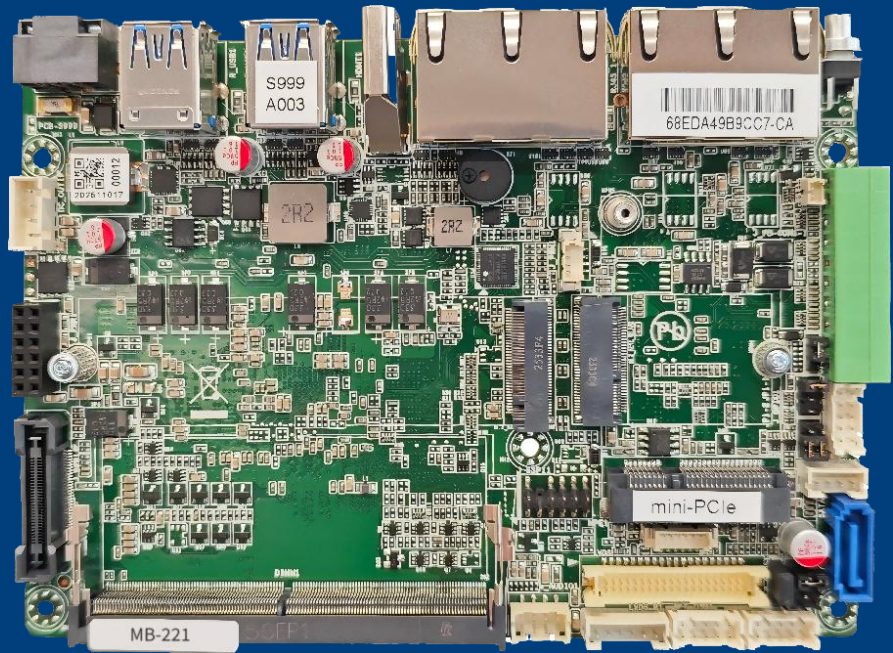




User Manual

Aicotek Motherboard | MB-221 User Manual

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1 Models and Attentions

1.1 Model

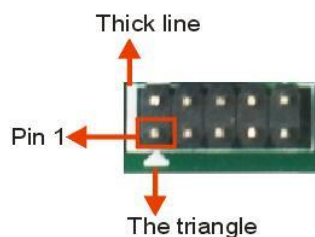
This manual is applied to following models:

Model	CPU	COM	USB	LAN	eDP/ LVDS	HDMI	Mini-PCle	M.2 KEY-M	M.2 KEY-E	SATA
MB-221-125H	125H	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-155H	155H	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-185H	185H	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-125U	125U	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-155U	155U	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-225H	225H	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-255H	255H	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-225U	225U	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1
MB-221-255U	255U	2	8	4	LVDS	1	PCIe+ USB2.0	PCIe 4x	PCIe+ USB2.0	1

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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

Specifications				
Model	Model	MB-221-125H	MB-221-155H	MB-221-185H
Processor System	Processor	Intel® Core™ Ultra processors (Series 1), Meteorlake-U/H		
		Ultra5 125H	Ultra7 155H	Ultra9 185H
	Clock Speed	up to 4.50GHz	up to 4.80GHz	up to 5.10GHz
	Multi-Core	14	16	16
	TDP	28W PL1	28W PL1	45W PL1
	Graphics	Intel® Arc™ graphics		
		7 Xe-Cores up to 2.20 GHz	8 Xe-Cores up to 2.25 GHz	8 Xe-Cores up to 2.35 GHz
	NPU	Intel® AI Boost, 11TOPS(Int8)		
	BIOS	AMI UEFI BIOS		
Memory	Memory Type	DDR5 5600 MT/s		
	Slot Type	1, DDR5 SO-DIMM, Non-ECC		
	Max Memory	32 GB		
	Channels	Single		
Display	HDMI	1, HDMI, max 3840*2160@30Hz <i>Note: 4K@30Hz for display only, not SI.</i>		
	eDP/LVDS	1, LVDS, max 1920*1200@60Hz <i>Notes: BOM Optional support eDP max 3840*2160@30Hz.</i>		
	Multi-Display	Dual		
Audio	Codec	Realtek Audio HDA codec		
	Audio	1, Line-Out + MIC		
Storage	SATA	1, SATA Gen3 6Gbps		
	M.2 SSD	1, M.2 M-Key 2280, PCIe x4, NVMe x4 SSD. <i>Note: BOM optional support SATA SSD.</i>		
Expansion	M.2	1, M.2 E-Key 2230, PCIe x1 + USB2.0, support WiFi + Bluetooth		
	Mini-PCle	1, Mini-PCle, PCIe+USB2.0, Support 5G + 4G		
	SIM	1, SIM for Mini-PCle		
	BTB	1, 2*PCle x1 + USB2.0 + SMBus + I2C + GPIO + RESET + PWROK + COM3-6, with DC out 12V@2A, 5V@2A, 3.3VSB@1A.		
Ethernet	Chipset	4, Intel I210 GbE Ethernet Controller		
	PXE/RPL Boot	Yes		

	Wake On LAN	Yes
USB	USB3.0	4, USB3.2 5Gbps
	USB2.0	4, USB2.0
I/O	Serials	2, RS232, COM1-2 <i>Note:</i> <i>COM1 Jumper option support RS485.</i> <i>COM2 resistors option support RS485.</i>
	FAN	1, CPU FAN, DC 12V <i>Note: resistor optional 5V</i>
	Fron Panel	1, Power On + Reset + HDD LED
	GPIO	8, 4* GPI+ 4* GPO, non-isolated 5V, 3.3V optional
Others	CMOS Clear	1
	RTC	1, CR2032 Li Battery
	Buzzer	1
	HW Monitor	System-temp, CPU-temp, Voltage-12V,5V,3.3V, Vcpu, VCC_GT
WatchDog Timer	Output	System reset
	Interval	Programmable 1-255 sec or min
Security	TPM	fTPM2.0
Power	Power in	1, Rear IO 12/19/24V, Auto Detect <i>Note: Support OVP, UVP</i>
	Power out	1, Internal 12V+5V
OS	OS Supported	Windows 10/11 64bit, Linux
Mechanical	PCB form	105mm * 146mm, δ 1.6mm
	Height	PCB: 1.6mm, Top side: <19.0mm, Bot side: <4.0mm
Environment	Temperature	Operation: -0 ~ 60°C Storage: -20 ~ 75°C
	Humidity	Operation: 5 ~ 95%, Non-condensing Storage: 5 ~ 95%, Non-condensing

