

MP30-AR0

Motherboard for APM X-Gene X3-408 processor

User's Manual

Rev. 1101

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For detailed product information, carefully read the User's Manual.

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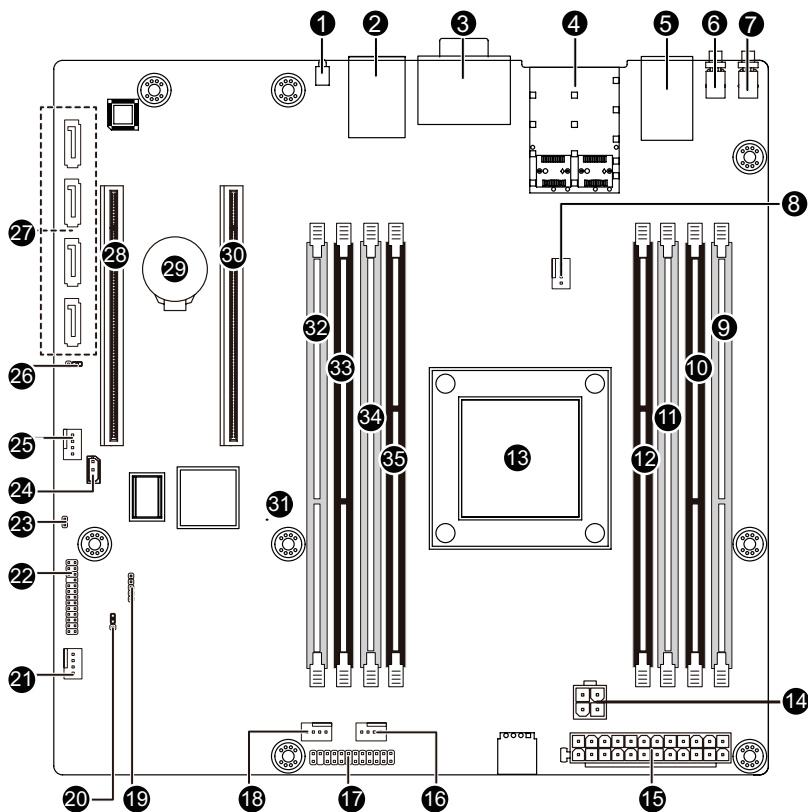
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Box Contents

- ☒ Motherboard
- ☒ Four SATA 6Gb/s cables
- ☒ User's Manual
- ☒ I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

