

ASMB-977 Dual LGA4677 4th Gen Intel® Xeon® Scalable Proprietary Server Board with 16x DDR5, 5 x PCIe x16, 9 x SATA3.0, 4 x USB 3.2 (Gen 1), Dual 10GbE, and IPMI Startup Manual

Packing List

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

- 1 x ASMB-977 startup manual
- 1 x Serial ATA HDD data cables
- 1 x Serial ATA HDD power cables
- 2 x CPU power cables (8P)
- 2 x CPU carriers
- 1 x I/O port bracket
- 1 x M.2 screw

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)

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

<https://advt.ch/asmb977>



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This manual is for the ASMB-977 series Rev. A1.

Part No. 2042097700
Printed in China

1st Edition
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Specifications

Standard M/B Functions

- **CPU:** Dual LGA4677 4th Gen Intel® Xeon® Scalable processors
- **BIOS:** AMI 256 Mbit SPI BIOS
- **Chipset:** Intel® C741 PCH
- **System Memory:** 16x DDR5 3200/3600/4000/4400/4800 MT/s registered ECC DIMM, Max. capacity 2TB

Note 2: Due to the inherent limitations of the PC architecture, the system may not fully detect 2TB RAM when 2TB RAM is installed.

- **SATA Interface:**
 - 8 x SATA 3.0 (6 Gb/s) via Mini SAS HD (SFF-8643), supports software RAID 0,1,5,10
 - 1 x SATA 3.0 (6 Gb/s) for internal HDD or ODD
- **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 or min level timer intervals
- **USB Port:** Supports up to 4 x USB 3.2 gen1 (2 rear and 2 onboard) and 1 x USB 2.0 ports (1*Type-A from onboard 10-pin header)

VGA Interface

- **Chipset:** ASPEED AST2600
- **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® X710-AT2

Mechanical and Environment

- **Dimensions (L x W):** 380 x 349.5 mm (14.96" x 13.76")
- **Power Supply Voltage:** +3.3 V, +5 V, ±12 V, +5 Vsb
- **Power Consumption (mainboard only, excluding IO device):** Max. load: +3.3V@2.43A, +5V@1.76A, +12V@18.12A, +5V_SB@1.54A, -12V@0.01A, +12V_8P_0@16.29A, +12V_8P_1@13.91A
- **Operating Temperature:** 0 ~ 40° C (depending on CPU)
- **Weight:** 1.8 kg (weight of board)

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, ATX12V3	Processor power connector (mandatory)
ATX12V2, ATX12V4	Processor power connector (reserved)
BH2	For optional battery kit
BIOS_SKT1	BIOS SPI ROM
BMC_SPI1	BMC SPI ROM
BMC_LAN	IPMI dedicated LAN connector
COM1	RS-232 connector
COM2	RS-232 header
CPUFAN0, CPUFAN1	CPU FAN connector
DIMMA1, DIMMB1, DIMMC1, DIMMD1, DIMME1, DIMMF1, DIMMG1, DIMMH1	DDR5 from CPU0
DIMM11, DIMMJ1, DIMMK1, DIMML1, DIMMM1, DIMMN1, DIMMO1, DIMMP1	DDR5 from CPU1
DIMMA1, DIMMC1, DIMME1, DIMMG1, DIMMI1, DIMMK1, DIMMM1, DIMMO1	DCPMM slot
ESPI1	eSPI connector
EX_THR1	Connector for external thermistor
GPIO1	GPIO connector
HDAUD1	Audio header
JFP1, JFP2, JFP3	Front panel header
KBMS1	External keyboard and mouse connector
LAN1, LAN2	1 Gbps LAN connector
LAN3, LAN4	10 Gbps LAN connector
LANLED1	LAN LED extension connector
M2_2280_1	M.2 connector (PCIe gen4 x4)
M2_2280_2	M.2 connector (SATA and PCIe gen3 x4)
PCIEX8_SLOT1	PCIe x8 slot (CPU0)

Jumpers and Connectors (Cont.)

