

MX310H

Intel® H310 PCH

Supports Coffee Lake (8th Gen)/ Coffee Lake Refresh (9th Gen) i7/i5/i3/Pentium processors

(Supports “up to 6 Cores” and “up to TDP 65W” type processors only)

Mini ITX Motherboard

User's Quick Start Card

Version 1.01

<http://www.bcmcom.com>



MX310H

• 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 in the provided CD-ROM. The Online User’s Manual and FAQ/Knowledge Base 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!

Application Notes:

Please read the following application notes before proceed with the system setup and/or OS installation:

1. Windows 10 Drivers Installation

It is recommended to load the MX310H drivers with the following sequence:

1. Install "Intel INF Driver".
2. Install "Intel Video Driver".
3. Install "Intel LAN Driver".
4. Install "Realtek Audio Driver".
5. Install "Intel ME Driver".
6. Install "Intel Serial IO Driver".
7. Install "Intel RST Driver".
8. Make sure there is no exclamation mark shown for any device under Windows "Device Manager".

NOTE: If any of the driver listed above can't be installed, you may update Win10 to the latest version through Windows Update by connecting ethernet cable to one of two MX310H onboard LANs.

2. Display through PCIe video card (installed on "PCIEX16" slot)

1. Enter BIOS.
2. Enter BIOS option "Chipset"; change "Internal Graphics" to "Enabled".
3. Save & exit BIOS.
4. Power off the system and disconnect all power connections to MX310H board.
5. Install the PCIe16 VGA card on "PCIEX16" slot while the system is off and not connected with power.
6. Turn on the system (the PCIe16 VGA card will be the only video output available during system post (before entering the Windows 10 desktop).
7. Boot the system into Windows 10 desktop (If you also have a dedicated monitor connected to one of MX310H's video ports, both monitors will have video outputs, unless it needs further tuning under Display property).
8. Check under "Device Manager", and make sure the installed PCIe video card is being detected. (NOTE: If the installed PCIe video card is not being detected under device manager, it means this PCIe card is not compatible with MX310H board).
9. Install the PCIe video card Win10 driver provided by PCIe video card manufacturer.
10. Reboot the system.
11. After the system rebooted and entered Win10 desktop. There should be no any exclamation mark shown for the installed PCIe video card. And there will be video output shown on monitor connected to PCIe video card.

NOTE: 1. Due to the limitation of Intel video driver, the MX310H can only support maximum up to 2 video outputs simultaneously.

2. Besides the installed PCIe16 video card with its monitor connection, if you also have another dedicated monitor connected to one of MX310H's video ports, both monitors will have video outputs once the system entered Windows 10 desktop (after the Intel video driver and the PCIe16 video card driver are installed).
3. If there is only one video output, or you want to assign the video output to different video port (connected with its dedicated monitor), the adjustment can be made through Windows "Display Settings" or "Intel Graphics Command Center" (**preferred**, it can be obtained through Microsoft Store, and be installed after the Intel video driver is installed).

3. Boot Mode

1. The default boot mode is set as "UEFI". If you want to switch the boot mode to "Legacy", it can be changed through BIOS option "Boot"->"Boot Mode Select". Then save and exit BIOS once in order for the new boot mode to take effect.

4. PXE Boot

A. In "UEFI" mode:

1. Under BIOS option "Boot"->"Boot mode select"; change it to "UEFI".
2. Under BIOS option "Boot"->"LAN PXE Boot Option ROM"; change it to "Enabled".
3. Under BIOS option "Advance"->"Network Stack Configuration":
 - a. Change "Network Stack" to "Enabled".
 - b. Enable "Ipv4 PXE Support".
4. Save and exit BIOS.
5. After system reboot, enter BIOS again.
6. Under BIOS option "Boot"->"UEFI NETWORK Drive BBS Priorities", set the desired PXE LAN port as "Boot Option #1".
7. Press "ESC" key to get back to "Boot" menu.
8. Under BIOS option "Boot"->"Boot Option #1"; change the 1st boot device to the desired PXE LAN that selected under step 6.
9. Save and Exit BIOS.
10. The device will show the MAC address, and display message "Start PXE over IPv4...", which means the UEFI mode PXE is established with PXE server.

