

IPCTECH Motherboard User's Manual

QY-MB-H110-ATX

1.Models and Attentions

1.1 Models

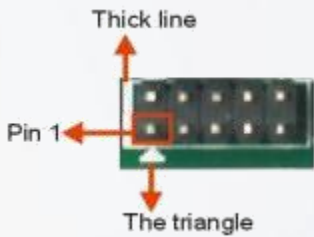
This manual is applied to following models:

Chipset	COM	LAN	USB	PCIE	PCI	DVI-D	HDMI	VGA	eDP/ LVDS	Mini-PCIE	SATA
H110	6	2	9	1*16X 1*4X 1*1X	4	1	1	1	eDP	2	3

1.2 Attentions

- 1. Notes under a table or figure indicate the difference of models, or alternative definition of specific pin of the header (jumper/connector).
- 2. How to identify the first pin of a header or jumper

Usually, there is a thick line or a triangle near the header’ s or jumper’ s pin 1.



Square pad, which you can find on the back of the motherboard, is usually used for pin 1.



2.Specification

Model	QY-MB-H110-ATX
CPU	Support Intel Pentium / Celeron / 6-7th Generation Core i3 / i5 / i7 CPU, LGA 1151 Support MAX CPU TDP: 65W
Chipset	Intel H110,TDP 6W
Display [1]	1*DVI (DVI-D): Support max resolution up to 1920*1200@60Hz 1*HDMI (type-A): Support max resolution up to 1920*1200@60Hz 1*VGA (DB15/F): Support max resolution up to 1920*1200@60Hz 1*eDP/LVDS (Header): Support max resolution up to 1920*1200@60Hz, eDP
Memory	Support DDR4-2400 MHz, 2*U-DIMM Slot, up to 32GB [2]
Storage	3*SATA 3.0 7P Connector 1*Mini-PCIE Slot (MSATA) [3]
Ethernet	1*Intel I210 AT+1*Intel I219-KM for 1000 Mbps
Audio	Realtek ALC897 5.1 Channel HDA Codec, Support 2*MIC+2*Line-out+1*Line-in
Expansion Slots	1*PCIE 16X Slot 1*PCIE 4X Slot 1*PCIE 1X Slot 4*PCI Slot 1*Mini-PCIE Slot (WIFI+4G, with 1*Full-Size SIM Card Slot)
COM	4*RS-232+2*RS-232/RS485 [4]
USB	4*USB 3.0 (Type-A, Rear I/O) 2*USB 2.0 (Type-A, Rear I/O) 3*USB 2.0 (Header, Internal)
Other Ports	8 * GPIO 1 * LPT Header 1 * SMB Header 1 * Front Panel Header 1 * PS/2 Connector (keyboard or mouse) 1 * SIM Card Slot 3 * CPU Fan Header

System	Windwos 7 / 8 / 10, Server 2008 / 2012, Linux
Temperature	Storage: -20~75°C Operating: 0~60°C
BIOS	AMI UEFI BIOS (Support Watchdog Timer)
Power Supply	ATX
Size	305mm * 217mm

Notes:

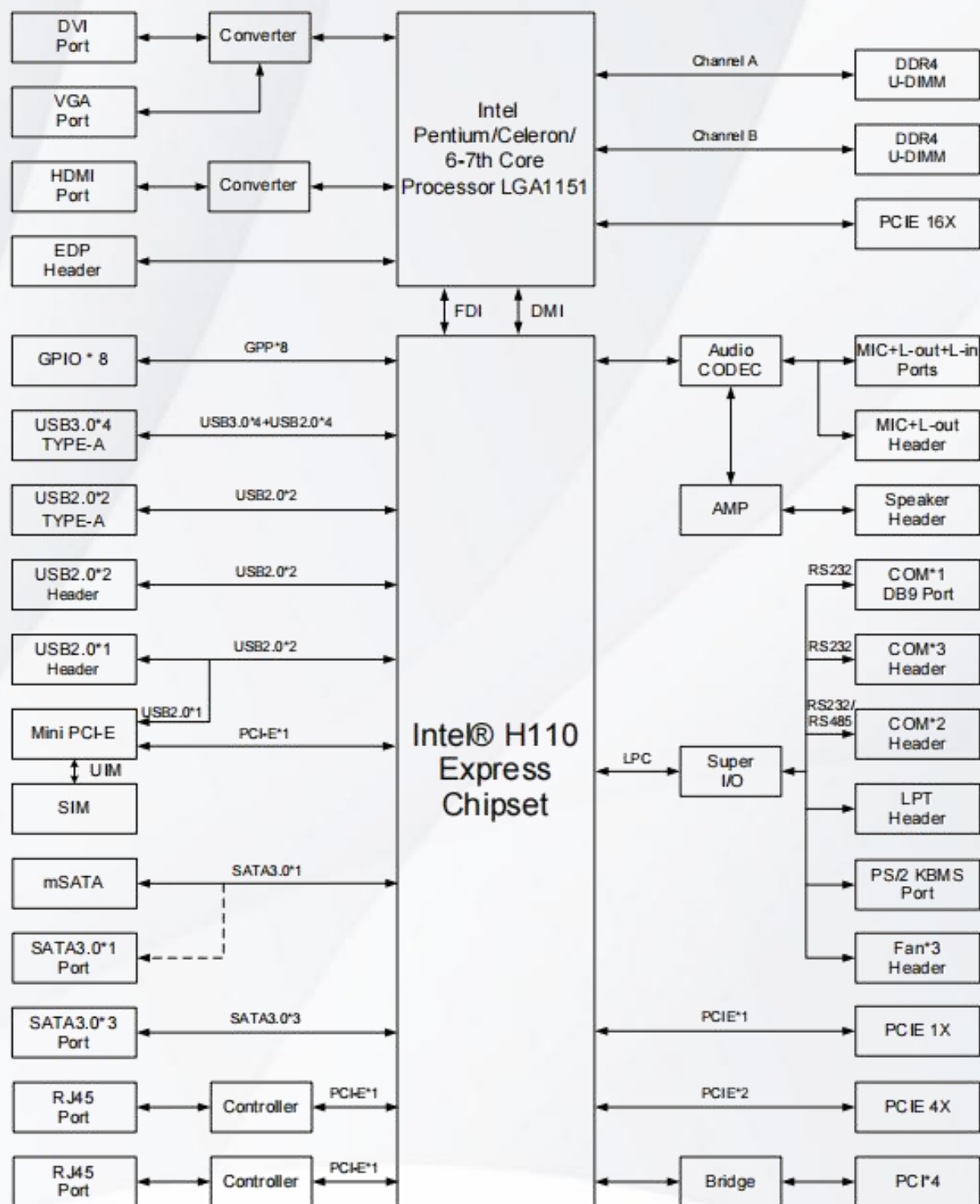
[1]: Up to two displays can be activated at the same time when chipset is customized into Intel H110.

[2]: 6th Generation CPU support DDR4 2133.

