

# iTXL-Q370A (MQ37AT-SI)

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Thin Mini-ITX Motherboard

User's Manual 1st Ed

## Copyright Notice

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# Packing List

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Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
iTXL-Q370A MB	1
SATA power cable	1
I/O Bracket	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

## About this Document

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This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the [GIGAIPC.com](http://GIGAIPC.com) for the latest version of this document.

## Safety Precautions

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Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.

13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
17. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device
- 18. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

## FCC Statement

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### **Warning!**



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

### **Caution:**

*There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.*

### **Attention:**

*Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.*



## China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

GIGAIPC Main Board/ Daughter Board/ Backplane

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电 子组件	○	○	○	○	○	○
外部信号 连接器 及线材	○	○	○	○	○	○

○: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。  
 X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。  
 备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。

# China RoHS Requirement (EN)

## Poisonous or Hazardous Substances or Elements in Products GIGAIPC Main Board/ Daughter Board/ Backplane

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	○	○	○	○	○	○
Wires & Connectors for External Connections	○	○	○	○	○	○

○ : The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.  
 X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.  
 Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

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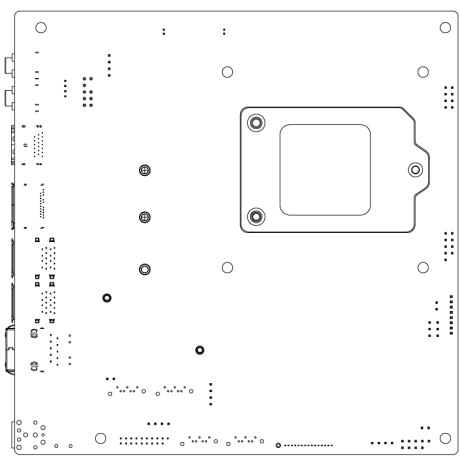
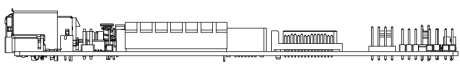
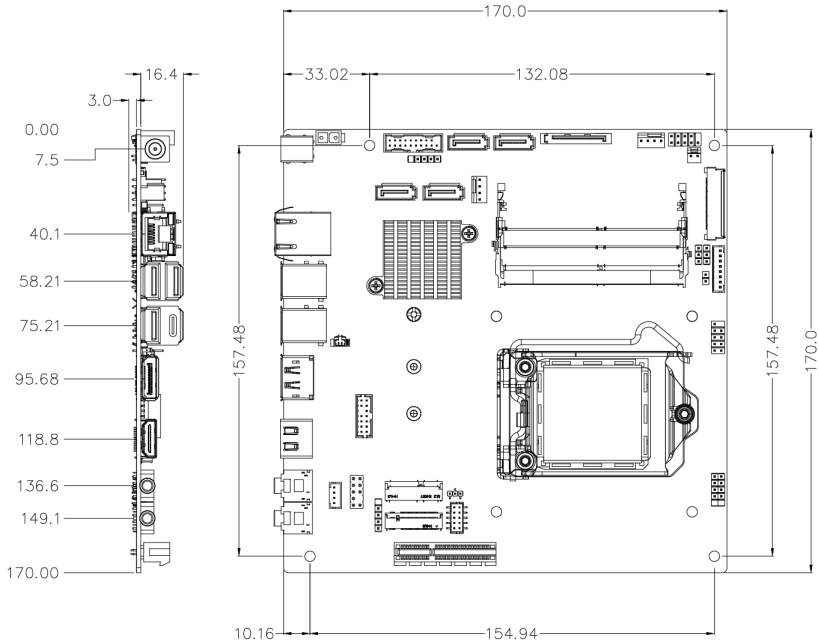
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# Chapter 1

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## Chapter 1 - Product Specifications



## 1.1 Specifications

Motherboard	iTXL-Q370A (MQ37AT-SI)
Form Factor	Thin Mini-ITX form factor 170W x 170D (mm)
CPU	Support for 8th/9th Generation Intel® Core™ i7 processors/ Intel® Core™ i5 processors/ Intel® Core™ i3 processors/ Intel® Pentium®processors/ Intel® Celeron® processors in the LGA1151 package TDP under 65W L3 cache varies with CPU
Socket	1 x LGA 1151
Chipset	Intel® Q370 Express Chipset
Memory	2 x DDR4 SO-DIMM sockets supporting up to 32 GB of system memory Dual channel memory architecture Support for DDR4 2666/2400 MHz memory modules
Ethernet	1 x GbE LAN port (Intel® i219LM)
Video	Integrated Graphics Processor - Intel® HD Graphics support: 1 x HDMI port, supporting a maximum resolution of 4096 x 2160@60 Hz 1 x DP port, supporting a maximum resolution of 4096 x 2160@60 Hz 1 x LVDS port, supporting a maximum resolution of 1920 x 1080@60Hz * Support up to 3 displays at the same time * Support for HDMI 1.4 version * Maximum shared memory of 1024MB
Audio	Realtek ALC887 + ALC105 Amplifier High Definition Audio
Storage	4 x SATA 6Gb/s ports
Raid	Intel® SATA RAID 0/1/10/5
Expansion Slots	1 x PCIe x4 (Gen3 x 4 bus) slot 1 x M.2 slot: - M-key - SATA 6Gb/s & PCIe - Supports NGFF-2260/2280 cards 1 x M.2 slot: - E-key - Supports NGFF-2230 CNVi cards only

Motherboard	iTXL-Q370A (MQ37AT-SI)
Internal I/O	1 x 2-pin ATX main power connector 4 x SATA 6Gb/s connectors 5 x USB 2.0 headers 2 x USB 3.0 headers 1 x Front panel header 1 x Front panel audio header 1 x Speaker out header 1 x DMIC header 1 x LVDS connector 1 x FPD 1 x FPD_SW 1x3 (For Panel Power SW) 1 x LCD_VCC Pin header 1 x Back Light Switch 1 x System fan header 1 x CPU fan header 1 x COM Header (RS-232) 1 x SATA Power
Rear I/O	2 x Audio jacks (Line out, Mic in) 1 x HDMI 2.0 1 x Display Port 1 x RJ45 4 x USB3.1 1 x DC Jack (+12V/+19VDC )
TPM	1 x TPM Header
OS Compatibility	Windows 10 (x64)
PSU Connectors	1 x DC-in (+12/ +19VDC) 1 x 2-pin ATX power connector
Operating Properties	Operating temperature: 0°C to 60°C Operating humidity: 0-90% (non-condensing) Non-operating temperature: -20°C to 70°C Non-operating humidity: 0% - 95% (non-condensing)
Packing Content	BOX Packing Capacity: 10pcs Carton size: 460 x 345 x 203 (mm) Content: IO Shield x 1 (12AIO-MCH370-00R) SATA Power cable x 1 (25CRI-710300-K1R)
Order Information	Motherboard: 9MQ370ATMR-SI
Optional kit:	TPM 1.2 module: 9CMUFLNR-00 TPM 2.0 module: 9CTM000NR-00

