GIGAIPC

uATX-H410A (MH410AM)

Micro-ATX Motherboard
User's Manual 1st Ed

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Micro-ATX Motherboard   uATX-H410A (MH410AM)

Packing List

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

Item	Quantity
uATX-H410A (MH410AM)	1
IO Shield	1
SATA cable	2

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

About this Document

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 for the latest version of this document.

Safety Precautions

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

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.

GIGAIPC

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	○	○	○	○	○	○
O: 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	O	O	O	O	O	○
Wires & Connectors for External Connections	O	O	O	O	O	O
O : 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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Chapter 1

Chapter1 - Product Specifications

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1.1   Specifications

Micro-ATX Motherboard   uATX-H410A (MH410AM)
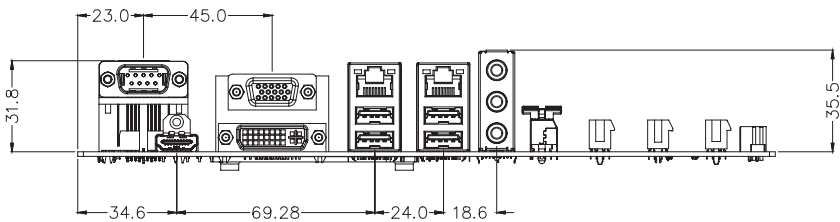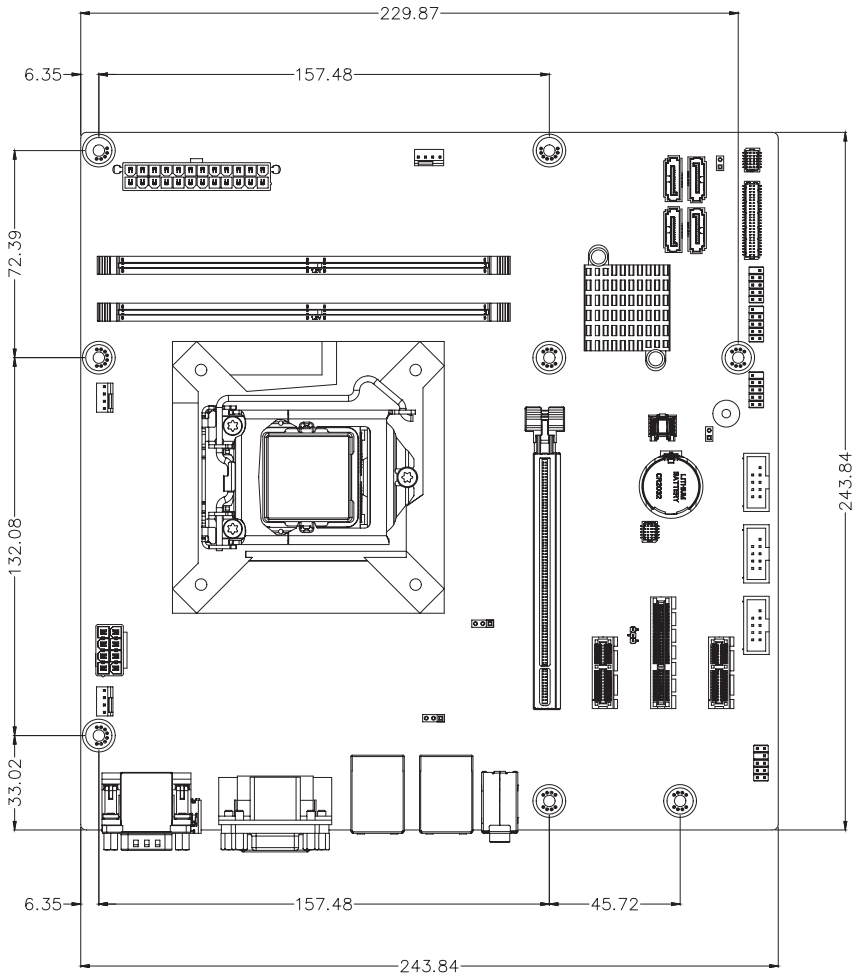
Motherboard	uATX-H410A (MH410AM)
Form Factor	Micro ATX 244W x 244D(mm)
CPU	Support for 10th Generation Intel® Core™ i9/i7/i5/i3 processors, Pentium® & Celeron® processors in the LGA1200 package TDP under 65W
Socket	1 x LGA 1200
Chipset	Intel® H410 Express Chipset
Memory	2 x DDR4 DIMM sockets, Max. Capacity 64GB Support Dual channel DDR4 2933/2666 MHz memory modules
Ethernet	2 x GbE LAN Ports (Intel® I219V and Realtek® RTL8111HS)
Video	Integrated Graphics Processor - depends on CPU: 1 x HDMI 1.4 port, supporting a maximum resolution of 4096x2160 @30Hz 1 x DVI-D port, supporting a maximum resolution of 1920x1200 @60Hz 1 x VGA port, supporting a maximum resolution of 1920x1200 @60Hz (2 independent display outputs)
Audio	Realtek® Audio Codec
Storage	4 x SATA 6Gb/s Ports
Raid	—
Expansion Slots	1 x PCIe x16 (Gen3 x16) 1 x PCIe x4 (Gen3 x2) 2 x PCIe x1 (Gen3 x1)

