

MX680RD

Intel® R680E PCH

Supports LGA1700 Alder Lake S 12th Gen

Core™ i9, Core i7, Core i5, Core i3, Pentium, Celeron

(65W TDP max (including Turbo Mode)) with DDR5-4800 SODIMM

Mini-ITX Motherboard

User's Quick Start Card

Version 1.00

<http://www.bcmcom.com>

• Inspect the Package:



• Responsibility:

This manual is provided "As-Is" with no warranties of any kind, it will neither expressed or implied, including, but not limited to the implied warranties or conditions of this product's fitness for any particular purpose. In no event shall we be liable for any loss of profits, loss of business, loss of data, interruption of business, or indirect, special, incidental, or consequential damages of any kind, even the possibility of such damages arising from any defect or error in this manual or product. We reserve the right to modify and update the user manual without prior notice.

WARNING: CMOS Battery Damage

Replace your system's CMOS RAM battery only with the identical CR-2032 3V Lithium-Ion coin cell (or equivalent) battery type to avoid risk of personal injury or physical damage to your equipment. Always dispose of used batteries according to the manufacturer's instructions, or as required by the local ordinance (where applicable). The damage due to not following this warning will void your motherboard's manufacturer warranty.

Perchlorate Material- Special Handling May Apply.

See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate/>

ATTENTION: Incorrect BIOS Setup

If you do not know how to handle BIOS setup or how to set it up properly, it is strongly advisable that you do not modify any of the settings than otherwise instructed in the User's Quick Start Card. Even a seemingly small incorrect adjustment or modification in the BIOS setup can render your system unstable or unusable. The incorrect BIOS setup is not covered by your motherboard's manufacturer warranty.

• Additional Information:

Additional information on setting this board up can be found in the User's Manual from BCM website. The Online User's Manual can be found on our website by visiting our website: <http://www.bcmcom.com>. If your question is not answered in our FAQ/Knowledge Base, visit our forums and post your messages or submit a new FAQ through FAQ Submittal form for us to add your question in our FAQ with our answer.

WARNING: Electrostatic Sensitive Device (ESD)

Static electricity can easily damage your motherboard and will void your motherboard warranty. Keep the motherboard and other system components in their anti-static packaging until you are ready to install them. Touch a grounded surface before you remove any system component from its protective anti-static packaging. Unpacking and installation should be done on a grounded, anti-static mat. The operator should be wearing an anti-static wristband, grounded at the same points as the anti-static mat. During configuration and installation touch a grounded surface frequently to discharge any static electrical charge that may have built up in your body. Avoid touching the components when handling the motherboard or a peripheral card. Handle the motherboard and peripheral cards either by the edges or by the peripheral card case-mounting bracket.