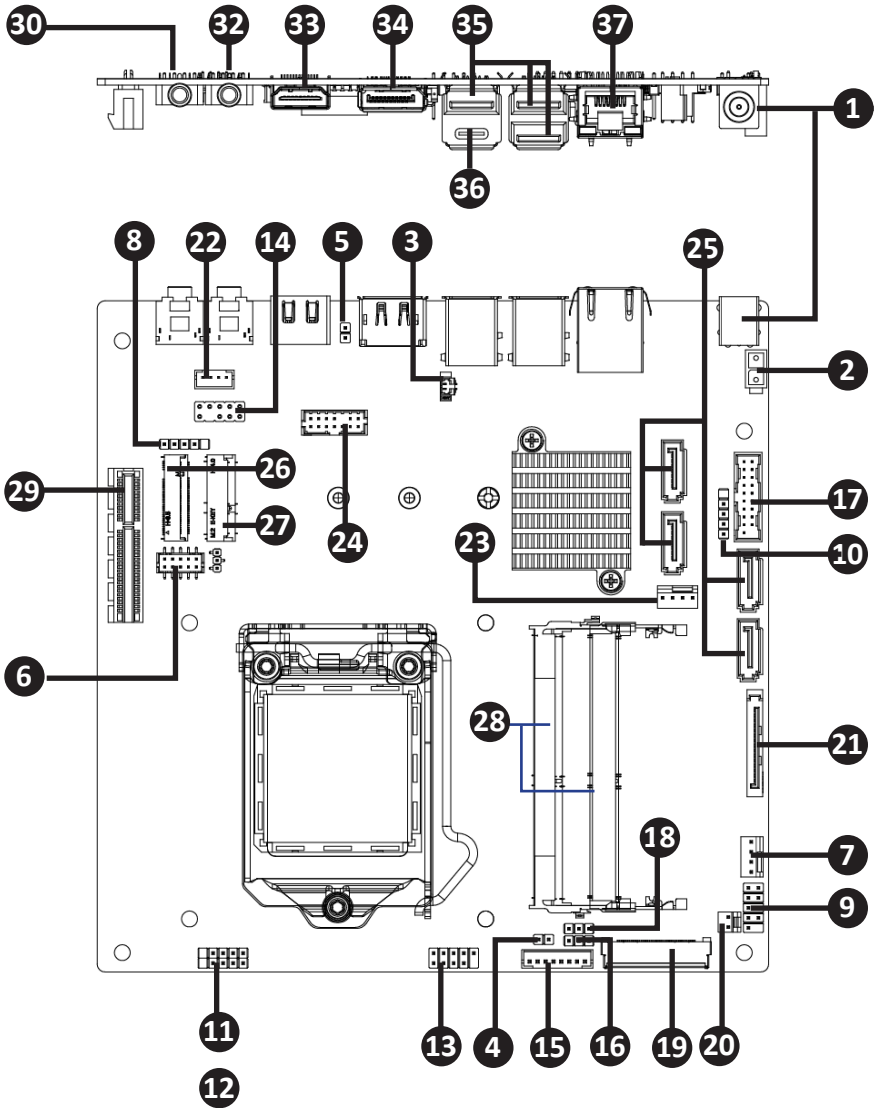


# Chapter 2

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## Chapter 2 – Hardware Information

## 2.1 Jumpers and Connectors

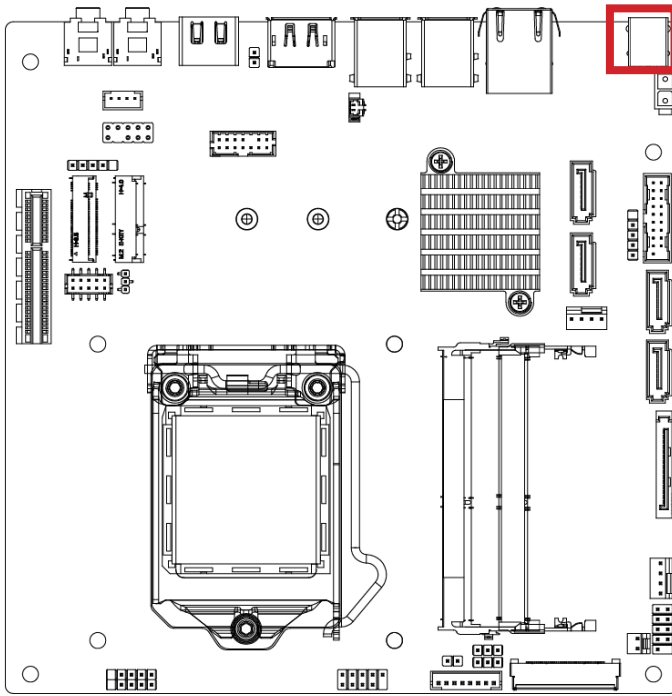


No	Code	Description
1	DC_IN	DC In Jack
2	ATX_19V	ATX 1x2 Pin Power Connector
3	Battery	Battery Connector
4	BL_SW	Brightness Switch Connector
5	CLR_CMOS	Clear CMOS Jumper
6	COM1	Serial Port Header
7	CPU_FAN	CPU FAN Connector
8	DMIC_CON	Digital MIC Connector
9	SYS_PANEL	System Panel Header
10	F_USB2_1	USB 2.0 Header
11	F_USB2_2	USB 2.0 Header
12	F_USB2_3	USB 2.0 Header
13	F_USB2_4	USB 2.0 Header
14	FP_Audio	Front Panel Audio Header
15	FPD	Front Panel Display Connector
16	FPD_PWR	Front Panel Display Power Connector
17	F_USB3	USB 3.0 Header
18	LCD_VCC	LCD_VCC Connector
19	LVDS	LVDS Connector
20	MON_SW	Monitor Switch Connector
21	SATA_PWR	SATA Power Connector
22	SPKR	Speaker out Connector
23	SYS_FAN	System Fan Connector

No	Code	Description
24	TPM	Trusted Platform Module Connector
25	SATA2, 3, 4, 5	SATA 6 Gb/s Connector x 4
26	M2M	M.2 Slot, M-Key, SATA 6Gb/s & PCIe, Supports NGFF-2260/2280 Cards
27	M2E	M.2 Slot, E-Key, Supports NGFF-2230 CNVi Cards only
28	SODIMM1, SODIMM2	2 x DDR4 SO-DIMM Sockets
29	PCIe x4	1 x PCIe x4 (Gen3 x 4 bus) Slot
30		IO Connector Information
31	MIC_IN	MIC In Connector
32	LINE_OUT	Line Out Connector
33	HDMI 2	HDMI Connector
34	DP	Display Port Connector
35	USB31_1, USB31_2,	USB3.1 Type A Connector x 3
36	USB31	USB3.1 Type C Connector x 1
37	LAN	Ethernet x 1

## 2.2.1 DC\_IN (DC In Jack)

1

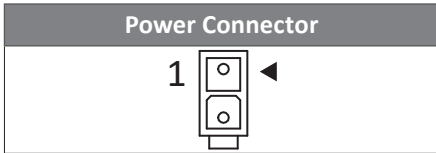
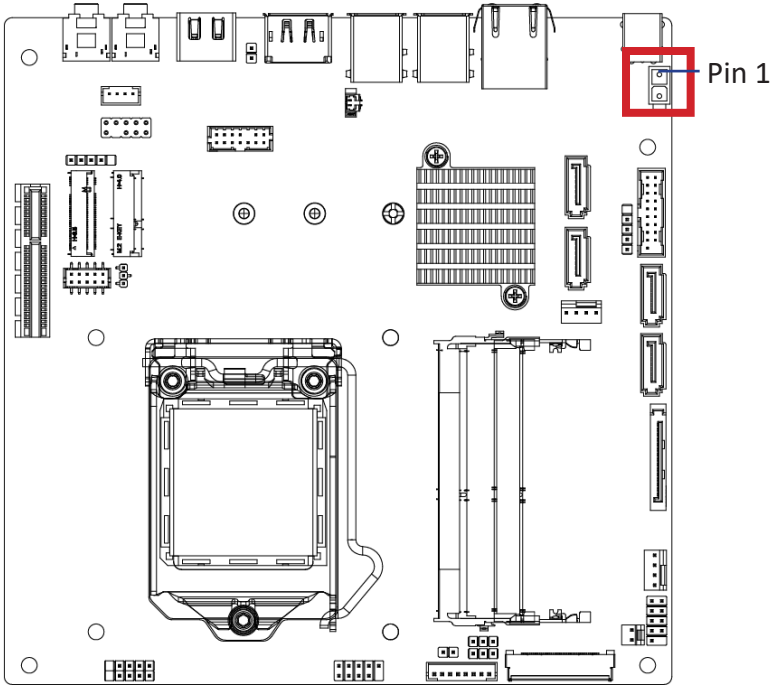