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| Motherboard	uATX-H410A (MH410AM)
Internal I/O	1 x 24-pin ATX main power connector 1 x 8-pin ATX 12V power connector 1 x CPU fan header 2 x System fan headers 1 x Front panel header 1 x Front panel audio header 4 x USB 2.0 headers 3 x COM headers (RS-232) 1 x Clear CMOS jumper 1 x Buzzer 1 x Case open header 1 x AT/ATX Mode select jumper
Rear I/O	3 x Audio Jacks (Line in, Line out, Mic in) 1 x COM Port (RS-232) 1 x HDMI 1 x DVI-D 1 x VGA 2 x RJ45 LAN Ports 4 x USB 3.2 Gen 1
TPM	Onboard TPM 2.0 security chip INFINEON SLB9670VQ2.0
OS Compatibility	Windows 10 (x64) Linux
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)

Chapter 2

Chapter 2 – Hardware Information

2.1 Jumpers and Connectors
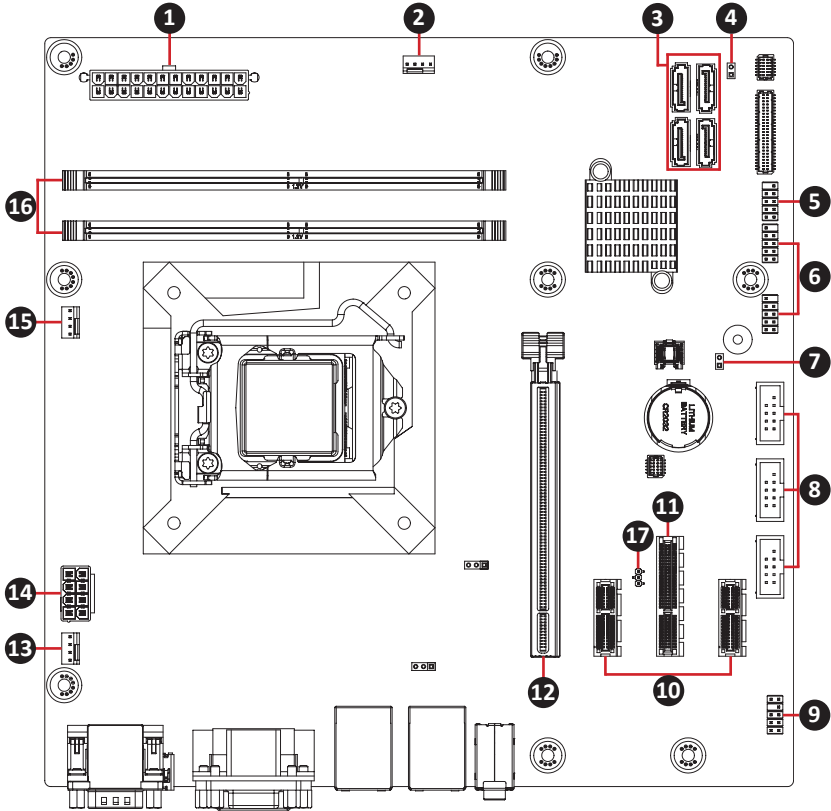
No	Code	Description
1	ATX	24 pin ATX main power connector
2	SYS_FAN2	System fan connector
3	SATA0, SATA1 SATA2, SATA3	SATA 6 Gb/s Connector x 4
4	CASE_OPEN	Chassis open intrustion alert header
5	F_PANEL	Front panel header
6	FUSB2_1 FUSB2_2	USB 2.0 Header
7	CLR_CMOS	Clear CMOS jumper
8	COM2 COM3 COM4	Serial Port Header (RS-232)
9	FP_AUDIO	Front audio header
10	PCIEX1_1 PCIEX1_2	PCIe x1 (Gen3 x1) Slot
11	PCIEX4	PCIe x4 (Gen3 x2) Slot
12	PCIEX16	PCIe x16 (Gen3 x16) Slot
13	SYS_FAN1	System fan connector
14	ATX_12V	8 pin ATX 12V power connector (for CPU)
15	CPU_FAN	CPU FAN connector
16	DDR4_1, DDR4_3	DDR4 DIMM Sockets x 2
17	ATX_SEL	AT/ATX mode select jumper