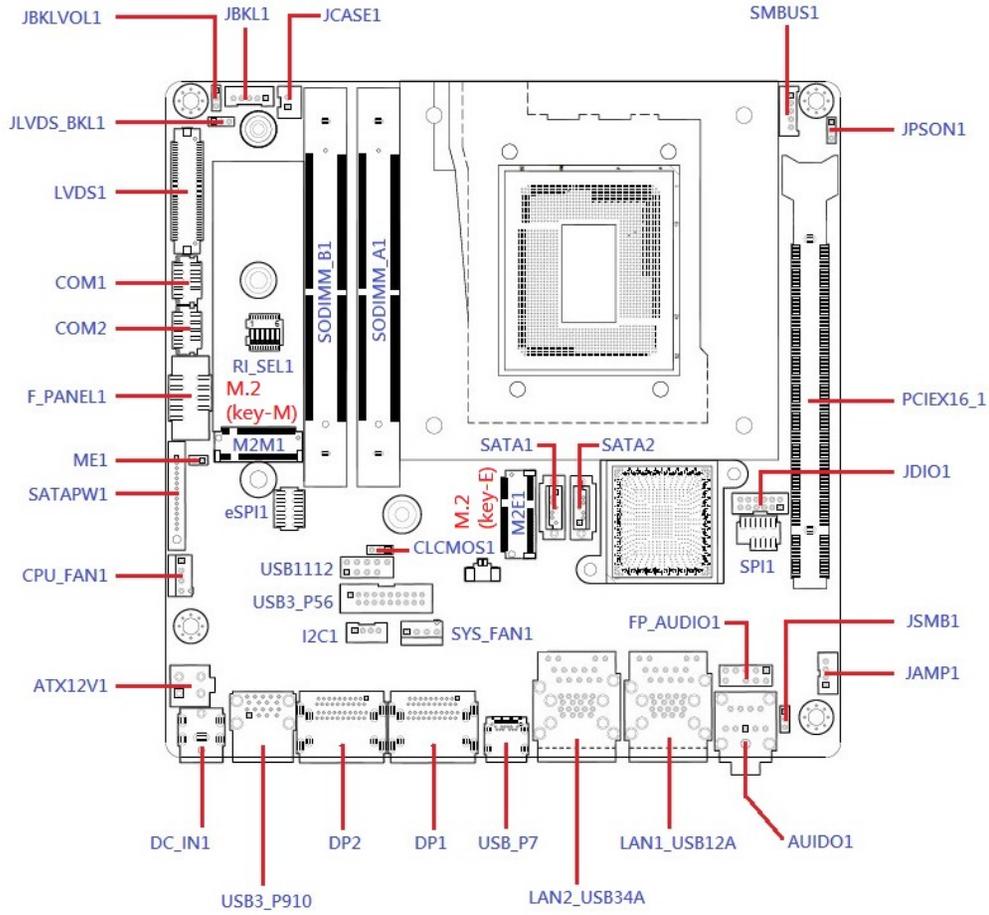
WARNING: Misplaced Jumper Damage

Incorrect setting jumpers and connectors may lead to damage to your motherboard and will void your motherboard warranty. Please pay special attention not to connect these headers in wrong directions. DO NOT change ANY jumpers while the motherboard has the power!

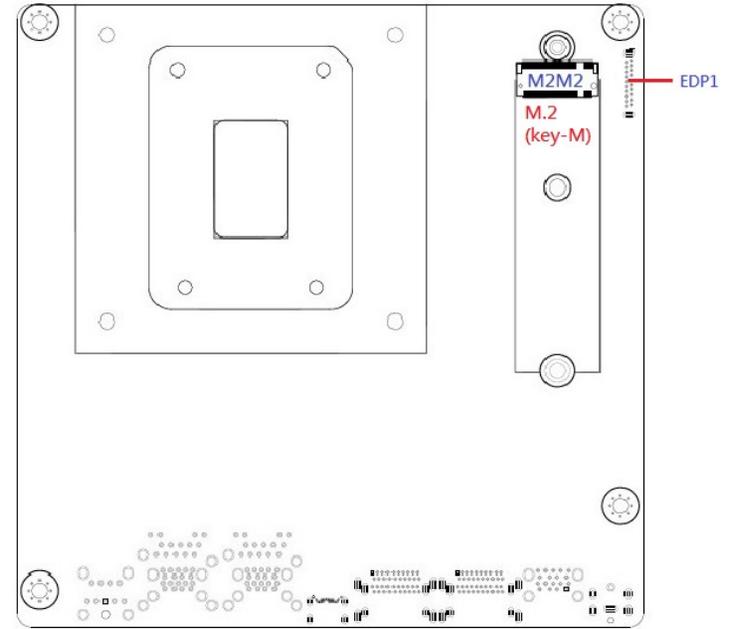
Motherboard Layout:

• Board Layout:

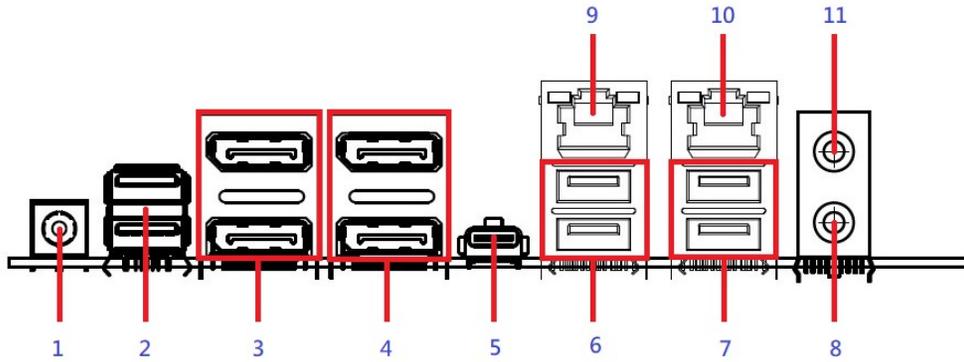
(Top Side)

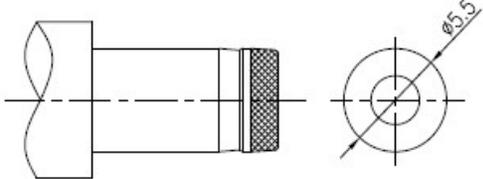


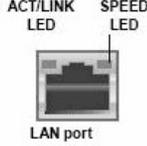
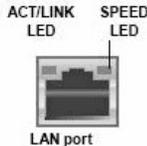
(Bottom Side)



• Back Panel (Rear IO):



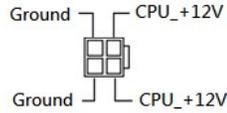
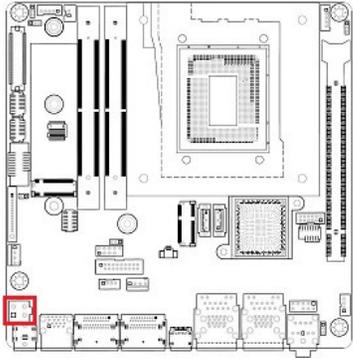
Item	Name	Function	Description
1	DC_IN	DC-in connector	The connector is for DC-in (12-24V) (19V recommended, 9A max) DC Mate Plug: DIA. 5.5mm (Outer) x 2.5mm (Inner). 
2	USB3_P910 (Red)	USB 3.2 Connectors (Dual-Stacked, Type A)	These two Universal Serial Bus (USB) ports are available for connecting USB 3.2 devices.
3	DP2	Display Port (Dual-Stacked)	Two Display Port Connectors (DP++, 1.4a supported)
4	DP1	Display Port (Dual-Stacked)	Two Display Port Connectors (DP++, 1.4a supported)
5	USB_P7	USB 3.2 Connector (Type C)	This Universal Serial Bus (USB) port is available for connecting USB 3.2 Type C devices.

6	USB34A (Red)	USB 3.2 Connectors (Dual-Stacked, Type A)	These two Universal Serial Bus (USB) ports are available for connecting USB 3.2 devices.																				
7	USB12A (Red)	USB 3.2 Connectors (Dual-Stacked, Type A)	These two Universal Serial Bus (USB) ports are available for connecting USB 3.2 devices.																				
9	LAN2	2.5G LAN (RJ-45) Connectors 	This port allows 2.5G connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. <table border="1"> <thead> <tr> <th colspan="2">ACT/Link LED</th> <th colspan="2">Speed LED</th> </tr> <tr> <th>Status</th> <th>Description</th> <th>Status</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>No link</td> <td>OFF</td> <td>10/100Mbps connection</td> </tr> <tr> <td>Orange</td> <td>Linked</td> <td>Green</td> <td>1Gbps connection</td> </tr> <tr> <td>Blinking</td> <td>Data activity</td> <td>Orange</td> <td>2.5Gbps connection</td> </tr> </tbody> </table>	ACT/Link LED		Speed LED		Status	Description	Status	Description	OFF	No link	OFF	10/100Mbps connection	Orange	Linked	Green	1Gbps connection	Blinking	Data activity	Orange	2.5Gbps connection
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10	LAN1	2.5G LAN (RJ-45) Connectors 	This port allows 2.5G connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications. <table border="1"> <thead> <tr> <th colspan="2">ACT/Link LED</th> <th colspan="2">Speed LED</th> </tr> <tr> <th>Status</th> <th>Description</th> <th>Status</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>No link</td> <td>OFF</td> <td>10/100Mbps connection</td> </tr> <tr> <td>Orange</td> <td>Linked</td> <td>Green</td> <td>1Gbps connection</td> </tr> <tr> <td>Blinking</td> <td>Data activity</td> <td>Orange</td> <td>2.5Gbps connection</td> </tr> </tbody> </table>	ACT/Link LED		Speed LED		Status	Description	Status	Description	OFF	No link	OFF	10/100Mbps connection	Orange	Linked	Green	1Gbps connection	Blinking	Data activity	Orange	2.5Gbps connection
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8	AUDIO (Pink)	Microphone port	This port connects a microphone.																				
11	AUDIO (Green)	Line-out port	This port connects a headphone or a speaker.																				