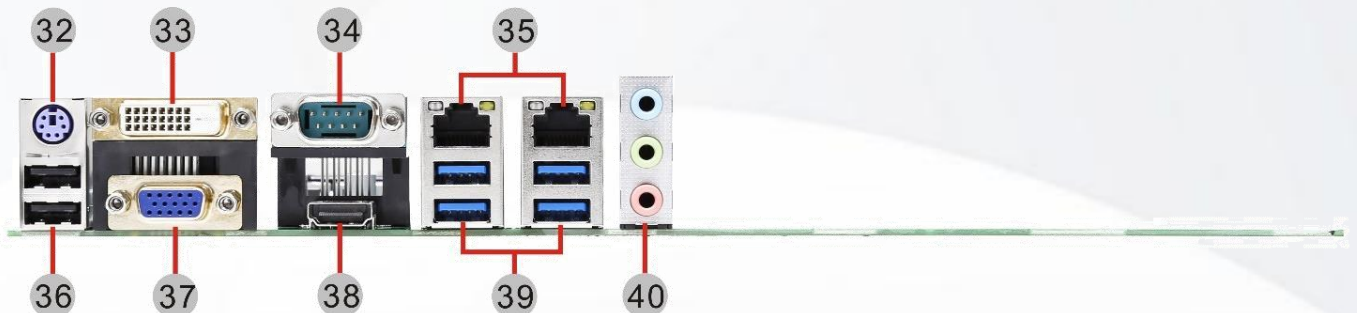
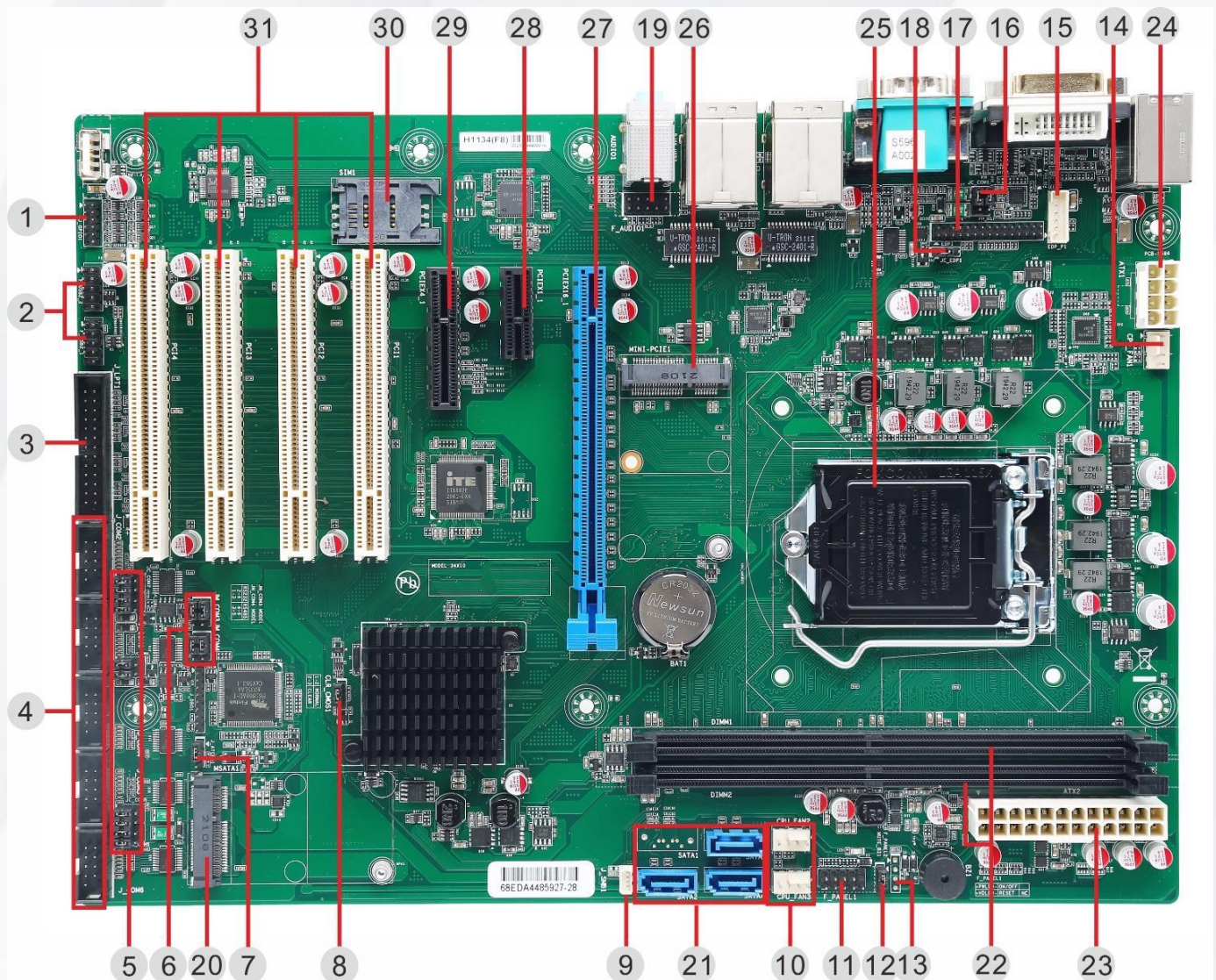
[3]: MINI-PCIE1 slot supports 3G/4G and WIFI by default, MSATA1 slot supports mSATA by default. MSATA and SATA1 share the same signal, they can' t be accessed simultaneously.

[4]: COM3-4 is RS232 by default, RS485 is selectable by "COM3-4 Select Jumpers" (JM_COM3-4, Location 6).

3.Functional Block Diagram



4.Jumper / Headers and Connectors



Jumpers / Headers and Connectors

1	Front USB Pin Header	P7	21	SATA3.0 Connectors	
2	Front USB1-2 Pin Headers	P7	21	DIMM Slots	
3	Parallel Pin Header	P8	23	ATX2 Power Supply Connector	
4	COM2-6 Pin Header	P8	24	ATX1 Power Supply Connector	
5	COM2-6 Select Jumpers	P9	25	CPU Socket Slot	
6	COM3-4 Select Jumpers	P9	26	Mini-PCIE Slot	
7	AT or ATX Select Jumper	P9	27	PCIE 16X Slot	
8	COMS Clear Select Jumper	P10	28	PCIE 1X Slot	
9	SMB Pin Header	P10	29	PCIE 4X Slot	
10	CPU FAN 2-3 Pin Headers	P10	30	SIM Card Slot	
11	Front Panel Pin Header1	P10	31	PCI Slots	
12	Buzzer Mute Select Jumper	P10	32	PS/2 Connector (keyboard or mouse)	
13	Front Panel Pin Header2		33	DVI Connector	
14	CPU FAN1 Pin Header	P10	34	COM Connector	
15	EDP Backlight Control Header	P11	35	LAN Connector	
16	COM1 Select Jumper	P11	36	USB2.0 Connector	
17	EDP Signal Header	P11	37	VGA(DB15) Connector	
18	EDP VDD Select Jumper	P12	38	HDMI Connector	
19	Front Audio Pin Header	P12	39	USB3.0 Connectors	
20	MSATA Slot		40	Audio Connector	