Specifications

Model	Model	MB-221-125U	MB-221-155U
Processor System	Processor	Intel® Core™ Ultra processors (Series 1), Meteorlake-U/H	
		Ultra5 125U	Ultra7 155U
	Clock Speed	up to 4.30GHz	up to 4.80GHz
	Multi-Core	12	
	TDP	15W PL1	
	Graphics	Intel® Graphics	
		4 Xe-Cores up to 1.85 GHz	4 Xe-Cores up to 1.95 GHz
	NPU	Intel® AI Boost, 11TOPS(Int8)	
	BIOS	AMI UEFI BIOS	
Memory	Memory Type	DDR5 5600 MT/s	
	Slot Type	1, DDR5 SO-DIMM, Non-ECC	
	Max Memory	32 GB	
	Channels	Single	
Display	HDMI	1, HDMI, max 3840*2160@30Hz <i>Note: 4K@30Hz for display only, not SI.</i>	
	eDP/LVDS	1, LVDS, max 1920*1200@60Hz <i>Notes: BOM Optional support eDP max 3840*2160@30Hz.</i>	
	Multi-Display	Dual	
Audio	Codec	Realtek Audio HDA codec	
	Audio	1, Line-Out + MIC	
Storage	SATA	1, SATA Gen3 6Gbps	
	M.2 SSD	1, M.2 M-Key 2280, PCIe x4, NVMe x4 SSD. <i>Note: BOM optional support SATA SSD.</i>	
Expansion	M.2	1, M.2 E-Key 2230, PCIe x1 + USB2.0, support WiFi + Bluetooth	
	Mini-PCle	1, Mini-PCle, PCIe+USB2.0, Support 5G/4G	
	SIM	1, SIM for Mini-PCle	
	BTB	1, 2*PCle x1 + USB2.0 + SMBus + I2C + GPIO + RESET + PWROK + COM3-6, with DC out 12V@2A, 5V@2A, 3.3VSB@1A.	
Ethernet	Chipset	4, Intel I210 GbE Ethernet Controller	
	PXE/RPL Boot	Yes	
	Wake On LAN	Yes	
USB	USB3.0	4, USB3.2 5Gbps	

	USB2.0	4, USB2.0
I/O	Serials	2, RS232, COM1-2 <i>Note:</i> COM1 Jumper option support RS485. COM2 resistors option support RS485.
	FAN	1, CPU FAN, DC 12V <i>Note: resistor optional 5V</i>
	Fron Panel	1, Power On + Reset + HDD LED
	GPIO	8, 4* GPI+ 4* GPO, non-isolated 5V, 3.3V optional
Others	CMOS Clear	1
	RTC	1, CR2032 Li Battery
	Buzzer	1
	HW Monitor	System-temp, CPU-temp, Voltage-12V,5V,3.3V, Vcpu, VCC_GT
WatchDog Timer	Output	System reset
	Interval	Programmable 1-255 sec or min
Security	TPM	fTPM2.0
Power	Power in	1, Rear IO 12/19/24V, Auto Detect <i>Note: Support OVP, UVP</i>
	Power out	1, Internal 12V+5V
OS	OS Supported	Windows 10/11 64bit, Linux
Mechanical	PCB form	105mm * 146mm, δ 1.6mm
	Height	PCB: 1.6mm, Top side: <19.0mm, Bot side: <4.0mm
Environment	Temperature	Operation: -0 ~ 60°C Storage: -20 ~ 75°C
	Humidity	Operation: 5 ~ 95%, Non-condensing Storage: 5 ~ 95%, Non-condensing

Specifications

Model	Model	MB-221-225H	MB-221-255H
Processor System	Processor	Intel® Core™ Ultra processors (Series 1), Meteorlake-U/H	
		Ultra5 225H	Ultra7 255H
	Clock Speed	up to 4.90GHz	up to 5.10GHz
	Multi-Core	14	16
	TDP	28W PL1	28W PL1
	Graphics	Intel® Arc™ graphics	
		7 Xe-Cores up to 2.20 GHz	8 Xe-Cores up to 2.25 GHz
	NPU	Intel® AI Boost, 13TOPS(Int8)	
	BIOS	AMI UEFI BIOS	
Memory	Memory Type	DDR5 5600 MT/s	
	Slot Type	1, DDR5 SO-DIMM, Non-ECC	
	Max Memory	32 GB	
	Channels	Single	
Display	HDMI	1, HDMI, max 3840*2160@30Hz <i>Note: 4K@30Hz for display only, not SI.</i>	
	eDP/LVDS	1, LVDS, max 1920*1200@60Hz <i>Notes: BOM Optional support eDP max 3840*2160@30Hz.</i>	
	Multi-Display	Dual	
Audio	Codec	Realtek Audio HDA codec	
	Audio	1, Line-Out + MIC	
Storage	SATA	1, SATA Gen3 6Gbps	
	M.2 SSD	1, M.2 M-Key 2280, PCIe x4, NVMe x4 SSD. <i>Note: BOM optional support SATA SSD.</i>	
Expansion	M.2	1, M.2 E-Key 2230, PCIe x1 + USB2.0, support WiFi + Bluetooth	
	Mini-PCle	1, Mini-PCle, PCIe+USB2.0, Support 5G + 4G	
	SIM	1, SIM for Mini-PCle	
	BTB	1, 2*PCle x1 + USB2.0 + SMBus + I2C + GPIO + RESET + PWROK + COM3-6, with DC out 12V@2A, 5V@2A, 3.3VSB@1A.	
Ethernet	Chipset	4, Intel I210 GbE Ethernet Controller	
	PXE/RPL Boot	Yes	
	Wake On LAN	Yes	
USB	USB3.0	4, USB3.2 5Gbps	

	USB2.0	4, USB2.0
I/O	Serials	2, RS232, COM1-2 <i>Note:</i> COM1 Jumper option support RS485. COM2 resistors option support RS485.
	FAN	1, CPU FAN, DC 12V <i>Note: resistor optional 5V</i>
	Fron Panel	1, Power On + Reset + HDD LED
	GPIO	8, 4* GPI+ 4* GPO, non-isolated 5V, 3.3V optional
Others	CMOS Clear	1
	RTC	1, CR2032 Li Battery
	Buzzer	1
	HW Monitor	System-temp, CPU-temp, Voltage-12V,5V,3.3V, Vcpu, VCC_GT
WatchDog Timer	Output	System reset
	Interval	Programmable 1-255 sec or min
Security	TPM	fTPM2.0
Power	Power in	1, Rear IO 12/19/24V, Auto Detect <i>Note: Support OVP, UVP</i>
	Power out	1, Internal 12V+5V
OS	OS Supported	Windows 10/11 64bit, Linux
Mechanical	PCB form	105mm * 146mm, δ 1.6mm
	Height	PCB: 1.6mm, Top side: <19.0mm, Bot side: <4.0mm
Environment	Temperature	Operation: -0 ~ 60°C Storage: -20 ~ 75°C
	Humidity	Operation: 5 ~ 95%, Non-condensing Storage: 5 ~ 95%, Non-condensing