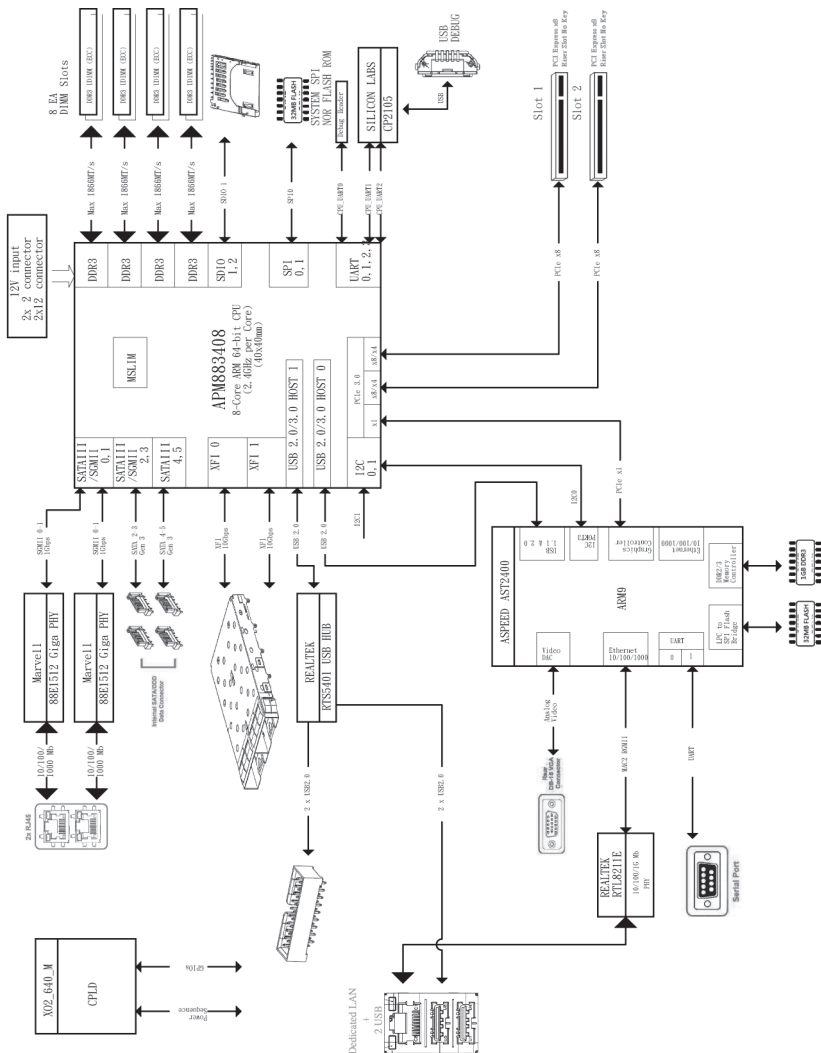
MP30-AR0 Motherboard Layout



Item	Code	Description
1	LED_STA	System status LED
2	USB2_MLAN	BMC Management LAN port (top)/USB 2.0 ports (bottom)
3	VGA1_COM1	Serial port (top)/VGA port (bottom)
4	SFP+_1_2	10G Fiber LAN ports
5	LAN1_2	LAN ports
6	SW_PWR	Power button/LED
7	SW_ID	ID switch button/LED
8	CPU_FAN	CPU fan connector
9	DIMM_P0_A0	Channel 1 slot 0
10	DIMM_P0_A1	Channel 1 slot 1
11	DIMM_P0_B0	Channel 2 slot 0
12	DIMM_P0_B1	Channel 2 slot 1
13	CPU0	ARM CPU
14	P12V_AUX1	4 pin power connector
15	ATX1	24 pin main power connector
16	SYS_FAN1	System fan connector#1
17	FP_1	Front panel header (for Server system)
18	SYS_FAN2	System fan connector#2
19	PMBUS	PMBus header
20	CLR_CMOS	Clear CMOS jumper
21	SYS_FAN3	System fan connector#3
22	BP_1	HDD back plane board header
23	CASE_OPEN	Case open intrusion alert header
24	IPMB	IPMB connector
25	SYS_FAN4	System fan connector#4
26	SATA_DOM0	SATA port 3 DOM support jumper
27	SATA0/1/2/3	SATA3 6Gb/s connectors
28	PCIE_2	PCI Express x16 slot
29	BAT	Battery socket
30	PCIE_1	PCI Express x16 slot
31	LED_BMC	BMC firmware readiness LED
32	DIMM_P0_C0	Channel 3 slot 0
33	DIMM_P0_C1	Channel 3 slot 1
34	DIMM_P0_D0	Channel 4 slot 0
35	DIMM_P0_D1	Channel 4 slot 1



CAUTION! If a SATA type hard drive is connected to the motherboard, please ensure the jumper is closed and set to **2-3 pins** (Default setting), in order to reduce any risk of hard disk damage. Please refer to Page 22 for SATA_DOM0 jumper setting instruction.













Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

1-2 Product Specifications

 CPU	<ul style="list-style-type: none"> Support for ARM X-Gene X3-408 Processor SoC L3 cache varies with CPU
 Memory	<ul style="list-style-type: none"> 8 x 1.5V DDR3 DIMM sockets supporting up to 256GB UDIMM of system memory Four channel memory architecture DDR3 1600/1333MHz UDIMM memory modules Support for ECC UDIMM memory modules
 LAN	<ul style="list-style-type: none"> 2 x XFI supports 10 Gbps SFP+ LAN ports 2 x Marvell 88E1512 PHY supports GbE LAN ports 1 x Management LAN 10/100/1000Mbps LAN port
 Expansion Slots	<ul style="list-style-type: none"> 2 x PCI Express x16 slot, running at x8 (Gen3/PCIe_2/PCIe_3)
 Onboard Graphics	<ul style="list-style-type: none"> ASPEED® AST2400 supports 16MB DDR3 VRAM
 Storage Interface	<ul style="list-style-type: none"> 4 x SATA3 6Gb/s connectors (SATA0/SATA1/SATA2/SATA3)
 USB	<ul style="list-style-type: none"> 2 x USB 2.0 ports (back panel)
 Internal Connectors	<ul style="list-style-type: none"> 1 x 24-pin ATX main power connector 1 x 4-pin ATX 12V power connector 4 x SATA3 6Gb/s connectors 1 x SD Card socket 1 x USB 2.0 header 1 x PMBus header 1 x CPU fan header 4 x System fan headers 1 x Front panel header 1 x HDD Back plane board header 1 x IPMB connector 1 x Chassis intrusion alert header
 Rear Panel I/O	<ul style="list-style-type: none"> 2 x USB 2.0 ports 2 x SFP+ ports 3 x RJ-45 ports (1 x 10/100/1000 Mbps dedicated management LAN port) 1 x COM port 1 x Power button/LED 1 x ID Switch button/LED 1 x System Status LED
 Form Factor	<ul style="list-style-type: none"> uATX Form Factor; 9.6 inch x 9.6 inch
* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.	

1-3 Installing the Memory



Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-3-1 Four Channel Memory Configuration

This motherboard provides Eight DDR3 memory sockets and supports Four Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Four Channel memory mode will be four times of the original memory bandwidth.

The eight DDR3 memory sockets are divided into four channels each channel has two memory sockets as following:

Channel 1: DDR3_P0_A0, DDR3_P0_A1

Channel 2: DDR3_P0_B0, DDR3_P0_B1

Channel 3: DDR3_P0_C0, DDR3_P0_C1

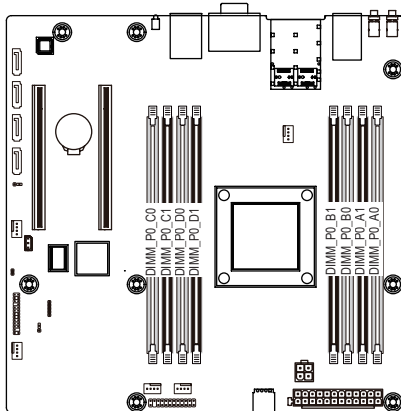
Channel 4: DDR3_P0_D0, DDR3_P0_D1



When only one DIMM is used, it must be populated in memory slot0 first.

Memory populated sequence must be followed with slot0/slot1.

System will not boot normally with incorrect populated sequence.



Slot Per Channel (SPC) and DIMM Per Channel (DPC)					
1 Slot	2 Slot		4 Slot		8 Slot
1DPC	1DPC	2DPC	1DPC	2DPC	2DPC
A0 or C0	A0 + B0 or A0 + C0	A0 + A1 or C0 + C1	A0 + B0 + C0 + D0	A0 + A1 + B0 + B1 or A0 + A1 + C0 + C1	Insert Full

Due to CPU limitations, read the following guidelines before installing the memory in Four Channel mode.

1. Four Channel mode cannot be enabled if only one DDR3 memory module is installed.
2. When enabling Four Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used for optimum performance.

1-3-2 Installing a Memory



Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.

Be sure to install DDR3 DIMMs on this motherboard.

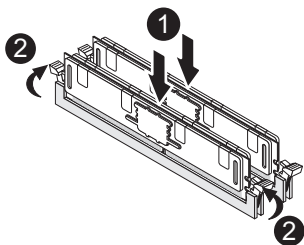
Installation Step:

Step 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.

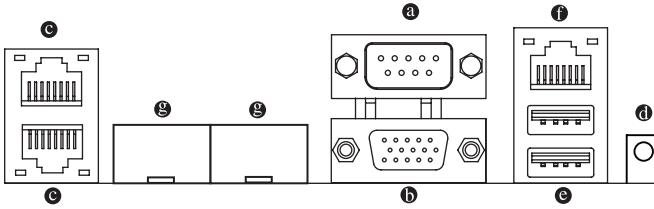
Step 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

Note: For dual-channel operation, DIMMs must be installed in matched pairs.

Step 3. Reverse the installation steps when you wish to remove the DIMM module.



