

IPCTECH Motherboard User's Manual

QY-MB-B75-ATX

1.Models and Attentions

1.1 Models

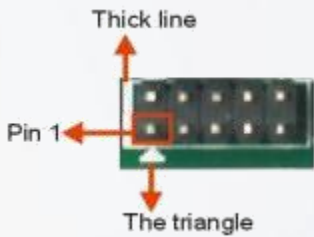
This manual is applied to following models:

Chipset	COM	LAN	USB	PCIE	PCI	DVI-D	HDMI	VGA	eDP/ LVDS	Mini-PCIE	SATA
B75	6	2	11	1*16X 1*4X 1*1X	4	1	1	1	LVDS	2	5*2.0

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

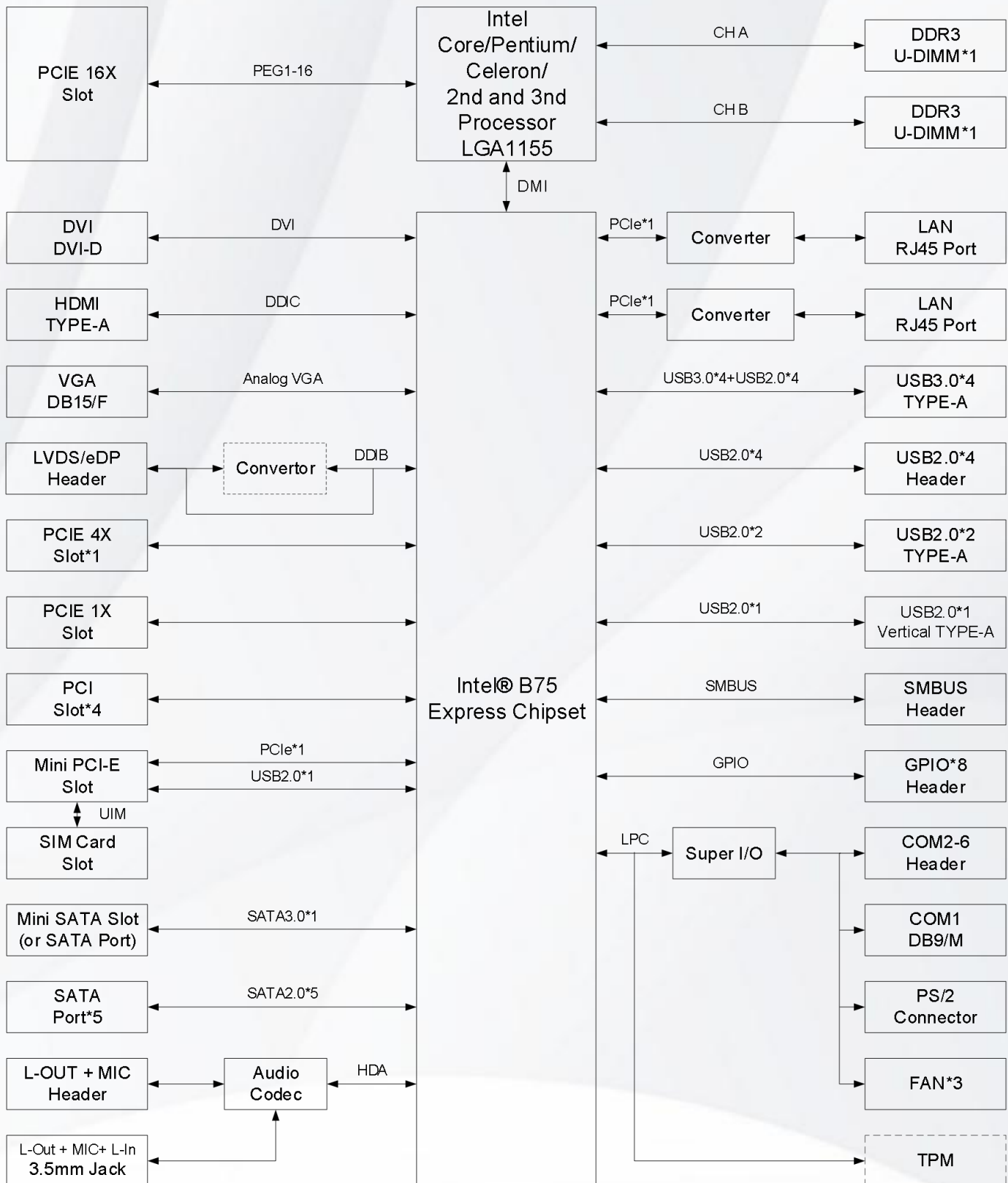
Model	QY-MB-B75-ATX
CPU	Support Intel 2nd/3rd Generation Core / Pentium / Celeron Desktop CPU, LGA1155 Support MAX CPU TDP: 65W
Chipset	Intel B75,TDP 6.7W
Dispaly	1*DVI (DVI-D): Support max resolution up to 1920*1200@60Hz 1*HDMI (type-A): Support max resolution up to 1920*1200@60Hz 1*VGA (DB15/F): Support max resolution to 1920*1200@60Hz 1*eDP/LVDS (Header): Support max resolution up to 1920*1200@60Hz, default LVDS
Memory	Support DDR3-1333/1600 MHz, 2*non-ECC U-DIMM Slot, up to 16GB
Storage	5*SATA 2.0 7P Connector 1*Mini-PCIE Slot (MSATA)
Ethernet	2*Intel GBE LAN Chip (10/100/1000 Mbps,RJ-45 type)
Audio	Realtek ALC897 5.1 Channel HDA Codec, 1*Line-out+Line-in+MIC 3.5mm Jack 1*Front Audio Header (Line-out+MIC)
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	1*RS-232 (COM 1, DB9 type) 3*RS-232 (COM 2/5/6, Header) 1*RS-232 / 485 (COM 3, Header) 1*RS-232 / 485 (COM 4. Header)
USB	4*USB 3.0 (Type-A, Rear I/O) 2*USB 2.0 (Type-A, Rear I/O) 1*USB 2.0 (Vertical Type-A, Internal) 4*USB 2.0 (Header, Internal)