DC In Jack



## 2.2.2 ATX\_19V (ATX 1x2 Pin Power Connector)

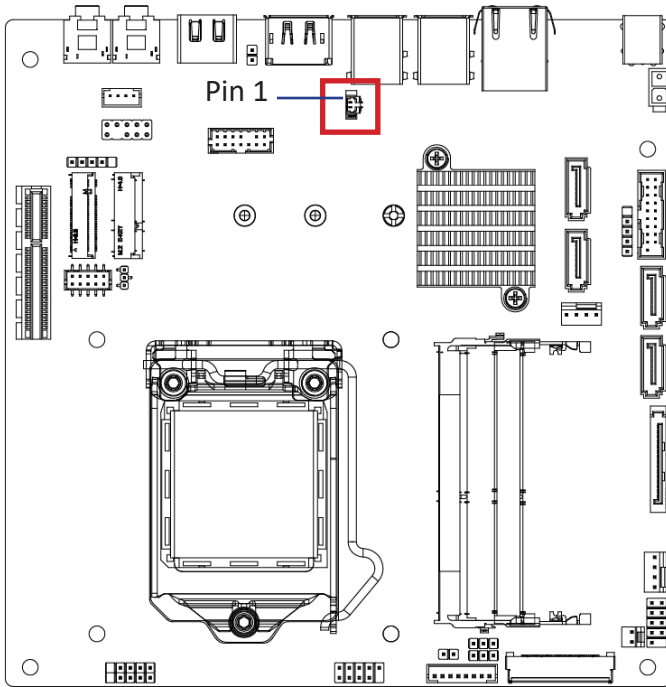
2



Pin No.	Definition
1	GND
2	19V

## 2.2.3 Battery (Battery Connector)

3



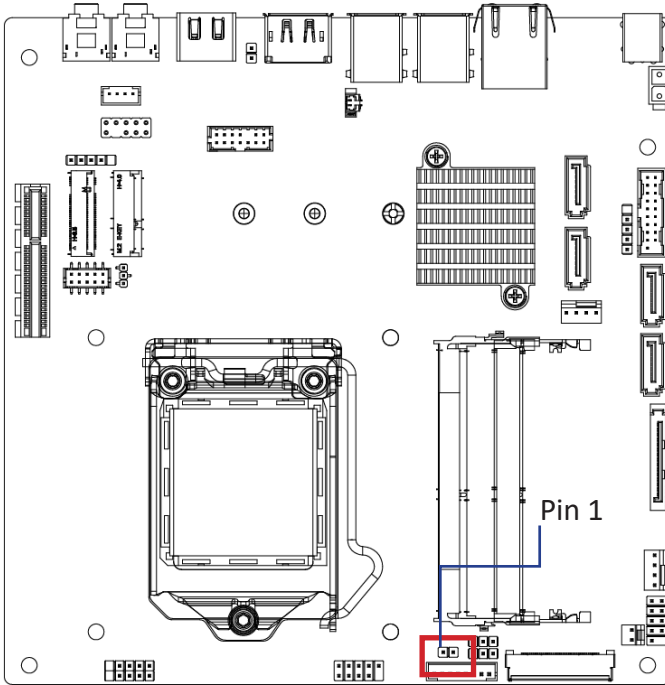
Battery Connector



Pin No.	Definition
1	3V
2	GND

## 2.2.4 BL\_SW (Brightness Switch Connector)

4



Brightness Switch Connector



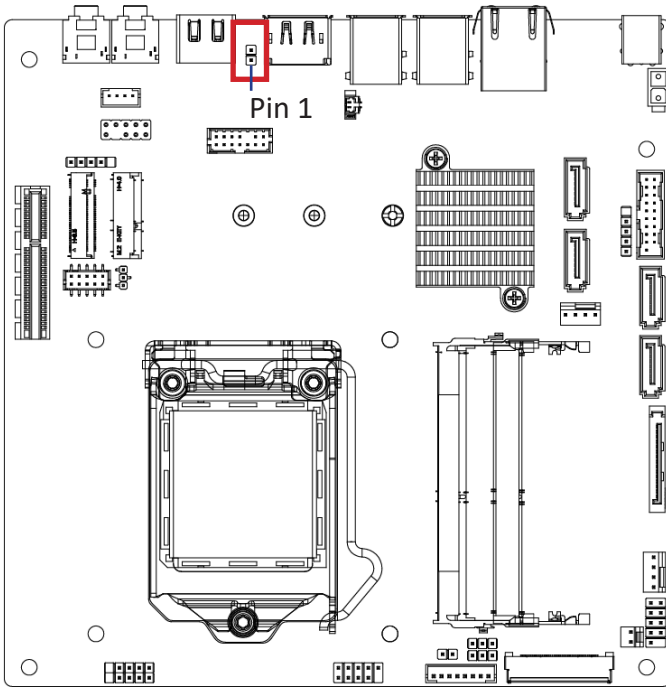
1

Pin No.	Definition
1	Brightness Down
2	Brightness UP



## 2.2.5 CLR\_CMOS (Clear CMOS Jumper)

5



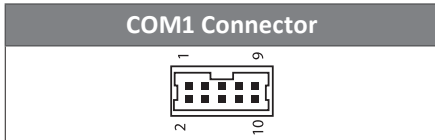
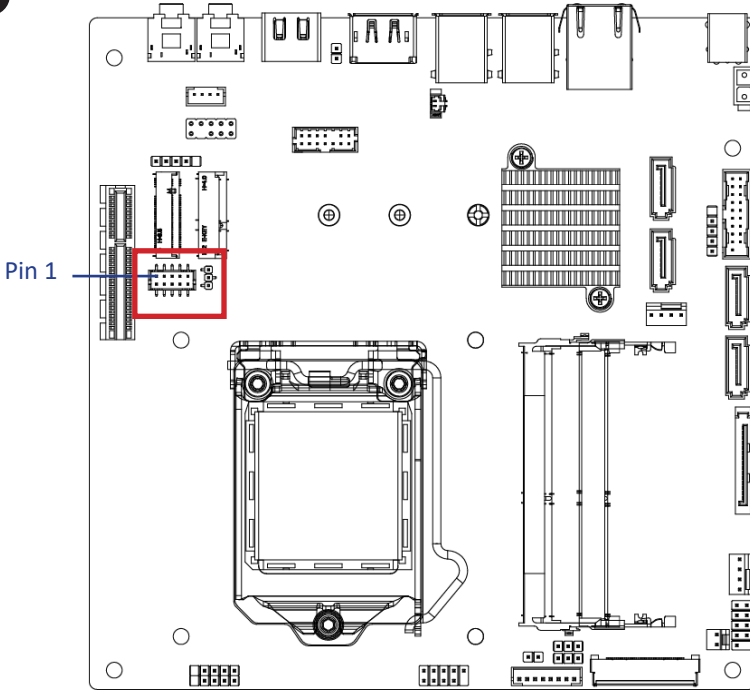
Clear COMS Jumper



Pin No.	Definition
1	Clear CMOS
2	GND
Open: Normal Operation (Default setting) Close: Clear COMS data.	