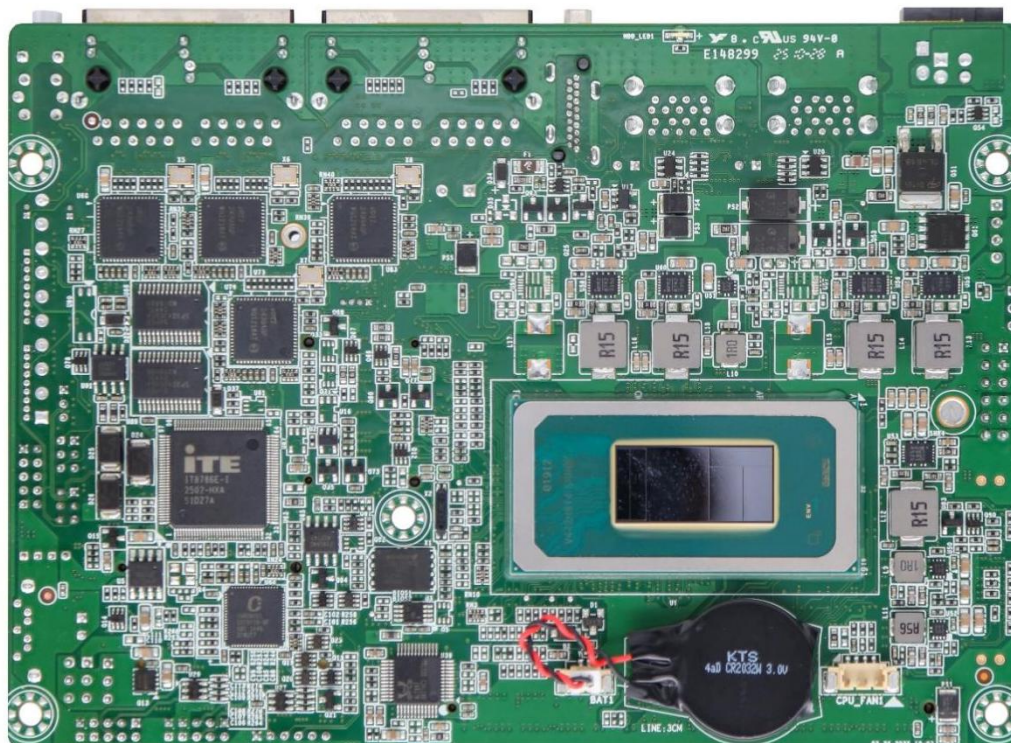
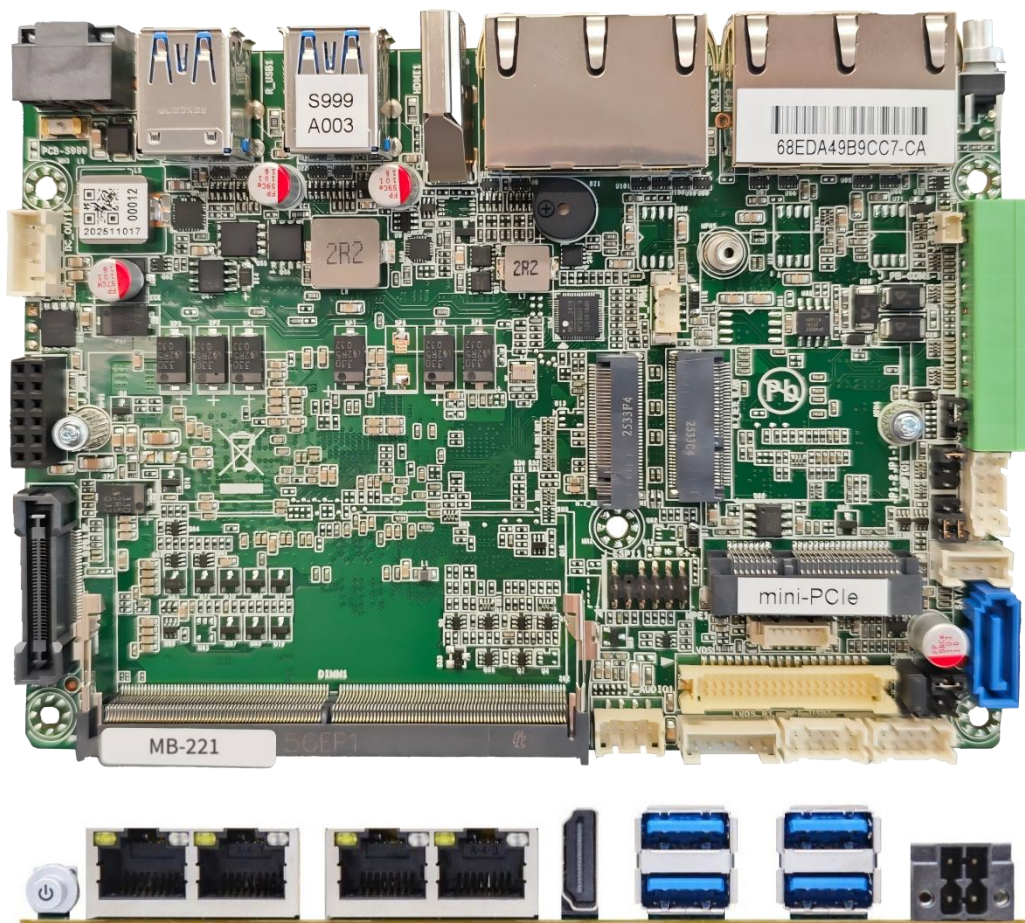
Specifications

Model	Model	MB-221-225U	MB-221-255U
Processor System	Processor	Intel® Core™ Ultra processors (Series 2), Arrow Lake -U/H	
		Ultra5 225U	Ultra7 255U
	Clock Speed	4.8 GHz	5.2 GHz
	Multi-Core	12	
	TDP	15W PL1	
	Graphics	Intel® Graphics	
		4 Xe-Cores up to 2.0 GHz	4 Xe-Cores up to 2.1 GHz
	NPU	Intel® AI Boost, 12TOPS(Int8)	
	BIOS	AMI UEFI BIOS	
Memory	Memory Type	DDR5 5600 MT/s	
	Slot Type	1, DDR5 SO-DIMM, Non-ECC	
	Max Memory	32 GB	
	Channels	Single	
Display	HDMI	1, HDMI, max 3840*2160@30Hz <i>Note: 4K@30Hz for display only, not SI.</i>	
	eDP/LVDS	1, LVDS, max 1920*1200@60Hz <i>Notes: BOM Optional support eDP max 3840*2160@30Hz.</i>	
	Multi-Display	Dual	
Audio	Codec	Realtek Audio HDA codec	
	Audio	1, Line-Out + MIC	
Storage	SATA	1, SATA Gen3 6Gbps	
	M.2 SSD	1, M.2 M-Key 2280, PCIe x4, NVMe x4 SSD. <i>Note: BOM optional support SATA SSD.</i>	
Expansion	M.2	1, M.2 E-Key 2230, PCIe x1 + USB2.0, support WiFi + Bluetooth	
	Mini-PCle	1, Mini-PCle, PCIe+USB2.0, Support 5G/4G	
	SIM	1, SIM for Mini-PCle	
	BTB	1, 2*PCle x1 + USB2.0 + SMBus + I2C + GPIO + RESET + PWROK + COM3-6, with DC out 12V@2A, 5V@2A, 3.3VSB@1A.	
Ethernet	Chipset	4, Intel I210 GbE Ethernet Controller	
	PXE/RPL Boot	Yes	
	Wake On LAN	Yes	
USB	USB3.0	4, USB3.2 5Gbps	