B. In "Legacy" Mode:

1. Under BIOS option "Boot"->"Boot mode select"; change it to "Legacy".
2. Under BIOS option "Boot"->"LAN PXE Boot Option ROM"; change it to "Enabled".
3. Save and exit BIOS.
4. After system reboot, enter BIOS again.
5. Under BIOS option "Boot"->"NETWORK Drive BBS Priorities", set the desired PXE LAN port as "Boot Option #1".
6. Press "ESC" key to get back to "Boot" menu.
7. Under BIOS option "Boot"->"Boot Option #1"; change the 1st boot device to the desired PXE LAN that selected under step 5.
8. Save and Exit BIOS.
9. The system shall reboot once, and display the MAC address, and some message like "PXE-E79: NBP...", which means the legacy mode PXE is established with PXE server.

5. The Header "SPKR"

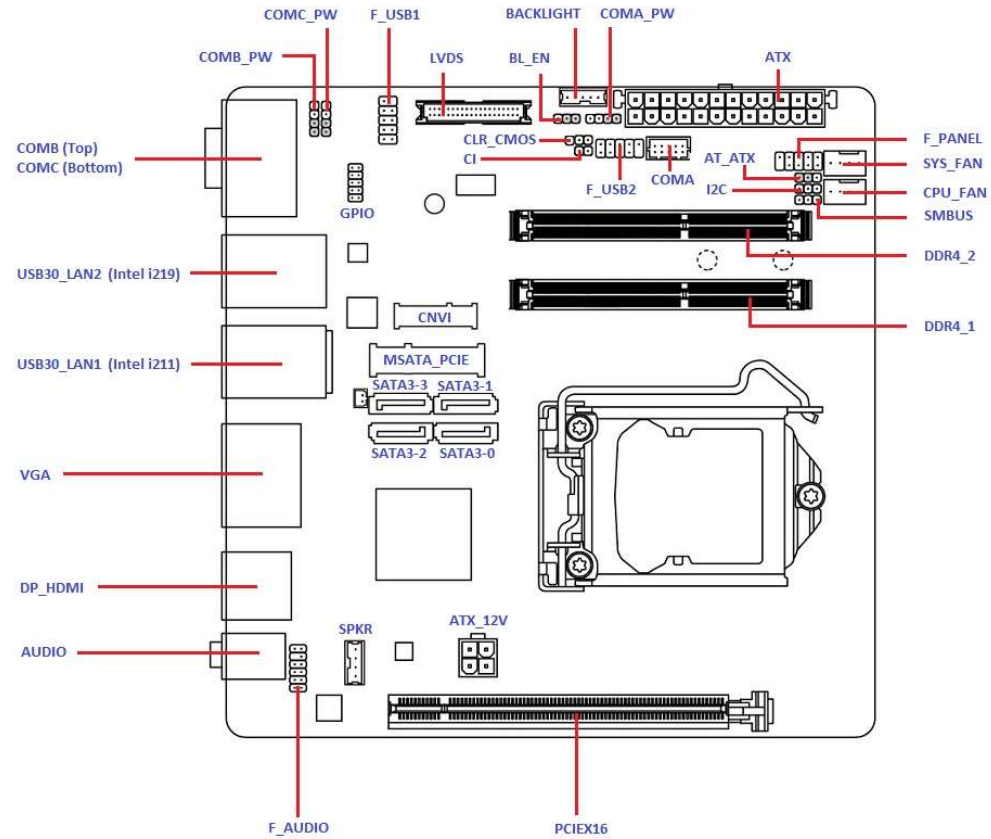
1. BIOS option "AMP SE-Input Stereo-Output Gain select" supports volume control of speaker header "SPKR".

