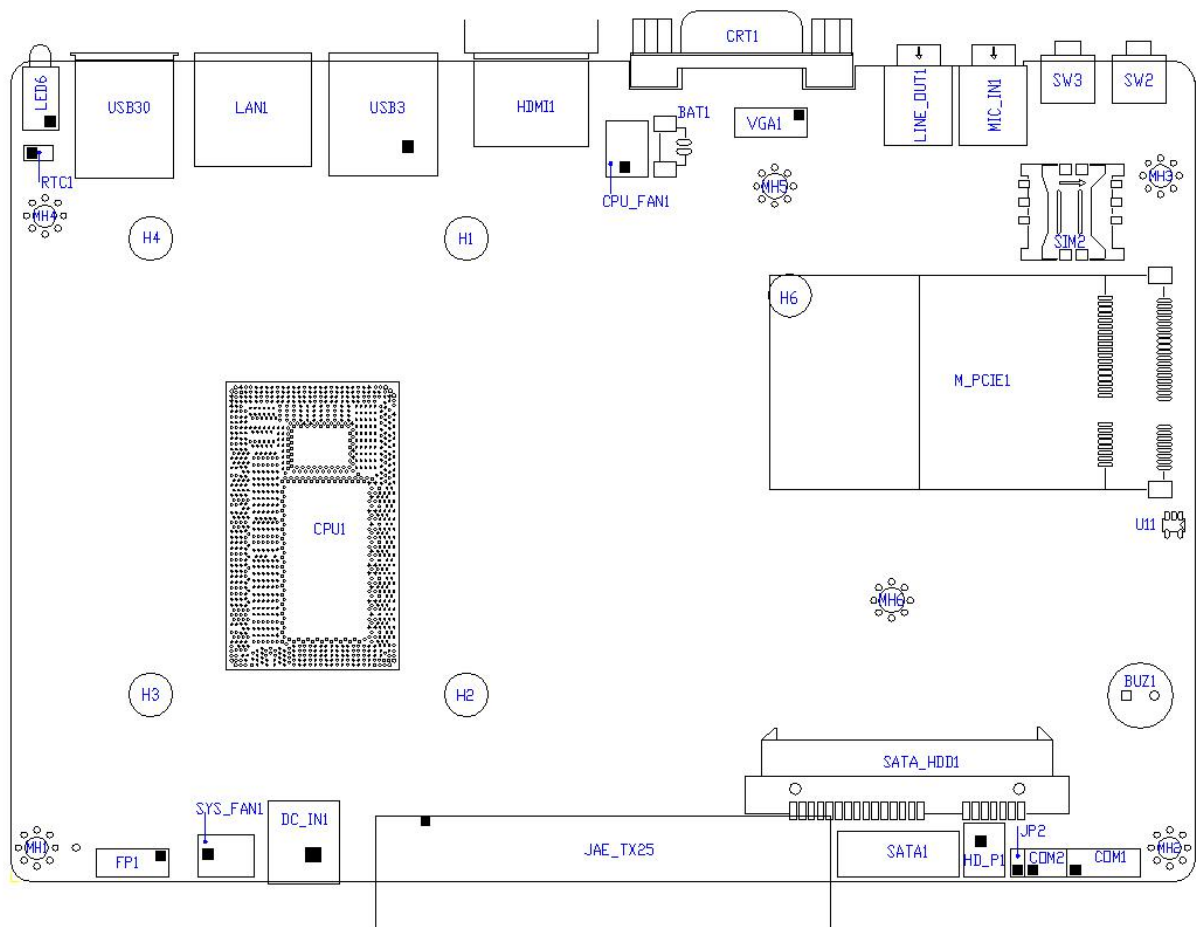Support power on automatic boot function, jumper selection.

1.3 Size

165*114.2 mm

1.4 Working temperature

Motherboard working temperature：-20℃ ~ +60℃

Motherboard storage temperature：-40℃ ~ +85℃

2 OPS90C 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

DC_IN1 is standard DC-JACK port，Center column is:2.5mm

2.2 CRT1 & VGA1

CRT1 is a standard CRT monitor output interface.

VGA1 is 2×5,2.0mm expansion header,can not use at the same time.