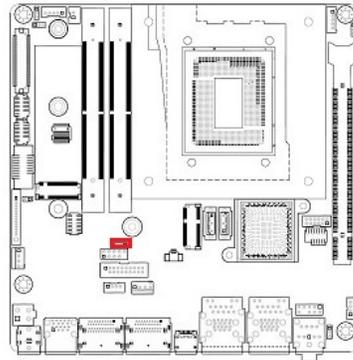
Jumpers, Connectors, & Headers:

- ATX 4-Pins Power Connector (12V-24V, 8A max): ATX12V1

(Use only **either** the “DC-IN” connector at rear IO, or this connector for power connection of MX680RD).



- Clear CMOS Jumper: CLCMOS1



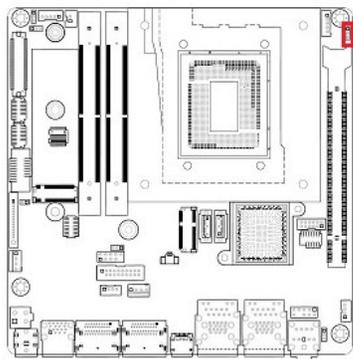
Normal (Default)



Clear CMOS



- ATX/AT Mode Selection: JPSON1



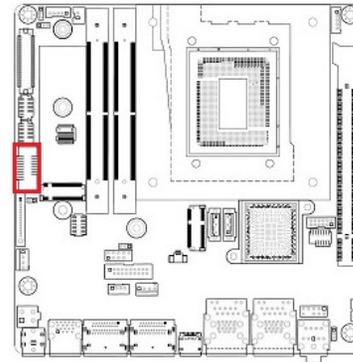
AT mode



ATX mode
(Default)

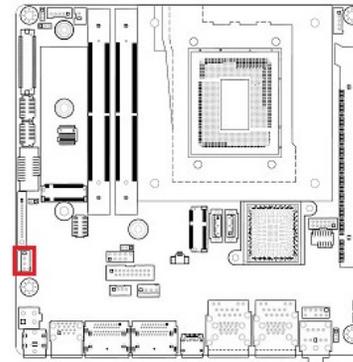


- Front Panel Connector: F_PANEL1

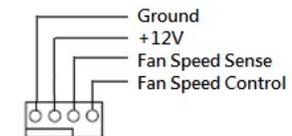
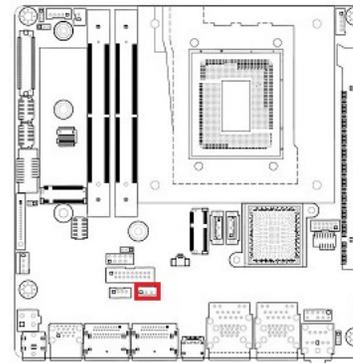


- | | |
|-------------|------------------|
| 1. HDD LED+ | 2. Power LED+ |
| 3. HDD LED- | 4. Power LED- |
| 5. Ground | 6. Power Button# |
| 7. Reset# | 8. Ground |
| 9. NC | |

