ASMB-586 LGA 1151 Intel® Xeon® E and 8th/9th Core™ MicroATX Server Board with 4 x DDR4, 4 x PCIe, 6 x USB 3.1, 8 x SATA3, Quad/Dual LANs, 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

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)

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 for ASMB-586 at:

https://advt.ch/searc8f16d

Register your products on our website and get 2 months extra warranty for FREE at:

http://www.register.advantech.com

This manual is for the ASMB-586 series Rev. A1..

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Specifications

Standard Functions

- **CPU:** Intel LGA1151 Xeon E-21xx/22xx and 8th/9th Gen Core i3/i5/i7 series processors
- **BIOS:** AMI 256 Mb SPI BIOS
- **Chipset:** Intel C246
- **System Memory:** Dual channel DDR4 ECC/Non-ECC 2666/2400/2133 MHz unbuffered DIMM, Max. 128 GB

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

- **SATA3 Interface:** 8 x SATA3 6Gb/s ports to support Intel Rapid Storage Technology Enterprise with software RAID 0, 1, 10 & 5. (for Windows only)
- **Serial ports:** Two serial ports onboard, only supports RS-232 (one can be in rear IO 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 3.1:** Supports up to six USB 3.1 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 256MB)
- **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 @ 3.87 A, +5 V @ 4.11 A, +12 V @ 0.63 A, +12 V (8P) @ 6.28 A, +5 Vsb @ 0.09 A
- **Operating temperature:** 0 ~ 60° C (Depends on CPU speed and cooler solution)

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)
BAT2	For optional battery kit
BMC1	BMC connector to support IPMI-1000 module (P/N: IPMI-1000-00A2E)
COM1*, COM2	Serial port: RS-232
CPUFAN0	CPU FAN connector
DVI1	DVI connector
DIMMA0,DIMMA1, DIMMB0,DIMMB1	DDR4 288-pin slot
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 / Reset connector
JFP2	External speaker / HDD LED connector/ SMBus connector
JFP3	Keyboard Lock and Power LED 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 3.1 Gen2 port 1, 2 stack connector LAN2 / USB 3.1 Gen2 port 3, 4 stack connector
LAN3_4	LAN3 & LAN4 connector
LANLED1	LAN LED extension connector
LPC1	Low pin count connector for Advantech TPM and RS232/422/485 module
PCIEX4_SLOT4	PCIe x4 slot (Gen3 x4 link)
PCIEX1_SLOT5	PCIe x1 slot (Gen3 x1 link)
PCIEX16_SLOT6	PCIe x16 slot (Gen3 x16 link)
PCIEX4_SLOT7	PCIe x4 slot (Gen3 x4 link)

Jumpers and Connectors (Cont.)

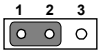
Connector list	
PMBUS1	PMBUS connector to communicate with power supply
SATA0~7	SATA III (6Gb/s)
SPDIF_OUT1	SPDIF Audio output pin header
SYS_LED1	System Information LED Connector
SPI4	BIOS SPI ROM
SYSFAN0,SYSFAN1, SYSFAN2,SYSFAN3	System FAN connector
SPI_CN1	SPI flash card pin header
SMBUS1	SMBus From PCH
SGPIO1, SGPIO2	Serial General Purpose I/O
USB7_8, USB9_10, USB11_12	USB 2.0 Port (Header)
USB13	USB 2.0 Port (USB Type A)
USB5_6	USB 3.1 Gen1 Port (Header)
VOLT1	Voltage Display

*COM1 is directed to the PCB silk screen as COM1 or COM3 but in BIOS it shows as COM1.

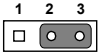
Jumper list	
Label	**Function**
CPUFAN_SEL1, SYSFAN_SEL1	FAN PWM (1-2) / DC mode (2-3)
HDMI_I2C1	For RD debugging
JCMOS1	CMOS clear
JME1	Intel ME Disable Jumper for ME/BIOS update
JWDT1	Watch Dog Reset
JUSB1	Rear window USB 3.1 Gen2 port power source switch between +5 VSB and +5 V
JUSB2	On board USB2.0/3.1 Gen1 port power source switch between +5 VSB and +5 V
JCASE1	Case Open
JPEG1, JPEG2	x16 or x8x8 or x8x4x4 for slot-6
JTHR_SEL1	Selects on board or external thermistor
JPEG3	Default (1-2)/reserve for RD debug (2-3)
JSMB1	For RD debug purpose
PSON1	AT(1-2) / ATX(2-3)

Jumpers and Connectors (Cont.)

