

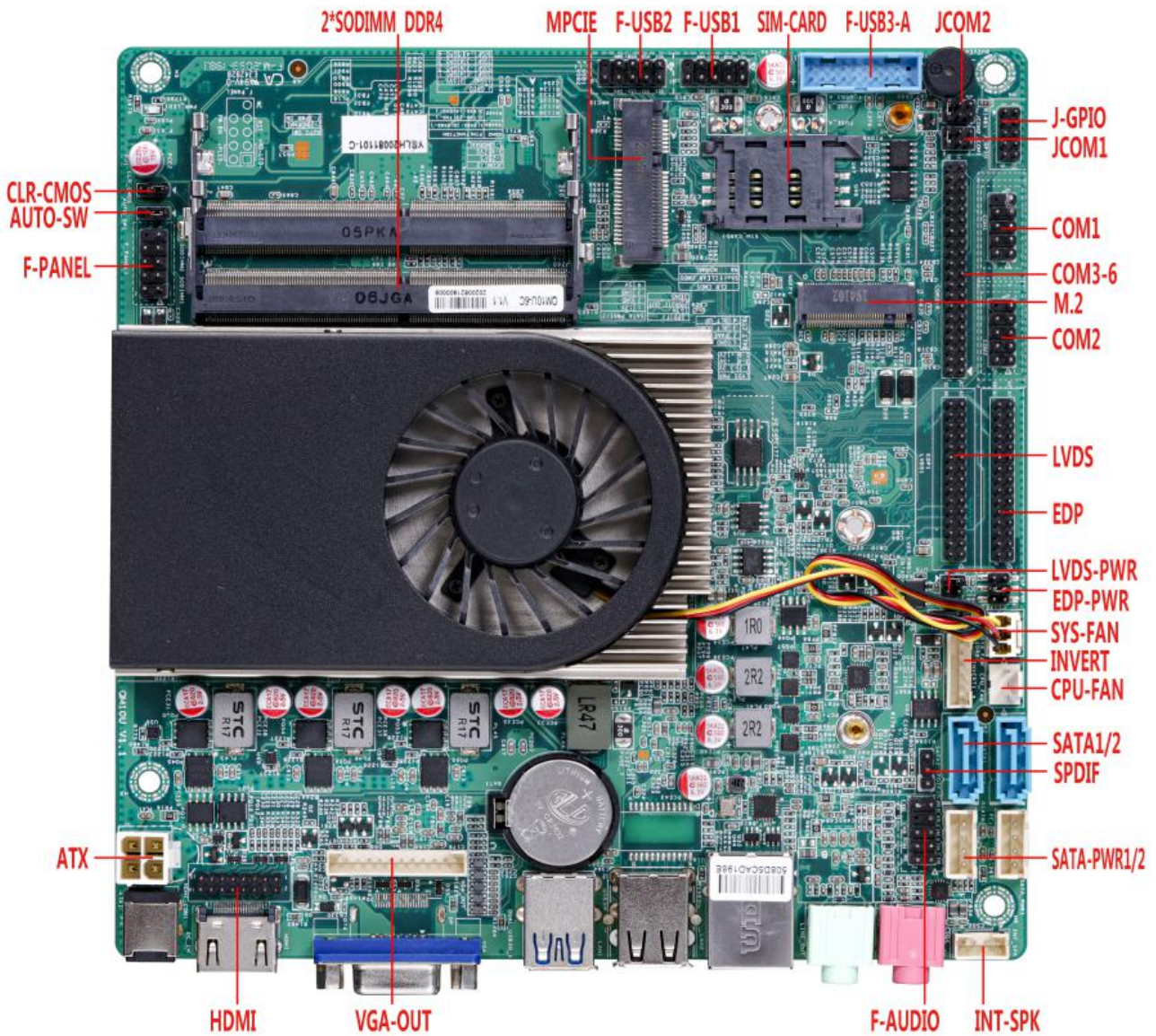


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ELSKY QM8U QM10U V1.2 Manual

Motherboard diagram



VGA + single lan port picture ↓ (default)