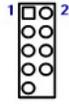
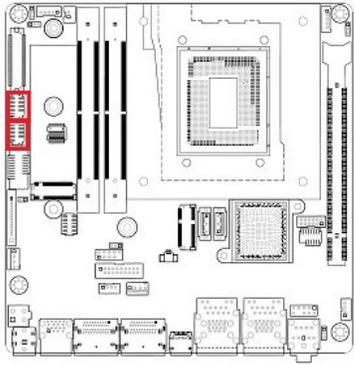
- Fan Connectors: CPU_FAN1



- Fan Connectors: SYS_FAN1

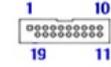
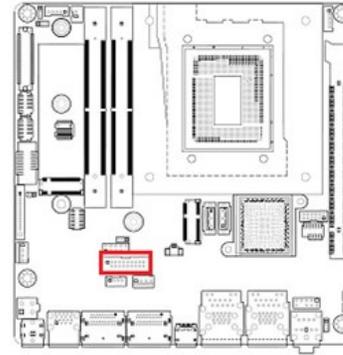


• Serial Port Connectors: COM1, COM2



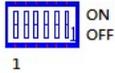
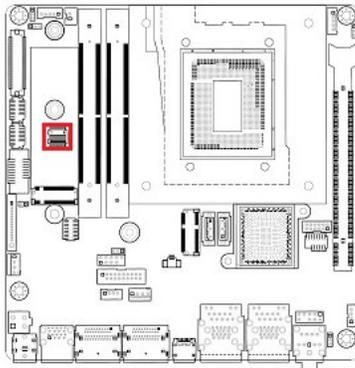
- | | |
|-----------|---------|
| 1. DCD# | 2. RX |
| 3. TX | 4. DTR# |
| 5. Ground | 6. DSR# |
| 7. RTS# | 8. CTS# |
| 9. RI# | |

• Front USB 3.2 Headers: USB3_P56



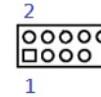
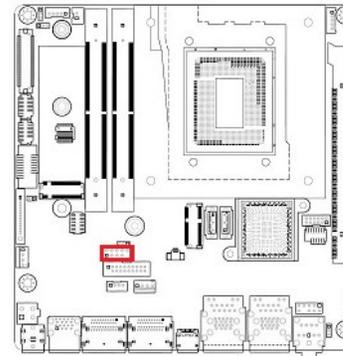
- | | |
|-------------|--------------|
| 1. +5V | 19. +5V |
| 2. USB3_RX- | 18. USB3_RX- |
| 3. USB3_RX+ | 17. USB3_RX+ |
| 4. Ground | 16. Ground |
| 5. USB3_TX- | 15. USB3_TX- |
| 6. USB3_TX+ | 14. USB3_TX+ |
| 7. Ground | 13. Ground |
| 8. USB- | 12. USB- |
| 9. USB+ | 11. USB+ |
| 10. NC | |

• COM Mode Setting for COM1, COM2: RI_SEL1



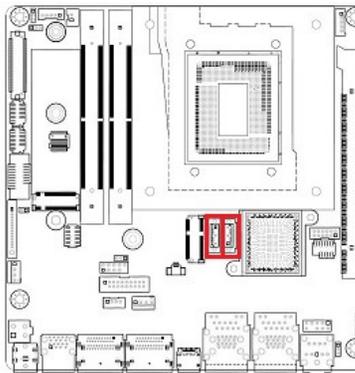
- Switch:
COM1:
Pin#1: Ringin (Default)
Pin#2: +12V
Pin#3: +5V
- COM2:
Pin#4: Ringin (Default)
Pin#5: +12V
Pin#6: +5V

• Front USB 2.0 Headers: USB1112



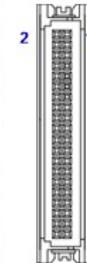
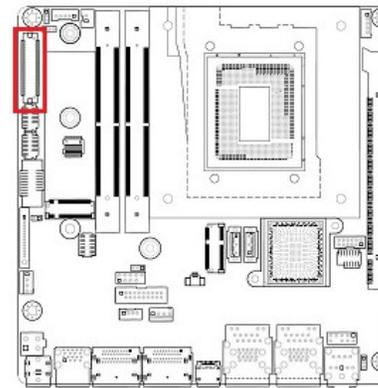
- | | |
|-----------|-----------|
| 1. USB+5V | 2. USB+5V |
| 3. USB- | 4. USB- |
| 5. USB+ | 6. USB+ |
| 7. Ground | 8. Ground |
| | 9. NC |