2.1.1   Rear I/O Connector
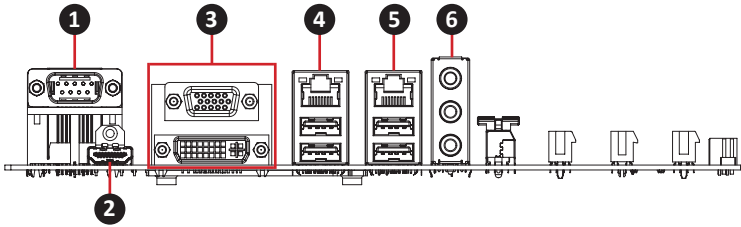
No	Code	Description
1	COM1	1 x Serial Port (RS-232)
2	HDMI	1 x HDMI
3	VGA_DVI	1 x VGA Port (top) 1 x DVI-D Port (bottom)
4	USB31_LAN1	1 x RJ45 LAN Port (top) 2 x USB 3.2 Gen 1 (bottom)
5	USB31_LAN2	1 x RJ45 LAN Port (top) 2 x USB 3.2 Gen 1 (bottom)
6	AUDIO	3 x Audio Jacks (Line in, Line out, Mic in)

2.2.1 ATX (24 pin ATX main power connector)

1

PIN 1
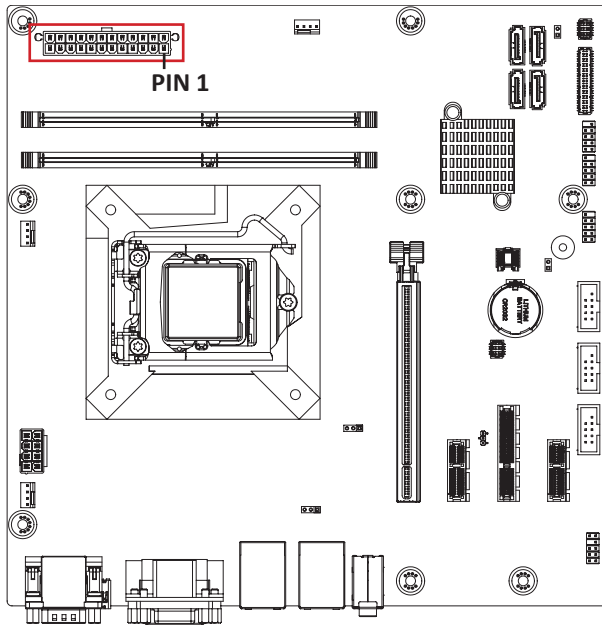
ATX power connector		Connector PN	Vendor
24 **2**		740-41-24TW46	PINREX
23 **1**		ABA-POW-013-K08	LOTES

Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND
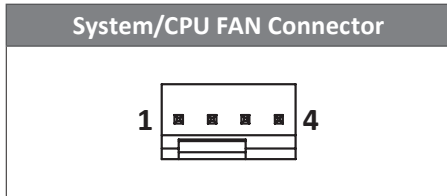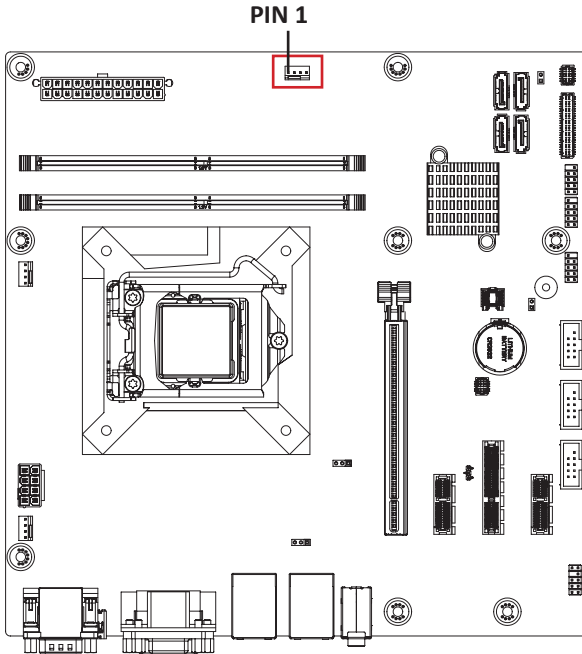
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2.2.2 SYS_FAN2 (System fan connector)