JWDT1: Watchdog timer output option	
Closed Pins	Result
1-2	System reset*
2-3	NC
*: Default	

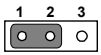


System Reset 1-2 Closed

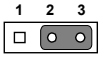


NC 2-3 Closed

PSON1: ATX, AT mode selector	
Closed Pins	Result
1-2	AT Mode
2-3	ATX Mode*
*: Default	

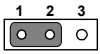


AT Mode 1-2 closed

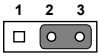


ATX Mode 2-3 closed

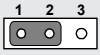
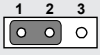
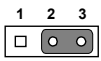
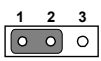
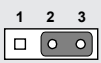
JCMOS1/JME1: CMOS clear/ME update function	
Closed pins	**Result**
1-2	Keep CMOS data/Disable ME update*
2-3	Clear CMOS data/Enable ME update
*: Default	



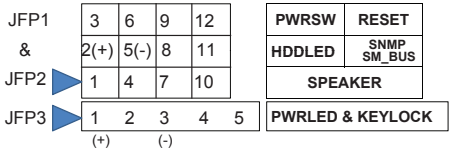
Keep CMOS data/Disable ME update



Clear CMOS data/Enable ME update

PCIEX16_Slot6 Configuration (JPEG2, JPEG1)		
Function	**JPEG1**	**JPEG2**
Slot6 PCIe x16 (Default)	 1-2 closed	 1-2 closed
Slot6 PCIe x8x8	 2-3 closed	 1-2 closed
Slot6 PCIe x8x4x4	 2-3 closed	 2-3 closed

Installation Note



JFP1, JFP2	
Pin.3	#PWR_SW
Pin.6	GND
Pin.9	#RST_SW
Pin.12	GND

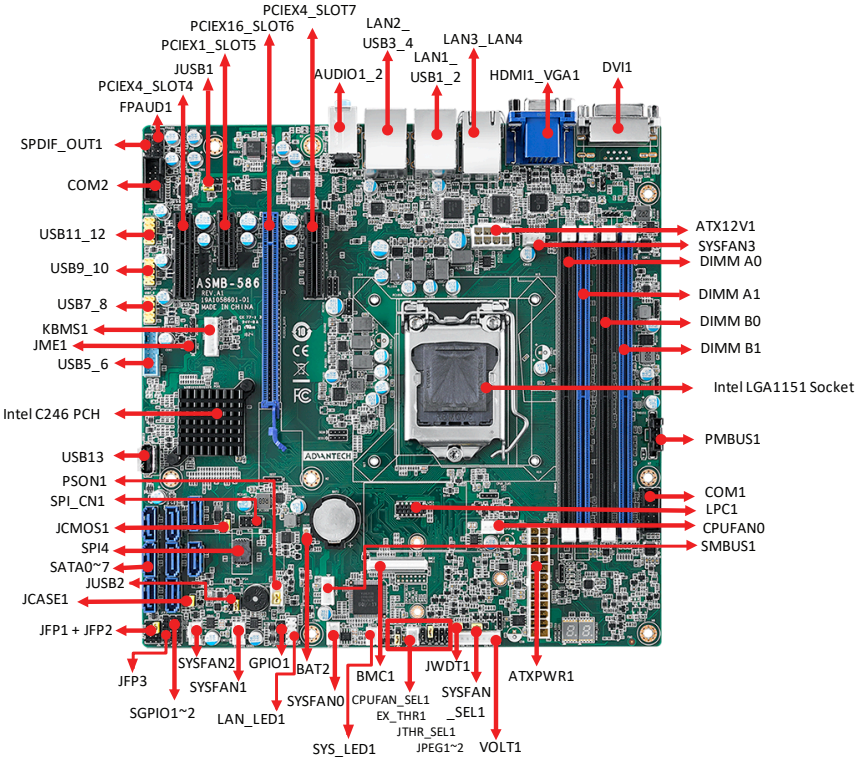
*Power button pin is located in Pin 3 & 6 of front panel connector

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: Jumper and Connector Locations