2.3 HDMI1

HDMI1 is standard HDMI output interface.

2.4 USB30、USB3

USB30 is 2*Standard USB3.0 Port，Support 2*USB3.0 equipment，and compatible with USB 1.0/1.1/2.0 device.USB3 is 2*Standard USB2.0 Port.

2.5 LAN1

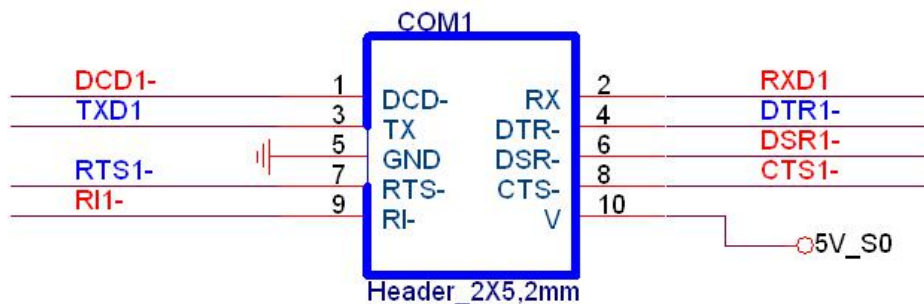10/100/1000 M LAN standard RJ45 Port，Maincontrol chipset all are Realtek RTL8111E。

2.6 MIC_IN1 and LINE_OUT1

MIC_IN is MICPHONE input Port，Using a universal connector。

LINE_OUT1 is Audio output Port，Using a universal connector

2.7 COM1

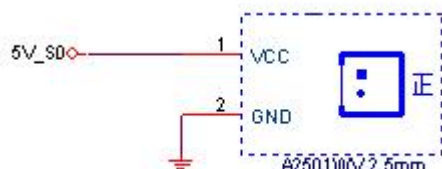RSR232 Pin header，with 2x5、2mm pin，Pin10 is 5V Power

2.8 SATA1

Standard　SATA device Port，Support SATA3.0 or bellow3.0。

2.9　HD_P1

1 *SATA device power interface, with CJT company A2501WV-2P devices or other compatible devices. The definition is similar to the following figure.
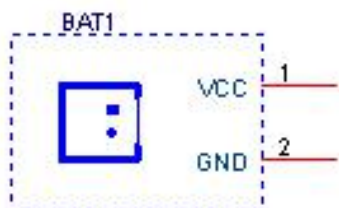

2.10　RTC1

RTC1 is RTC Reset Jumper，with 1x2、2mm Pin。

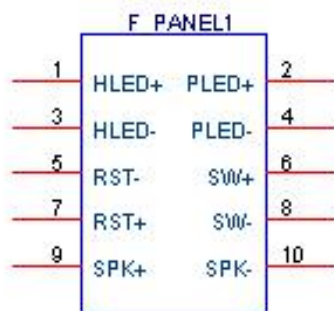| RTC1	Function introduction
Close	Clear RTC CMOS
Open	default

2.11　BAT1

battery Port ，Convenient battery replacement. Using CJT A1251WV-2P interface or other compatible interface.

2.12　FP1

Control panel with 2x5, 2mm pin, integrated HDD_LED, PWR_LED, power switch, reset switch, SPEAKER function. The pins are defined as follows.

F_PANEL1	Pin definition
1，3	Hard disk read and write indicators positive and negative signal pins。
2，4	Main power indicator Positive and negative signal pins.
5，7	Motherboard reset signal Positive and negative signal pins.
6，8	Motherboard switch signal positive and negative signal pins.
9，10	Alternate buzzer interface.

2.13　JP2

ATPower-on mode selection jumper，When Choose Close Optional，DC Power on and them Motherboard Poweron

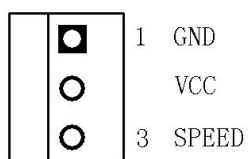| PS_ON	Boot mode Optional
Close	AT Power boot mode
Open	ATX Boot mode

2.14　MPCIE1

MPCIE1 is standard Mini-PCIE socket，Can be inserted full length card. Half-length card Mini-PCIE card, to be connected to the long card fixed.