Other Ports	8 * GPIO 1 * PS/2 Connector (Keyboard & Mouse) 1 * Front Panel Header (HDD LED+PWR LED+PWR-ON+RESET) 1 * Parallel Header 1 * SMBUS Header 1 * System FAN Header 2 * CPU FAN Header 1 * Case Open Header 1 * CMOS Clear Jumper 1 * ME Flash Jumper 1 * USB VDD Select Jumper (For RJ45_USB1) 1 * Buzzer Header (Not onboard by default)
TPM	1 * TPM Header (LPC Signals)
System	Windwos 7, Linux
Temperature	Storage: -20~75℃ Operating: 0~60℃
BIOS	AMI UEFI BIOS (Support Watchdog Timer)
Power Supply	ATX Standard (24P + 8P) 1 * ATX 8P CPU Power Input Connector 1 * ATX 24P Power Input Connector
Size	305mm * 220mm

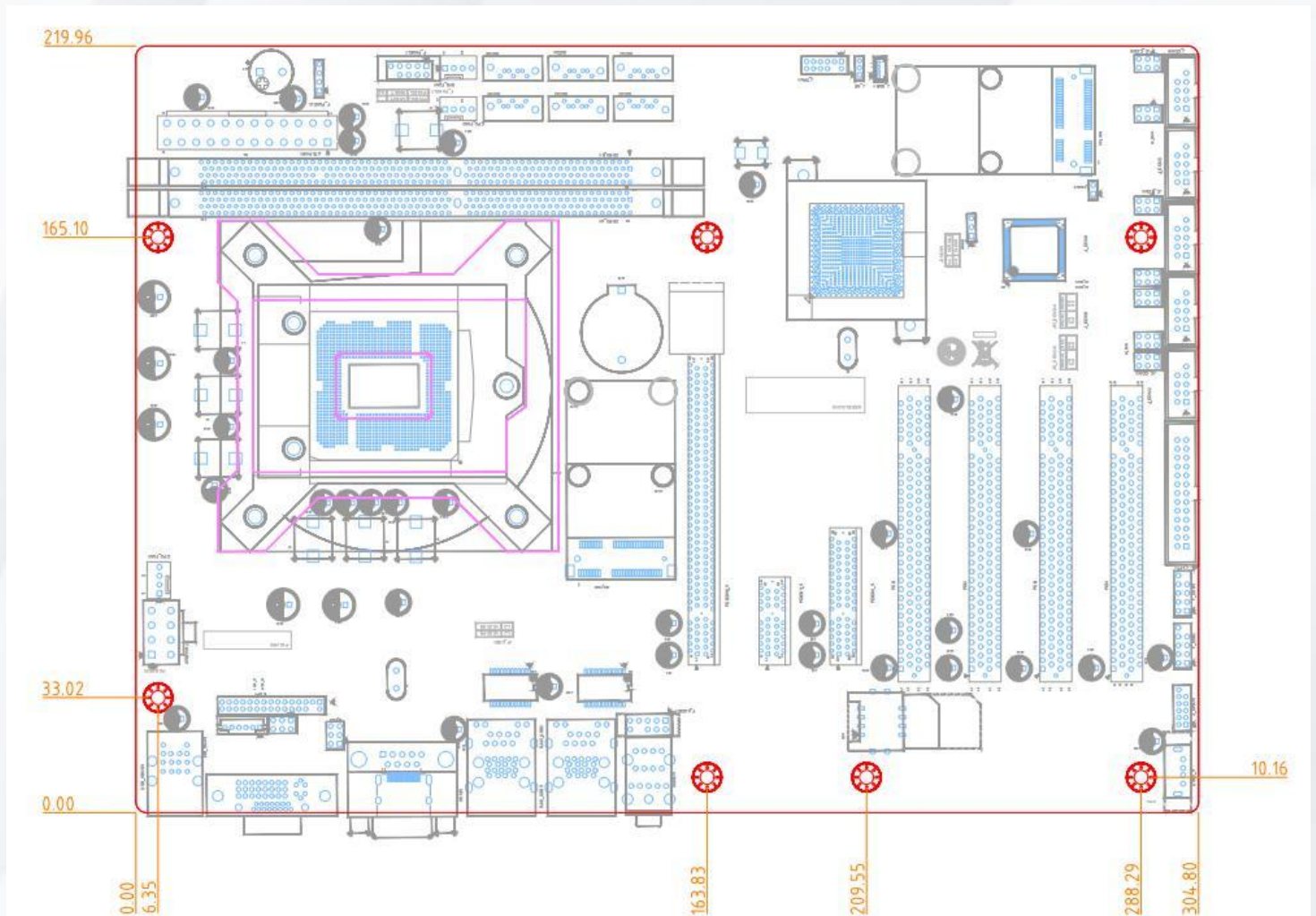
Notes:

1. Intel B75 supports two independent displays.
2. The maximum memory frequency depends on CPU.
3. Mini-PCIE and SATA share the same SATA3.0 signal, they cannot be accessed simultaneously (support Mini-PCIE by default).
4. PCIe 3.0 only support by Intel 3th generation Core i5/i7 CPU.

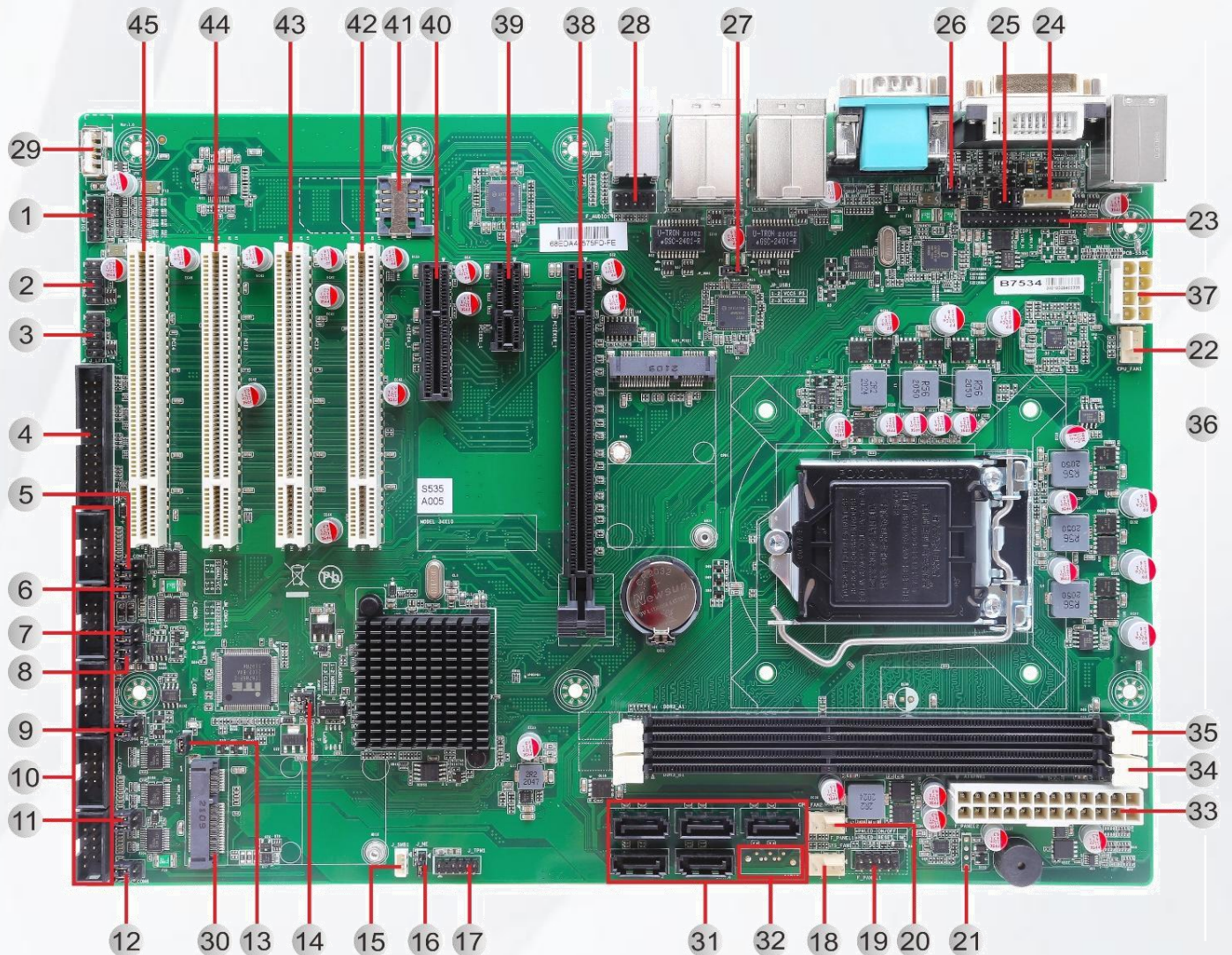
3.Functional Block Diagram

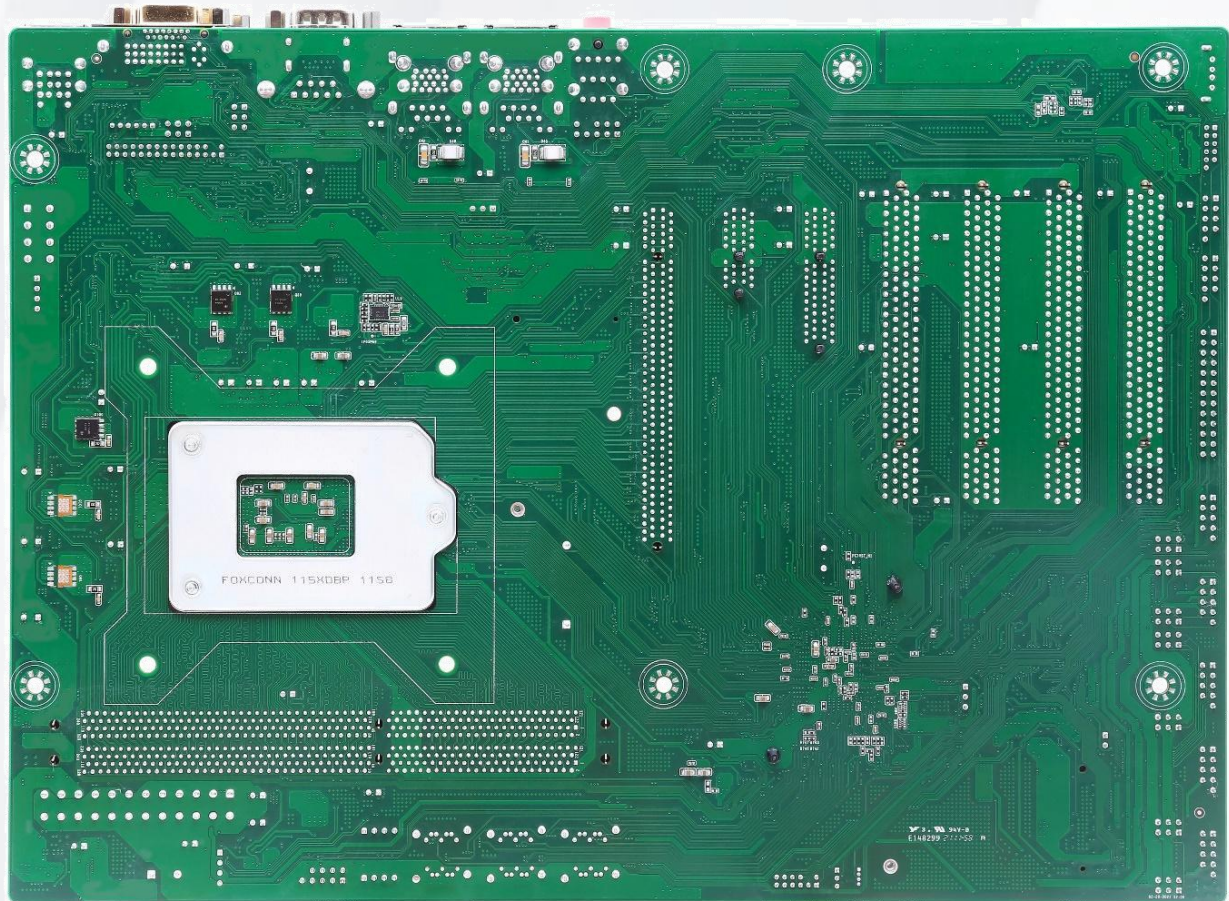


4.Mechanical Drawing



5. Jumpers / Headers and Connectors





Jumpers / Headers and Connectors

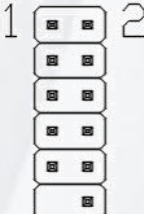
1	J-GPIO1	GPIO Header
2	F-USB2	Front USB2.0 Header2
3	F-USB1	Front USB2.0 Header1
4	J-LPT1	Parallel Header
5	JC-COM2	COM2 DCD/RI Select Jumper
6	JC-COM3	COM3 DCD/RI Select Jumper
7	JM-COM3	COM3 RS232/485 Select Jumper
8	JM-COM4	COM4 RS232/485 Select Jumper
9	JC-COM4	COM4 DCD/RI Select Jumper
10	J-COM2-6	COM2/3/4/5/6 Header
11	JC-COM5	COM5 DCD/RI Select Jumper
12	JC-COM6	COM5 DCD/RI Select Jumper
13	J-COPEN1	Case Open Header
14	JCOMS1	COMS Clear Jumppt
15	J-SMB1	SMBUS Header
16	J-ME	ME Flash Jumper
17	J-TPM1	TPM Header (LPC Signals)