❷

PIN 1

System/CPU FAN Connector
1 ▪ ▪ ▪ ▪ 4

Connector PN	Vendor
744-81-045B11	PINREX
WF04R22BJQ195	HORNGTONG

Pin No.	Definition
1	GND
2	POWER
3	FANIO
4	FANPWM

2.2.3   SATA0, SATA1, SATA2, SATA3 (SATA 6Gb/s Connector)

❸
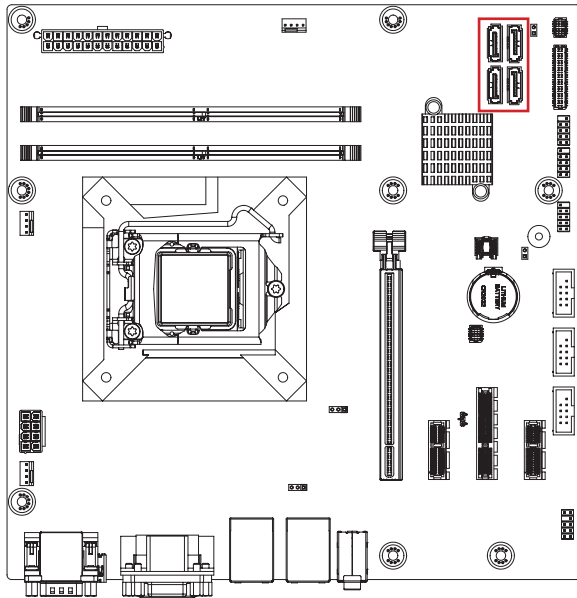
SATA 6Gb/s Connector

Connector PN	Vendor
ABA-SAT-054-S15	LOTES
WAT3M-07A1G3BU4W	WINWIN

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

2.2.4 CASE_OPEN (Chassis open intrustion alert header)

4

PIN 1

case open connector
1
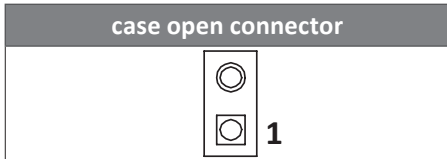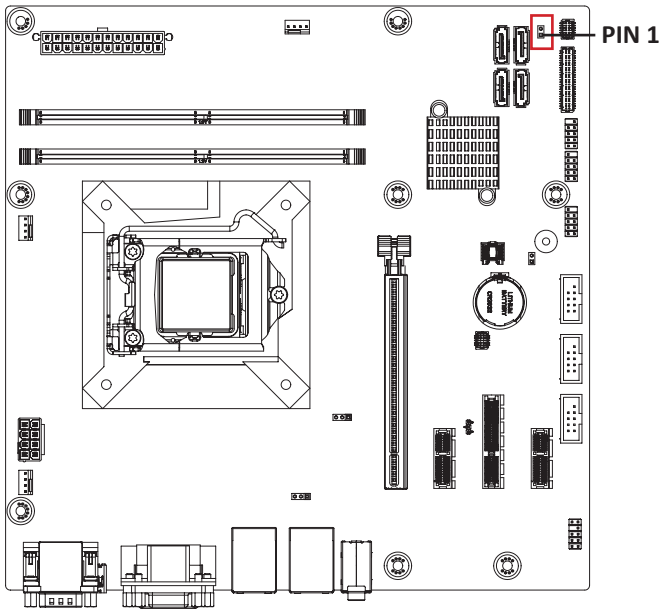
Connector PN	Vendor
210-91-02GBK2	PINREX
PH02R23BAZE11	HORNGTONG