1-4 Back Panel Connectors



a Serial Port

Connects to serial-based mouse or data processing devices.

b Video Port

The video in port allows connect to video in, which can also apply to video loop thru function.

c RJ-45 LAN Ports (Gigabit Ethernet LAN Ports)

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.

d System Status LED

Color	Status	Description
Green	On	System is operating normally.
	Blink	Degrade condition, may indicates the following: <ul style="list-style-type: none">• CPU failure• DIMM killed
Amber	On	Critical condition, may indicates the following: <ul style="list-style-type: none">• Power module failure• System fan failure• Power supply voltage issue• System temperature/voltage issue
	Blink	Non-critical condition, may indicates the following: <ul style="list-style-type: none">• Redundant power module failure• Temperature and voltage issue• Chassis intrusion
N/A	Off	System is not ready. May indicate the following: <ul style="list-style-type: none">• POST error• NMI error• Processor or terminator missing

e USB 2.0 Port

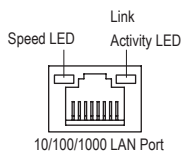
The USB port supports the USB 2.0 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

f KVM Server Management 10/100/1000 Mbps LAN Port (Dedicated LAN Port)

The LAN port provides Internet connection with data transfer speeds of 10/100/1000Mbps. This port is the dedicated LAN port for server management.

g SFP+ LAN Port

The SFP+ LAN port provides Internet connection at up to 10 Gbps data rate. The following describes the states of the LAN port LEDs.

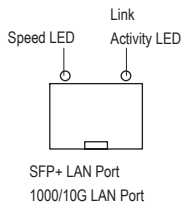


10/100/1000 Speed LED:

State	Description
Yellow On	1 Gbps data rate
Yellow Blink	Identify 1 Gbps data rate
Green On	100 Mbps data rate
Green Blink	Identify 100 Mbps data rate
Off	10 Mbps data rate

Link/Activity LED:

State	Description
On	Link between system and network or no access
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring



SFP+ Speed LED:

State	Description
Green On	10 Gbps data rate
Green Blink	Identify 10 Gbps data rate
Yellow On	1 Gbps data rate
Yellow Blink	Identify 1 Gbps data rate
Off	100 Mbps data rate

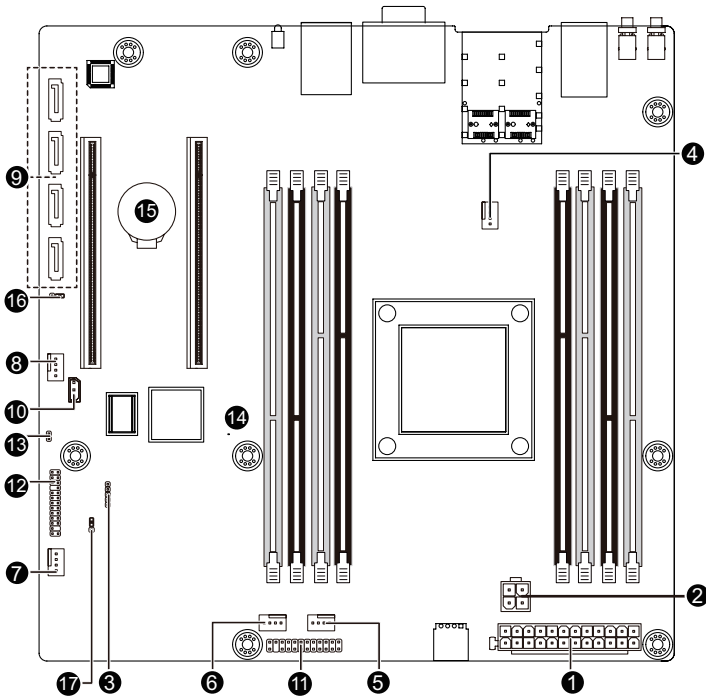
Link/Activity LED:

State	Description
On	Link between system and network or no access
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring



- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-5 Internal Connectors



1) ATX1	10) IPMB
2) P12V_AUX1	11) FP_1
3) PMBUS	12) BP_1
4) CPU0_FAN	13) CASE_OPE
5) SYS_FAN1 (System Fan)	14) LED_BMC
6) SYS_FAN2 (System Fan)	15) BAT1
7) SYS_FAN3 (System Fan)	16) SATA_DOM0
8) SYS_FAN4 (System Fan)	17) CLR_CMOS
9) SATA2/3/0/1	