18	SYS-FAN1	System FAN Header
19	F-PANEL1	Front Panel Header
20	CPU-FAN2	CPU FAN Header2
21	F-PANEL2	Buzzer Header (Default not onboard)
22	CPU-FAN1	CPU FAN Header1
23	EDP1	eDP/LVDS Signal Header
24	LVDS-P1	eDP/LVDS Backlight Control Header
25	LVDS-P2	eDP/LVDS VDD Select Jumper
26	JC-COM1	COM1 DCD/RI Select Jumper
27	JP-USB1	USB VDD Select Jumper
28	F-AUDIO1	Front Audio Header (Line-Out + MIC)
29	USB2-1	USB2.0 Internal Vertical TYPE-A Connector
30	MINI-PCIE2	USB2.0 Internal Vertical TYPE-A Connector
31	SATA1-5	SATA2.0 7P Connector1/2/3/4/5
32	SATA6	SATA2.0 7P Connector1/2/3/4/5
33	ATXPWR1	ATX 24P Power Input Connector
34	DDR3-A1	DDR3 CHA DIMM Slot
35	DDR3-B1	DDR3 CHB DIMM Slot
36	MINI-PCIE1	Mini PCI-E Slot (WIFI+4G/3G)
37	ATXPWR2	ATX 8P CPU Power Input Connector
38	PCIE 16X-1	PCI-E 16x Slot
39	PCIE 1X-1	PCI-E 1x Slot
40	PCIE 4X-1	PCI-E 4x Slot
41	SIM1	Full-Size SIM Card Slot
42	PCI1	PCI Slot1
43	PCI2	PCI Slot2
44	PCI3	PCI Slot3
45	PCI4	PCI Slot4
46	USB-KBMS1(KBMS)	PS/2 Connector (Keyboard & Mouse)
47	DVI-VGA1(VGA)	DVI-D 24+4P/F Connector
48	COM1	COM1 DB9/M Connector
49	RJ45-USB2(RJ45)	GBE LAN RJ45 Connector2
50	RJ45-USB1(RJ45)	GBE LAN RJ45 Connector1
51	USB-KBMS1(USB)	Dual USB2.0 TYPE-A Connector
52	DVI-VGA1(VGA)	VGA DB15/F Connector
53	HDMI1	HDMI TYPE-A Connector
54	RJ45-USB2(USB)	Dual USB3.0 TYPE-A Connector2
55	RJ45-USB1(USB)	Dual USB3.0 TYPE-A Connector1
56	AUDIO1	Line-Out + MIC + Line-In 3.5mm Jack



6. Definition of Jumpers / Headers and Connectors

1) J-GPIO1 (GPIO Header 6*2 Pin 2.00mm)

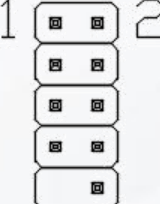
Graphic	Pin	Definition	Pin	Definition
	1	PCH-GPI17 (0x050E Bit1, H [1])	2	PCH-GPI6 (0x050C Bit6, H)
	3	PCH-GPI1 (0x050C Bit1, H)	4	PCH-GPI7 (0x050C Bit7, H)
	5	GND	6	PCH-GPO68 (0x0548 Bit4, H)
	7	PCH-GPO71 (0x0548 Bit7, H)	8	PCH-GPO70 (0x0548 Bit6, H)
	9	PCH-GPO69 (0x0548 Bit5, H)	10	+ 3.3V [2]
			12	N/C

Noties:

[1]: “H” or “L” means the default voltage is Hight or Low level (3.3V GPIO).