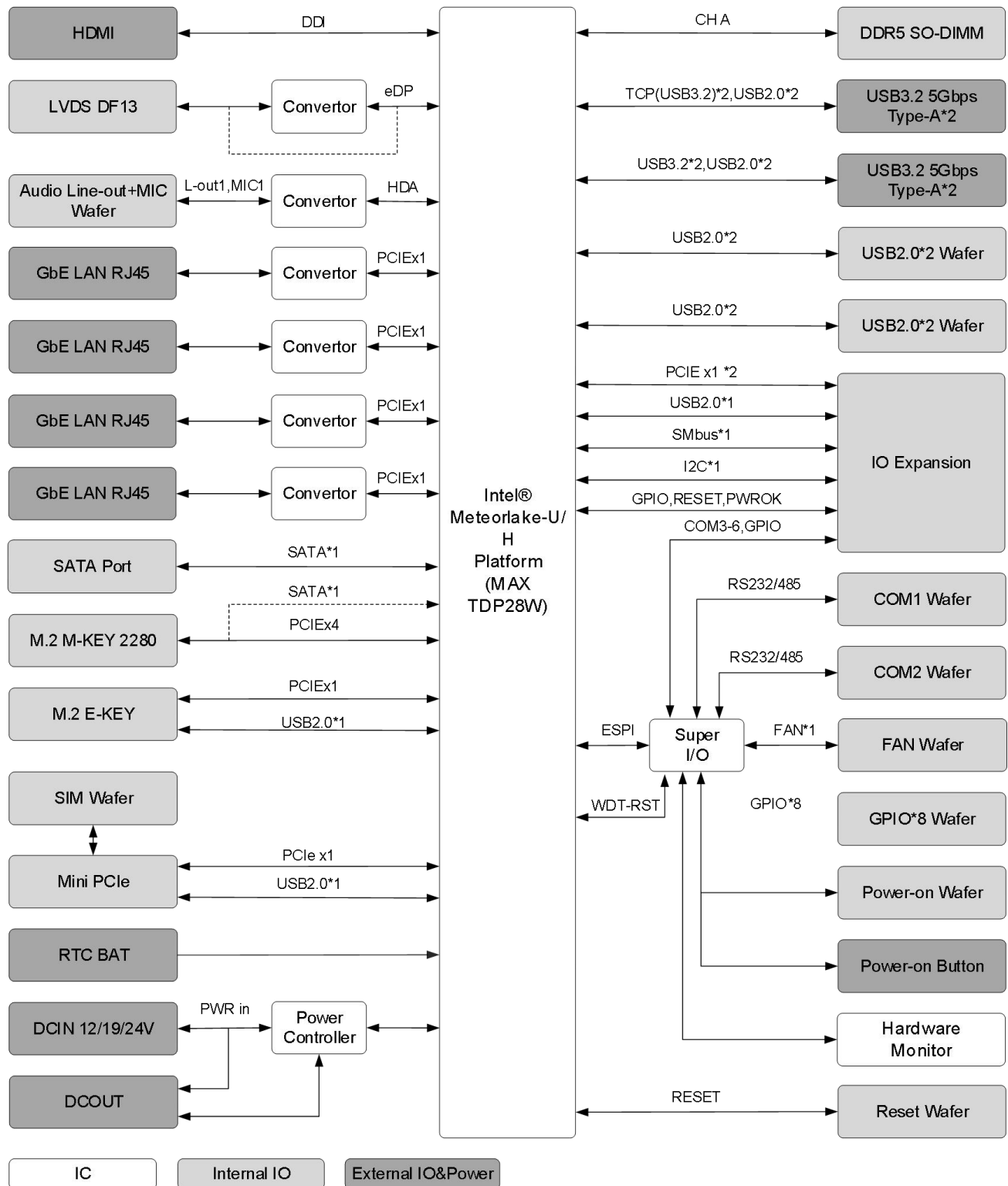
	USB2.0	4, USB2.0
I/O	Serials	2, RS232, COM1-2 <i>Note:</i> COM1 Jumper option support RS485. COM2 resistors option support RS485.
	FAN	1, CPU FAN, DC 12V <i>Note: resistor optional 5V</i>
	Fron Panel	1, Power On + Reset + HDD LED
	GPIO	8, 4* GPI+ 4* GPO, non-isolated 5V, 3.3V optional
Others	CMOS Clear	1
	RTC	1, CR2032 Li Battery
	Buzzer	1
	HW Monitor	System-temp, CPU-temp, Voltage-12V,5V,3.3V, Vcpu, VCC_GT
WatchDog Timer	Output	System reset
	Interval	Programmable 1-255 sec or min
Security	TPM	fTPM2.0
Power	Power in	1, Rear IO 12/19/24V, Auto Detect <i>Note: Support OVP, UVP</i>
	Power out	1, Internal 12V+5V
OS	OS Supported	Windows 10/11 64bit, Linux
Mechanical	PCB form	105mm * 146mm, δ 1.6mm
	Height	PCB: 1.6mm, Top side: <19.0mm, Bot side: <4.0mm
Environment	Temperature	Operation: -0 ~ 60°C Storage: -20 ~ 75°C
	Humidity	Operation: 5 ~ 95%, Non-condensing Storage: 5 ~ 95%, Non-condensing