2.2.5   F_PANEL (Front panel header)

❺

PIN 1
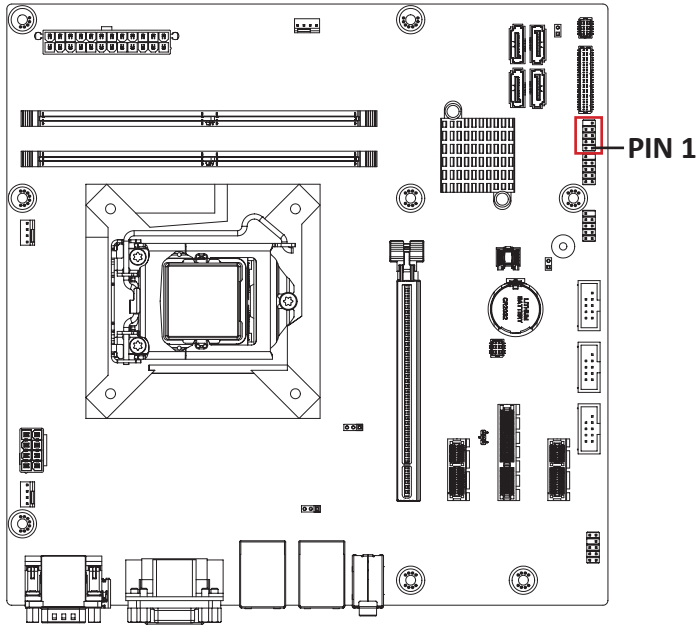
System Panel Header
9 10 1 2

Connector PN	Vendor
210-92-05GB02	PINREX
PH10R53BAZ010	HORNGTONG

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

2.2.6   F_USB2_1, F_USB2_2 (USB 2.0 header)

6

PIN 1

USB 2.0 Header
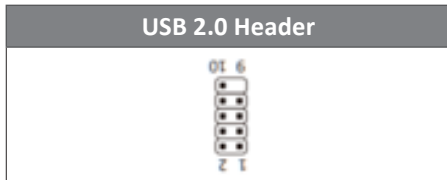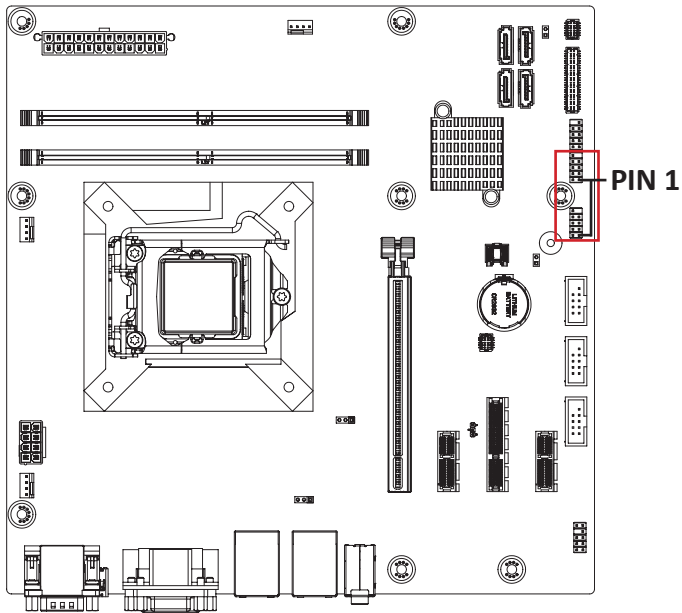
Connector PN	Vendor
210-92-05GB04	PINREX
PH10R53BAZ009	HORNGTONG

Pin No.	Definition
1	VCC
2	VCC
3	USB-
4	USB-
5	USB+
6	USB+
7	GND
8	GND
9	No Pin
10	No Connect

2.2.7 CLR_CMOS (Clear CMOS jumper)

7

PIN 1

Clear CMOS connector

Connector PN	Vendor
210-91-02GBK2	PINREX
PH02R23BAZE11	HORNGTONG
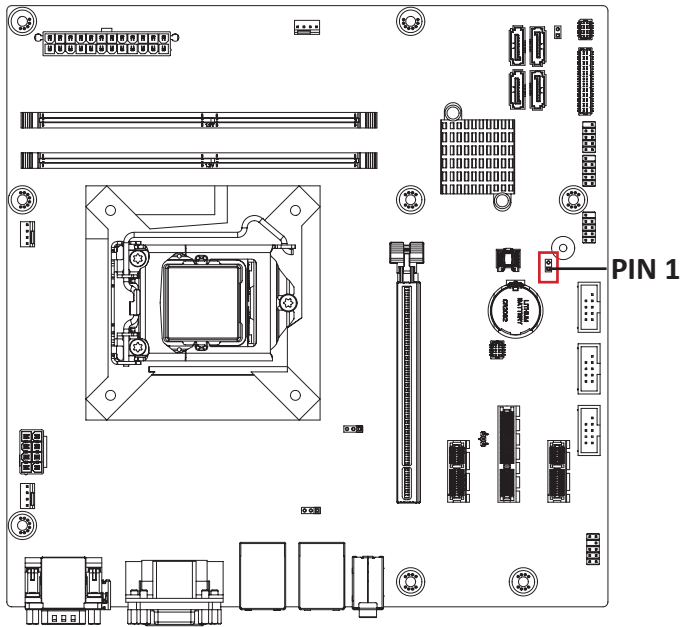
Clear CMOS Jumper	
	Default
	Enable

Micro-ATX Motherboard   uATX-H410A (MH410AM)

2.2.8   COM2, COM3, COM4 (Serial port header, RS-232)

8

PIN 1
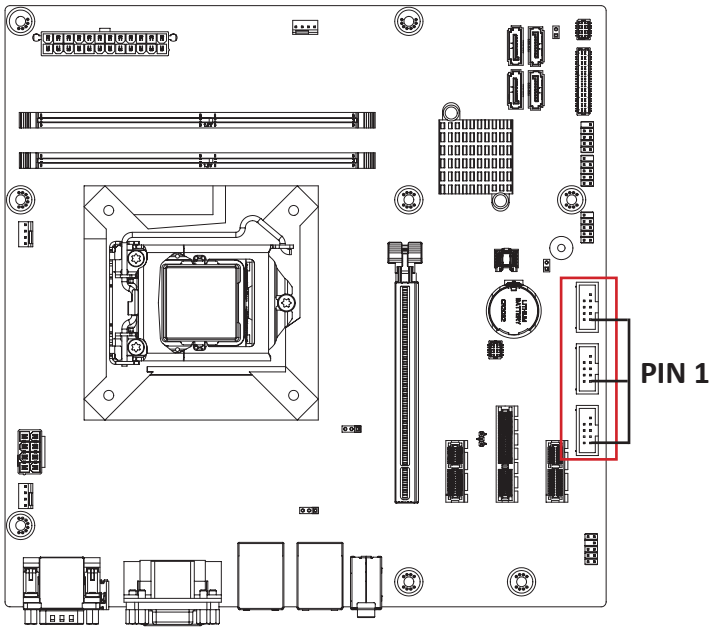
COM2, COM3, COM4 header
10 **⊡⊡** 9 **⊡⊡** **⊡⊡** 2 **⊡⊡** 1
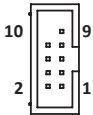
Connector PN	Vendor
510-90-10GB04	PINREX
BH10RB-9IAZ010	HORNGTONG