6. The Header "F_AUDIO"

1. The front audio Header "F_AUDIO" volume can be adjusted through OS volume control.

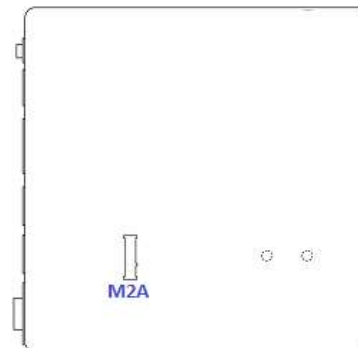
Motherboard Layout:

• Board Layout (Top View):

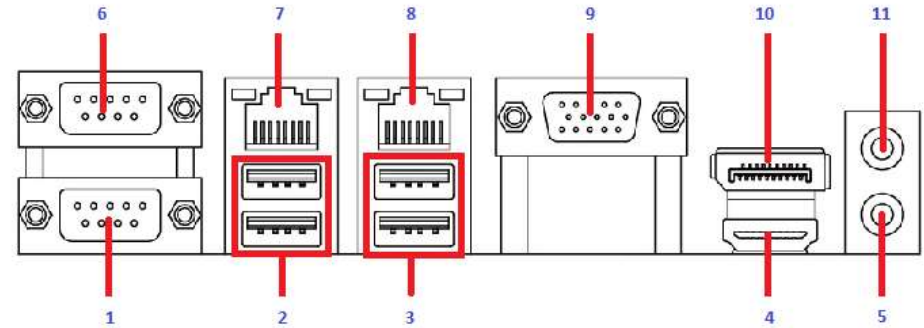


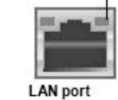

• Board Layout (Bottom View):

NOTE: The "M2A" (M.2) connector on the bottom side of MX310H board supports M.2 SATA SSD in 2260/2280 ONLY (It does not support nvme SSD).



• Back Panel (Rear I/O Ports):