## 2.2.6 COM1 (Serial Port Header)

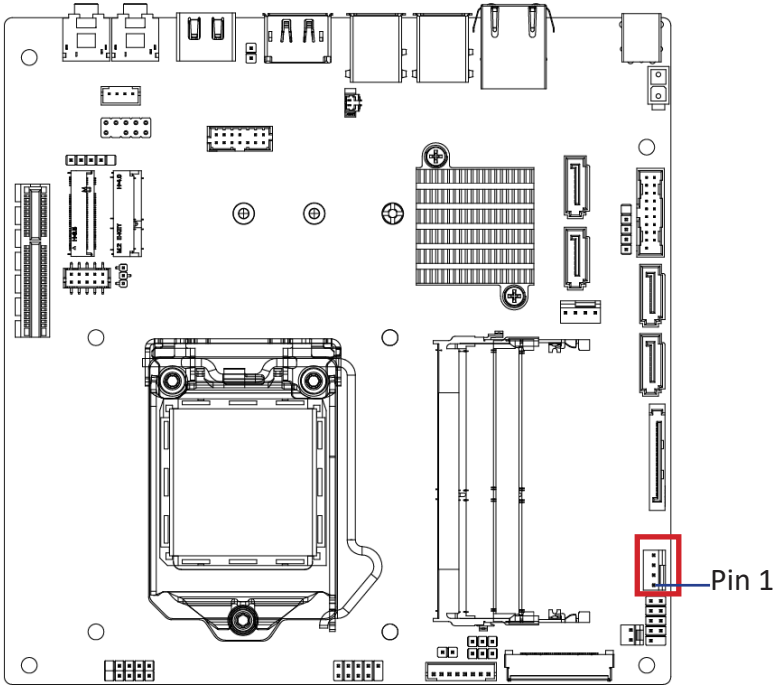
6



Pin No.	Definition
1	DCD
2	DSR
3	RX
4	RTS
5	TX
6	CTS
7	DTR
8	RI
9	GND
10	NC

## 2.2.7 CPU\_FAN (CPU FAN Connector)

7



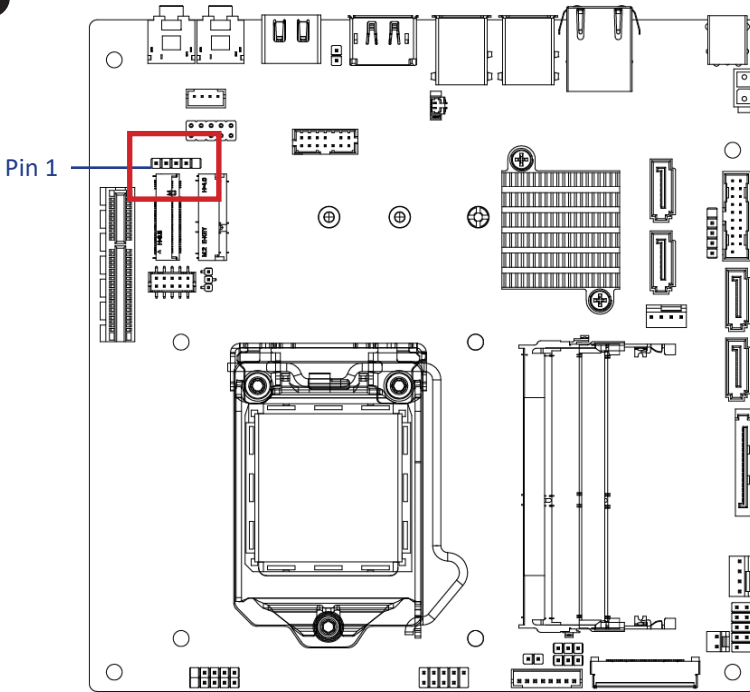
CPU Fan Connector



Pin No.	Definition
1	GND
2	12V
3	Sense
4	PWM

## 2.2.8 DMIC\_CON (Digital MIC Connector)

8



Digital MIC Connector

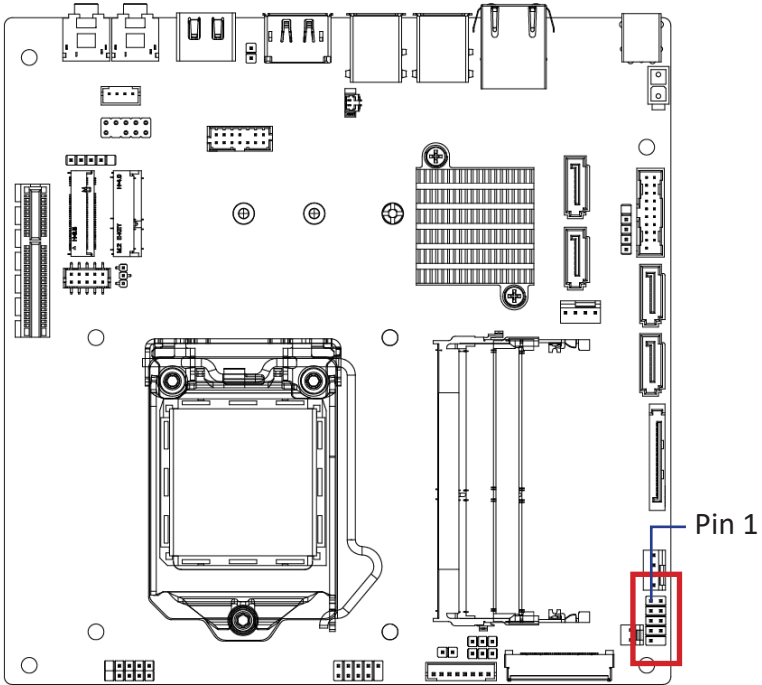


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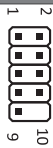
Pin No.	Definition
1	3.3V
2	DATA
3	GND
4	Clock

## 2.2.9 SYS\_PANEL (System Panel Header)

9



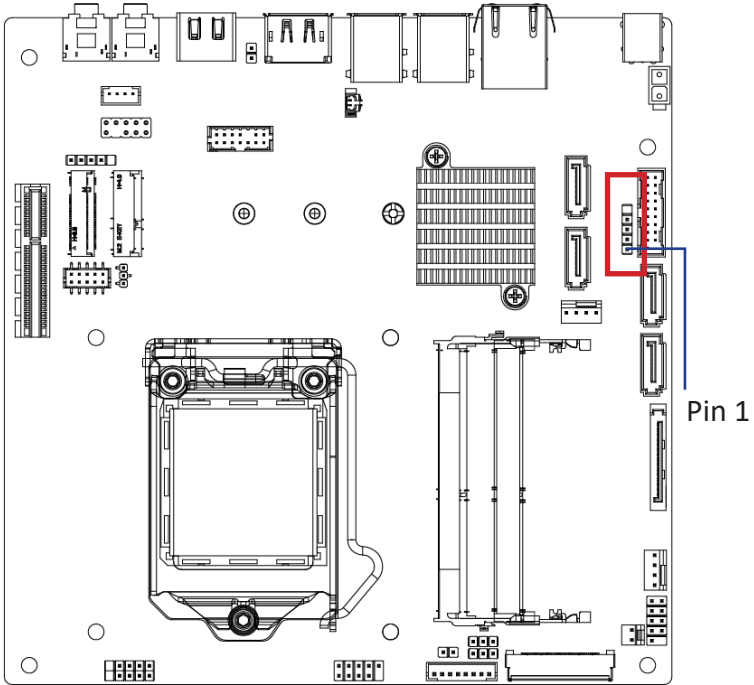
System Panel Header



Pin No.	Definition
1	HD+
2	MPD+
3	HD-
4	MPD-
5	GND
6	PW+
7	RESET
8	GND
9	NC
10	NC