Read the following guidelines before connecting external devices:

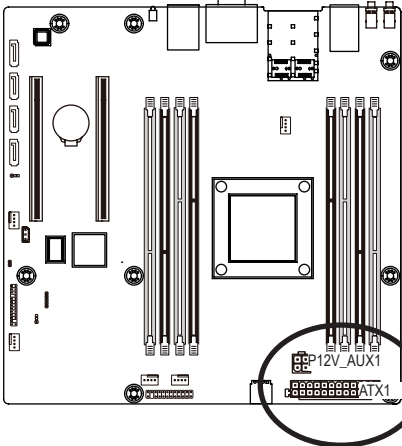
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

1/2/3) ATX1/P12V_AUX1 (2x4 12V Power Connector and 2x12 Main Power Connector)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.



- To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.



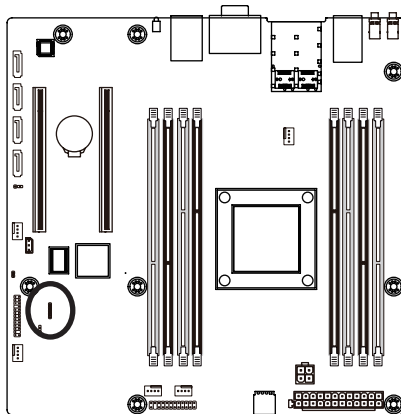
P12V_AUX1

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



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 (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	3.3V	24	GND

3) PMBUS (PMBus connector)

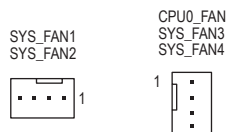
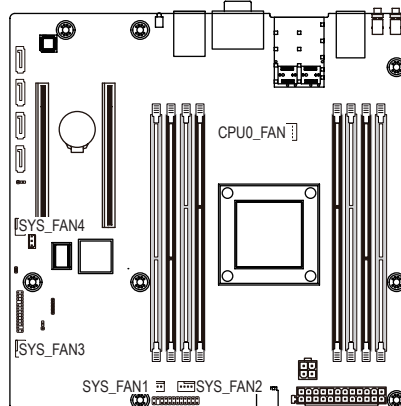


1
5

Pin No.	Definition
1	PMBus CLK
2	PMBus DATA
3	PMBus Alert
4	GND
5	3.3V Sense

4/5/6/7/8) CPU0_FAN/SYS_FAN1/SYS_FAN2/SYS_FAN3/SYS_FAN4 (CPU Fan/System Fan Headers)

The motherboard has one 4-pin CPU fan header, and four 4-pin system fan headers. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.



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



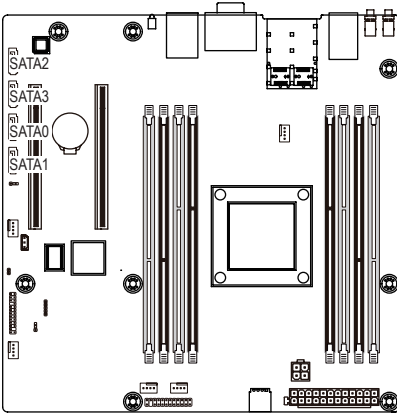
- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

9) SATA2/SATA3/SATA0/SATA1

(SATA 6Gb/s Connectors/SATA3 Support SATA DOM Function)

The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and 1.5Gb/s standard. Each SATA connector supports a single SATA device.

Please see page 22 for SATA DOM jumper setting.



Normal Mode:

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

SATA DOM Mode:

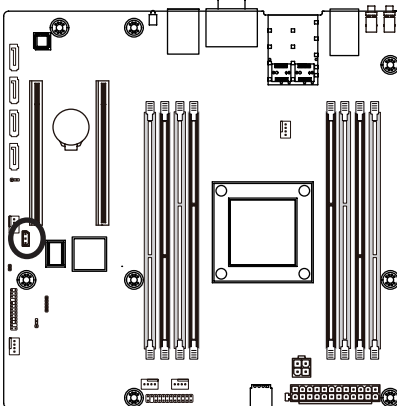
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	P5V



- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are configured, the total number of hard drives must be an even number.
- A RAID 10 configuration requires four hard drives.