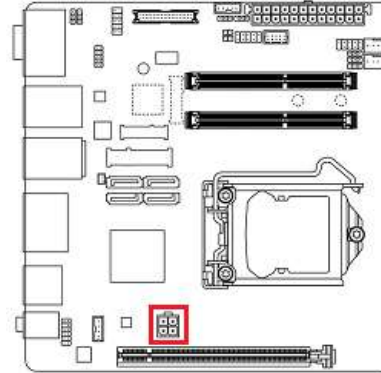


Item	Name	Function	Description																				
1	COMC	Serial Port	Serial Port C.																				
2	USB3.0	USB3.0 Ports	The USB3.0 Port Connectors.																				
3	USB3.0	USB3.0 Ports	The USB3.0 Port Connectors.																				
4	HDMI	HDMI Port	The HDMI Port Connector.																				
5	AUDIO (MIC-IN)	Microphone port (Pink)	This port connects a microphone.																				
6	COMB	Serial Port	Serial Port B.																				
7	LAN2 (Intel i219)	Gigabit LAN (RJ-45) Connectors  LAN port	This port allows Gigabit 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" data-bbox="1564 982 2037 1209"> <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>10Mbps connection</td> </tr> <tr> <td>Orange</td> <td>Linked</td> <td>Green</td> <td>100Mbps connection</td> </tr> <tr> <td>Blinking</td> <td>Data activity</td> <td>Orange</td> <td>1Gbps connection</td> </tr> </tbody> </table>	ACT/Link LED		Speed LED		Status	Description	Status	Description	OFF	No link	OFF	10Mbps connection	Orange	Linked	Green	100Mbps connection	Blinking	Data activity	Orange	1Gbps connection
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Blinking	Data activity	Orange	1Gbps connection																				
8	LAN1 (Intel i211)	Gigabit LAN (RJ-45) Connectors  LAN port	This port allows Gigabit 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" data-bbox="1564 1339 2037 1567"> <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>10Mbps connection</td> </tr> <tr> <td>Orange</td> <td>Linked</td> <td>Green</td> <td>100Mbps connection</td> </tr> <tr> <td>Blinking</td> <td>Data activity</td> <td>Orange</td> <td>1Gbps connection</td> </tr> </tbody> </table>	ACT/Link LED		Speed LED		Status	Description	Status	Description	OFF	No link	OFF	10Mbps connection	Orange	Linked	Green	100Mbps connection	Blinking	Data activity	Orange	1Gbps connection
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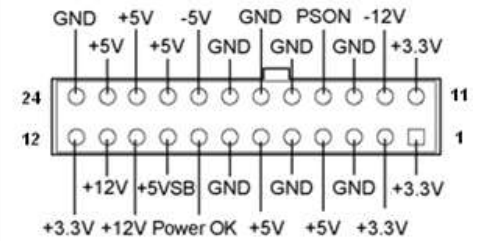
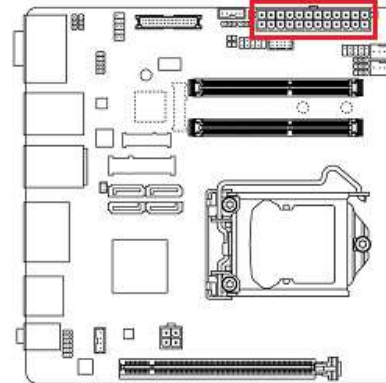
9	VGA	VGA Port	The VGA 15-Pins Connector.
10	DP	Display Port	This Port Provides Display Port Monitor Connection.
11	AUDIO (LINE- OUT)	Line-out port (Lime)	This port connects a headphone or a speaker.

Jumpers, Connectors, & Headers:

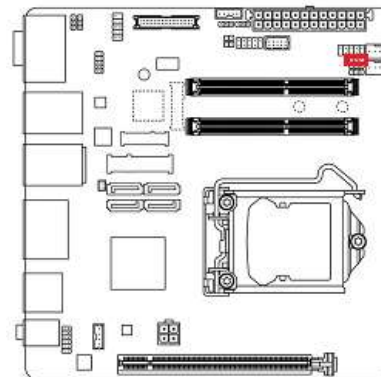
• 4-Pin ATX Power Connector: ATX_12V



• 24-Pin ATX Power Connector: ATX

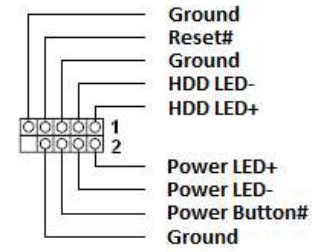
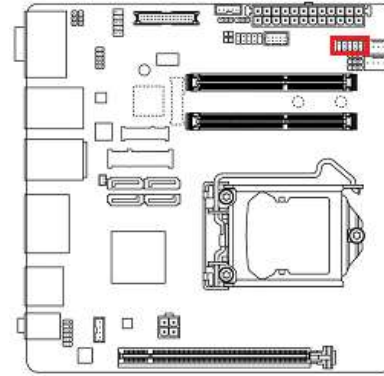


• ATX/ AT Mode Select: AT_ATX

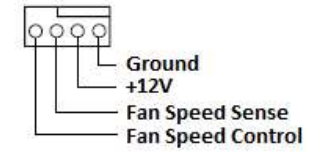
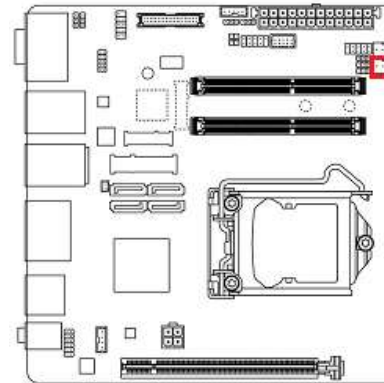