Interfaces

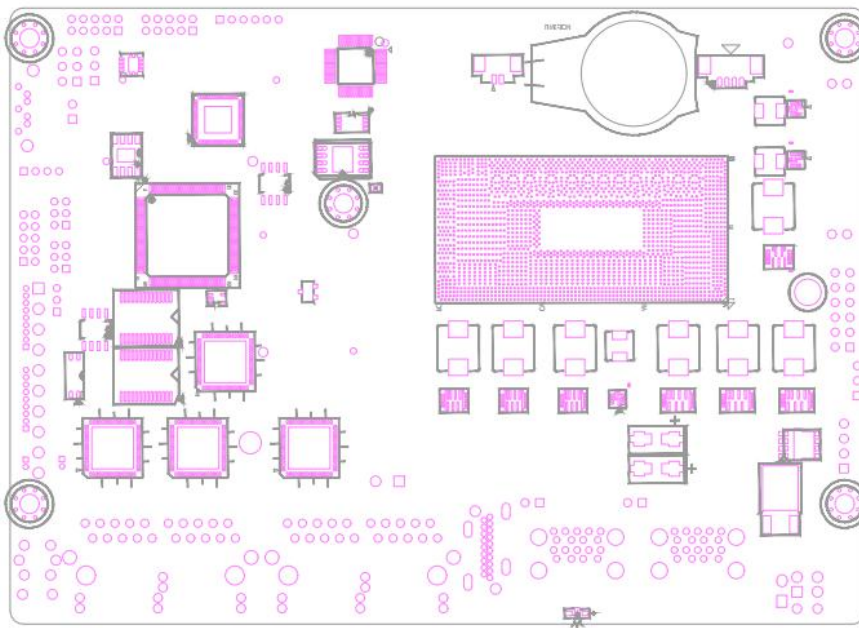
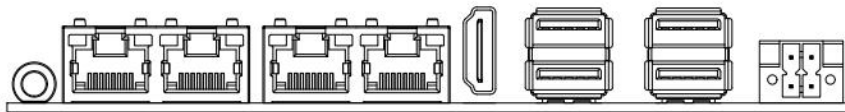
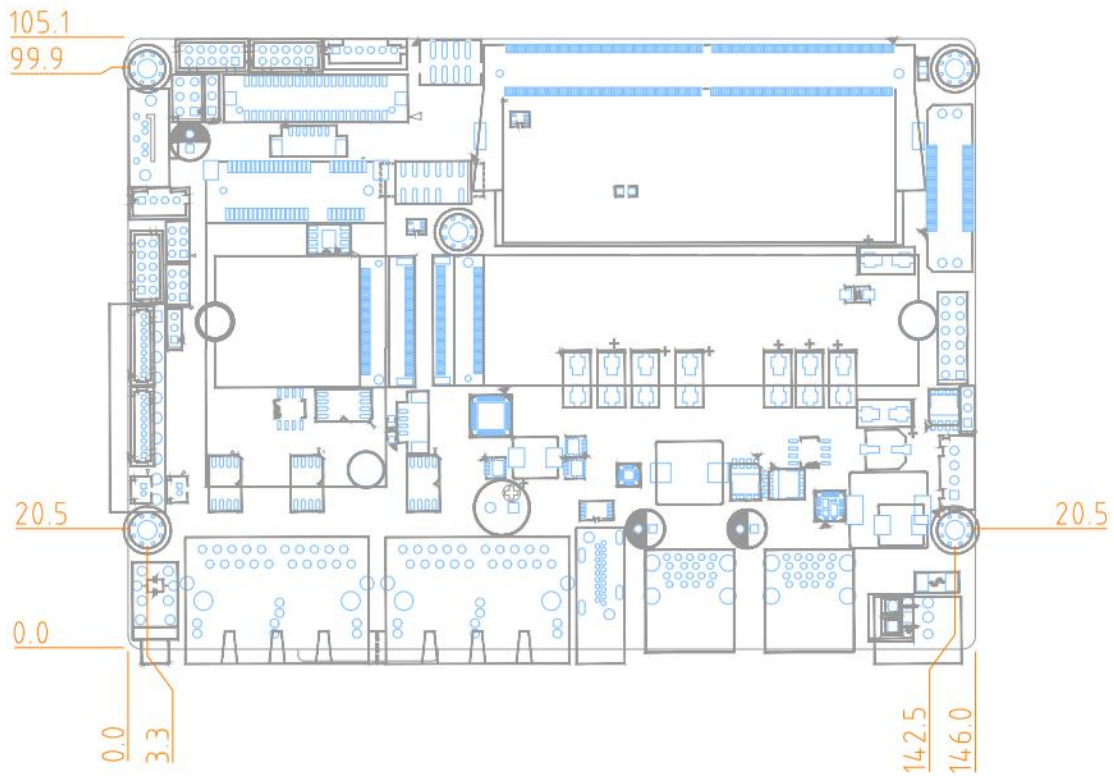
Model	Model	MB-221 Serials
Rear I/O	Power in	1, 2x2P 3.5mm Terminal Block <i>Note: BOM option support 1x2P 3.5mm Terminal Block</i>
	Power on	1, Button
	HDMI	1, Type-A
	LAN	4, RJ45
	USB3.0	4, Type-A
Internal I/O	Power in	/
	Power out	1, Wafer
	eDP/LVDS	1, DF13, with Backlight Control Wafer
	Audio	1, Wafer, Line-Out + MIC
	Storage	1, SATA 7P Port, with Power supply Wafer 1, M.2 M-Key 2280, PCIe x4
	Expansion	1, M.2 E-Key 2230, PCIe + USB2.0 1, Mini-PCIe, PCIe + USB2.0 1, SIM Wafer 1, BTB Connector, Expansion Card with Power out Header
	USB2.0	4, Wafer
	Serial	2, Wafer, COM1-2 <i>Note: BOM Option support t COM1+COM2+Power on Terminal Block</i>
	GPIO	1, Wafer
	Power on	1, Wafer
	Reset	1, Wafer
	HDD LED	1, Orange light LED
	FAN	1, Wafer
Others	Buzzer	1