(Note) When a RAID configuration is built across the SATA 6Gb/s channels, the system performance of the RAID configuration may vary depends on the devices are connected.

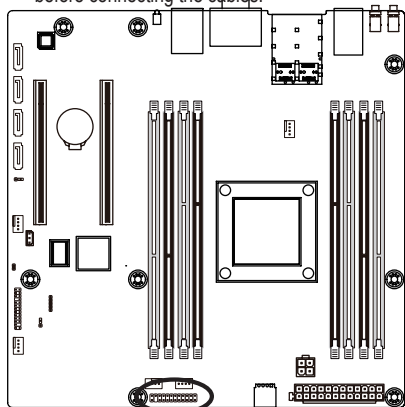
10) IPMB (IPMB Connector)



Pin No.	Definition
1	Clock
2	GND
3	Data

11) FP_1 (Front Panel Header/For Server System)

Connect the power switch, reset switch, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

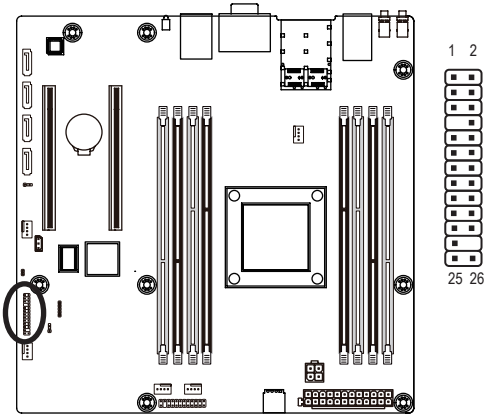


Pin No.	Signal Name	Definition
1	PWR_LED+	Power LED Anode
2	5VSB	Front Panel Power
3	KEY	Key
4	ID_LED+	System ID LED Anode
5	PWR_LED-	Power LED Cathode
6	ID_LED-	System ID LED Cathode
7	HDD_LED+	HDD Activity LED Anode
8	SYS_STATUS-	System Fault LED Cathode
9	HDD_LED-	HDD Activity LED Cathode
10	SYS_STATUS+	System Fault LED Anode
11	PWR_BTN	Power Switch
12	LAN1_LED+	NIC#1 Activity LED Anode
13	PWR_BTN (GND)	Power Switch (GND)
14	LAN1_LED-	NIC#1 Activity LED Cathode
15	RST_BTN	Reset Switch
16	SDA	SMBus SDA
17	RST_BTN (GND)	Reset Switch (GND)
18	SCL	SMBus SCL
19	ID_BTN	System ID Switch
20	CASE_OPEN	Chassis Intrusion
21	ID_BTN (GND)	System ID Switch (GND)
22	LAN2_LED+	NIC#2 Activity LED Anode
23	NMI_BTN	NMI to CPU Switch
24	LAN2_LED-	NIC#2 Activity LED Cathode



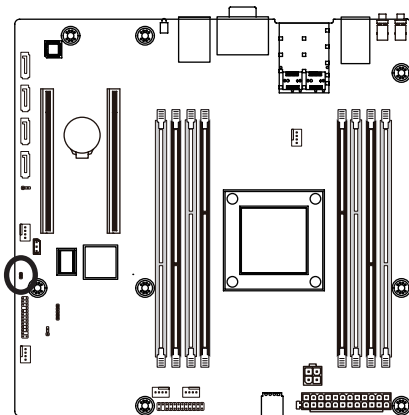
The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

12) BP_1 (HDD Back Plane Board Headers)



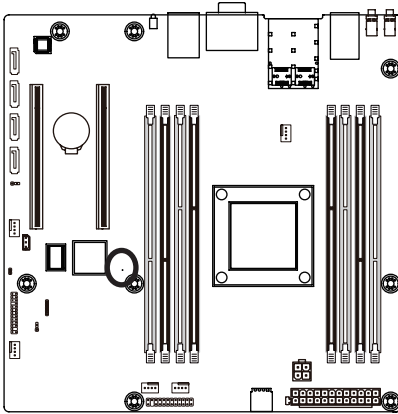
Pin No.	Definition
1	BP_SGP_CLK
2	NC
3	BP_SGP_GLD
4	FAN_GATE_N
5	BP_SGP_DOUT
6	GND
7	KEY
8	Reset
9	GND
10	BP_LED_A_N
11	BP_LED_G_N
12	GND
13	BP_SGP_DIN
14	NC
15	GND
16	SMB_BP_DATA
17	GND
18	SMB_BP_CLK
19	P_3V3_AUX
20	BMC_ACK
21	P_3V3_AUX
22	BMC_REQ
23	GND
24	KEY
25	BP_PRESENSE
26	GND