5. Definition of Jumpers / Headers and Connectors

1) GPIO Pin Header (6*2 Pin 2.00mm)

Location	Header	Pin	Definition	Pin	Definition
1	J-GPIO1	1	PCH-GPP-E4 (0xFDAE05A0 Bit1, H) [1]	2	PCH-GPP-E5 (0xFDAE05A8 Bit1, H) [1]
		3	PCH-GPP-E6 (0xFDAE05B0 Bit1, H) [1]	4	PCH-GPP-F5 (0xFDAE0610 Bit1, H) [1]
		5	GND	6	PCH-GPP-F6 (0xFDAE0618 Bit0, H) [1]
		7	PCH-GPP-F7 (0xFDAE0620 Bit0, H) [1]	8	PCH-GPP-F8 (0xFDAE0628 Bit0, H) [1]
		9	PCH-GPP-F9 (0xFDAE0630 Bit0, H) [1]	10	+ 5V [2]
				12	N/C

Noties:

[1]: "H" or "L" means the default voltage is High or Low level.

[2]: Power on this Pin and GPIO output is 5V signaling by default, 3.3V is available if specified (resistor selectable).

2) Front USB1-2 Pin Headers (5*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
2	F-USB2-1	1	+ 5V	2	+ 5V
		3	USB8-	4	USB9-
		5	USB8+	6	USB9+
		7	GND	8	GND
				10	N/C
	F-USB2-2	1	+ 5V	2	+ 5V
		3	USB5- [1]	4	USB10+
		5	USB5+ [1]	6	USB10+
		7	GND	8	GND
				10	N/C



Noties:

[1]: This Pin and Mini PCI-E1 share the same USB signal and can' t be accessed simultaneously.
If Mini PCI-E1 doesn' t support 3G device, this USB signal can be supplied.

3)Parallel Pin Header (13*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
3	J-LPT1	1	STROBE#	2	AUTOFEED#
		3	DATA0	4	ERROR#
		5	DATA1	6	INIT#
		7	DATA2	8	SLCTIN#
		9	DATA3	10	GND
		11	DATA4	12	GND
		13	DATA5	14	GND
		15	DATA6	16	GND
		17	DATA7	18	GND
		19	ACKNLG#	20	GND
		21	BUSY	22	GND
		23	PE	24	GND
		25	SLCT	26	N/C

4)COM2-6 Pin Header (5*2 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
	J-COM2	1	PIN1-COM2 [1]	2	DSR#2
		3	RXD2	4	RTS#2
		5	TXD2	6	CTS#2
		7	DTR#2	8	PIN8-COM2 [2]
		9	GND		



4	J-COM3	1	PIN1-COM3 [1]	2	DSR#3
		3	PIN1-COM3 [3]	4	RTS#3
		5	TXD3	6	CTS#3
		7	DTR#3	8	PIN8-COM3 [2]
		9	GND		
	J-COM4	1	PIN1-COM4 [1]	2	DSR#4
		3	PIN1-COM4 [3]	4	RTS#4
		5	TXD4	6	CTS#4
		7	DTR#4	8	PIN8-COM4 [2]
		9	GND		
	J-COM5	1	PIN1-COM5 [1]	2	DSR#5
		3	RXD5	4	RTS#5
		5	TXD5	6	CTS#5
		7	DTR#5	8	PIN8-COM5 [2]
		9	GND		
	J-COM6	1	PIN1-COM [1]	2	DSR#6
		3	RXD6	4	RTS#6
		5	TXD6	6	CTS#6
		7	DTR#6	8	PIN8-COM6 [2]
		9	GND		

Noties:

[1]: Pin1 of COM2-6 is DCD# by default, 5V is selectable by "COM2-6 Select Jumpers" (JC_COM2-6, Location 5).