## 2.2.10 F\_USB2\_1 (USB 2.0 Header)

10



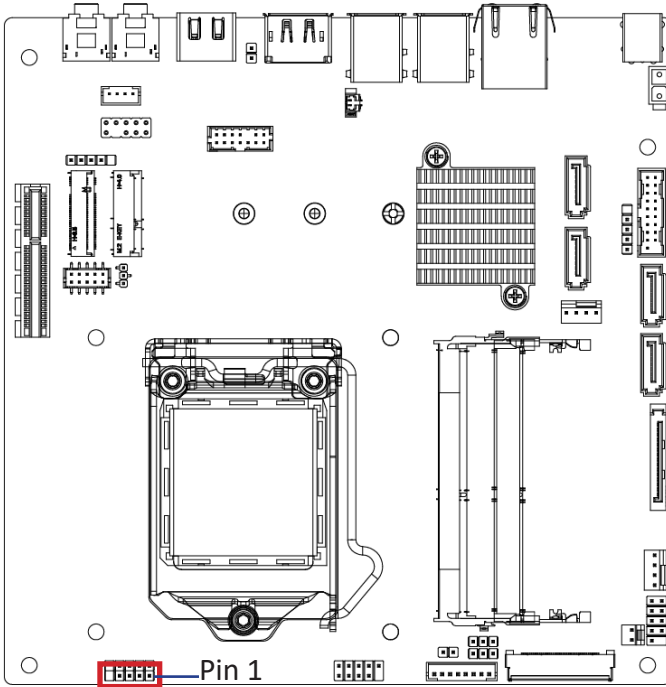
USB 2.0 Header



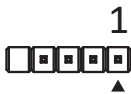
Pin No.	Definition
1	5V
2	D-
3	D+
4	GND

## 2.2.11 F\_USB2\_2 (USB 2.0 Header)

11



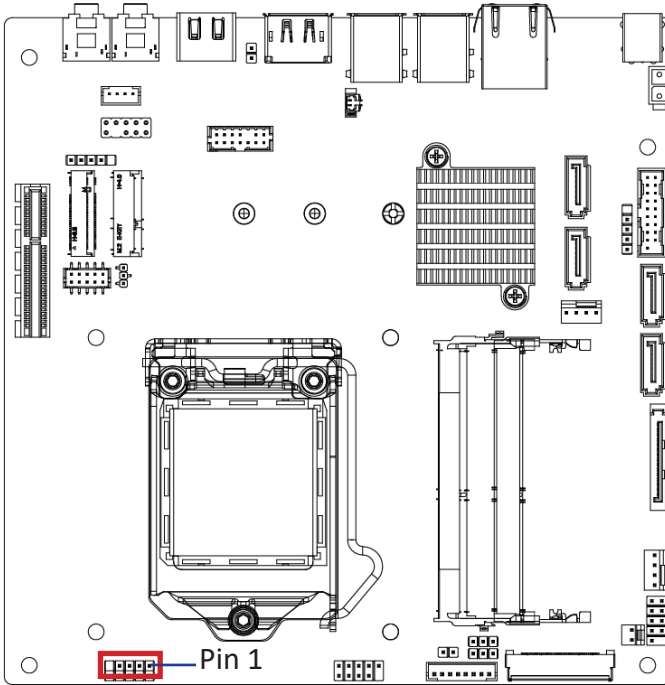
USB 2.0 Header



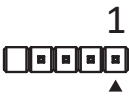
Pin No.	Definition
1	5V
2	D-
3	D+
4	GND

## 2.2.12 F\_USB2\_3 (USB 2.0 Header)

12



USB 2.0 Header

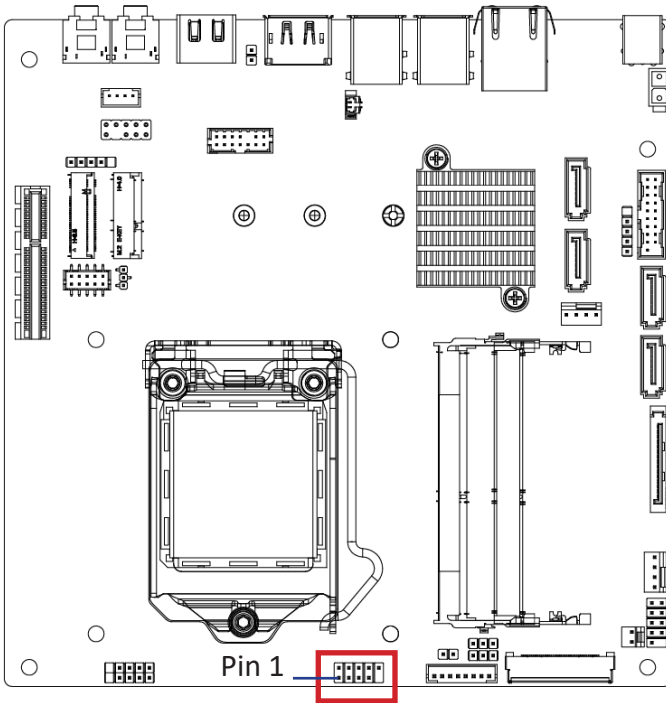


Pin No.	Definition
1	5V
2	D-
3	D+
4	GND

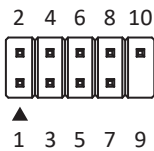


## 2.2.13 F\_USB2\_4 (USB 2.0 Header)

13



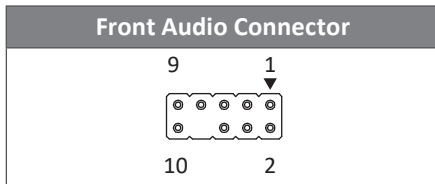
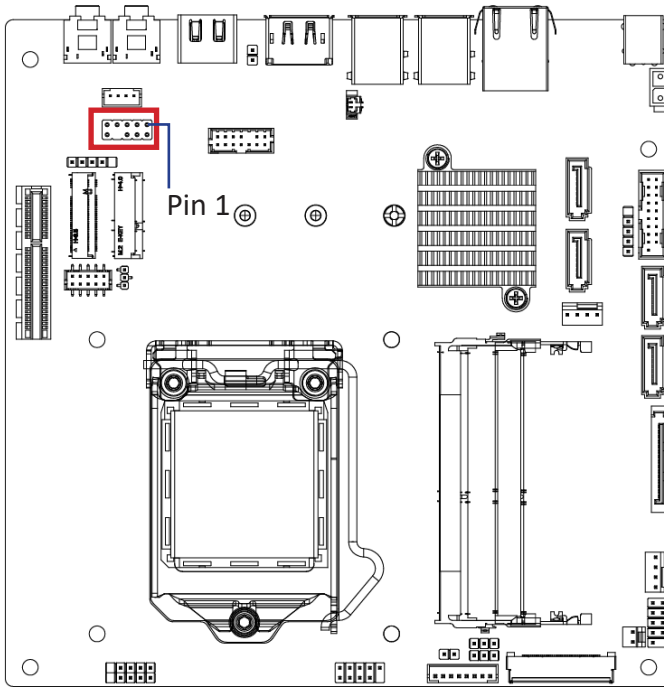
USB 2.0 Header



Pin No.	Definition
1	5V
2	5V
3	D-
4	D-
5	D+
6	D+
7	GND
8	GND
9	NC
10	NC

## 2.2.14 FP\_Audio (Front Panel Audio Header)

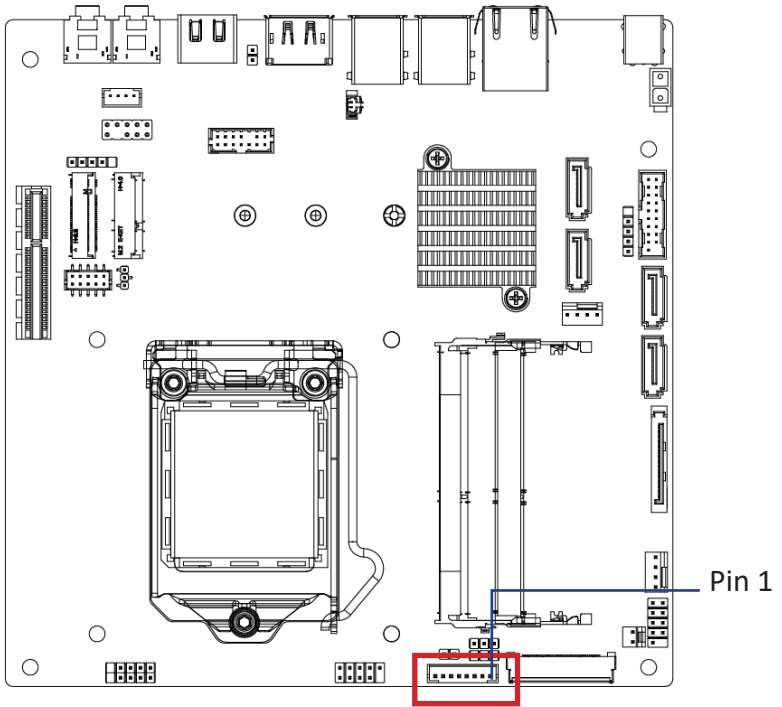
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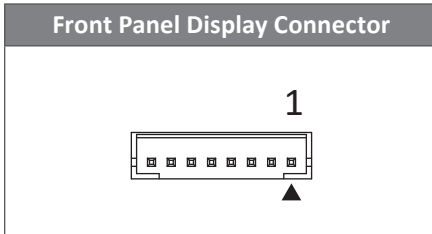
Pin No.	Definition	Pin No.	Definition
1	MIC-L	6	MIC-JD
2	GND	7	GND
3	MIC-R	8	NC
4	DELTECT	9	LINE-L
5	LINE-R	10	LINE-JD