VGA + dual lan port picture ↓



DP + single lan port picture ↓



DP + dual lan port picture ↓



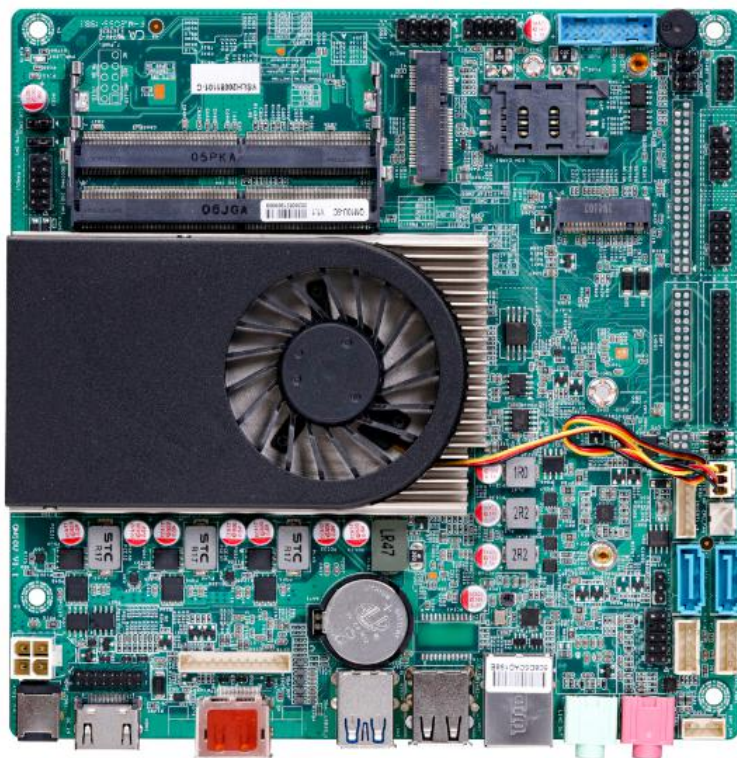
DP + 6COM + LVDS picture ↓



VGA + 6COM + EDP picture ↓



DP + 2COM + EDP picture ↓



VGA + 2COM + LVDS picture ↓



Product Model Order Selection:

Motherboard model	CPU	4K	LAN	COM	USB2.0	USB3.1	Memory	Power
QM8U-2C	Support Whiskey Lake 8 th gen core i3、 i5、 i7	support	1	2	6	4	2*NB DDR4 MAX 64GB	+12V
QM8U-6C				6				
QM8U-2L2C			2	2	4	4		
QM8U-2L6C				6				
Support DP port motherboard model,QM8U-DP specification same as above								
QM10U-2C	Support Comet Lake 10 th gen core i3、 i5、 i7	support	1	2	6	4	2*NB DDR4 MAX 64GB	+12V
QM10U-6C				6				
QM10U-2L2C			2	2	4	4		
QM10U-2L6C				6				
Support DP port motherboard model,QM10U-DP specification same as above								

Important Tips:

- 1) Motherboard default HDMI+VGA+LVDS+6COM+10USB+1LAN;
- 2) Motherboard VGA port and DP port two for one choice port , default support VGA port, can change support DP port; DP port support 4K resolution 4096/3840*2160@60Hz;
- 3) Motherboard LVDS pin and EDP pin is two for one choice pin , by default support LVDS pin, can change support EDP pin; EDP support 4K resolution 4096/3840*2160@60Hz;
- 4) Motherboard HDMI port support 4K resolution 4096/3840*2160@30Hz;
- 5) Motherboard by default support M.2 2280, can choose M.2 2242; Support SATA protocol or NVME (PCIE) protocol M.2 disk,default support 2types signal;
- 6) Motherboard MINI-PCIE by default support PCIE signal and USB signal coexist, by default F_USB2 2/4/6/8/10 pin has no signal,MINI-PCIE USB signal and F_USB2 signal two for one choice, in which PCIE signal can change to SATA signal,support MSATA disk, SATA1 interface after the change no signal;
- 7) Motherboard blue USB port and pin support USB3.1 Gen2, the max transmission broadband is10.0Gbps;
- 8) External USB ports and all USB pins will be A power by default (with electricity after shutdown), all can change to S power (without electricity after shutdown); later manufacture the board default all USB port and pin will be S power;
- 9) Motherboard support 6 COM port, can choose 2 COM, COM2~COM6 support RS232; COM1 support RS232/RS422/RS485 optional setting through BIOS;
- 10) Motherboard COM1 and COM2 can set the 9th pin to output 0V/5V/12V through JCOM1 and JCOM2 jumping cap respectively, with the default 0V;
- 11) The motherboard supports single gigabit network port by default, which can be changed to double gigabit network port;
- 12) Motherboard only support 12V power supply,not support 19V power supply

CPU information

CPU model	CPU brand	CPU	Frequency	Max Turbo Frequency GHz	CPU TDP (W)
8 th gen I3	core	8145U	Dual core 2.1G	3.9G	15
8 th gen I5	core	8365U	Quad core 1.6G	4.1G	15
		8265U	Quad core 1.6G	3.9G	15
8 th gen I7	core	8665U	Quad core 1.9G	4.8G	15
10 th gen I3	core	10110U	Dual core 2.1G	4.1G	15
10 th gen I5	core	10310U	Quad core 1.7G	4.4G	15
	core	10210U	Quad core 1.6G	4.2G	15
10 th gen I7	core	10510U	Quad core 1.8G	4.9G	15
	core	10610U	Quad core 1.8G	4.9G	15
	core	10810U	Six core 1.1G	4.9G	15
	core	10710U	Six core 1.1G	4.7G	15