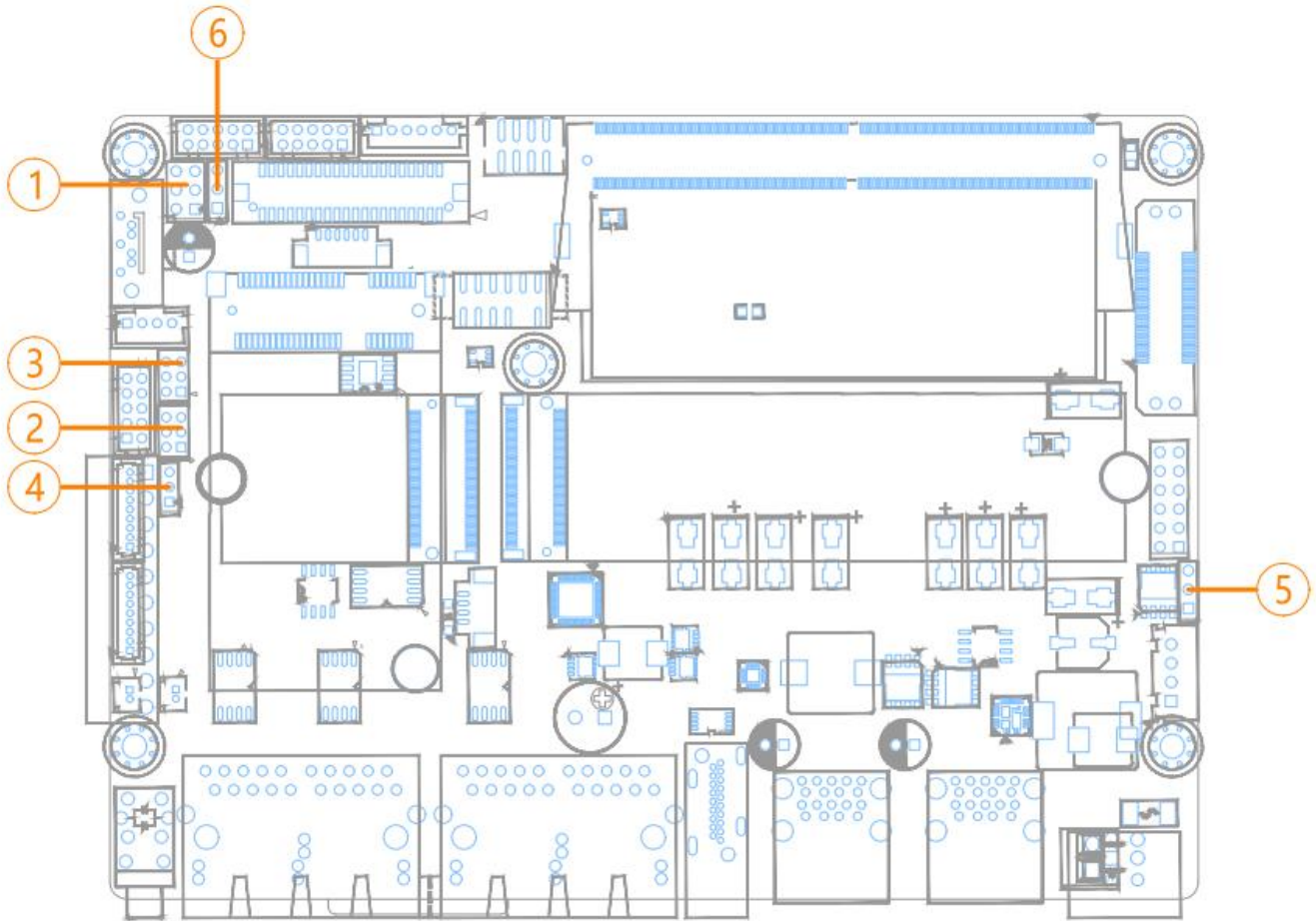
3 Block Diagram



4 Mechanical Drawing



5 Jumper



Jumpers		
①	JC_LVDS1	LVDS1 Power VCC3.3/VCC5/VCC12 Select Jumper
②	JP1-1	COM1 RS4232/RS485 Select Jumper
③	JP1-2	COM1 RS4232/RS485 Select Jumper
④	JP1-3	COM1 RS4232/RS485 Select Jumper
⑤	J_ME1	ME Flash Jumper
⑥	CLR_CMOS	CMOS Clear Select Jumper

6 Definition of Jumpers

6.1 LVDS Power VCC3.3/VCC5/VCC12 Select: Jumper, 3*2P, 2.54mm (Mark No.1 JC_LVDS1)

Graphic	Setting	Function
	1-2(Default)	VCC3.3
	3-4	VCC5
	5-6	VCC12

6.2 COM1 RS232/RS485 Select: Jumper, 3*2P, 2.54mm (Mark No.2-4, JP1-1/JP1-2/JP1-3)

Graphic	Setting	Function
 JP1-1	JP1-1: 1-2 JP1-2: 3-5、 4-6 JP1-3:1-2(Default)	COM1: RS232
 JP1-2	JP1-1: 5-6 JP1-2: 1-3、 2-4 JP1-3:2-3	COM1: RS485
 JP1-3		

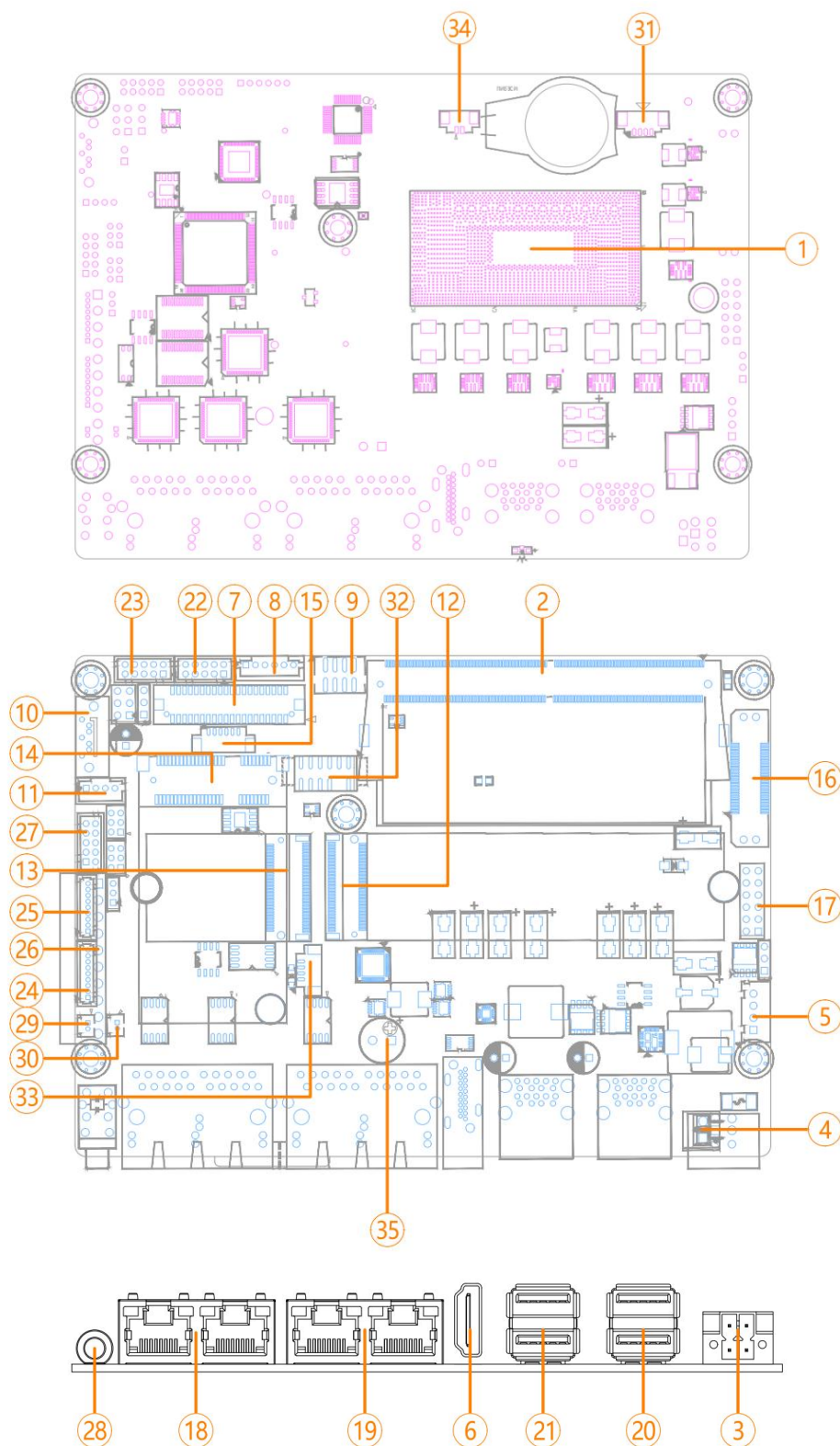
6.3 ME Flash: Jumper, 3*1P, 2.54mm (Mark No.5, J_ME1)