## 2.2.15 FPD (Front Panel Display Connector)

15



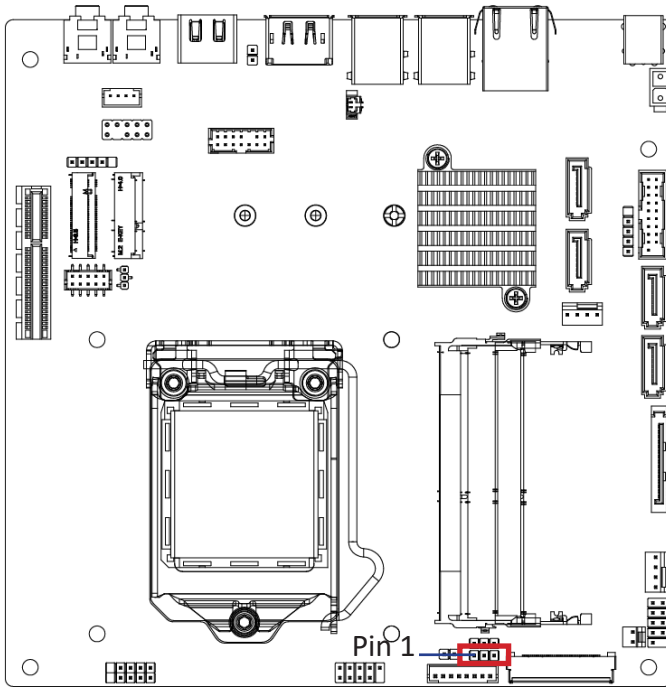
Front Panel Display Connector



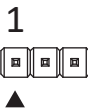
Pin No.	Definition
1	Brightness Enable
2	Brightness PWM
3	Brightness Power
4	Brightness Power
5	GND
6	GND
7	Brightness UP
8	Brightness Down

## 2.2.16 FPD\_PWR (Front Panel Display Power Connector)

16



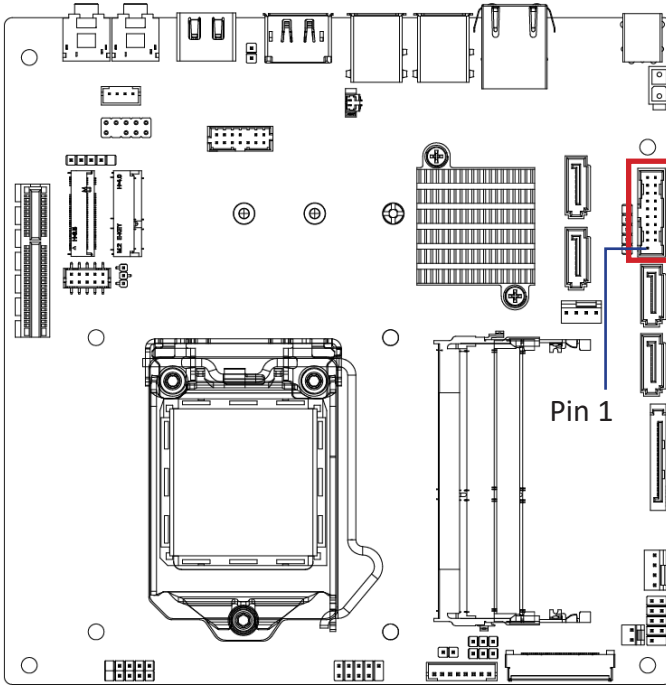
Front Panel Display Power Connector



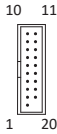
Pin No.	Definition
1	12V
2	Brightness Power
3	19V

## 2.2.17 F\_USB3 (USB 3.0 Header)

17



USB 3.0 Header

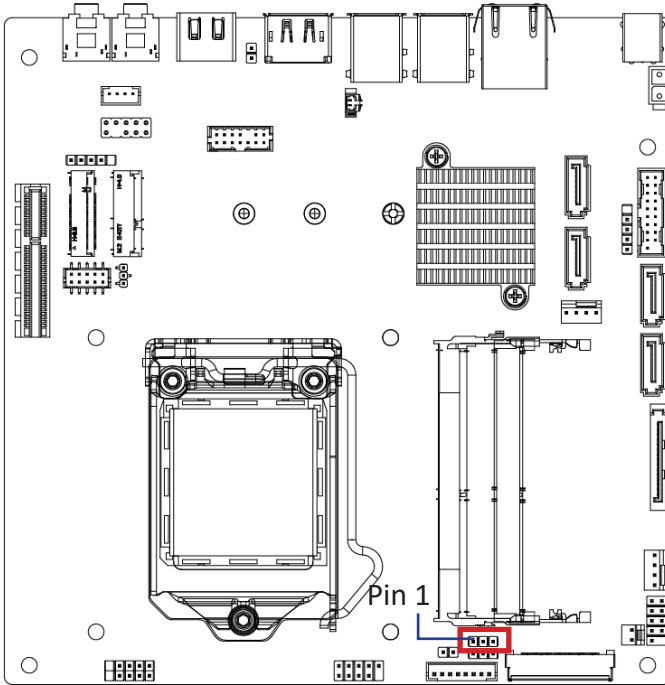


Pin No.	Definition
1	5V
2	RX-
3	RX+
4	GND
5	TX-
6	TX+
7	GND
8	D-
9	D+
10	OC

Pin No.	Definition
11	D+
12	D-
13	GND
14	TX+
15	TX-
16	GND
17	RX+
18	RX-
19	5V
20	NC