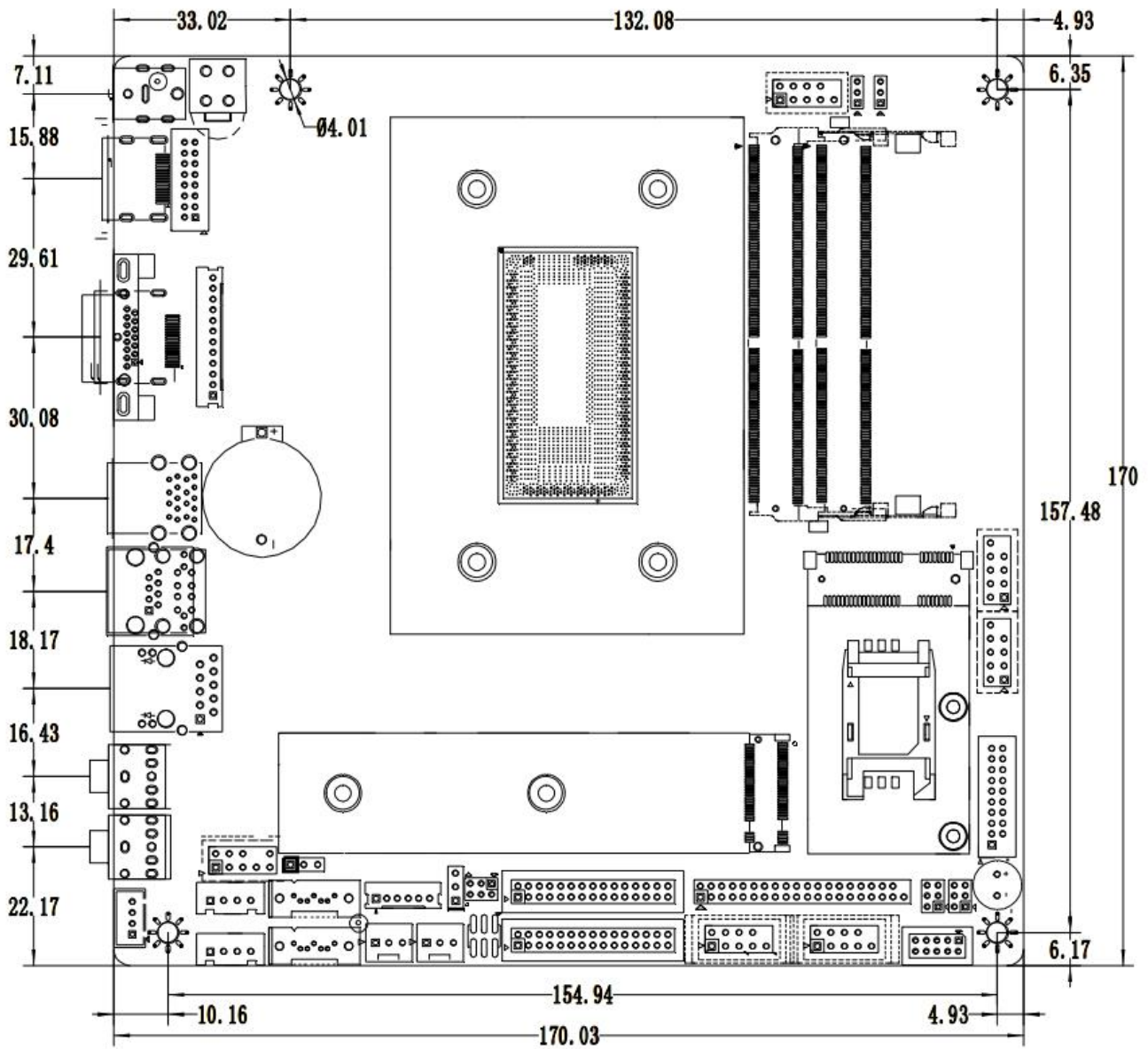
Motherboard Specification

Motherboard size	170mm*170mm*18mm	
CPU	Support 8 th gen Whiskey Lake CPU: I3-8145U、I5-8265U、I7-8665U etc.	
	Support 10 th gen Comet Lake CPU: I3-10110U、I5-10210U、I7-10510U etc.	
Memory	QM8U	2*NB-DDR4 memory channel , support 2133/2400MHz memory , max support 64GB
	QM10U	2*NB-DDR4 memory channel , support 2133/2400/2666MHz memory , max support 64GB
Power supply	1*DC_IN	Support 12V power, DC head diameter 2.5MM
	1*DC_ATX	Motherboard full consumption power is about 85W.Suggest use 12V7A or above power
Display function	Integrated Intel UHD Graphics super core graphics controller, Support single display, double display/three display copy, double display/three display extension, DOS single display	
	1*VGA_OUT pin	Support resolution 1920*1080@60HZ (12Pin, 1*12Pin, 2.0mm)
	1*VGA DB15 port	Support resolution 1920*1080@60HZ
	1*DP port	Support 4K resolution 4096/3840*2160@60HZ
	VGA port and DP port two for one choice	