1-2: AT Mode
2-3: ATX Mode (Default)

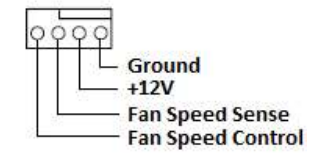
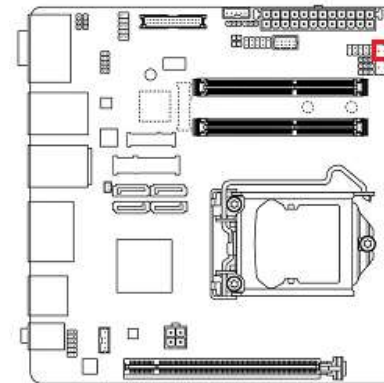
• Front Panel Connector: F_PANEL



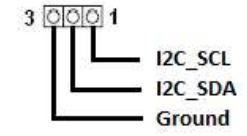
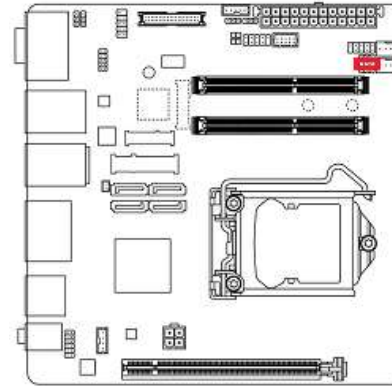
• CPU Fan Connector: CPU_FAN



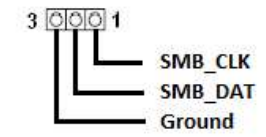
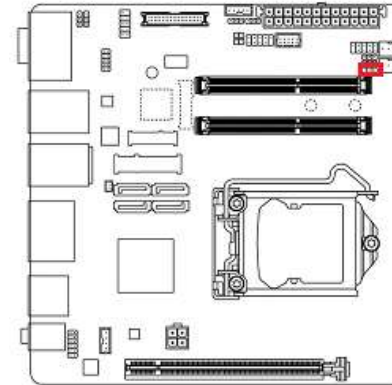
• System Fan Connector: SYS_FAN



• I2C Header: I2C



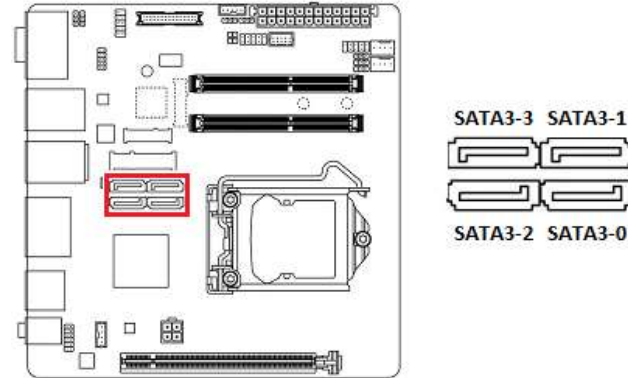
• SMBUS Header: SMBUS



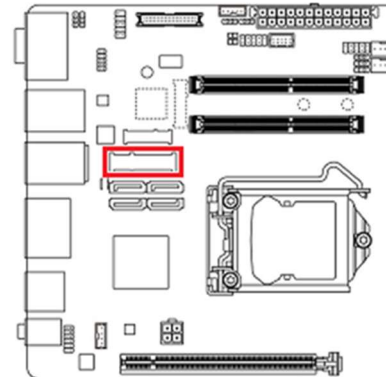
• **SATA3 Connectors: SATA3-1, SATA3-2, SATA3-3, SATA3-4**

NOTE: 1. "SATA3-2" is sharing SATA signal with "MSATA_PCIE" connector, both headers can't be connected with SATA device simultaneously (can only choose to use either one of these 2 headers).