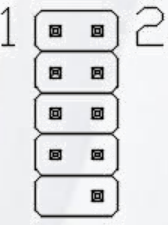
[2]: Power on this pin is 3.3V by default, 5V is available if sepcified. (resistor selectable)

2) F-USB2 (Front USB2.0 Header2 5*2 Pin 2.54mm)

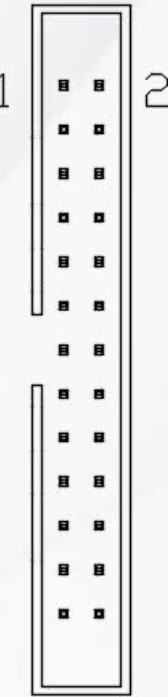
Graphic	Pin	Definition	Pin	Definition
	1	+ 5V	2	+ 5V
	3	USB2-3-	4	USB2-4-
	5	USB2-3+	6	USB2-4+
	7	GND	8	GND
			10	N/C



3) F-USB1 (Front USB2.0 Header1 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 5V	2	+ 5V
	3	USB2-3-	4	USB2-4-
	5	USB2-3+	6	USB2-4+
	7	GND	8	GND
			10	N/C

4) J-LPT1 (Parallel Header 13*2 Pin 2.54mm)

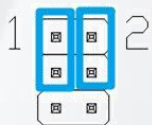
Graphic	Pin	Definition	Pin	Definition
	1	LPT-STB#	2	EXPLPT-AFD#
	3	LPT-PD0	4	EXPLPT-ERR#
	5	LPT-PD1	6	EXPLPT-INIT#
	7	LPT-PD2	8	EXPLPT-SLIN#
	9	LPT-PD3	10	GND
	11	LPT-PD4	12	GND
	13	LPT-PD5	14	GND
	15	LPT-PD6	16	GND
	17	LPT-PD7	18	GND
	19	LPT-ACK#	20	GND
	21	LPT-BUSY	22	GND
	23	LPT-PE	24	GND
	25	LPT-SLCT	26	N/C



5) JC-COM2 (COM2 DCD/RI Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM2-PIN1: DCD COM2-PIN8: RI
	3-5, .4-6	COM2-PIN1: + 5V COM2-PIN8: + 12V

6) JC-COM3 (COM3 DCD/RI Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM3-PIN1: DCD COM3-PIN8: RI
	3-5, .4-6	COM3-PIN1: + 5V COM3-PIN8: + 12V

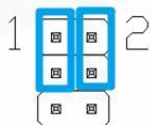
7) JM-COM3* (COM3 RS232/485 Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	RS232 (COM3-PIN1: DCD COM3-PIN3: RXD)
	3-5, .4-6	RS485 (COM3-PIN1: RS485- COM3-PIN3: RS485+)

Notes:

[*]: When using RS485 Mode. JC-COM3 (1-3) jump cap needs to be removed. (JC-COM3, Location 6)

8) JM-COM4* (COM4 RS232/485 Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	RS232 (COM4-PIN1: DCD COM4-PIN3: RXD)
	3-5, .4-6	RS232 (COM4-PIN1: DCD COM4-PIN3: RXD)

Notes:

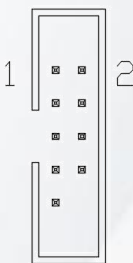
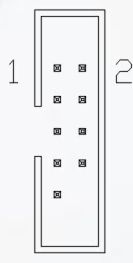
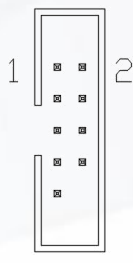
[*]: When using RS485 Mode. JC-COM3 (1-3) jump cap needs to be removed. (JC-COM3, Location 6)



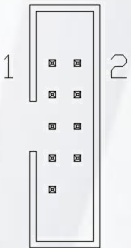
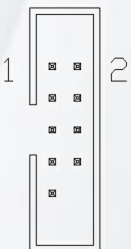
9) JC-COM4 (COM4 DCD/RI Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM4-PIN1: DCD COM4-PIN8: RI
	3-5, .4-6	COM4-PIN1: + 5V COM4-PIN8: + 12V

10) J-COM2/3/4/5/6 (COM2/3/4/5/6 Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
J-COM2 	1	COM2-PIN1 [1]	2	COM2-DSR
	3	COM2-RXD	4	COM2-RTS
	5	COM2-TXD	6	COM2-CTS
	7	COM2-DTR	8	COM2-PIN8 [1]
	9	GND		
J-COM3 	1	COM3-PIN1 [2] [3]	2	COM3-DSR
	3	COM3-PIN3 [3]	4	COM3-RTS
	5	COM3-TXD	6	COM3-CTS
	7	COM3-DTR	8	COM3-PIN8 [2]
	9	GND		
J-COM4 	1	COM4-PIN1 [4] [5]	2	COM4-DSR
	3	COM4-PIN3 [5]	4	COM4-RTS
	5	COM4-TXD	6	COM4-CTS
	7	COM4-DTR	8	COM4-PIN8 [4]
	9	GND		



J-COM5 	1	COM5-PIN1 [6]	2	COM5-DSR
	3	COM5-RXD	4	COM5-RTS
	5	COM5-TXD	6	COM5-CTS
	7	COM5-DTR	8	COM5-PIN8 [6]
	9	GND		
J-COM6 	1	COM6-PIN1 [7]	2	COM6-DSR
	3	COM6-RXD	4	COM6-RTS
	5	COM6-TXD	6	COM6-CTS
	7	COM6-DTR	8	COM6-PIN8 [7]
	9	GND		

Notes:

[1]: PIN1 of COM2 can be DCD (default) /5V and Pin8 of COM2 can be RI (Default) / 12V, selectable by "COM2 DCD/RI Select Jumper" . (JC_COM2, Location 5)

[2]: PIN1 of COM3 can be DCD (default) /5V and Pin8 of COM3 can be RI(Default) / 12V, selectable by "COM3 DCD/RI Select Jumper" . (JC_COM3, Location 6)

[3]: COM3 can be RS232 (default) / RS485 selecting by "COM3 RS232/RS485 Select Jumper" . (JM_COM3, Location 7).