## 2.2.18 LCD\_VCC (LCD\_VCC Connector)

18



LCD\_VCC Connector

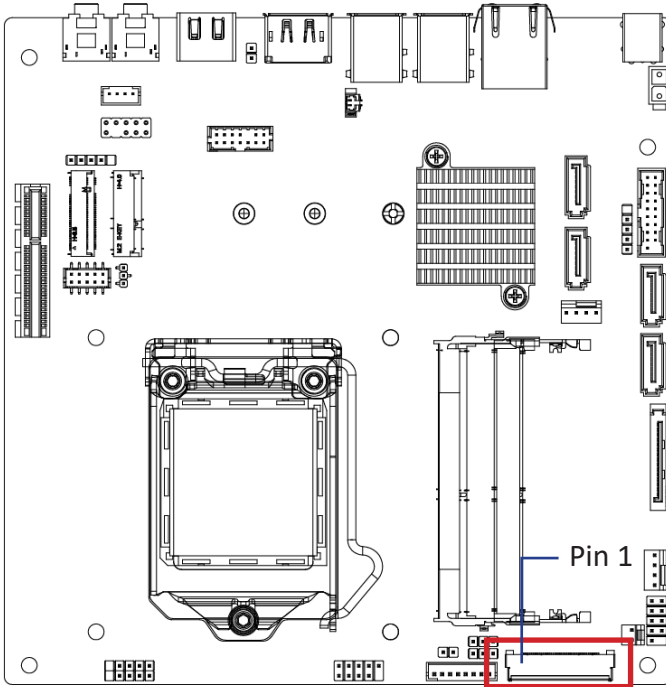
1



Pin No.	Definition
1	3.3V
2	LCDVCC
3	5V

## 2.2.19 LVDS (LVDS Connector)

19



LVDS Connector

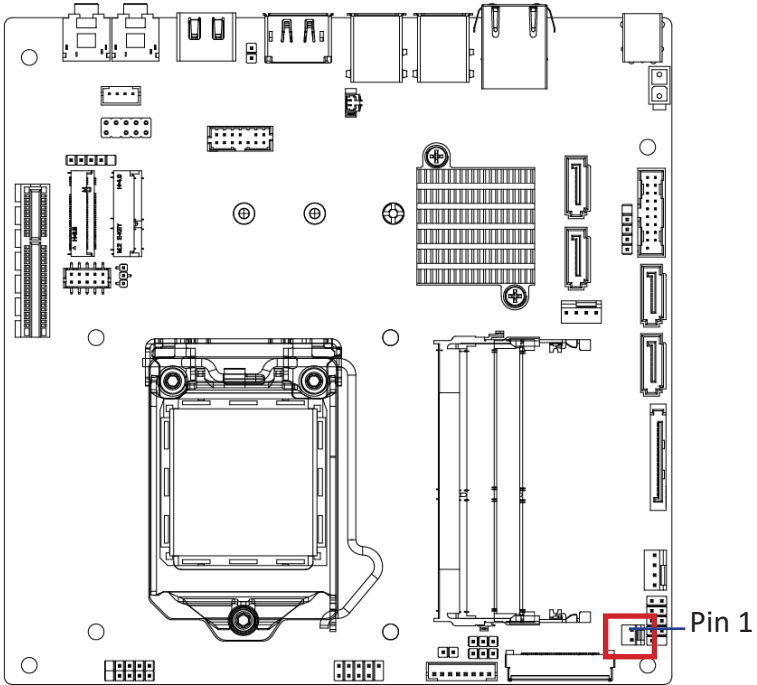


Pin No.	Definition	Pin No.	Definition
1	A3+	21	NC
2	A3-	22	3.3V
3	A2+	23	GND
4	A2-	24	DELTECT
5	A1+	25	GND
6	A1-	26	ACLK+
7	A0+	27	ACLK-
8	A0-	28	GND
9	B3+	29	GND
10	B3-	30	GND

Pin No.	Definition	Pin No.	Definition
11	B2+	31	SMB CLK
12	B2-	32	Brightness Enable
13	B1+	33	Brightness Control
14	B1-	34	BCLK+
15	B0+	35	BCLK-
16	B0-	36	Brightness Power
17	GND	37	Brightness Power
18	LVDVCC	38	Brightness Power
19	LVDVCC	39	NC
20	LVDVCC	40	SMB DATA

## 2.2.20 MON\_SW (Monitor Switch Connector)

20



Monitor Switch Connector

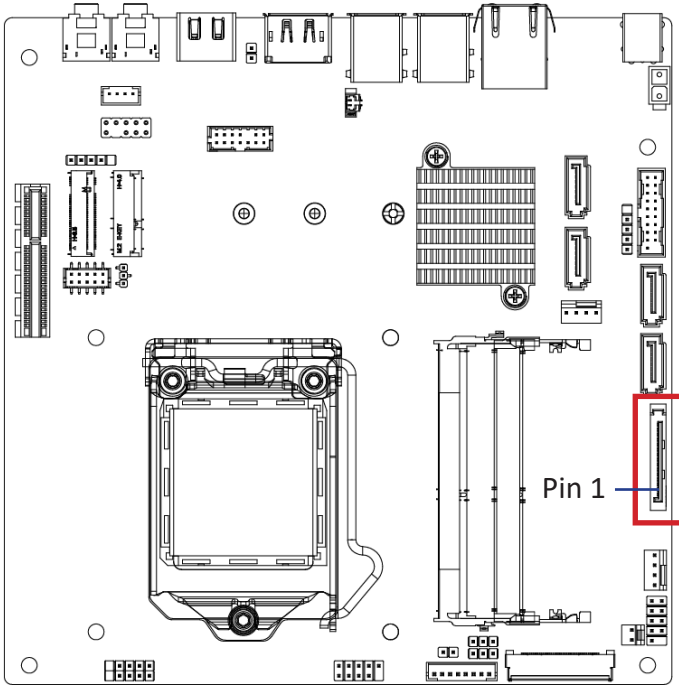


Pin No.	Definition
1	MON
2	GND

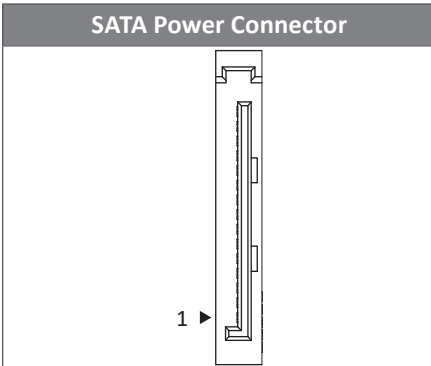


## 2.2.21 SATA\_PWR (SATA Power Connector)

21



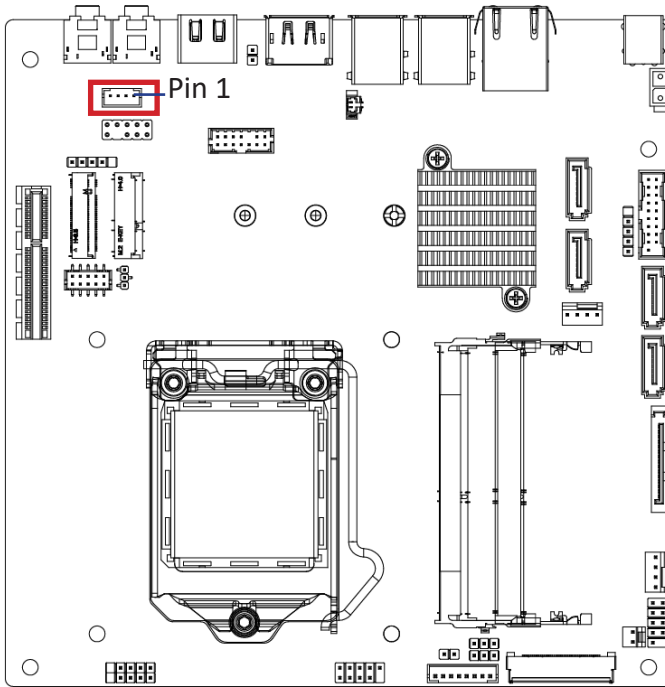
SATA Power Connector



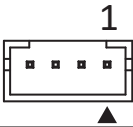
Pin No.	Definition
1	NC
2	NC
3	NC
4	GND
5	GND
6	GND
7	5V
8	5V
9	5V
10	GND
11	GND
12	GND
13	12V
14	12V
15	12V

## 2.2.22 SPKR (Speaker Out Connector)

22



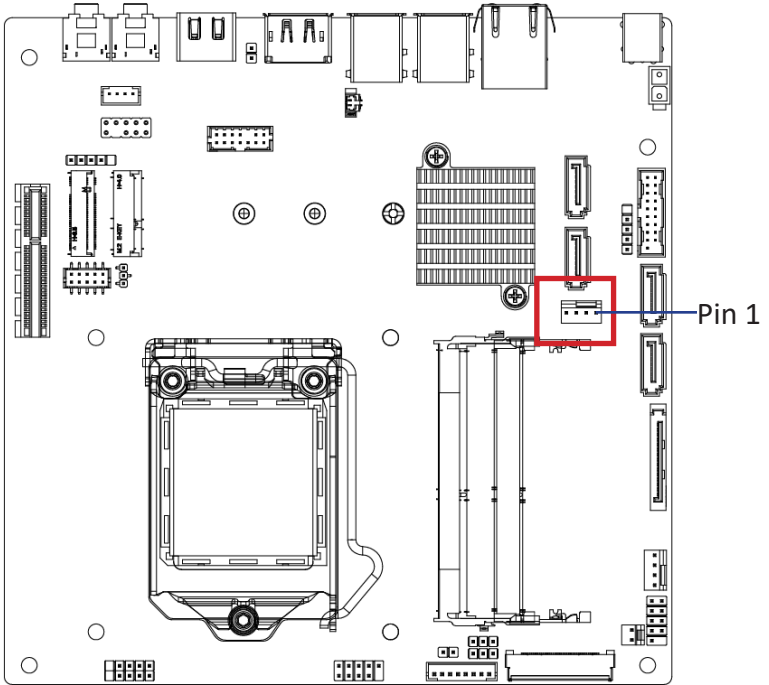
Speaker Out Connector



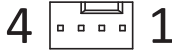
Pin No.	Definition
1	SPEAKER R-
2	SPEAKER R+
3	SPEAKER L+
4	SPEAKER L-

