

ASMB-815 Series LGA 3647 Intel Xeon® Processor Scalable Family Server Board with 6 DDR4, 5 PCIe x8 or 2 PCIe x16 and 1 PCIe x8, 8 SATA3, 6 USB3.0, Dual 10GbE, IPMI Startup Manual

Packing List

Before you begin installing your card, please make sure that the following items have been shipped:

- 1 ASMB-815 Startup Manual
- 1 Driver CD
- 2 Serial ATA HDD data cables
- 2 Serial ATA HDD power cables
- 2 CPU power cables (8P)
- 1 I/O port bracket
- 1 Warranty card

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

Note 1: Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: <https://www.adobe.com/downloads.html> (Acrobat is a trademark of Adobe)

Specifications

Standard M/B Functions

- **CPU:** LGA3647-P0 Intel Xeon® Processor scalable family series
 - **BIOS:** AMI 256 Mb SPI BIOS
 - **Chipset:** Intel® C622 PCH
 - **System Memory:** 6* DDR4-1866/2133/2400/2666 Registered ECC DIMM, Max. Capacity 192 GB
- Note 2:** Due to the inherent limitations of the PC architecture, the system may not fully detect 192 GB RAM when 192 GB RAM is installed.
- **SATA Interface:** 8 SATA3 6 Gb/s ports Intel Rapid Storage (for Windows only) (SATA0-SATA7 supports software RAID 0, 1, 10 & 5)
 - **Serial Ports:** One onboard header, only supports RS-232
 - **Keyboard/Mouse Header (KBMS2):** Supports the standard PS/2 keyboard and mouse via PS/2 cable
 - **Watchdog Timer:** 255 level timer intervals
 - **USB Port:** Supports up to 6 USB 3.0 ports (2 ports from onboard 20-pin header) and 7 USB 2.0 ports (1*Type-A, 4 ports from onboard 10-pin header)

VGA Interface

- **Chipset:** ASPEED AST2500/2510
- **Display Memory:** 64 MB
- **Resolution:** Supports VGA up to resolution 1920 x 1200 @ 60 Hz refresh rate

Ethernet Interface

- **Interface:** 10/100/1000 Mbps & 10 GbE Base-T
- **Controller:** LAN1/2: Intel I210; LAN3/4: Intel X557

Mechanical and Environment

- **Dimensions (L x W):** 244 x 304 mm (9.6" x 12")
- **Power Supply Voltage:** +3.3 V, +5 V, ±12 V, +5 Vs
- **Power Consumption (mainboard only, excluding IO device):** Max. load: +3.3 V @ 2.77 A, +5 V @ 7.01 A, +12 V @ 0.58 A, +5 Vsb @ 0.13 A, -12 V @ 0.06 A, 12V_8P @ 17.58A
- **Operating Temperature:** 0 ~ 60° C (depending on CPU)
- **Weight:** 0.91 kg (weight of board)

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

For technical support and service, please visit our support website at:

<http://support.advantech.com>

This manual is for the ASMB-815 series Rev. A1

Part No. 2001815I11
Printed in China

2nd Edition
Dec 2017

Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

| Connectors | |
|--|--|
| Label | Function |
| ATXPWR1 | ATX 24 Pin main power connector |
| ATX12V1 | Processor power connector (for CPU0) |
| BH2 | For optional battery kit |
| BIOS_SKT1 | BIOS SPI ROM |
| BMC_CN1 | IPMI module header (ASMB-815 I & T2 SKUs only) |
| COM2 | Serial port: RS-232 |
| CPUFAN0 | CPU FAN connector |
| DIMMA1, DIMMB1, DIMMC1, DIMMD1, DIMME1, DIMMF1 | DDR4 slot |
| EX_THR1 | Connector for external thermistor |
| GPIO1 | GPIO connector |
| HDAUD1 | Audio header |
| JFP1, JFP2, JFP3 | Front panel header |
| KBMS2 | External keyboard and mouse connector (6-pin) |
| LAN1, LAN2, LAN3_4 | RJ-45 LAN connector |
| LAN5 | IPMI dedicated LAN connector (ASMB-815 I & T2 SKUs only) |
| LANLED1 | LAN LED extension connector |
| LPC1 | TPM connector |
| M2_2280 | M.2 connector (SATA & PCIe x4) |
| PMBUS1 | PMBUS connector to communicate with power supply |
| SATA0~SATA7 | Serial ATA0~7 |
| SGPIO1 | SATA SGPIO header |
| SLOT1 | PCIe x1 slot (x1 link) (PCH) |
| SLOT2 | PCIe x4 slot (x4 link) (PCH) |
| SLOT3 | PCIe x8 slot (0 or x8 link) (CPU) |
| SLOT4 | PCIe x16 slot (x16 or x8 link) (CPU) |
| SLOT5 | PCIe x8 slot (0 or x8 link) (CPU) |
| SLOT6 | PCIe x16 slot (x16 or x8 link) (CPU) |

Jumpers and Connectors (Cont.)