Pin No.	Definition
1	NDCD-
2	NSIN
3	NSOUT-
4	NDTR-
5	GND
6	NDSR-
7	NRTS-
8	NCTS
9	NRI-
10	NC

2.2.9 FP_AUDIO (Front audio header)

9

PIN 1
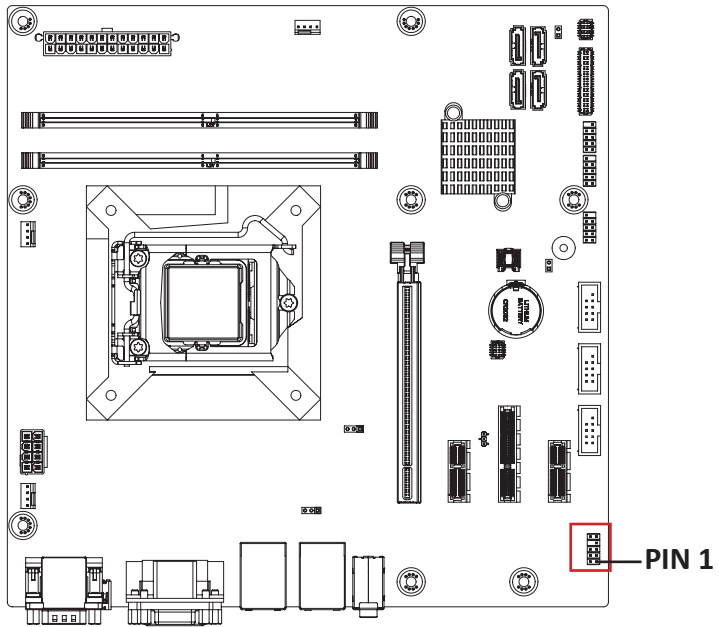
Front Audio header
10 ⬛⬛ 9
⬛⬛
⬛⬛
⬛⬛
2 ⬛⬛ 1

Connector PN	Vendor
210-92-05GE05	PINREX

Pin No.	Definition
1	MIC2_L
2	AGND
3	MIC2_R
4	FP_AUDIO_DET
5	LINE2_R
6	AGND
7	FAUDIO_JD
8	NC
9	LINE2_L
10	AGND

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2.2.10   PCIEX1_1, PCIEX1_2 (PCIe x1 (Gen3 x1) Slot)

10
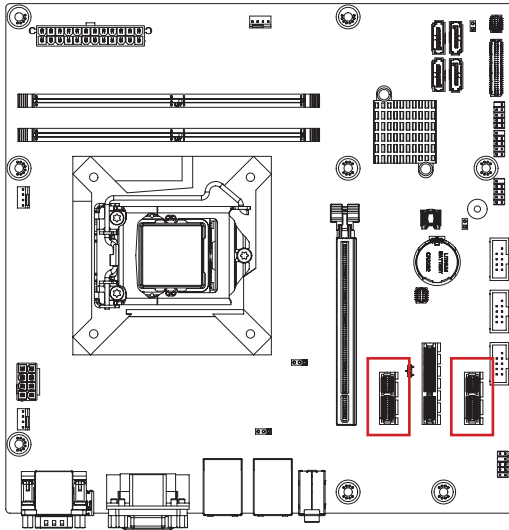
2.2.11   PCIEX4 (PCIe x4 (Gen3 x2) Slot)

11
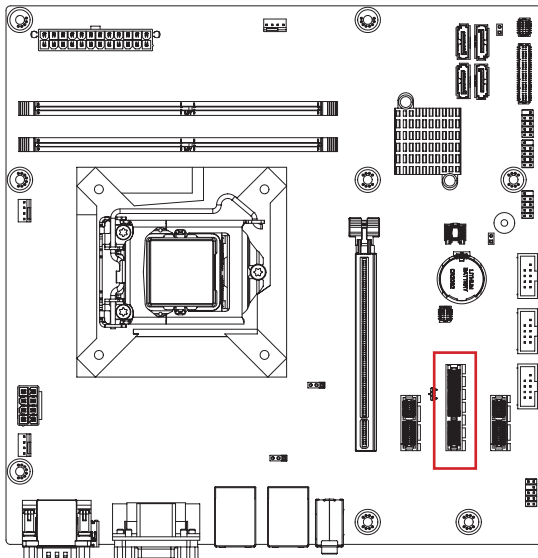
2.2.12   PCIEX16 (PCIe x16 (Gen3 x16) Slot)