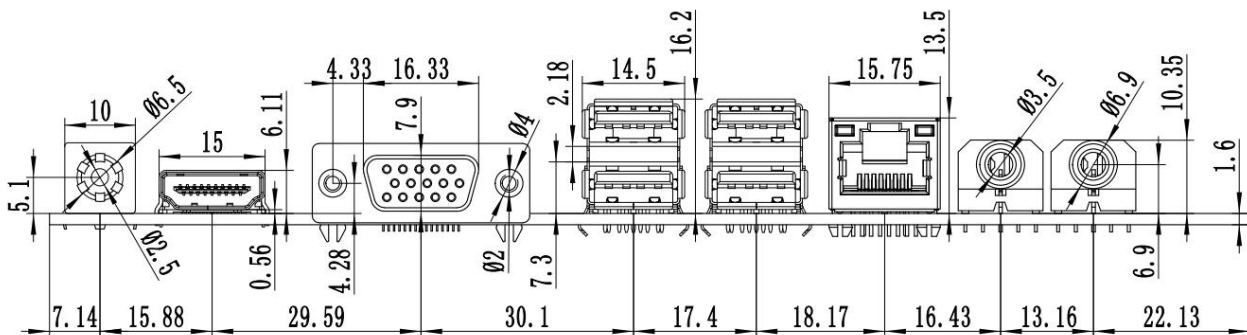
	1*HDMI 1.4 port	Support 4K resolution 4096/3840*2160@30HZ	
	1*HDMI_CON pin	Support 4K resolution 4096/3840*2160@30HZ (16Pin, 2*8Pin, 2.0mm)	
	1*EDP pin	Support 4K resolution 4096/3840*2160@60HZ (30Pin, 2*15Pin, 2.0mm)	
	1*EDP_PWR pin	EDP working voltage control Pin (6Pin, 2*3Pin, 2.0mm)	
	1*LVDS pin	Support resolution 1920*1080@60HZ (30Pin, 2*15Pin, 2.0mm)	
	1*LVDS_PWR pin	LVDS working voltage control pin (6Pin, 2*3Pin, 2.0mm)	
	1*INVERT pin	LVDS Backlight switch backlight brightness control (6Pin, 1*6Pin, 2.0mm)	
	1*BKLT-PWR1	LVDS backlight voltage control pin	
	LVDS pin and EDP pin two for one choice		
Ethernet function	1*LAN port	Realtek 8111H Gigabit network card chip, Support Network wake-up and PXE No disk startup function	
	1*Mini-PCIE port	Support WIFI/3G/4G/GPS/bluetooth module, can choose support MSATA	
Hard disk function	1*M.2 port	By default support M.2 2280, can choose 2242; By default NVME (PCIE) Agreement, can change support SATA Agreement	
	1*SATA1 port	标准 SATA3.0 硬盘 port, 最大传输速度 6.0 Gbps	
	SATA1 signal and MSATA signal two for one choice, by default support SATA1		
	1*SATA2 port	Standard SATA3.0 hard disk port, Maximum transmission speed 6.0 Gbps	
	1*SATA_PWR1 pin	It is hard disk power supply pin and can take the 5V,12V electricity. (4Pin, 1*4Pin, 2.54mm)	
	1*SATA_PWR2 pin	It is hard disk power supply pin and can take the 5V,12V electricity. (4Pin, 1*4Pin, 2.54mm)	
Audio Function	Integrated Realtek ALC662 HD Digital audio decoder, 6-channel high fidelity audio controller		
	1*LINE_OUT port	Support Audio output (green)	
	1*MIC_IN port	Support Microphone input (red)	
	1*INT_SPK pin	power amplifier Support 80m5W Speaker output (4Pin, 1*4Pin, 2.0mm)	
	1*F_AUDIO pin	Standard Audio Pin (9Pin, 2*5Pin, 2.54mm)	
	1*SPDIF pin	Digital audio pin pin (3Pin, 1*3Pin, 2.54mm)	
USB Function	2*USB3.1 port	Rear standard USB3.1 Gen2 port, Maximum transmission speed 10.0Gbps	
	2*USB2.0 port	Rear standard USB2.0 port, Maximum transmission speed 480Mbps (60MB/s)	
	1*F_USB1 pin	Front USB2.0 pin, one group have 2*USB2.0 (9Pin, 2*5Pin, 2.54mm)	
	1*F_USB2 pin	Front USB2.0 pin, one group have 2*USB2.0 (9Pin, 2*5Pin, 2.54mm)	
	1*F_USB3_A pin	Front USB3.1 Gen2 pin, one group have 2*USB3.1 (19Pin, 2*10Pin, 2.0mm)	
Switch Function	1*F_PANEL pin	switch, power LED, Hard disk LED, restart pin (9Pin, 2*5Pin, 2.54mm)	
	1*AUTO_SW pin	hardware control power on pin (3Pin, 1*3Pin,	

