

ASMB-587 LGA 1200 Intel® Xeon® W & 10th Gen. Core™ MicroATX Server Board with 4 x DDR4, 3 x PCIe, 6 x USB 3.2, 5 x SATA3, Quad/Dual LANs, and IPMI Startup Manual

Packing List

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

- 1 Startup manual
- 2 Serial ATA HDD data cables
- 2 Serial ATA HDD power cables
- 1 COM cable (for connection to real panel)
- 1 I/O port bracket
- 1 Warranty card
- 1 JFP1 cable

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:
<http://www.adobe.com/downloads/> (Acrobat is a trademark of Adobe)

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This manual is for the ASMB-587 series Rev. A1.

Part No. 2041058700
Printed in China

1st Edition
October 2020

Specifications

Standard Functions

- **CPU:** LGA 1200 Intel® Xeon® W and 10th Gen. Core™ i9/i7/i5/i3 processor
- **BIOS:** AMI 256 Mb SPI BIOS
- **Chipset:** Intel W480E
- **System memory:** Dual Channel DDR4 ECC/Non-ECC 2933/2666/2400 MHz unbuffered DIMM, Max. 128 GB

Note: Due to the inherent limitations of PC architecture, the system may not fully detect 128 GB RAM when 128 GB RAM is installed.

- **SATA3 interface:** 5 x SATA3 6Gb/s ports to support Intel Rapid Storage Technology with software RAID 0, 1, 10 & 5 (for Windows only)
- **Serial ports:** Two serial ports onboard, only support RS-232 (one can be in rear I/O via COM cable connection)
- **Keyboard/mouse connector:** Supports standard PS/2 keyboard and mouse via KMBS1 pin header
- **Watchdog timer:** 255 level timer intervals (sec/min)
- **USB 3.2:** Supports up to six USB 3.2 ports, four Gen2 ports in rear I/O and two Gen1 ports from on-board pin header
- **USB 2.0:** Supports up to seven USB 2.0 ports (1* Type-A)

Display Interface

- **Chipset:** CPU integrated Intel HD graphics controller
- **Display memory:** 1 GB maximum shared memory with 2 GB and above system memory installed (BIOS default is 256 MB)
- **Resolution:**
 - Supports VGA up to 1920 x 1200 resolution @ 60 Hz refresh rate
 - Supports DVI up to 1920 x 1200 resolution @ 60 Hz refresh rate
 - Supports HDMI 2.0 up to 2K/4K resolution @ 60Hz

Ethernet Interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** LAN1: Intel® I219LM; LAN2 ~ LAN4: Intel® I210AT (LAN2 is BMC shared NIC; LAN3/4 is for G4 SKU only)

Mechanical and Environmental

- **Dimensions (L x W):** 244 x 244 mm (9.6" x 9.6")
- **Power supply voltage:** +3.3 V, +5 V, ±12 V, 5 Vsb
- **Power consumption:** Max. load: +3.3 V @ 0.75 A, +5 V @ 1.43 A, +12 V @ 0.66 A, +12 V (8P) @ 7.08 A, +5 Vsb @ 0.13 A
- **Operating temperature:** 0 ~ 60° C (depends on CPU speed and cooler solution)
- **Weight:** 0.5 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 jumper and connector.

Connector list	
Label	Function
ATXPWR1	ATX 24-pin main power connector (for System)
ATX12V1	8-pin power connector (for CPU)
AUDIO1~2	Audio connector
BAT1	For RTC battery
BAT2	For optional battery kit
BIOS_SKT1	BIOS SPI ROM
BMC2	BMC connector to support IPMI-1000 module (P/N: IPMI-1000-00A2E)
COM1, COM2	Serial port: RS-232
CPUFAN0	CPU FAN connector
DIMMA0, DIMMA1, DIMMB0, DIMMB1	DDR4 288-pin slot
DVI1	DVI connector
EX_THR1	For external thermistor cable kit
FPAUD1	Front Panel Audio Header
GPIO1	8-bit GPIO header
HDMI1_VGA1	HDMI + VGA connector
JFP1	Power Switch/Power Reset/ LANLED1/LANLED2/ HDD LED/Power LED Power LED Behavior: • Suspend: Fast flash (ATX/AT) • System On: ON (ATX/AT) • System Off: OFF (ATX/AT)
KBMS1	External keyboard and mouse connector (6-pin)
LAN1_USB1_2, LAN2_USB3_4	LAN1/USB 3.2 Gen2 port 1, 2 stack connector LAN2/USB 3.2 Gen2 port 3, 4 stack connector
LAN3_LAN4	LAN3 & LAN4 connector
LPC1, LPC2	Low pin count connector for Advantech TPM and RS232/422/485 module
M2_2280_1	M.2 22110/2280 (PCIe/SATA)
PCIEX4_SLOT4, PCIEX4_SLOT7	PCIe x4 slot (Gen3 x4 link)
PCIEX16_SLOT6	PCIe x16 slot (Gen3 x16 link)
PMBUS1	PMBUS connector to communi- cate with power supply







Jumpers and Connectors (Cont.)