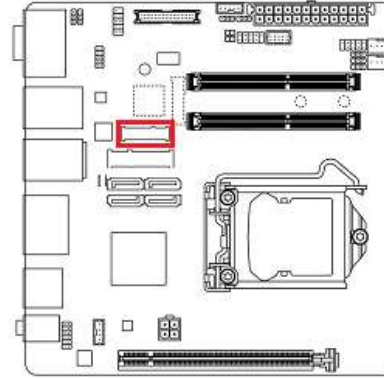
2. "SATA3-3" is sharing SATA signal with "M2A" header (at bottom side of board), both headers can't be connected with SATA device simultaneously (can only choose to use either one of these 2 headers).



• **MSATA_PCIE Connector: MSATA_PCIE**

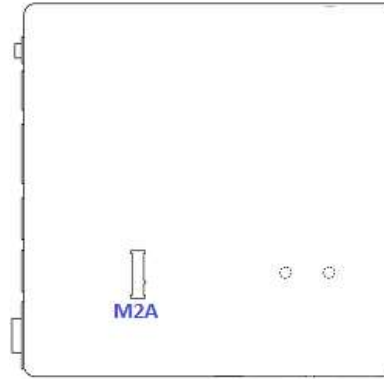


• **CNVI Connector (E-Key, Supports WIFI Cards in 2230 Only): CNVI**

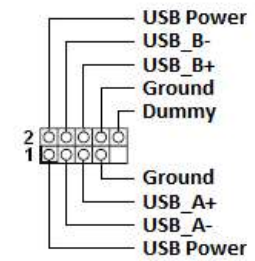
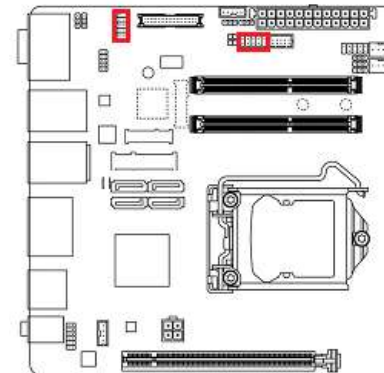


• **M.2 SATA SSD Connector (On the Bottom Side of Board): M2A**

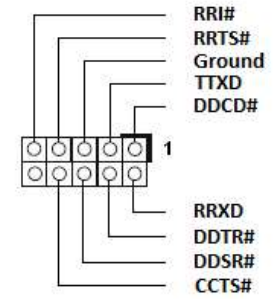
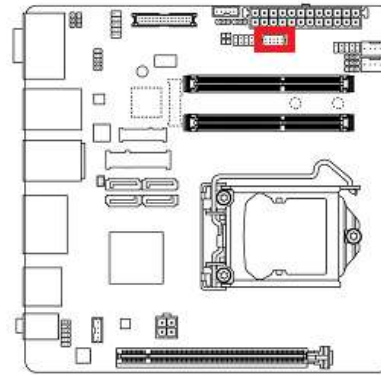
NOTE: Supports 2260/ 2280 SATA SSD Only (It does not support nVME type SSD).



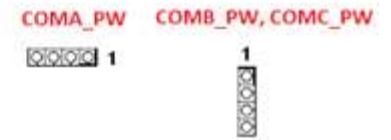
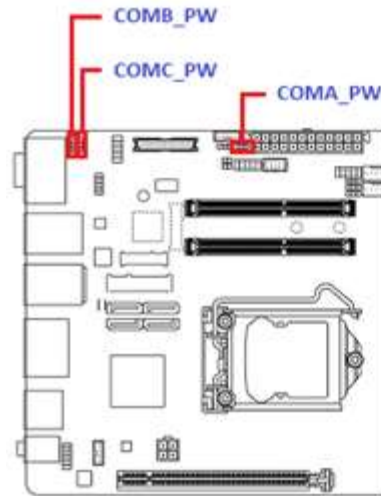
• **USB2.0 Headers: F_USB1, F_USB2**