Graphic	Setting	Function
	1-2(Default)	Normal
	2-3	Debug

6.4 CMOS Clear Select: Jumper, 3*1P, 2.54mm (Mark No.3, CLR_CMOS1)

Graphic	Setting	Function
	1-2(Default)	Normal
	2-3	Clear CMOS

7 Headers / Wafers and Connectors



Headers / Wafers and Connectors

①	U1	CPU
②	DIMM1	DDR5 SO-DIMM Slot
③	DC_IN1	DC 12/19/24V Power Input Terminal Block
④	DC_IN2	DC 12/19/24V Power Input Terminal Block
⑤	DC_OUT1	DC 12V+5V Power Output Wafer
⑥	HDMI1	HDMI TYPE-A Connector
⑦	LVDS1	LVDS Signal Header
⑧	LVDS_P1	LVDS Backlight Control Wafer
⑨	J_AUDIO1	Front Audio Header (Line-Out + MIC)
⑩	SATA1	SATA3.0 7P Connector
⑪	P_SATA1	SATA Power Header
⑫	M.2_KEYM_PCIESSD1	M.2 M-Key Slot (PCIe x4/SATA, 2280)
⑬	M.2_KEYE_WLAN1	M.2 E-Key Slot (PCIe+USB2.0, 2230)
⑭	MPE1	Mini-PCIe Slot (PCIe+USB2.0)
⑮	J_SIM1	SIM Card Wafer
⑯	J_B2B1	Board To Board Expansion Connector
⑰	J_PWR1	Expansion Card Power Supply Header
⑱	RJ45_1-2	Dual GbE LAN RJ45 Connector1
⑲	RJ45_3-4	Dual GbE LAN RJ45 Connector2
⑳	R_USB1	Dual USB3.0 TYPE-A Connector
㉑	R_USB2	Dual USB3.0 TYPE-A Connector
㉒	F_USB1	Front Dual USB2.0 Wafer
㉓	F_USB2	Front Dual USB2.0 Wafer
㉔	J_COM1	COM1 Wafer
㉕	J_COM2	COM2 Wafer
㉖	J_PB-COM1-1	COM1+COM2+Power Terminal Block
㉗	J_GPIO1	GPIO Wafer
㉘	PSBTN1	Power on Button
㉙	J_PB1	Power on Wafer
㉚	J_RST1	System Reset Wafer
㉛	CPU_FAN1	CPU FAN Wafer

③②	J_ESPI1	ESPI Header
③③	J_PRM1	Power Debug Wafer
③④	BAT1	CMOS Battery Wafer
③⑤	BZ1	Buzzer

8 Definition of Connectors

8.1 DC 12/19/24V Power Input/Output: Wafer, 2*2P, 3.5 mm (Mark No.3, DC_IN1)

Graphic	Pin	Definition	Pin	Definition
	1	DC_IN	3	DC_IN
	2	GND	4	GND

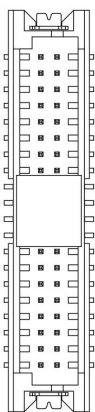
8.2 DC 12/19/24V Power Input: Terminal Block, 2*1P, 3.50mm (Mark No.4, DC_IN2)

Graphic	Pin	Definition	Pin	Definition
	1	GND	2	DC_IN

8.3 DC 12V+5V Power Output: Wafer, 4*1P, 2.50 mm (Mark No.5, DC_OUT1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC12	3	GND
	2	GND	4	VCC5

8.4 eDP/LVDS: DF13, 20*2P, 1.25mm (Mark No.7, LVDS1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC3.3/VCC5/VCC12 ^[1]	2	VCC3.3/VCC5/VCC12 ^[1]
	3	LVDS_PRSENT	4	GND
	5	VCC3.3/VCC5/VCC12 ^[1]	6	VCC3.3/VCC5/VCC12 ^[1]
	7	LVDS_A_DATA0-	8	LVDS_B_DATA0- /EDP1_TX0- ^[2]
	9	LVDS_A_DATA0+	10	LVDS_B_DATA0+ /EDP1_TX0+ ^[2]
	11	GND	12	GND
	13	LVDS_A_DATA1-	14	LVDS_B_DATA1- /EDP1_TX1- ^[2]
	15	LVDS_A_DATA1+	16	LVDS_B_DATA1+ /EDP1_TX1+ ^[2]
	17	GND	18	GND
	19	LVDS_A_DATA2-	20	LVDS_B_DATA2- /DDI_A_TX2- ^[2]
	21	LVDS_A_DATA2+	22	LVDS_B_DATA2+ /DDI_A_TX2+ ^[2]
	23	GND	24	GND

	25	LVDS_A_CLK-	26	LVDS_B_CLK- /DDI_A_TX3- [2]
	27	LVDS_A_CLK+	28	LVDS_B_CLK+ /DDI_A_TX3+ [2]
	29	GND	30	GND
	31	N/C	32	EDP1_HPD
	33	GND	34	GND
	35	LVDS_A_DATA3-	36	LVDS_B_DATA3- /EDP1_AUX- [2]
	37	LVDS_A_DATA3+	38	LVDS_B_DATA3+ /EDP1_AUX+ [2]
	39	N/C	40	GND

Notes:

[1]: Panel Power VDD is 3.3V by default, 5V or 12V is selectable by “eDP/LVDS Power VCC3.3/VCC5/VCC12 Select Jumper”. (JV_LVDS1).