PCIEX16_SLOT2	PCIe x16 slot (CPU0)
PCIEX16_SLOT4	PCIe x16 slot (CPU0)
PCIEX8_SLOT5	PCIe x8 slot (CPU1)
PCIEX16_SLOT6	PCIe x16 slot (CPU0)
PCIEX8_SLOT7	PCIe x8 slot (CPU1)
PCIEX16_SLOT8	PCIe x16 slot (CPU1)
PCIEX16_SLOT9	PCIe x16 slot (CPU1)
PCIEX8_SLOT10	PCIe x8 slot (CPU1)
PCIEX8_SLOT11	PCIe x8 slot (CPU1)
PMBUS1	PMBUS connector to communicate with the power supply
SATA0~SATA3, SATA4~7	SATA via SFF-8643
SGPIO1	SATA0~3 SGPIO header
SGPIO2	SATA4~7 SGPIO header
SLOT12V1	For PCIe slot 12V input only
SLOT12V2	For PCIe slot 12V input only
SMBUS1	SMBus header
SATA0	SATA connector
SYSFAN0~SYSFAN6	System FAN connector
SYS_LED1	System LED connector
USB2A1	USB 2.0 port (Type-A)
USB3H1	USB 3.0 port (20-pin header)
VGA1	VGA connector

Jumper list

Label	Function
JCMOS1	CMOS clear
JME1	ME update
JWDT1	Watch Dog Reset
JTHR_SEL1	Internal (default pins 1-2) and external (pins 2-3) thermistor selection
JCASE1	Chassis case open alarm
PERSON1	AT(1-2)/ATX(2-3)

Jumpers and Connectors (Cont.)

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

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

Jumpers and Connectors (Cont.)

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

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

Declaration of Conformity

The computer is supplied with a battery-powered real time 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.

The device complies with the requirements of FCC Class A, 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

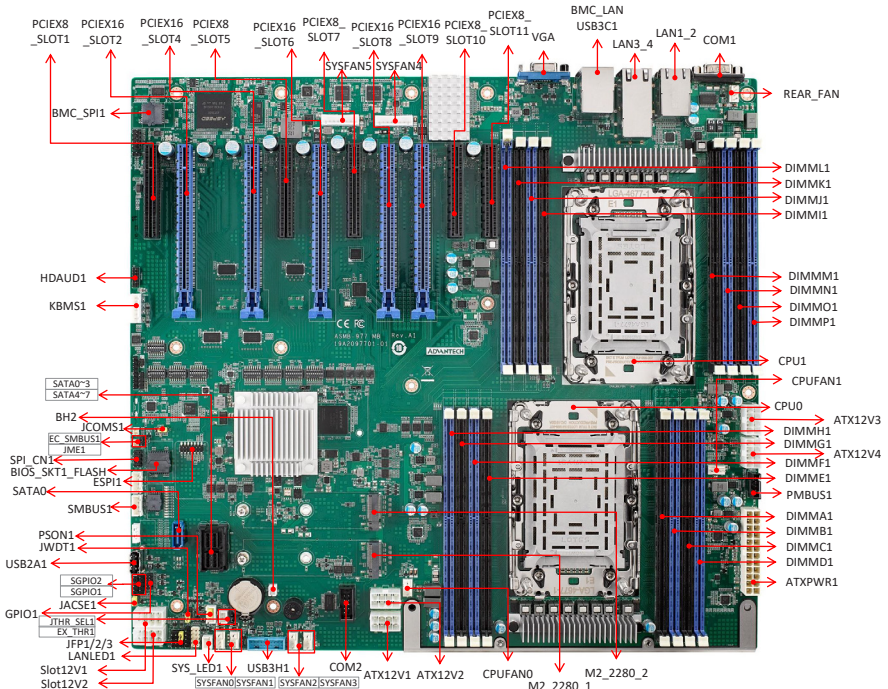


Figure 1: Board Layout: Jumper and Connector Locations