## 2.2.23 SYS\_FAN (System Fan)

23



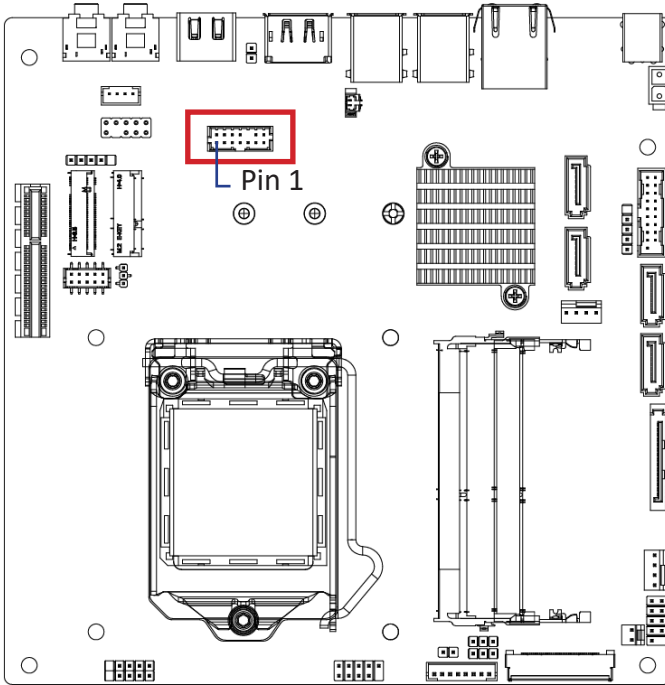
System FAN



Pin No.	Definition
1	GND
2	12V
3	Sense
4	PWM

## 2.2.24 TPM (Trusted Platform Module Connector)

24



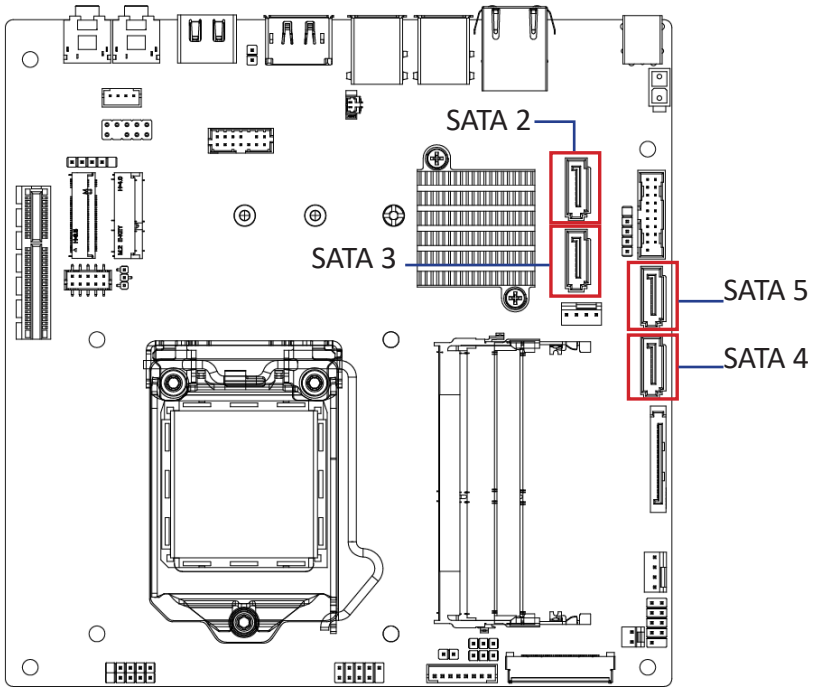
TPM Module Connector

2		14
1		13

Pin No.	Definition
1	LPC CLK
2	3.3V
3	RESET
4	3.3V
5	LAD0
6	SeriesIRQ
7	LAD1
8	DETECT
9	LAD2
10	NC
11	LAD3
12	GND
13	LPC FRAME
14	GND

## 2.2.25 SATA2, 3, 4, 5 (SATA 6 Gb/s Connector)

25



SATA 6GB/S Connector

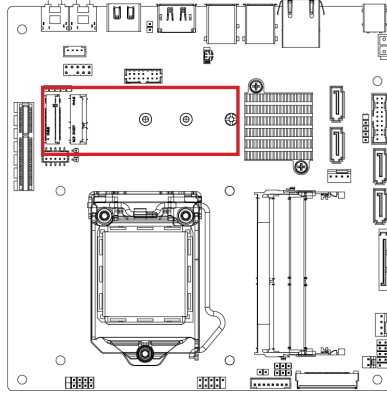


Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

## 2.2.26 M2M (M.2 Slot, M-Key, SATA 6Gb/s & PCIe, Supports NGFF-2260/2280 Cards)

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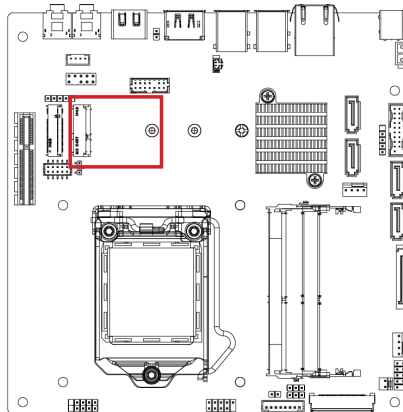
26



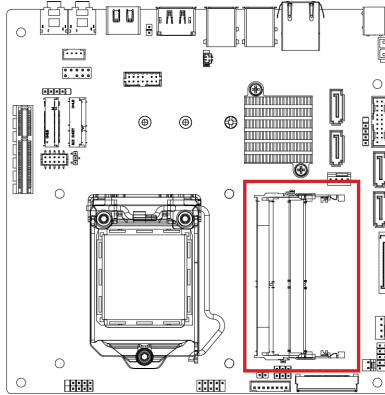
## 2.2.27 M2E (M.2 Slot, E-Key, Supports NGFF-2230 CNVi Cards Only)

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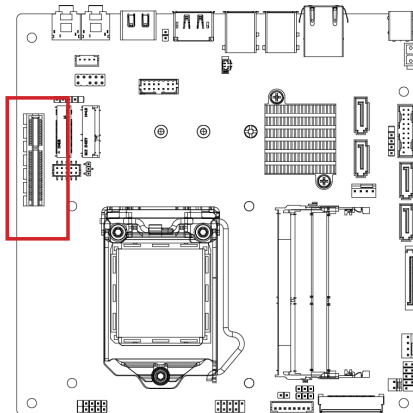
27



## 2.2.28 SODIMM1, SODIMM2 (2 x DDR4 SO-DIMM Sockets)

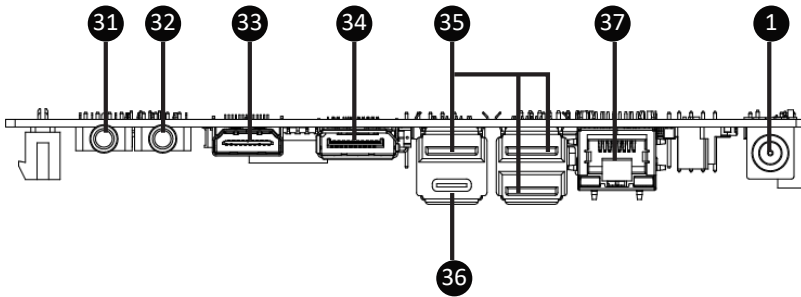
**28**

## 2.2.29 PCIe x4 (1 x PCIe x4 (Gen3 x 4 Bus) Slot)

**29**

## 2.2.30 IO Connector Information

30



	Code	Description
31	MIC_IN	MIC In Connector
32	LINE_OUT	Line Out Connector
33	HDMI 2	HDMI Connector
34	DP	Display Port Connector
35	USB31_1, USB31_2,	USB3.1 Type A Connector x 3
36	USB31	USB3.1 Type C Connector x 1
37	LAN	Ethernet x 1
1	DC_IN	DC In Jack