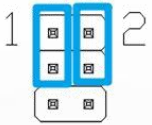
[4]: PIN1 of COM4 can be DCD (default) /5V and Pin8 of COM4 can be RI(Default) / 12V, selectable by "COM4 DCD/RI Select Jumper" . (JC_COM4, Location 9)

[5]: COM4 can be RS232 (default) / RS485 selecting by "COM4 RS232/RS485 Select Jumper" . (JM_COM4, Location 8).

[6]: PIN1 of COM5 can be DCD (default) /5V and Pin8 of COM5 can be RI(Default) / 12V, selectable by "COM5 DCD/RI Select Jumper" . (JC_COM5, Location 11)

[7]: PIN1 of COM6 can be DCD (default) /5V and Pin8 of COM6 can be RI(Default) / 12V, selectable by "COM6 DCD/RI Select Jumper" . (JC_COM6, Location 12)

11) JC-COM5 (COM5 DCD/RI Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM5-PIN1: DCD COM5-PIN8: RI
	3-5, .4-6	COM5-PIN1: + 5V COM5-PIN8: + 12V



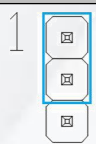
12) JC-COM6 (COM6 DCD/RI Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM6-PIN1: DCD COM6-PIN8: RI
	3-5, .4-6	COM6-PIN1: + 5V COM6-PIN8: + 12V

13) J-COPEN1 (Case Open Header 2*1 Pin 2.54mm)

Graphic	Setting	Function
	1-2: Connected	Active Case Open
	1-2: Open	Normal

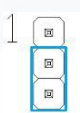
14) JCMOS1 (CMOS Clear Jumper 3*1 Pin 2.5mm)

Graphic	Setting	Function
	1-2: Connected	Normal
	1-2: Open	Clear CMOS

15) J-SMB1 (SMBUS Header 4*1 Pin 1.25mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 3.3V	2	SMB-CLK-MAIN
	3	SMB-DATA-MAIN	4	GND

16) J-ME (ME Flash Jumper 3*1 Pin 2.54mm)

Graphic	Definition	Pin Definition
	1-2	ME Programmable
	2-3(Default)	ME Protect



17) J-TPM1*(TPM Header 6*2 Pin 2.00mm)

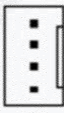
Graphic	Pin	Definition	Pin	Definition
	1	L-AD0	2	+ 3.3V-STBY [1]
	3	L-AD1		
	5	L-AD2	6	CLK33M-TPM
	7	L-AD3	8	GND
	9	L-FRAME_N	10	N/C
	11	SER-IRQ	12	PCI-RST-N3

Notes:

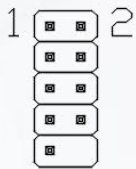
[*]: F_PANEL2 default not on board.

[1]: Power on this Pin is 3.3V_STBY by default, 3.3V_PS is available if specified. (resistor selectable)

18) SYS-FAN1 (System FAN Header 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection2
	2	+ 12V	4	FAN Speed Control2

19) F-PANEL1 (Front Panel Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	HDD 3.3V LED+	2	POWER 3.3V LED+
	3	HDD 3.3V LED-	4	POWER 3.3V LED-
	5	RESET-	6	POWER+
	7	RESET+	8	POWER-
	9	N/C		



20) CPU-FAN2 (CPU FAN Header2 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection3
	2	+ 12V	4	FAN Speed Control3

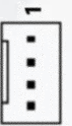
21) F-PANEL2* (Buzzer Header 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	SPK+	3	N/C
	2	N/C	4	SPK-

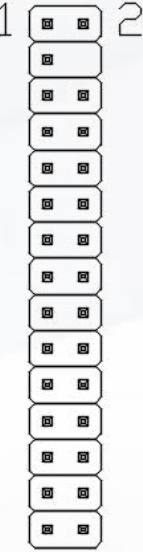
Notes:

[*]: F_PANEL2 default not on board

22) CPU-FAN1 (CPU FAN Header1 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection1
	2	+ 12V	4	FAN Speed Control1

23) EDO1 (eDP/LVDS Signal Header 15*2 Pin 2.00mm)