		2.0mm)
Other I/O	COM1/COM2 pin	Serial port, COM1 support RS232, RS422/RS485 optional (9Pin, 2*5Pin, 2.54mm)
	COM3~COM6 pin	Serial port, support standard RS232; (39Pin, 2*20Pin, 2.0mm)
	1*JCOM1 pin	Control COM1 9th voltage 0V/5V/12V optional (6Pin, 2*3Pin, 2.0mm)
	1*JCOM2 pin	Control COM2 9th voltage 0V/5V/12V optional (6Pin, 2*3Pin, 2.0mm)
	1*SIM_CARD card slot	Support SIM card, when use 3G/4G need SIM card
	1*FAN2 pin	CPU fan pin, support temperature control (3Pin, 1*3Pin, 2.54mm)
	1*FAN3 pin	System fan pin,full speed,not support temperature control (3Pin, 1*3Pin, 2.54mm)
	1*CLR_CMOS pin	CLR_CMOS Motherboard zero clearing、discharge pin (3Pin, 1*3Pin, 2.0mm)
	1*J_GPIO pin	GPIO control pin (10Pin, 2*5Pin, 2.0mm)
Working environment	working temperature : -20°C~60°C; Working humidity: 5%~95% relative humidity, No condensation	
BIOS	AMI BIOS, Support Power up, RTC, Intelligent identification of remote switching equipment	
Watch Dog	Watchdog programming, Support Hardware reset function (256level, 0~255second)	
Operating system	Support Windows 10 64, Linux etc.	