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

8.5 eDP/LVDS Backlight Control: Wafer, 6*1P, 2.0mm (Mark No.11, LVDS_P1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	4	LVDS_BKLT_EN
	2	GND	5	VCC12
	3	LVDS_BKLT_CTL	6	VCC12

8.6 Front Audio: Wafer 4*2P, 2.00mm (Mark No.9, J_AUDIO1)

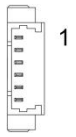
Graphic	Pin	Definition	Pin	Definition
	1	MIC_IN_R	2	LINE_OUT_R
	3	GND_AUD	4	GND_AUD
	5	GND_AUD	6	GND_AUD
	7	MIC_IN_L	8	LINE_OUT_L

8.7 SATA Power: Wafer, 4*1P, 2.00mm (Mark No.11, P_SATA1)

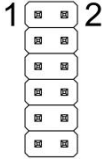
Graphic	Pin	Definition	Pin	Definition
	1	VCC12	3	GND
	2	GND	4	VCC5

0

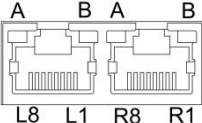
8.8 SIM Card: Wafer, 6*1P, 1.25mm (Mark No.15, J_SIM1)

Graphic	Pin	Definition	Pin	Definition
	1	UIM_PWR	4	UIM_CLK
	2	UIM_DATA	5	UIM_RST
	3	GND	6	UIM_VPP

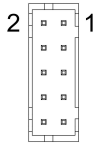
8.9 Expansion Card Power Supply: Header, 6*2P, 2.54mm (Mark No.17, J_PWR1)

Graphic	Pin	Definition	Pin	Definition
	1	DC_IN	2	DC_IN
	3	GND	4	DC_IN
	5	VCC12	6	VCC12
	7	VCC12	8	VCC12
	9	GND	10	GND
	11	GND	12	GND

8.10 Dual GbE LAN: RJ45, (Mark No.18-19, RJ45_1-2/RJ45_3-4)

Graphic	Pin	Definition		Pin	Definition	
	L1	MDI0_1+		R1	MDI0_2+	
	L2	MDI0_1-		R2	MDI0_2-	
	L3	MDI1_1+		R3	MDI1_2+	
	L4	MDI2_1+		R4	MDI2_2+	
	L5	MDI2_1-		R5	MDI2_2-	
	L6	MDI1_1-		R6	MDI1_2-	
	L7	MDI3_1+		R7	MDI3_2+	
	L8	MDI3_1-		R8	MDI3_2-	
A	Active LED	ACT: Twinkling Yellow		B	Speed LED	1000M: Turn Yellow
		Only LINK: Lights On				100M: Turn Green
		NO LINK: Lights On				10M: Lights Off

8.11 Front Dual USB2.0: Wafer, 5*2P, 2.00mm (Mark No.22-23, F_USB1/2)

Graphic	Pin	Definition	Pin	Definition
	1	VCC5	2	VCC5
	3	USB2.0_1-	4	USB2.0_2-
	5	USB2.0_1+	6	USB2.0_2+
	7	GND	8	GND
	9	GND	10	GND

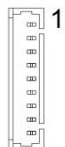
8.12 COM1: Wafer, 9*1P, 1.25mm (Mark No.24, J_COM1)

Graphic	Pin	Definition	Pin	Definition
	1	DCD	6	CTS
	2	DSR	7	DTR
	3	RXD/RS485+ [1]	8	RI
	4	RTS	9	GND
	5	TXD/RS485- [1]		

Notes:

[1]: COM1 is RS232 by default, RS485 is Select by "COM1 RS485/RS232 Select Jumper". (JP1-1/JP1-2/JP1-3) COM1 can be RS485 selecting by jumper and setting BIOS to RTS mode.

8.13 COM2: Wafer, 9*1P, 1.25mm (Mark No.24, J_COM2)

Graphic	Pin	Definition	Pin	Definition
	1	DCD	6	CTS
	2	DSR	7	DTR
	3	RXD/RS485+ [1]	8	RI
	4	RTS	9	GND
	5	TXD/RS485- [1]		

Notes:

[1]: COM2 is RS232 by default, RS485 is Select by RES.

8.14 COM1+COM2+Power: Terminal Block, 10*1P, 3.50mm (Mark No.26, J_PB-COM1-1)

Graphic	Pin	Definition	Pin	Definition
	1	COM1_RXD/RS485+ [1]	6	GND
	2	COM1_TXD/RS485- [1]	7	UPS_OK
	3	GND	8	GND
	4	COM1_RXD/RS485+ [1]	9	Power on+

5	COM1_TXD/RS485- [1]	10	Power on-
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Note:

[1]: COM1 is RS232 by default, RS485 is Select by "COM1 RS485/RS232 Select Jumper". (JP1-1/JP1-2/JP1-3) COM1 can be RS485 selecting by jumper and setting BIOS to RTS mode.

[2]: COM2 is RS232 by default, RS485 is Select by RES.

8.15 GPIO: Wafer, 5*2P, 2.00mm (Mark No.27, J_GPIO1)

Graphic	Pin	Definition	Pin	Definition
	1	SIO_GPI81 (0xA07 Bit1, H [1])	2	SIO_GPI80 (0xA07 Bit0, H [1])
	3	SIO_GPI83 (0xA07 Bit3, H [1])	4	SIO_GPI82 (0xA07 Bit2, H [1])
	5	SIO_GPO85 (0xA07 Bit5, H [1])	6	SIO_GPO84 (0x4A07 Bit4, H [1])
	7	SIO_GPO87 (0xA07 Bit7, H [1])	8	SIO_GPO86 (0xA07 Bit6, H [1])
	9	GND	10	VCC_GPIO [2]

Note:

[1]: "H" or "L" means the default voltage is High or Low level (5V GPIO).

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

8.16 Power On: Wafer, 2*1P, 1.25mm (Mark No.29, J_PB1)

Graphic	Pin	Definition	Pin	Definition
	1	PWR_ON+	2	PWR_ON-

8.17 System Reset: Wafer, 2*1P, 1.25mm (Mark No.30, J_RST1)

Graphic	Pin	Definition	Pin	Definition
	1	Reset+	2	Reset-

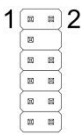
8.18 CPU FAN: Wafer 4*1P, 1.25mm (Mark No.31, CPU_FAN1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection
	2	VCC12 [1]	4	FAN Speed Control

Notes:

[1]: Power on this Pin is 12V by default, 5V is available if specified. (resistor selectable)

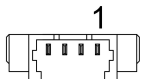
8.19 ESPI: Header, 6*2P, 2.00mm (Mark No.32, J_ESPI1)

Graphic	Pin	Definition	Pin	Definition
	1	ESPI_IO0	2	VCC3.3
	3	ESPI_IO1	4	NA
	5	ESPI_IO2	6	ESPI_CLK
	7	ESPI_IO3	8	GND
	9	ESPI_CS0	10	VCC3.3
	11	ESPI_ALERT0_N	12	PLTRST_N ^[1]

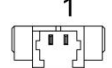
Note:

[1]: Signal on this Pin is PLT_RST_N by default, ESPI_RST0_N is available if specified. (resistor selectable).

8.20 Power Debug: Wafer 4*1P, 1.25mm (Mark No.33, J_PRM1)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	SCL
	2	N/C	4	SDA

8.21 CMOS Battery: Wafer, 2*1P, 1.25mm (Mark No.34, BAT1)

Graphic	Pin	Definition	Pin	Definition
	1	VCC_BAT	2	GND

【End】



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Baltesakker 17, 5625TC
Eindhoven, the Netherlands
www.aicotek.com
info@aicotek.com