• Serial Port A: COMA

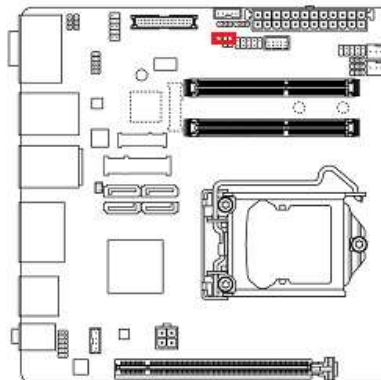


• COM Port +12V/ +5V Power Select: COMA_PW, COMB_PW, COMC_PW



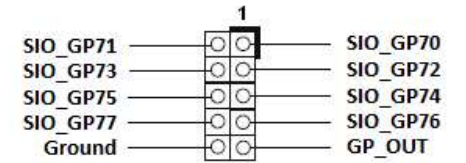
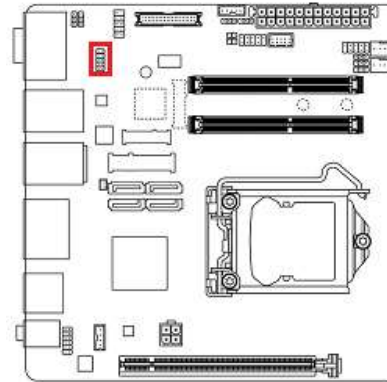
Pin 1-2: +12V
Pin 2-3: +5V
Pin 3-4: Default

• Clear CMOS Header: CLR_CMOS

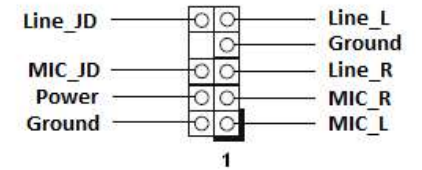
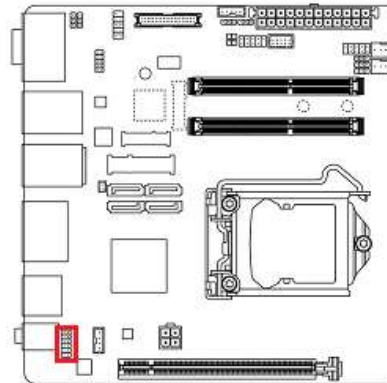


Pin 1-2: Clear CMOS
Pin 2-3: Normal (Default)

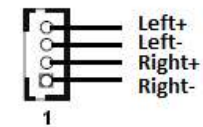
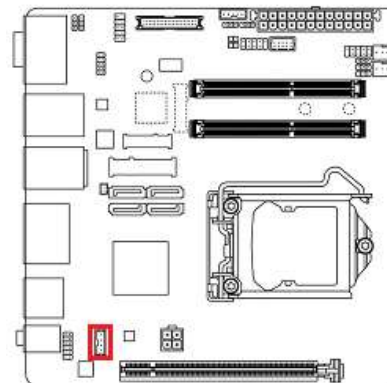
• GPIO Header: GPIO