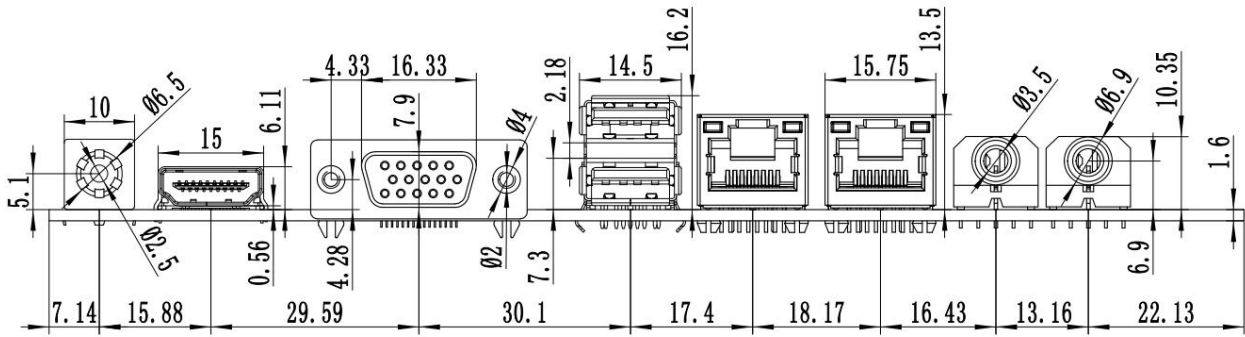
1.1 Motherboard size



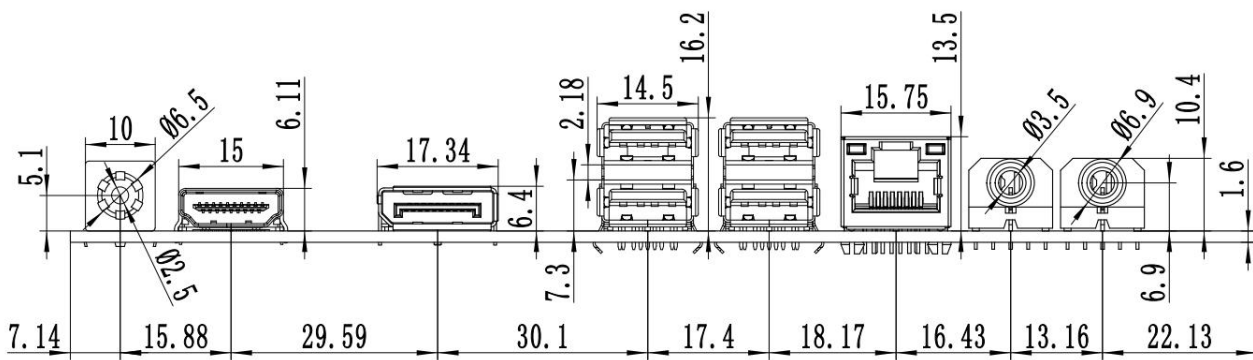
VGA+single lan port size ↓



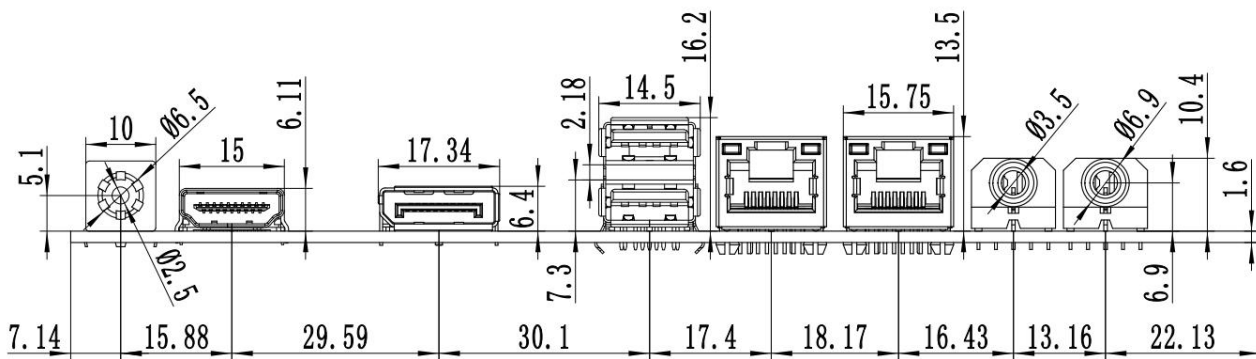
VGA+ dual lan port size ↓



DP+ single lan port size ↓




DP+dual lan port size ↓



2.1 VGA pin definition:

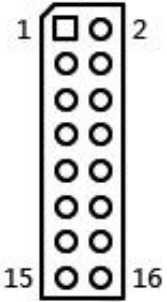
Item: VGA OUT (1*12Pin, 2.0mm)			
pin	Definition	pin	Definition
1	GND	2	VSYNC
3	HSYNC	4	GND
5	RED	6	GND
7	GRN	8	GND
9	BLUE	10	GND
11	DDC_DATA	12	DDC_CLK

pin Bit Number Map



⚠️ Note: VGA_H pin signal and the rear VGA interface are the same signal, only double-display and three-display replication is supported.

2.2 HDMI pin definition:

item: HDMI_CON (2*8Pin, 2.0mm)				Pin item picture
pin	Definition	pin	Definition	
1	HDMI_TXD2P	2	HDMI_TXD1P	
3	HDMI_TXD2N	4	HDMI_TXD1N	
5	GND	6	GND	
7	HDMI_TXD0P	8	HDMI_TXC0P	
9	HDMI_TXD0N	10	HDMI_TXC0N	
11	GND	12	HDMI_5V	
13	HDMI_CLK	14	HDMI_5V	
15	HDMI_DATA	16	HDMI_HPD	

⚠️ Notice: When inserting the HDMI cable, the first stitch of the HDMI cable must correspond to the first pin of the motherboard pin. If the plug is reversed or inserted incorrectly, the screen will not be displayed.

2.3 LVDS pin definition:

item: LVDS (2*15Pin, 2.0mm)				Pin item picture
pin	Definition	pin	Definition	
1	VCC	2	VCC	
3	VCC	4	GND	
5	GND	6	GND	
7	ADO0-	8	ADO0+	
9	ADO1-	10	ADO1+	
11	ADO2-	12	ADO2+	
13	GND	14	GND	
15	ACLK-	16	ACLK+	
17	ADO3-	18	ADO3+	
19	BDO0-	20	BDO0+	
21	BDO1-	22	BDO1+	
23	BDO2-	24	BDO2+	
25	GND	26	GND	
27	BCLK-	28	BCLK+	
29	BDO3-	30	BDO3+	

⚠ Notice: When inserting the LVDS cable, the first stitch of the LVDS cable must correspond to the first pin of the motherboard pin. If the plug is reversed or inserted incorrectly, there is a danger of burning the screen and burning the motherboard!

2.3.1 Backlight power supply definition:

item: INVERT (1*6Pin, 2.0mm)		Pin item picture
pin	Definition	
1	+12V	
2	+12V	
3	ON/OFF ((Backlight switch))	
4	ADJ (Backlight brightness adjustment)	
5	GND	
6	GND	

2.3.2 LVDS screen working voltage:

item: LVDS_PWR (2*3Pin, 2.0mm)		Pin item picture
pin	Definition	
1-2short circuit	+3.3V	
3-4short circuit	+5V	
5-6short circuit	+12V	

⚠ Notice: Screens of different sizes require different operating voltages. The motherboard provides three screen operating voltages of 3.3V, 5V and 12V. Please set the corresponding value of "LVDS_PWR" according to the working voltage required by the screen, otherwise there will be danger of burning the screen and burning the motherboard!

2.4 EDP pin definition:

Note: The EDP backlight line is integrated with the screen line

item: EDP (2*15Pin, 2.0mm)				Pin item picture
pin	Definition	pin	Definition	
1	VCC	2	VCC	
3	GND	4	GND	
5	TX0P	6	TX0N	
7	GND	8	GND	
9	TX1P	10	TX1N	
11	GND	12	GND	
13	TX2P	14	TX2N	
15	GND	16	GND	
17	TX3P	18	TX3N	
19	GND	20	GND	
21	AUXP	22	AUXN	
23	GND	24	HPD	
25	BKLT_CTL	26	BKLT_EN	
27	GND	28	GND	
29	BLPWR	30	BLPWR	

⚠ Notice: When inserting the EDP cable, the first stitch of the LVDS cable must correspond to the first pin of the motherboard pin. If the plug is reversed or inserted incorrectly, there is a danger of burning the screen and burning the motherboard!