2.15　SIM1

3G card SIM socket

2.16　CPU_FAN1、SYS_FAN1

FAN interface supports the maximum current of 0.3A, defined as follows.

CPU fan interface, support speed automatic adjustment. The maximum fan voltage is equal to the input supply voltage. When the input supply voltage is high, pay attention to select the appropriate fan. The SYS fan does not support automatic speed adjustment。

2.17   DDR3L

DDR3 is extrapolated DDR3L memory socket, standard DDR3 SODIMM204 memory socket, maximum support 8GB memory (1066/1333 / 1600MHz).
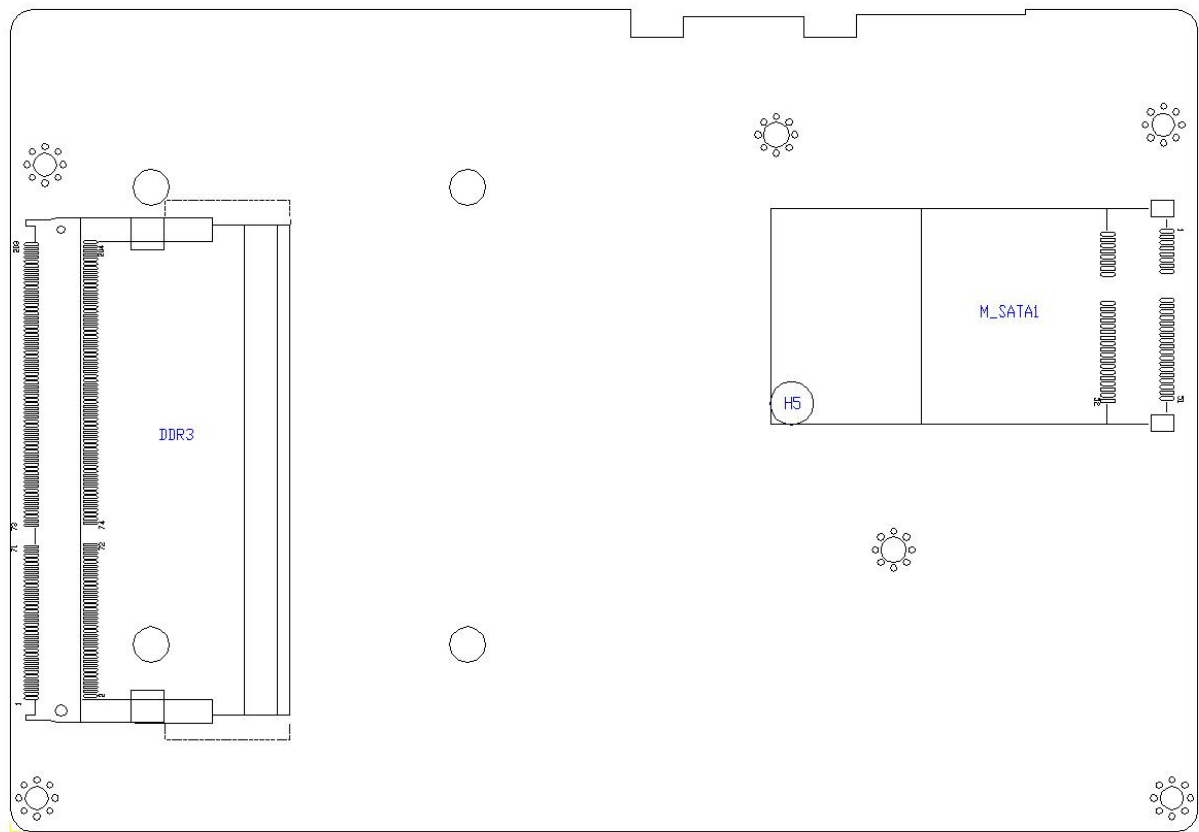
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2.18 JAE_TX25

OPS interface, using TX25-80P-LT-H1E interface. Please refer to OPS specifications, according to the company FAE recommended matching OPS expansion board.

If the selected OPS has a power supply (12V +/- 10%) to the motherboard, the DC_IN1 ~ 3 interface should not plug the power supply. When the OPS board power supply is normal, the motherboard will automatically switch to OPS power supply, not with DC_IN1 ~ 3 power supply conflict.

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.