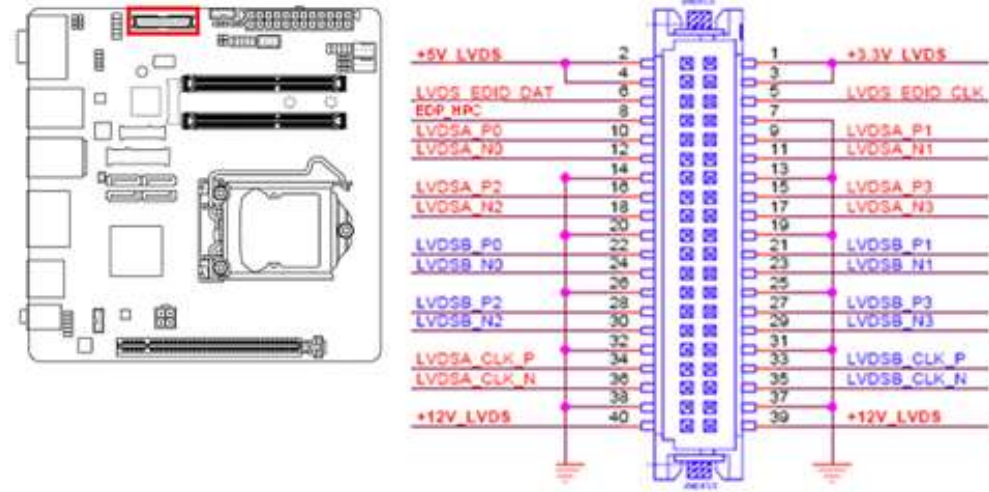
• Front Audio Header: F_AUDIO



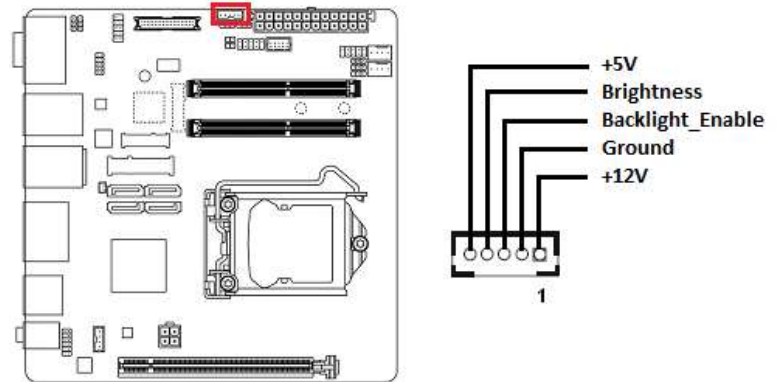
• Audio AMP Output Connector: SPKR



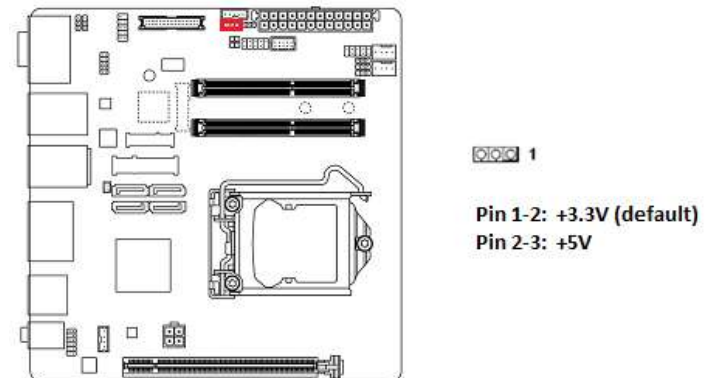
• LVDS Panel Connector: LVDS



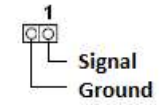
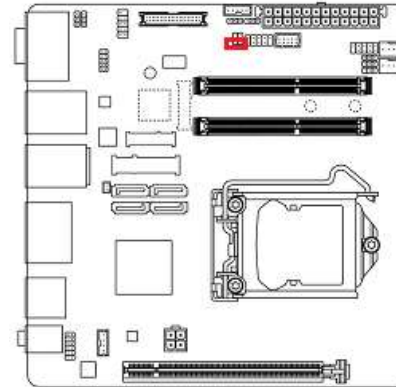
• Backlight Connector: BACKLIGHT



• LVDS Backlight Power Select: BL_EN

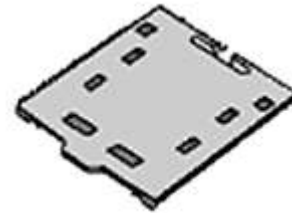


- **Chassis Intrusion Header: CI**



- **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 replaced on the processor socket.



- **Do not Touch Socket Contact**