13) CASE_OPEN (Case open intrusion alert header)



- ☐ Open: Normal operation.
- ☒ Closed: Active chassis intrusion alert.

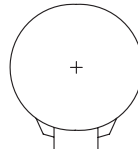
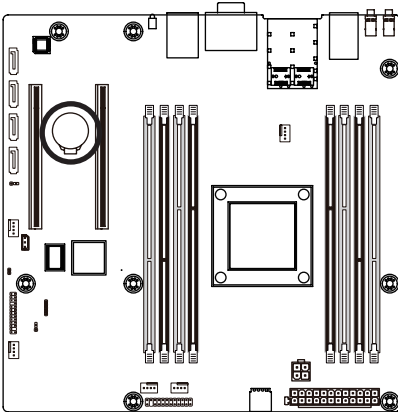
14) LED_BMC (BMC Firmware Readiness LED)



State	Description
On	BMC firmware is initial
Blinking	BMC firmware is ready
Off	AC loss

15) BAT1 (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.



- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

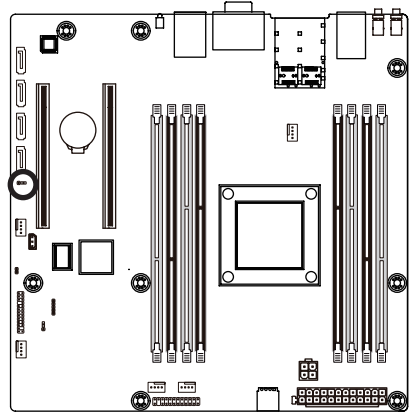
16) SATA_DOM0 (SATA port 3 Jumper)



CAUTION!

- If the SATA DOM power is supplied by the motherboard, set the jumper to pin 1-2.
- If the SATA DOM power is supplied by external power, set the jumper to pin 2-3.
- If a SATA type hard drive is connected to the motherboard, please ensure the jumper is closed and set to **2-3 pins** (Default setting), in order to reduce any risk of hard disk damage.

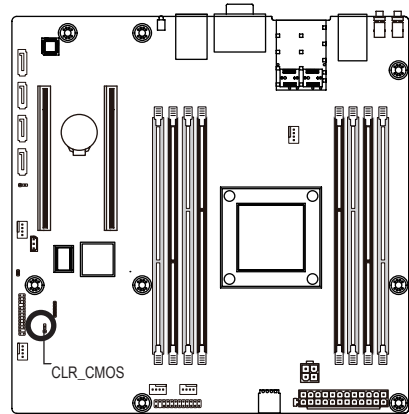
Please refer to the pin definition table in the following.



Pin No.	Definition
1	P5V
2	SATA3 Pin7
3	GND

17) CLR_CMOS (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



1-2 Close: Normal operation (Default setting)



2-3 Close: Clear CMOS data.



- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.

Chapter 2 UBOOT Configuration

Follow the instruction below for uboot configuration:

1. When system start UBOOT, please Hit any key to stop autoboot.

```
U-Boot 2013.04 (Mar 17 2015 - 23:01:13)          REV: 1.13.00-F03a ( uart3 )

CPU0: APM ARM 64-bit Potenza Rev B0 1400MHz PCP 1400MHz
      32 KB ICACHE, 32 KB DCACHE
      SOC 2000MHz IOBAXI 400MHz AXI 250MHz AHB 125MHz GFC 66.667MHz
Boot from SDIO
Board: GIGABYTE MP30AR0 - AppliedMicro APM883408-xNA24SPT Customer Board
I2C: ready

DRAM: ECC 8 GiB @ 1600MHz
SF: Detected MX25L25635F with page size 64 KiB, total 32 MiB

MMC: X-Gene SD/SDIO/eMMC: 0
PCIE0: (RC) link down
PCIE2: (RC) X1 GEN-1 link up
PCIE3: (RC) link down
00:00.0 - 10e8:e004 - Bridge device
01:00.0 - 1a03:1150 - Bridge device
02:00.0 - 1a03:2000 - Display controller
Video: ASPEED VGA Card (1a03, 2000) found @ (2:0:0)
Mode: 1024x768x32 48kHz 60Hz
In: serial
Out: serial
Err: serial
CPUs: 11111111
Net: eth0
Hit any key to stop autoboot: 0
MP30AR0#
```