Graphic	Pin	Definition	Pin	Definition
	1	VDD_PANEL [1]	2	VDD_PANEL [1]
	3	VDD_PANEL [1]		
	5	GND/EDP_HPD [2]	6	GND/EDP_HPD [2]
	7	LVDS_A_DATA0-/N/C [2]	8	LVDS_A_DATA0+/N/C [2]
	9	LVDS_A_DATA1-/N/C [2]	10	LVDS_A_DATA1+/N/C [2]
	11	LVDS_A_DATA2-/N/C [2]	12	LVDS_A_DATA2+/N/C [2]
	13	GND	14	GND



15	LVDS_A_CLK-/N/C [2]	16	LVDS_A_CLK+/N/C [2]
17	LVDS_A_DATA3-/N/C [2]	18	LVDS_A_DATA3+/N/C [2]
19	LVDS_B_DATA0-/EDP_TX0-[2]	20	LVDS_B_DATA0+/EDP_TX0+[2]
21	LVDS_B_DATA1-/EDP_TX1-[2]	22	LVDS_B_DATA1+/EDP_TX1+[2]
23	LVDS_B_DATA2-/N/C [2]	24	LVDS_B_DATA2+/N/C [2]
25	GND	26	GND
27	LVDS_B_CLK-/N/C [2]	28	LVDS_B_CLK+/N/C [2]
29	LVDS_B_DATA3-/EDP_AUX-[2]	30	LVDS_B_DATA3+/EDP_AUX+[2]

Notes:

[1]: Panel Power VDD can be 12V/5V/3.3V(default) selectable by “eDP/LVDS VDD Select Jumper” (LVDS_P2. Location 25).

[2]: It supports LVDS by default and can supports eDP if specified. (resistor selectable)

24) LVDS-P1 (eDP/LVDS Backlight Control Header 6*1 Pin 2.00mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	4	EDP/LVDS-BKLT-EN
	2	GND	5	+ 12V
	3	+ 5V	6	+ 12V

25) LVDS-P2 (eDP/LVDS Backlight Control Header 3*2 Pin 2.54mm)

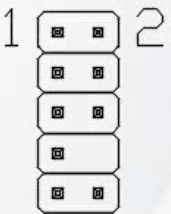
Graphic	Setting	Function
	1-2	+ 12V
	3-4	+ 5V
	5-6 (Default)	+ 3.3V



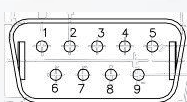
26) JC-COM1 (COM1 DCD/RI Select Jumpert 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM1_PIN1: DCD COM1_PIN9: RI
	3-5, 4-6	COM1_PIN1: + 5V COM1_PIN9: + 12V

27) JP-USB1 (USB VDD Select Jumper 3*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	MIC-IN-L	2	GND-AUD
	3	MIC-IN-R	4	+ 3.3V
	5	LINE-OUT-R	6	MIC-RET
	7	GND-AUD		
	9	LINE-OUT-L	10	LINE-OUT-RET

48) COM1 (COM1 DB9/M Connector)

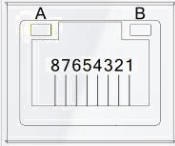
Graphic	Pin	Definition	Pin	Definition
	1	COM1_PIN1 [1]	6	COM1_DSR
	2	COM1_RXD	7	COM1_RTS
	3	COM1_TXD	8	COM1_CTS
	4	COM1_TXD	9	COM1_PIN9 [1]
	5	GND		

Notes:

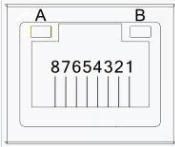
[1]: PIN1 of COM1 can be DCD (default) /5V and Pin9 of COM1 can be RI (Default) / 12V, selectable by "COM1 DCD/RI Select Jumper" . (JC_COM1, Location 26)



49) RJ45-USB2(RJ45) (GBE LAN RJ45 Connector2 8 Pin)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI0-2+		5	MDI2-2-	
	2	MDI0-2-		6	MDI1-2-	
	3	MDI1-2+		7	MDI3-2+	
	4	MDI2-2+		8	MDI3-2-	
	A	Speed LED	1000M: Turn Orange	B	Active LED	ACT:Twinking Yellow
			100M: Turn Green			Only: Lights On
			10M: Lights Off			Stop: Lights Off

50) RJ45-USB1(RJ45) (GBE LAN RJ45 Connector1 8 Pin)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI0-1+		5	MDI2-1-	
	2	MDI0-1-		6	MDI1-1-	
	3	MDI1-1+		7	MDI3-1+	
	4	MDI2-1+		8	MDI3-1-	
	A	Speed LED	1000M: Turn Orange	B	Active LED	ACT:Twinking Yellow
			100M: Turn Green			Only: Lights On
			10M: Lights Off			Stop: Lights Off

56) ADUIO1 (Line-Out+MIC+Line-In 3.5mm Jack)

Graphic	Setting	Function
	Blue	Line-In
	Green	Line-Out
	Pink	MIC-In

[END]