Connector list	
SATA0~4	SATA III (6 Gb/s)
SMBUS1	SMBus from PCH
SYS_LED1	System Information LED Con- nector
SYSFAN0,SYSFAN1, SYSFAN2,SYSFAN3	System FAN connector
SPI_CN1	SPI flash card pin header
SPDIF_OUT1	SPDIF Audio output pin header
USB5_6	USB 3.2 gen1 Port (Header)
USB7_8, USB9_10, USB11_12	USB 2.0 port (Header)
USB13	USB 2.0 port (USB Type A)

Jumper list	
Label	Function
HDMI_I2C1	For RD debugging
JCMOS1	CMOS clear
JME1	Intel ME Disable Jumper for ME/BIOS update
JWDT1	Watchdog reset
JUSB_1	Rear window USB 3.2 Gen2 port power source switch between +5 V _{SB} and +5 V
JUSB_2	On board USB2.0/3.2 Gen1 port power source switch between +5 V _{SB} and +5 V
JCASE1	Case open
JPEG1, JPEG2	x16 or x8x8 or x8x4x4 for slot-6
JPEG3	Default (1-2)/reserve for RD debug (2-3)
JPSMB1, JPSMB2	PCIE SLOT SMBUS connector: to PCH (1-2)/ to BMC (2-3)
JSMB1	For RD debugging
JTHR_SEL1	Selects on board or external thermistor
PSON1	AT(1-2)/ATX(2-3)

Jumpers and Connectors (Cont.)


PCIEX16_Slot6 Configuration (JPEG1, JPEG2)


Function	JPEG1	JPEG2
Slot6 PCIe x16 (default)	 1-2 closed	 1-2 closed
Slot6 PCIe x8 + x8	 2-3 closed	 1-2 closed
Slot6 PCIe x8 + x4 + x4	 2-3 closed	 2-3 closed

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

JWDT1: Watchdog timer output option

Closed Pins	Result
1-2	System reset*
2-3	NC

*: Default



System Reset 1-2 Closed



NC 2-3 Closed

PSON1: ATX, AT mode selector

Closed Pins	Result
1-2	AT Mode
2-3	ATX Mode*

*: Default


AT Mode 1-2 closed


ATX Mode 2-3 closed

Installation Note

2.0 mm JFP 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-
CRPS Detect	10	9	SYS_LED+
GND	12	11	SYS_LED-
PWR LED+	14	13	HDD_LED+
PWR LED-	16	15	HDD_LED-

2.0 mm JFP connector to 2.54 mm Pitch Header

Description	Pin Number		Description
(Red) PWD BTN	▼1	2	RST BTN (White)
(Black) PWD GND	3	4	PWD GND (Black)
(Blue) LAN1_LED+	5	6	LAN2_LED+ (Brown)
(Red) LAN1_LED -	7	8	LAN2_LED - (Black)
		Key	
(Orange) HDD_LED+	13	14	PWR LED+ (Red)
(Black) HDD_LED -	15		
	Key	16	PWR LED - (Black)

SATA storage mapping table

Connector Label	BIOS Menu	Intel Rapid Storage Technology
SATA0	SATA0	Internal empty port 3
SATA1	SATA1	Internal empty port 4
SATA2	SATA2	Internal empty port 5
SATA3	SATA3	Internal empty port 6
SATA4	SATA4	Internal empty port 7

Declaration of Conformity

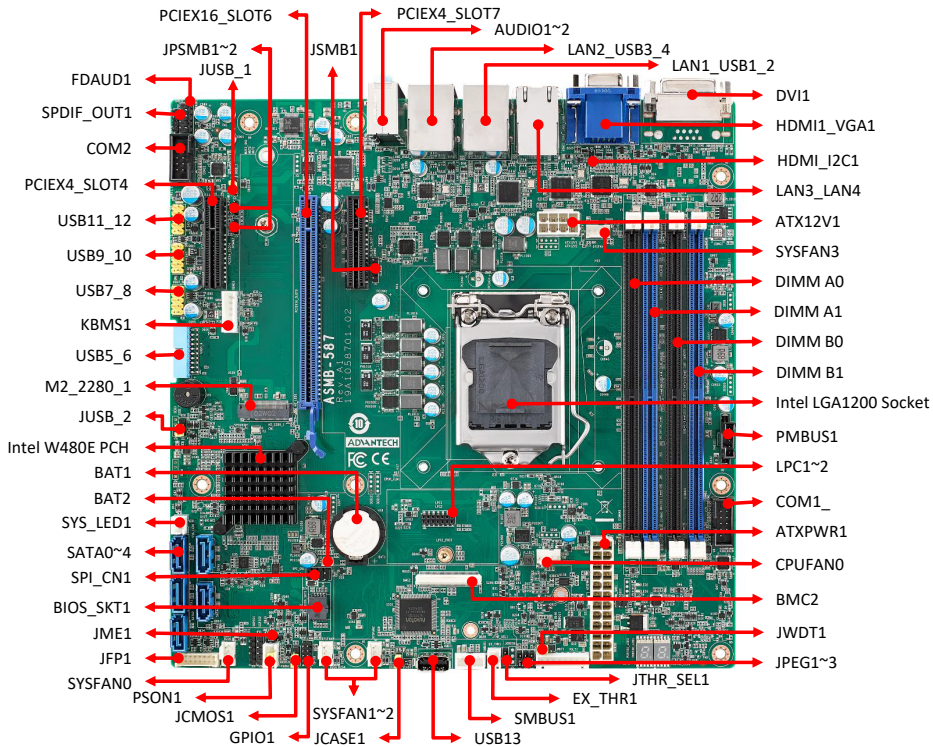
Caution! The computer is supplied with a battery-powered realtime clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.



This 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



Board Layout: Jumper and Connector Locations