2. Run load_env_default

```
MP30AR0#
MP30AR0# run load_env_default
filesize=74
4004000000: 65 74 68 31 61 64 64 72 3d 30 30 3a 30 32 3a 37 eth1addr=00:02:7
4004000010: 34 3a 30 32 3a 30 31 3a 30 31 0a 65 74 68 32 61 4:02:01:01.eth2a
4004000020: 64 64 72 3d 30 30 3a 30 32 3a 37 34 3a 30 32 3a ddr=00:02:74:02:
4004000030: 30 31 3a 30 32 0a 65 74 68 33 61 64 64 72 3d 30 01:02.eth3addr=0
### Resetting to default environment
### Warning: defaulting to text format
ethaddr=00:02:74:02:01:00
eth1addr=00:02:74:02:01:01
eth2addr=00:02:74:02:01:02
eth3addr=00:02:74:02:01:03
Saving Environment to SPI Flash...
SF: Detected MX25L25635F with page size 64 KiB, total 32 MiB
....
Erasing SPI flash...
SF: erased 262144 bytes @ 0xfd0000
..SF: Macronix: Successfully erased 262144 bytes @ 0xfd0000
Writing to SPI flash...
SF: Macronix: Successfully programmed 32768 bytes @ 0xfd0000
..
SF: Macronix: Successfully programmed 229376 bytes @ 0xfd8000
done
resetting ...
cold reset ...
```

3. After restarting UBOOT , please Hit any key to stop autoboot.

```
U-Boot 2013.04 (Mar 17 2015 - 23:01:13)          REV: 1.13.00-F03a ( uart3 )
CPU0: APM ARM 64-bit Potenza Rev B0 1400MHz PCP 1400MHz
      32 KB ICACHE, 32 KB DCACHE
      SOC 2000MHz IOBAKI 400MHz AXI 250MHz AHB 125MHz GFC 66.667MHz
Boot from SDIO
Board: GIGABYTE MP30AR0 - AppliedMicro APW883408-xNA24SPT Customer Board
I2C:   ready

DRAM:  ECC 8 GiB @ 1600MHz
SF:    Detected MX25L25635F with page size 64 KiB, total 32 MiB

MMC:   X-Gene SD/SDIO/eMMC: 0
PCIE0: (RC) link down
PCIE2: (RC) X1 GEN-1 link up
PCIE3: (RC) link down
 00:00.0 - 10e8:e004 - Bridge device
 01:00.0 - 1a03:1150 - Bridge device
 02:00.0 - 1a03:2000 - Display controller
Video: ASPEED VGA Card (1a03, 2000) found @ (2:0:0)
Mode: 1024x768x32 48kHz 60Hz
In:    serial
Out:   serial
Err:   serial
CPUs:  11111111
Net:   eth0
Hit any key to stop autoboot:  0
MP30AR0#
```

4. Type boot and press [Enter]. Then system will auto boot to Ubuntu.

```
Hit any key to stop autoboot:  0
MP30AR0#
MP30AR0#
MP30AR0# boot
SATA1 link 0 timeout.
No drive connected
SATA1 link 1 timeout.
No drive connected
AHCI1 0001.0300 32 slots 2 ports 6 Gbps 0x3 impl SATA mode
flags: 64bit ncq pm only pmp fbss pio slum part ccc
SATA2 link 0 timeout.
No drive connected
SATA2 link 1 timeout.
No drive connected
```

5. BOOT to demo OS (Same as Ubuntu)
6. Enter Username and Password.

Enter the following values:

Username: **root**

Password: **root**