

ASMB-561 Series LGA 4844 AMD EPYC™ 8004 microATX Server Board with 6 x DDR5, 4 x PCIe5.0 x16, 5 x USB3.2 Gen1, Dual 10GbE, Dual 2.5GbE, TPM2.0 , IPMI Startup Manual

Packing List

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

- 1 x ASMB-561 Startup Manual
- 1 x Standard I/O port bracket
- 1 x IO support plate
- 2 x M3 screws for M.2 storage

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

Note: 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:** AMD EPYC™ 8004 (SP6), 8–64 cores
- **BIOS:** AMI 256 Mbit SPI BIOS
- **System Memory:** 6 x DDR5-4800 registered ECC DIMM, Max. Capacity up to 596 GB
- **SATA Interface:** 8 via MCIO1&2 ports with SATA 6Gb/s with MCIO to SATA cables
- **M.2 Interface:** 2x NVMe M.2 2280 supports PCIe5.0 x4
- **Serial Ports:** 1 at rear IO, supports RS-232
- **Watchdog Timer:** 255 level timer intervals
- **USB Port:** Supports up to 5 x USB 3.2 Gen1 ports (2 rear ports, 2 ports from onboard 20-pin header and 1*Type-A on board)

VGA Interface

- **Chipset:** ASPEED AST2600
- **Display Memory:** 64 MB
- **Resolution:** Supports VGA up to resolution 1920x1200 @ 60Hz refresh rate

Ethernet Interface

- **Interface:** 100/1000/2500 Mbps & 10 GbE Base-T
- **Controller:** LAN1/2: Intel I226; LAN3/4: Intel X710

Mechanical and Environment

- **Dimensions (L x W):** 244 x 244 mm (9.6" x 9.6")
- **Power Supply Voltage:** +3.3 V, +5 V, ±12 V, +5 V_{SB}
- **Power Consumption (mainboard only, excluding IO device):** •Max. load: +3.3V @ 0.88 A, +5V @ 2.97 A, +12V @ 0.38 A, +5 VSB @ 0.04 A, +12V_8P @ 13.72 A
- **Weight:** 0.98 kg (weight of board)
- **Operating Temperature:** 0 ~ 60°C (depending on CPU)

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This manual is for the ASMB-561 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, ATX12V2	Processor power connector
BH2	For optional battery kit
BIOS_SKT1	BIOS SPI ROM
BMC_SPI1	IPMI ROM
COM1	Serial port: RS-232
CPUFAN0	CPU FAN connector
C0_DIMMA1, C0_DIMMB1, C0_DIMMD1, C0_DIMME1, C0_DIMMF1, C0_DIMMH1	DDR5 slot
EX_THR1	Connector for external thermistor
ESPI1	ESPI connector
GPIO1	GPIO connector
HDT1	AMD HDT connector
JFP1, JFP2	Front panel header
LAN1_2, LAN3_4	RJ-45 2.5GbE LAN connector RJ-45 10GbE LAN connector
LAN5	IPMI dedicated LAN connector
LAN_LED1	Chassis LAN LED
M2_2280_1	M.2 connector (SATA & PCIe x4)
M2_2280_2	M.2 connector (SATA & PCIe x4)
PMBUS1	PMBUS connector to communicate with power supply
MCIO1 MCIO2	Default SATA0~3 Default SATA4~7
MCIO3 MCIO4	Default Single PCIe x4 Default Single PCIe x4
PCIEX16_SLOT4 ~ PCIEX16_SLOT7	PCIe x16 slot (CPU direct)
SMBUS1, SKY_SB1	SMBus header
SPI_CN1	Connector for BIOS update tool
SW1	Intel X710 debug mode setting
SW3, SW4	MCIO Signal setting
SYS_LED1	Chassis System LED
SYSFAN0~SYSFAN4	System FAN connector

Jumpers and Connectors (Cont.)