2.4.1 EDP screen working voltage:

item: EDP_PWR (2*3Pin, 2.0mm)		Pin item picture
pin	Definition	
1-2short circuit	+3.3V	
3-4short circuit	+5V	
5-6short circuit	+12V	

⚠ Screens of different sizes require different operating voltages. The motherboard provides three screen operating voltages of 3.3V, 5V and 12V. Please set the corresponding value of "LVDS_PWR" according to the working voltage required by the screen, otherwise there will be danger of burning the screen and burning the motherboard!

2.5 J_GPIO pin definition:

item: : J_GPIO (2*5Pin, 2.0mm)				pin item picture
pin	Definition	pin	Definition	
1	GND	2	+5V	
3	GPIO_IN0	4	GPIO_OUT0	
5	GPIO_IN1	6	GPIO_OUT1	
7	GPIO_IN2	8	GPIO_OUT2	
9	GPIO_IN3	10	GPIO_OUT3	

2.6 Serial port(COM) function and pin definition:

The motherboard supports the standard RS232 6COM motherboard, and the COM1 can optionally support RS485 and RS422 through THE BIOS setting.

The 9th pin of COM1/2 can change the jumper Settings via JCOM1/JCOM2, selecting the 9th pin to output +5V or +12V voltage.

item: JCOM1 (2*3Pin, 2.0mm)		item: JCOM2 (2*3Pin, 2.0mm)		Pin item picture
pin	The 9th pin of COM1 is charged	pin	The 9th pin of COM2 is charged	
1-2short circuit	+5V	1-2short circuit	+5V	
3-4short circuit	+12V	3-4short circuit	+12V	
5-6short circuit	Without electricity (by default)	5-6short circuit	Without electricity (by default)	

2.6.1 COM1/2 pin definition:

item: COM1/2 (2*5Pin, 2.54mm)				Pin item picture
pin	Definition	pin	Definition	
1	DCD	2	RXD	
3	TXD	4	DTR	
5	GND	6	DSR	
7	RTS	8	CTS	
9	RI	10	NC	

2.6.2 COM3~6 pin definition:

item: COM3~6 (2*20Pin, 2.0mm)				Pin item picture
pin	Definition	pin	Definition	
1	COM3_DCD	2	COM3_RXD	
3	COM3_TXD	4	COM3_DTR	
5	GND	6	COM3_DSR	
7	COM3_RTS	8	COM3_CTS	
9	COM3-RI	10	NC	
11	COM4_DCD	12	COM4_RXD	
13	COM4_TXD	14	COM4_DTR	
15	GND	16	COM4_DSR	
17	COM4_RTS	18	COM4_CTS	
19	COM4-RI	20	NC	
21	COM5_DCD	22	COM5_RXD	
23	COM5_TXD	24	COM5_DTR	
25	GND	26	COM5_DSR	
27	COM5_RTS	28	COM5_CTS	
29	COM5-RI	30	NC	
31	COM6_DCD	32	COM6_RXD	
33	COM6_TXD	34	COM6_DTR	
35	GND	36	COM6_DSR	
37	COM6_RTS	38	COM6_CTS	
39	COM6-RI	40	NC	

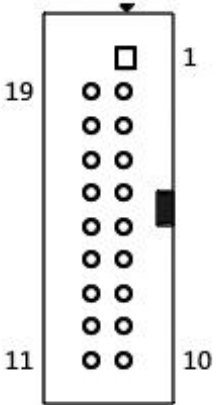
2.6.3 The RS422/RS485 definition of the COM1 pin:

item: : COM1 (2*5Pin, 2.54mm)			
Signal	Pin definition		
RS485	1 (S485-)	2 (S485+)	
RS422	1 (TXD-)	2 (TXD+)	
	3 (RXD+)	4 (RXD-)	

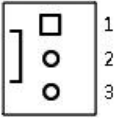
2.7 USB pin definition:

item: : F_USB1/ F_USB2 (2*5Pin, 2.54mm)				Pin item picture
pin	Definition	pin	Definition	
1	VCC+5V	2	VCC+5V	
3	DATA0-	4	DATA1-	
5	DATA0+	6	DATA1+	
7	GND	8	GND	
9	NC	10	GND	

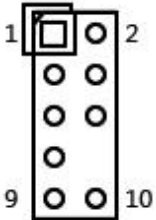
2.8 F_USB3_A pin definition:

item: : F_USB3.0_A (2*10Pin, 2.0mm)				Pin item picture
pin	Definition	pin	Definition	
20	NC	1	USB3.0_VCC	
19	USB3.0_VCC	2	USB3_RX4N	
18	USB3_RX3N	3	USB3_RX4P	
17	USB3_RX3P	4	GND	
16	GND	5	USB3_TX4N	
15	USB3_TX3N	6	USB3_TX4P	
14	USB3_TX3P	7	GND	
13	GND	8	USB PN3	
12	USB PN2	9	USB PP3	
11	USB PP2	10	NC	

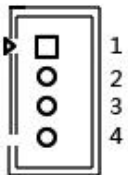
2.9 FAN port Definition:

item: : CPU_FAN (1*3Pin, 2.54mm)		item: : SYS_FAN (1*3Pin, 2.54mm)		Pin item picture
pin	Definition	pin	Definition	
1	GND	1	GND	
2	CTL (temperature control)	2	+12V	
3	TAC (Fan Speed Detection)	3	TAC (Fan Speed Detection)	