• SATA 3.0 Ports: SATA1, SATA2



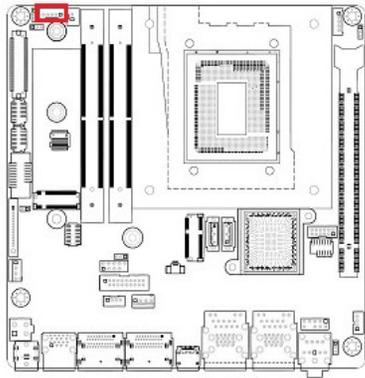
- | |
|--------|
| 1. GND |
| 2. TX+ |
| 3. TX- |
| 4. GND |
| 5. RX- |
| 6. RX+ |
| 7. GND |

• LVDS panel connector: LVDS1



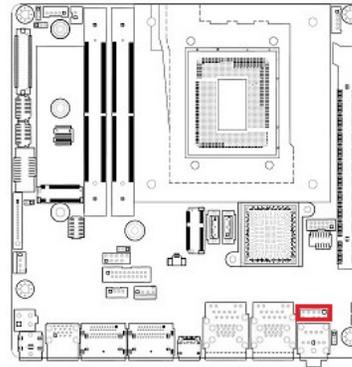
- | | |
|-----------------|-----------------|
| 39. VDD_+12V | 40. VDD_+12V |
| 37. GND | 38. GND |
| 35. LVDS_B_CLK- | 36. LVDS_A_CLK- |
| 33. LVDS_B_CLK+ | 34. LVDS_A_CLK+ |
| 31. GND | 32. GND |
| 29. LVDS_B3- | 30. LVDS_B2- |
| 27. LVDS_B3+ | 28. LVDS_B2+ |
| 25. GND | 26. GND |
| 23. LVDS_B1- | 24. LVDS_B0- |
| 21. LVDS_B1+ | 22. LVDS_B0+ |
| 19. GND | 20. GND |
| 17. LVDS_A3- | 18. LVDS_A2- |
| 15. LVDS_A3+ | 16. LVDS_A2+ |
| 13. GND | 14. GND |
| 11. LVDS_A1- | 12. LVDS_A0- |
| 9. LVDS_A1+ | 10. LVDS_A0+ |
| 7. GND | 8. GND |
| 6. DDC_CLK | 5. DDC_DATA |
| 3. VDD_+3.3V | 4. VDD_+5V |
| 1. VDD_+3.3V | 2. VDD_+5V |

• LVDS panel backlight connector: JBKL1



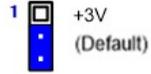
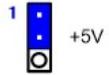
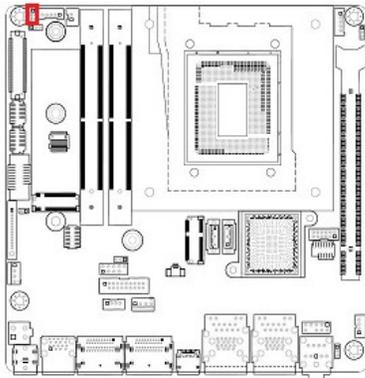
- 1. +12V_BL
- 2. GND
- 3. BL_EN
- 4. BRIGHT1
- 5. +5V_BL