| | |
|---------------------------|--|
| SLOT7 | PCIe x8 slot (x8 link) (CPU) |
| SLOT12V1 | For PCIe slot 12V input only |
| SMBUS1 | SMBus header |
| SPI_CN1 | Connector for BIOS update tool |
| SPI_SKT1 | EC EEPROM |
| SYS_LED1 | System LED connector |
| SYSFAN0~SYSFAN4 | System FAN connector |
| USB1_2, USB9_10, USB13_14 | USB 2.0 port 1, 2; USB 2.0 port 9, 10, 13, 14 (9-pin header) |
| USB11 | USB 2.0 port 11 (Type-A) |
| USB3_12, USB3_34, USB3_56 | USB 3.0 port 1, 2, 3, 4; USB 3.0 port 5, 6 (20-pin header) |
| VGA1_COM1 | VGA + COM connector |
| VOLT1 | Voltage display |
| VROC1 | Intel Virtual RAID (VROC) key |

Jumper list

| Label | Function |
|-----------|---|
| JCASE1 | Chassis case open alarm |
| JCMOS1 | CMOS clear |
| JME1 | ME update |
| JPRSNT1/2 | Manual switch PCIe slot 3/4 or slot 5/6 to PCIe x8 link |
| JTHR_SEL | To select on board or external thermistor |
| JWDT1 | Watch Dog Reset |
| PERSON1 | AT(1-2) / ATX(2-3) |

JCMOS1/JME1: CMOS clear/ME update function

| Closed pins | Result |
|-------------|-----------------------------------|
| 1-2 | Keep CMOS data/Disable ME update* |
| 2-3 | Clear CMOS data/Enable ME update |

*: Default



Keep CMOS data/Disable ME update Clear CMOS data/Enable ME update

Installation Note

| | | | | | | |
|------|------|------|------|-------|---------|------------------|
| JFP1 | 3 | 6 | 9 | 12 | PWRSW | RESET |
| & | 2(+) | 5(-) | 8 | 11 | | |
| JFP2 | 1(+) | 4 | 7 | 10(-) | SPEAKER | |
| JFP3 | 1(+) | 2 | 3(-) | 4 | 5 | PWRLED & KEYLOCK |

JFP1, JFP2

| | |
|---------------|---------------------------|
| Pin.3 | #PWR_SW |
| Pin.6 | GND |
| Pin.9 | #RST_SW |
| Pin.12 | GND |
| Pin.8, Pin.11 | HWM_SMB_DATA, HWM_SMB_CLK |

*Power button pin is located in Pin 3 & 6 of front panel connector.

Software Installation

The CD disc contains a driver installer program that will lead you through the installation of various device drivers needed to take full advantage of your motherboard.

The computer is supplied with a battery-powered realtime clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.

Declaration of Conformity

The device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference;
2. This device must accept any interference received, including interference that may cause undesired operation.

Board Layout

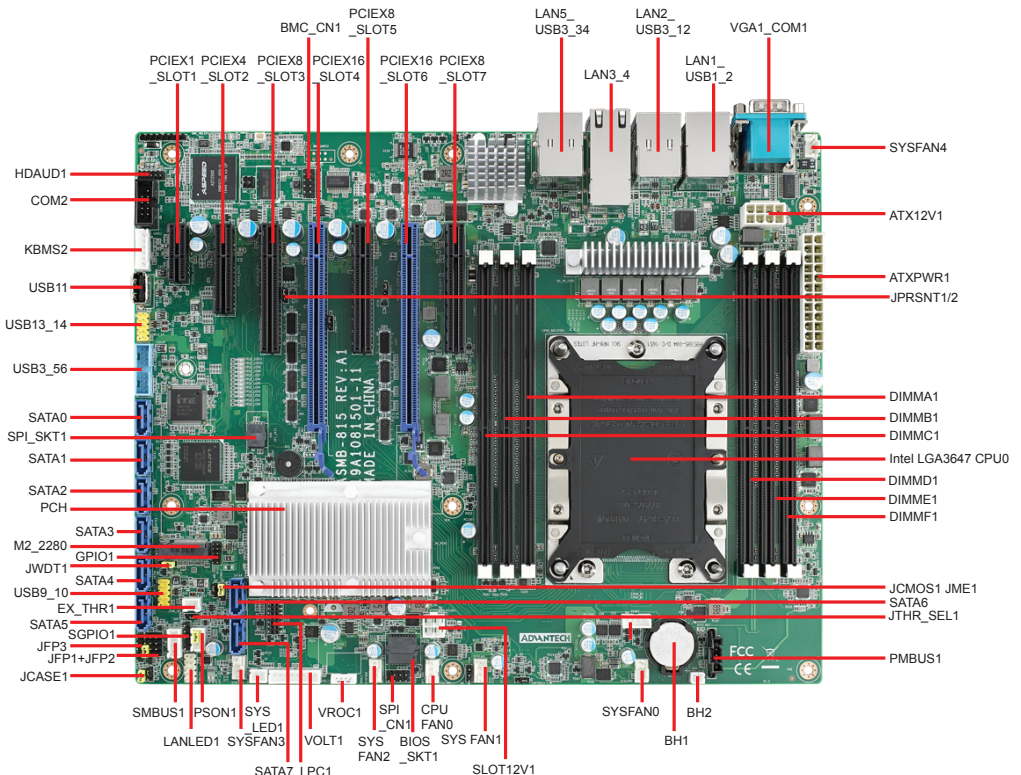


Figure 1: Board Layout: Jumper and Connector Locations