

ASMB-975 LGA 3647 Dual Intel Xeon® Processor Scalable Family Server Board with 12 DDR4, 4 PCIe x16 + 1 PCIe x8+4 PCIe x4, 14 SATA3, 8 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-975 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:** Dual LGA3647-P0 Intel Xeon® Processor Scalable Family series
- **BIOS:** AMI 256 Mb SPI BIOS
- **Chipset:** Intel® C620 PCH
- **System Memory:** 12* DDR4-1866/2133/2400/2666 Registered ECC DIMM, Max. Capacity 384 GB
- Note 2:** Due to the inherent limitations of the PC architecture, the system may not fully detect 384 GB RAM when 384 GB RAM is installed.
- **SATA Interface:** 14 SATA3 6 Gb/s ports Intel Rapid Storage (for Windows only) (SATA0-SATA7 support software RAID 0, 1, 10 & 5, SSATA0-SSATA5 support software RAID 0, 1, 10 & 5 due to 2 SATA controller design)
- **Serial Ports:** Two RS-232 (one on Rear I/O, and another one via pin header)
- **Keyboard/Mouse Header (KBMS1):** Supports the standard PS/2 keyboard and mouse via PS/2 cable
- **Watchdog Timer:** 255 sec/min level timer intervals
- **USB Port:** Supports up to 8 USB 3.0 ports (4 ports from onboard 20-pin header) and 3 USB 2.0 ports (1*Type-A, 2 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 & 10Gb (only for LAN3 & LAN4)
- **Controller:** LAN1/2: Intel I210; LAN3/4: Intel X557

Mechanical and Environment

- **Dimensions (L x W):** 358.1 x 330.2 mm (14.1" x 13")
- **Power Supply Voltage:** +3.3 V, +5 V, ±12 V, +5 Vsb
- **Power Consumption (mainboard only, excluding IO device):** Max. load: +3.3V@1.64A, +5V@7.27A, +12V@0.43A, +5V_SB@0.35A, -12V@0.05A, +12V_8P_0@23.3A, +12V_8P_1@24.4A
- **Operating Temperature:** 0 ~ 40° C (depending on CPU)
- **Weight:** 1.5 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-975 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)
ATX12V2	Processor power connector(for CPU1)
BH2	For optional battery kit
BMC_CN1, BMC_CN2	IPMI module header
COM2	Serial port: RS-232
CPUFAN0,CPUFAN1	CPU FAN connector
DIMMA1, DIMMB1, DIMMC1, DIMMD1, DIMME1, DIMMF1	DDR4 slot for CPU0
DIMMG1, DIMMH1, DIMMI1, DIMMJ1, DIMMK1, DIMML1	DDR4 slot for CPU1
EX_THR1	Connector for external thermistor
GPIO1	GPIO connector
HDAUD1	Audio header
JFP1, JFP2, JFP3	Front panel header
KBMS1	External keyboard and mouse connector (6 pin)
LAN1_USB1_2	RJ-45 LAN port 1 + USB 3.0 port 1/2 connector
LAN2_USB3_4	RJ-45 LAN port 2 + USB 3.0 port 3/4 connector
LPC1	TPM connector
SSATA4, SSATA5	SATA port 4/5 for M.2 2242 SATA SSD
PMBUS1	PMBUS connector to communicate with power supply
SATA0_1, SATA2_3, SATA4_5, SATA6_7	Serial ATA0~7
SSATA0_1, SSATA2_3	sSATA port 0~3
SGPIO1,2	sSATA SGPIO header
PCIEX4_SLOT1	PCIe x4 slot (CPU1)
PCIEX16_SLOT2	PCIe x16 slot (CPU0)
PCIEX4_SLOT3	PCIe x4 slot (CPU1)

Jumpers and Connectors (Cont.)

PCIEX16_SLOT4	PCIe x16 slot (CPU1)
PCIEX4_SLOT5	PCIe x4 slot (CPU0)
PCIEX16_SLOT6	PCIe x16 slot (CPU1)
PCIEX4_SLOT7 PCIEX16_SLOT8 PCIEX8_SLOT9	PCIe x4 slot (CPU0) PCIe x16 slot (CPU0) PCIe x8 slot (CPU1)
SMBUS1	SMBus header
SPI_CN1	Connector for BIOS update tool
SPI_SKT1	EC EEPROM
SYS_LED1	System LED connector
SYSFAN0-SYSFAN7	System FAN connector
USB11	USB 2.0 port 11 (Type-A)
USB5_6,USB7_8	USB 3.0 port 5,6,7,8 (20 pin header)
VGA1_COM1	VGA+COM connector
VOLT1	Voltage display
VROC1	Intel Virtual RAID (VROC) key

Jumper list

Label	Function
JCMOS1	CMOS clear
JME1	ME update
JWDT1	Watch Dog Reset
PSON1	AT(1-2) / ATX(2-3)
JCASE1	Alarm detection
JTHR_SEL	To select on board or external thermistor

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

Jumpers and Connectors (Cont.)

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

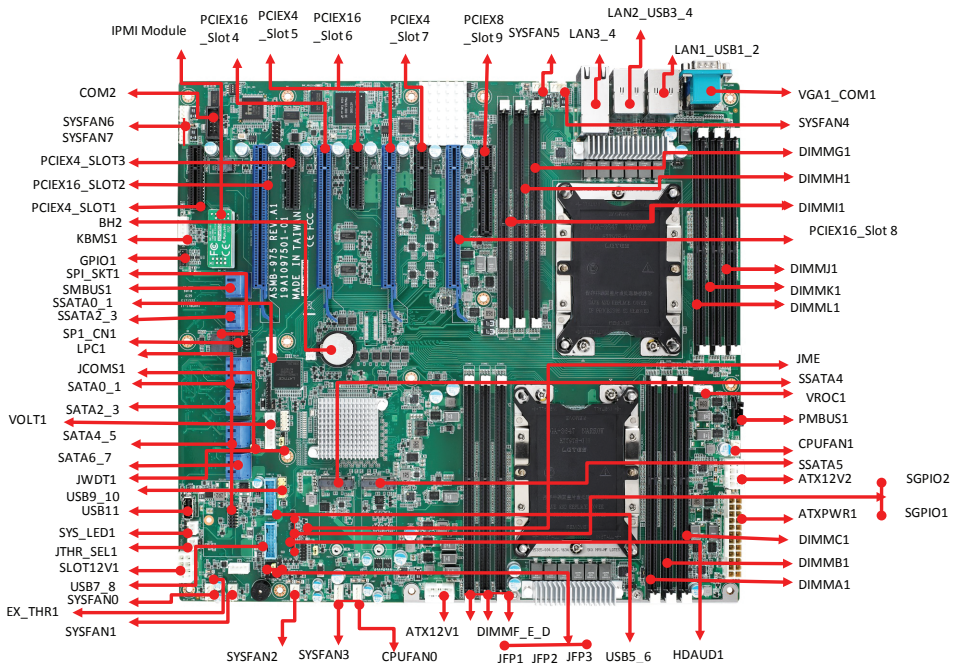


Figure 1: Board Layout: Jumper and Connector Locations