

## 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

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## 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, BMC_CN2	IPMI module header
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_2, LAN3_4	RJ-45 LAN connector
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) (CPU)
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)
SLOT7	PCIe x8 slot (x8 link) (CPU)
SMBUS1	SMBus header

## Jumpers and Connectors (Cont.)

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

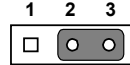
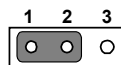
### Jumper list

Label	Function
JCASE1	Chassis case open alarm
JCMOS1	CMOS clear
JME1	ME update
JSKTOCC1	To force power when no CPU installed: Normal (1-2)/Debug (2-3)
JTHR_SEL	To select on board or external thermistor
JWDT1	Watch Dog Reset
PSON1	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.

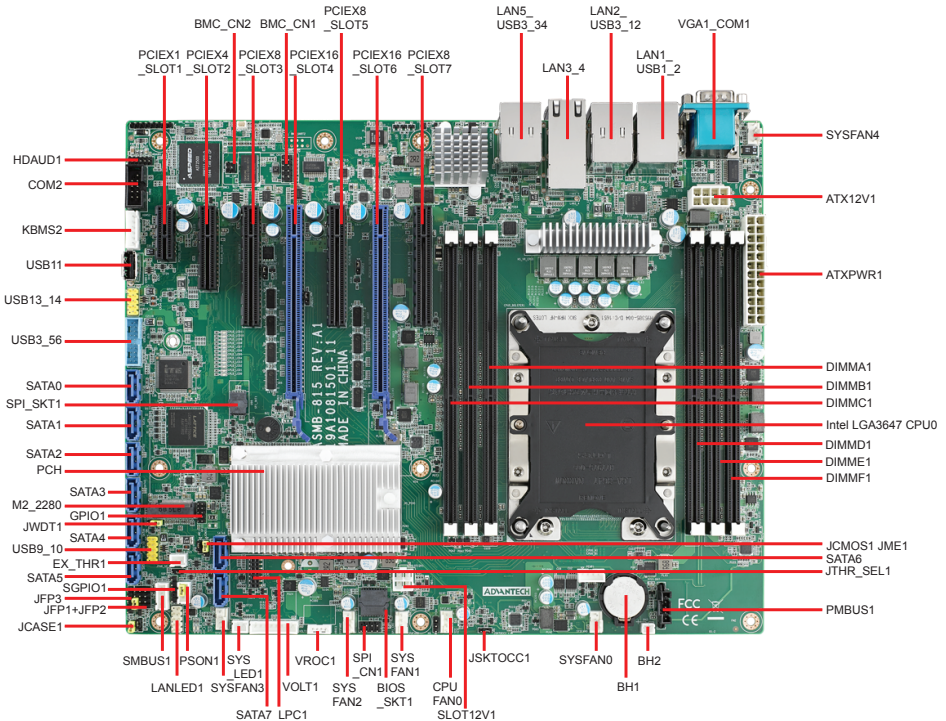
The computer is supplied with a battery-powered realtime clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.

## 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**