12
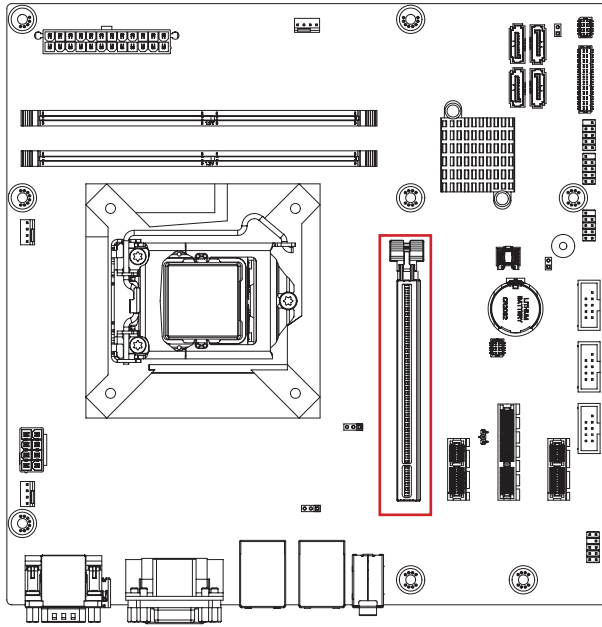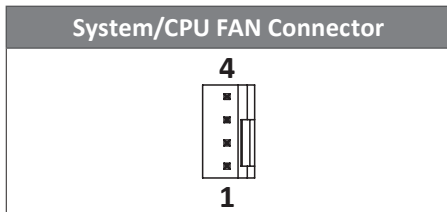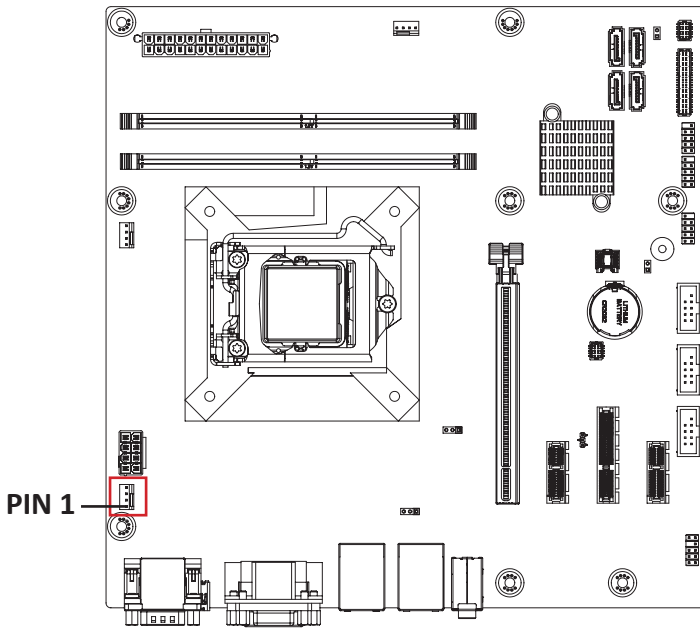
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2.2.13 SYS_FAN1 (System fan connector)

13

PIN 1

System/CPU FAN Connector
4
1

Connector PN	Vendor
744-81-045B11	PINREX
WF04R22BJQ195	HORNGTONG

Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed control

2.2.14 ATX_12V (8 pin ATX 12V power connector (for CPU))

14

PIN 1

ATX 12V Connector
4 [ ] 8
1 [ ] 5
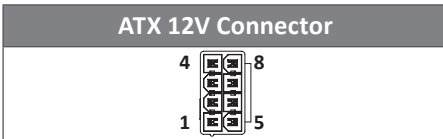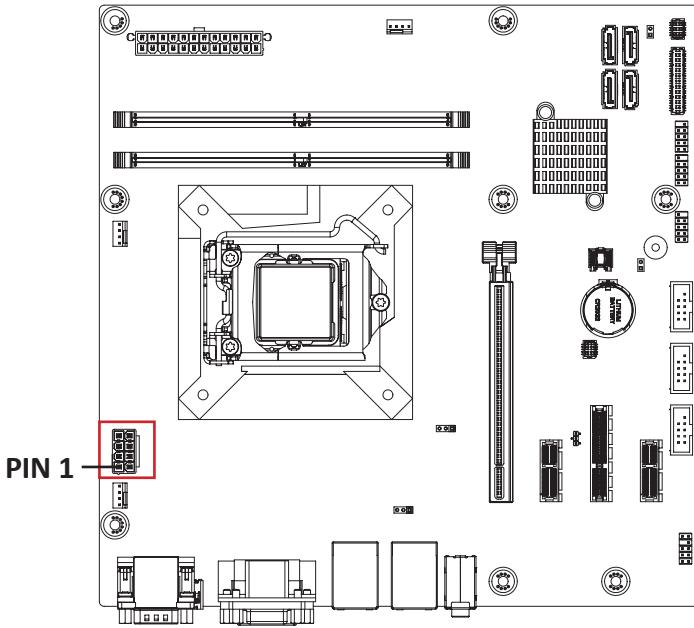
Connector PN	Vendor
740-41-08TWIB	PINREX
25114A0800B3-9LF	ATRC

Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	+12V
6	+12V
7	+12V
8	+12V

2.2.15 CPU_FAN (CPU FAN connector)

15

PIN 1

System/CPU FAN Connector
4
1
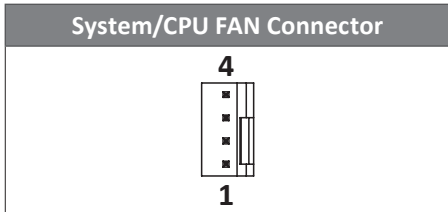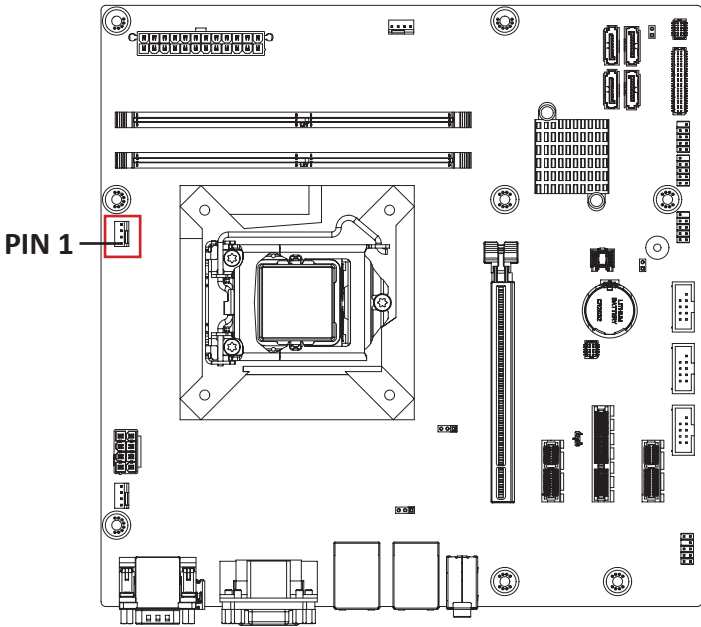
Connector PN	Vendor
744-81-045W11	PINREX
WF04R22WJQ195	HORNGTONG

Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed control

2.2.16 DDR4_1, DDR4_3 (DDR4 DIMM Sockets)

16
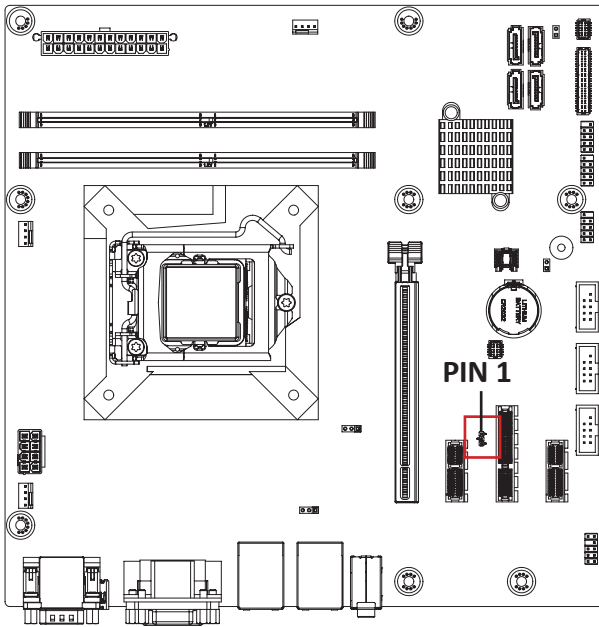
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2.2.17 ATX_SEL (AT/ATX mode select jumper)

17

AT/ATX mode select jumper
1

Connector PN	Vendor
220-96-03GB01	PINREX
PH03N2-7BAN000	HORNGTONG

Pin No.	Definition
1	ATX MODE
2	Detect
3	AT MODE
Jumper setting 1-2 Close : ATX mode.(Default setting) 2-3 Close : AT mode.	