[2]: Pin8 of COM2-6 is RI# by default, 12V is selectable by "COM2-6 Select Jumpers" (JC_COM2-6, Location 5).

[3]: COM3-4 is RS232 by default, RS485 is selectable by "COM3-4 Select Jumpers" (JM_COM3-4, Location 6).

5)COM2-6 Select Jumpers (3*2 Pin 2.54mm)

Location	Jumper	Seetings	Function
5	JC-COM2	1-3(Default)	Pin1: DCD#
	JC-COM3	2-4(Default)	Pin8: RI#
	JC-COM4	3-5	Pin1: + 5V
	JC-COM5 JC-COM6	4-6	Pin8: + 12V

6)COM3-4 Select Jumpers (3*2 Pin 2.54mm)

Location	Jumper	Seetings	Function
6	JC-COM3 JC-COM4	1-3,2-4(Default)	RS232
		3-5,4-6	PIN1-COM3: RS485- PIN3-COM3: RS485+ PIN1-COM4: RS485- PIN3-COM4: RS485+

7)AT or ATX Select Jumper (3*1 Pin 2.54mm)

Location	Jumper	Seetings	Function
7	J-ATCFG1	1-2(Default)	ATX MODE
		2-3	AT MODE

8)COMS Clear Select Jumper (3*1 Pin 2.54mm)

Location	Jumper	Seetings	Function
8	CLR-CMOS1	1-2(Default)	Normal
		2-3	Clear CMOS

9)SMB Pin Header (4*1 Pin 1.25mm)

Location	Header	Seetings	Function
9	J-SMB1	+ 3.3V	SMB-SDA
		SMB-SCL	GND



10) CPU Fan2-3 Pin Headers (4*1 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
10	CPU_FAN2 CPU_FAN3	1	GND	2	+ 12V
		3	FAN Speed Detection	4	FAN Speed Control

11) Front Panel Pin Header (5*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
11	F-PANEL1	1	HD LED+	2	Power LED+
		3	HD LED-	4	Power LED-
		5	RESET-	6	Power+
		7	RESET+	8	Power-
		9	N/C		

12) JBUZZer Mute Select Jumper (3*1 Pin 2.54mm)

Location	Jumper	Seetings	Function
12	MUTE-BZ1	1-2(Default)	Open Buzzer
		2-3	Close Buzzer

14) CPU FAN1 Pin Header (4*1 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
14	CPU-FAN1	1	GND	2	+ 12V
		3	FAN Speed Detection	4	FAN Speed Control

15) EDP Backlight Control Pin Header (6*1 Pin 2.00mm)

Location	Header	Pin	Definition	Pin	Definition
15	CPU-FAN1	1	GND	4	EDP -BKL-EN
		2	GND	5	+ 12V



		3	EDP-BKL-CTL	6	+ 12V
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16) COM1 Select Jumper (3*2 Pin 2.54mm)

Location	Jumper	Seetings	Function
16	JC-COM1	1-3(Default)	Pin1: DCD#
		2-4(Default)	Pin8: RI#
		3-5	Pin1: + 5V
		4-6	Pin8: + 12V

17) EDP Signal Pin Header (15*2 Pin 2.00mm)

Location	Header	Pin	Definition	Pin	Definition
17	EDP1	1	VDD [1]	2	VDD [1]
		3	VDD [1]		
		5	EDP-HPD	6	EDP-HPD
		7	N/C	8	N/C
		9	N/C	10	N/C
		11	N/C	12	N/C
		13	GND	14	GND
		15	N/C	16	N/C
		17	EDP-TX3-	18	EDP-TX3+
		19	EDP-TX0-	20	EDP-TX0+
		21	EDP-TX1-	22	EDP-TX1+
		23	EDP-TX2-	24	EDP-TX2+
		25	GND	26	GND
		27	N/C	28	N/C
		29	EDP-AUX-	30	EDP-AUX+

Noties:

[1]: Panel Power VDD is 3.3V by default, 5V is selectable by “EDP VDD Select Jumper” (JC_EDP1, Location18).

18) JEDP VDD Select Jumper (3*1 Pin 2.54mm)

Location	Jumper	Seetings	Function
18	JC-EDP1	1-2(Default)	+ 3.3V
		2-3	+ 5V

19) Front Audio Pin Header (5*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
19	F-AUDIO1	1	FRONT-MIC-L	2	GND-AUD
		3	FRONT-MIC-R	4	+ 3.3V
		5	FRONT-L-OUT-R	6	SENSE-B
		7	GND-AUD		
		9	FRONT-L-OUT-L	10	SENSE-B

[END]