2.10 Audio interface and pin definition:

item: : F_AUDIO (2*5Pin, 2.54mm)				Pin item picture
pin	Definition	pin	Definition	
1	MIC-L	2	GND	
3	MIC-R	4	NC	
5	LINE OUT-R	6	MIC_JD	
7	FAUDIO_JD	8	NC	
9	LINE OUT-L	10	LINE_JD	

2.11 Speaker(Power Amplifier) pin definition:

item: : INT_SPK (1*4Pin, 2.0mm)		Pin item picture
pin	Definition	
1	L+	
2	L-	
3	R-	
4	R+	

2.12 Hard Disk interface and definition:

One interface supports M.2 2280 by default, optional 2242; Default SATA protocol, can change

NVME (PCIE) protocol ,brush BIOS to change;

2 SATA3.0 hard disk interfaces and 2 4Pin hard disk power supply voltage interfaces; All SATA ports can transmit at 6Gbps

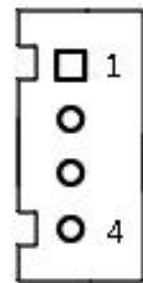
SATA Definition:

item: : SATA	
pin	Definition
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND

SATA_PWR Definition:

item: : SATA_PWR (1*4Pin, 2.54mm)	
pin	Definition
1	12V
2	GND
3	GND
4	5V

Pin item picture



⚠ Notice: The first pin of the "SATA_PWR" hard disk power supply interface is 12V output, and the fourth pin is 5V output. When using, you must use the customized power cord from our company to avoid burning the hard disk.

2.13 Power and Switch pin Definition:

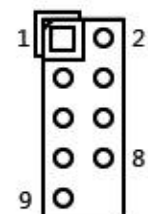
The motherboard provides a standard 5.5*2.5mm DC header (DC_IN), 1*4PIN ATX power supply interface.

The definition is:

item: : ATX (2*2Pin)		Pin item picture
pin	Definition	
1	GND	
2	GND	
3	+12V	
4	+12V	

Switch pin Definition :

item: : F_PANEL (2*5Pin, 2.54mm)				Pin item picture	
pin	Definition		pin		Definition
1	HDLED+	disk LED	2	PWRLED+	Power LED
3	HDLED-		4	GND	
5	GND	restart	6	P_SW IN	Switch
7	RST		8	GND	
9	GND		10		

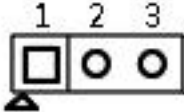


(1) Hard disk indicator light (the first and third pins of HDDLED, and the first pin is the positive pole of LED) will flash when the hard disk is reading and writing, indicating that the hard disk is running;

- (2) Power indicator light (the second and fourth pins of Power LED, and the second pin is the positive pole of LED) when the mainboard is switched on, the Power indicator light will be on; When the main board power off, the power indicator lights off;
- (3) The Reset Button (the 5th and 7th Reset buttons) can restart the system if the system fails to continue working;
- (4) Power switch control (6th, 8th pin Power Button) These two pins are connected to the bounce switch on the front panel of the chassis, which can be used to turn the computer on or off.

2.14 Power-on boot - Hardware control

Motherboard provides AUTO_SW jump cap control power on boot function

item: AUTO_SW (1*3Pin, 2.0mm)		Pin item picture
setting	function	
1-2 short circuit	Turn off the power on function	
2-3 short circuit	Turn on the power on function	

⚠️ Note: Hardware control and software control (BIOS setting) cannot be set at the same time when power-on, and there will be a conflict.

2.15 Motherboard discharges, clears and battery: :

The "CMOS" is powered by the button battery on the motherboard.

Clearing the "CMOS" will cause the previous BIOS settings to be cleared and set to the original factory setting.

Clearing CMOS procedures:

Method 1:

- (1) Turn off the motherboard and disconnect the power.
- (2) Use metal conductors to briefly connect the pin1, pin2 of "CLR_CMOS" for 5~6 seconds. Or press the "CMOS_SW" button.
- (3) When booting up, press "Delete" to enter the BIOS.
- (4) After entering the BIOS, press "F9", "Enter" to reload the optimal default value.
- (5) Press the "F10" to save and exit the setting.

CMOS pin definition:

item: CLR_CMOS (1*3Pin, 2.0mm)	
pin	Function
1-2 short circuit	Boot up normal by default
2-3 short circuit	Clear CMOS content, BIOS will restore factory settings.

⚠️ Notice: Please do not clear the "CMOS" when the motherboard is powered on or is charged, so as not to damage the motherboard.

After power, replug button battery, can also achieve the motherboard reset function.

Button battery specification: 3V CR2032

⚠️ Notice:

Please make sure the battery's positive electrode is facing up.

Please make sure the battery voltage is enough 2.8V~3V.

Please must use the same model or the manufacturer recommend the same type of battery.

If the battery is not replaced correctly, there is a danger of explosion!