• Front Panel Audio Connector: FP_AUDIO1

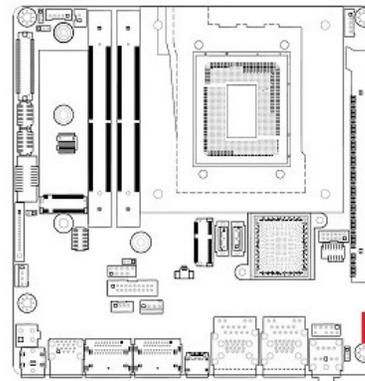


- 1. MIC2L
- 2. Ground
- 3. MIC2R
- 4. +3.3V
- 5. LINE2R
- 6. MIC2-JD
- 7. SENSEB
- 8. NC
- 9. LINE2L
- 10. LINE2-JD

• LVDS Panel Voltage Selection: JBKLVOL1

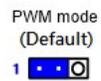
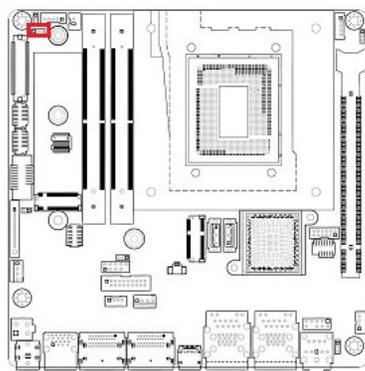


• Audio Amplifier Connector: JAMP1

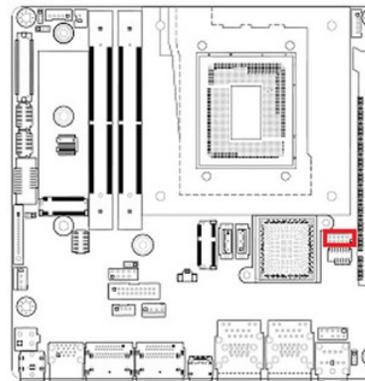


- 4. AMP_R+
- 3. AMP_R-
- 2. AMP_L+
- 1. AMP_L-

• LVDS Brightness Control Mode Selection: JLVD_BKL1

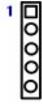
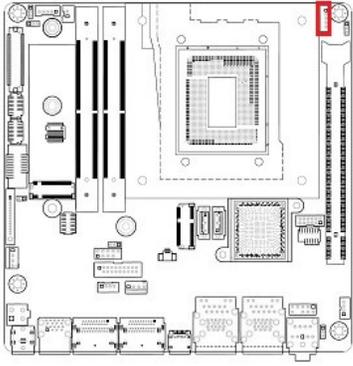


• Digital I/O (GPIO) Header: JDIO1



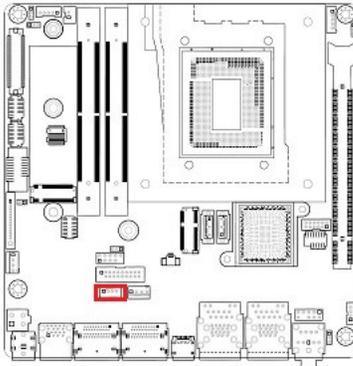
- 1. SIO_GPIO0
- 2. SIO_GPIO4
- 3. SIO_GPIO1
- 4. SIO_GPIO5
- 5. SIO_GPIO2
- 6. SIO_GPIO6
- 7. SIO_GPIO3
- 8. SIO_GPIO7
- 9. SMB_CLK_RESUME
- 10. SMB_DATA_RESUME
- 11. Ground
- 12. +5VSB

• **SMBus Header: SMBUS1**



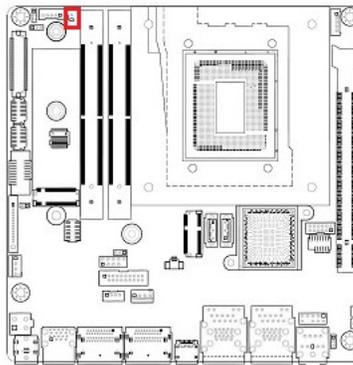
- 1. SMB_CLK
- 2. SMB_DATA
- 3. SMB_ALT
- 4. Ground
- 5. +3.3V

• **I2C connector: I2C1**



- 1. +3.3V
- 2. I2C_SCL
- 3. I2C_SDA
- 4. Ground

• **Chassis Intrusion Connector: JCASE1**



- 1. SIO_CASEOPEN#
- 2. Ground

• **Save the Processor Socket Cover**

After removing the processor cover during processor installation, please save the processor socket cover.
In the event that the desktop board needs to be returned for service or any time the processor is removed, the cover should be placed on the processor socket.



• **Do not Touch Socket Contact**