USB3A1, USB3C1,	USB 3.2 (Type A) ; USB 3.2 (Rear port x2)
USB3H1	USB 3.2 port x 2 (20-pin header);
VGA1	VGA connector

Jumper List

Label	Function
JCASE1	Chassis case open alarm
JCMOS1	CMOS clear
JWDT1	Watchdog timer reset
PSON1	AT(1-2) / ATX(2-3)
SW3 SW4	Switch OFF(1-4) (SATA) Switch OFF(2,4) & ON (1,3)

JCMOS1: CMOS Clear Function

Closed pins	Result
1-2	Keep CMOS data
2-3	Clear CMOS data
*: Default 1-2	



Keep CMOS data



Clear CMOS data

SW3 & SW4 Default Setting

Connector	Switch Name	Port	Switch OFF	Switch ON
MCIO1	SW3	1	SATA MODE	PCIe MODE
		2	Sideband for SKY_BP	Sideband for CXL
		3	SATA MODE	PCIe MODE
MCIO2	SW3	4	Sideband for SKY_BP	Sideband for CXL
		5	SATA MODE	PCIe MODE
MCIO3	SW4	6	Sideband for SKY_BP	Sideband for CXL
		7	SATA MODE	PCIe MODE
MCIO4	SW4	8	Sideband for SKY_BP	Sideband for CXL

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.

Installation Note

JFP1			
1	HDD_LED +	2	PWR BTN
3	HDD_LED -	4	GND
5	PWR LED +	6	RST BTN
7	PWR LED-	8	GND
9	PWR LED-		

2.0 mm JFP2 Connector on Board			
Description	Pin Number		Description
RST BTN	2	▼1	PWD BTN
PWD GND	4	3	PWD GND
LAN1_LED+	6	5	LAN2_LED+
LAN1_LED-	8	7	LAN2_LED-
X	10	9	SYS_LED+
GND	12	11	SYS_LED-
PWR LED+	14	13	HDD_LED+
PWR LED-	16	15	HDD_LED-

Board Layout

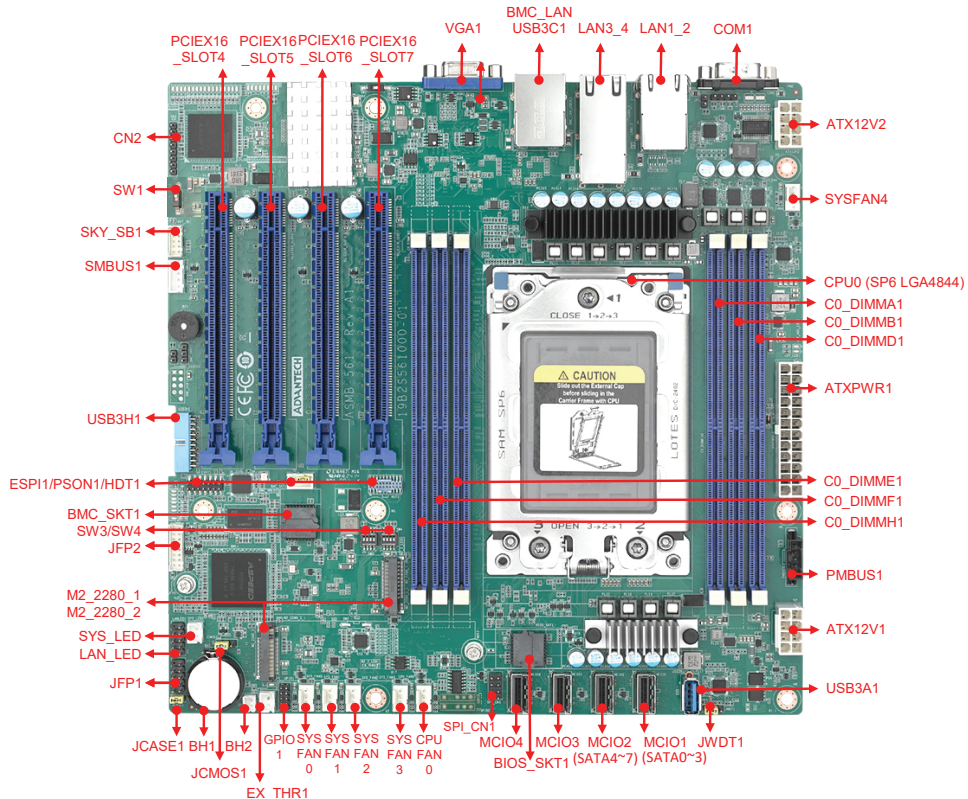


Figure 1: Board Layout: Jumper and Connector Locations