

ASMB-784 LGA 1150 Intel® Xeon® E3 V3 ATX Server Board with 2 PCIe x16 slots (x8 link) or 1 PCIe x16 slot (x16 link), 3 PCI, USB 3.0, PCIe Gen III, Quad/Dual LANs Startup Manual

Packing List

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

- 1 ASMB-784 Startup Manual
- 1 Driver CD (user's manual is included)
- 2 Serial ATA HDD data cables
- 2 Serial ATA HDD power cables
- 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)

Specifications

Standard SBC Functions

- **CPU:** LGA 1150 Intel® Xeon® E3 v3 processors
 - **BIOS:** AMI 128 Mb SPI BIOS
 - **Chipset:** Intel® C226
 - **System memory:** Dual Channel DDR3 ECC/Non-ECC 1066/1333/1600 MHz unbuffered DIMM, Max. 32 GB
- Note:** Due to the inherent limitations of PC architecture, the system may not fully detect 32 GB RAM when 32 GB RAM is installed.
- **SATA3 Interface:** 6 SATA3 6Gb/s ports to support Intel Matrix Storage with software RAID 0, 1, 10 & 5. (for Windows only)
 - **Serial ports:** Two serial ports, only supports RS-232
 - **Parallel port:** One parallel port, supports SPP/EPP/ECP modes.
 - **Keyboard/Mouse connector:** Supports standard PS/2 keyboard and mouse
 - **Watchdog timer:** 255 level timer intervals (sec)
 - **USB 3.0:** Supports up to four USB 3.0 ports. Two ports are in rear I/O, and two ports are on-board pin header.
 - **USB 2.0:** Supports up to 9 USB 2.0 ports (1* Type-A)
 - **PCIe Slot:** Two PCIe x1 slots and one PCIe x16 link with x16 slot which is able to switch to two x16 slots with x8 link.

Display Interface

- **Chipset:** CPU integrated Intel HD graphics controller
- **Display Memory:** 1 GB maximum shared memory with 2 GB and above system memory installed
- **Resolution:**
 - One VGA port supports RGB up to 1920 x 1200 resolution @ 60 Hz refresh rate
 - Two DVI ports support DVI up to 1920 x 1200 resolution @ 60 Hz refresh rate

Ethernet Interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** LAN1: Intel® I217LM; LAN2/3/4: Intel® I210-AT

Mechanical and Environmental

- **Dimensions (L x W):** 304.8 x 244 mm (12" x 9.6")
- **Power supply voltage:** +3.3 V, +5 V, ±12 V, 5 Vsb
- **Power consumption:** Max. load: +3.3 V @ 1.17 A, +5 V @ 2.30 A, +12 V @ 0.06 A, +12 V (8P) @ 4.33 A, +5 Vsb @ 0.16 A, -12 V @ 0.01 A
- **Operating temperature:** 0 ~ 60° C (Depends on CPU speed and cooler solution)
- **Weight:** 0.8 kg (weight of board)

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

<http://www.advantech.com/applied-computing-systems/>

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

http://support.advantech.com.tw/support/new_default.aspx

This manual is for the ASMB-784 series Rev. A1

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1st Edition,
July 2013

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	Processor power connector(for CPU)
SATA0-5	SATA III (6Gb/s)
USB6_7, USB8_9, USB10_11	USB 2.0 Port 6~11 (Header)
USB12	USB 2.0 Port 12 (USB Type A)
USB2_3	USB 3.0 Port 2 3 (Header)
PCI_SLOT1, PCI_SLOT3, PCI_SLOT5	PCI slot
PCIEX1_SLOT2, PCIEX1_SLOT7	PCIe x1 slot
PCIEX16_SLOT4, PCIEX16_SLOT6	PCIe x16 slots (one x16 link for slot 6 or two x8 link)
DIMMA0,DIMMA1, DIMMB0,DIMMB1	DDR3 slot
CPUFAN0	CPU FAN connector
SYSFAN0,SYSFAN1, SYSFAN2,SYSFAN3	System FAN connector
LAN1_USB4_5, LAN2_USB0_1	LAN1 / USB 2.0 port 4, 5 stack connector LAN2 / USB 3.0 port 0, 1 stack connector
VGA_COM1	VGA+COM connector
DVI1+DVI2	DVI-D connector
KBMS1	PS/2 keyboard and mouse connector
KBMS2	External keyboard and mouse connector(6 pin)
SPI_CN1	SPI flash card pin header
LANLED1, LANLED2	LAN LED extension connector
SMBUS1	SM Bus From PCH
GPIO1	8-bit GPIO header
FPAUD1	Audio front panel header
LPT1	Parallel port
COM2	Serial port: RS-232

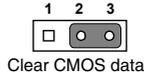
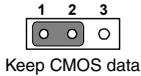
Connector list	
PMBUS1	PMBUS connector to communicate with power supply
LPC1	Low pin count connector for Advantech TPM LPC modules
VOLT1	Voltage Display
SGPIO1	Serial General Purpose I/O
JFP1	Power Switch / Reset connector
JFP2	External speaker / HDD LED connector/ SM Bus connector
JFP3	Keyboard Lock and Power LED Suspend: Fast flash (ATX/ AT) System On: ON (ATX/ AT) System Off: OFF (ATX/AT)
SPDIF_OUT1	SPDIF Audio output pin header
BMC1	BMC connector to support IPMI-1000 module

Jumper list	
Label	Function
JCMOS1	CMOS clear
JME1	Intel ME Disable Jumper for ME/BIOS update
JWDT1	Watch Dog Reset
JUSB1, JUSB2	On board USB port (USB 2, 3, 6 ~ 12) power source switch between +5 VSB and +5 V
CPUFAN_SEL1,SYSFAN_SEL1	FAN PWM / DC mode selection
PSON1	AT(1-2) / ATX(2-3)
JCASE1	Case Open
JPEG1, JPEG2	PCIEX16_SLOT6 PCIe Link switch between one x16 or two x8 or x8, two x4
JKBMS1	PS/2 keyboard and mouse power source switch between +5 VSB and +5 V
JPCICK1	PCI slot clock selection between 33 and 66 MHz
JCASEOP_SW1	Case intrusion trigger setting for JCASE1.

Jumpers and Connectors

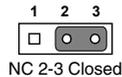
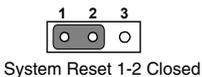
JCMOS1: CMOS clear function

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



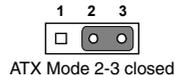
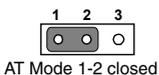
JWDT1: Watchdog timer output option

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



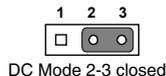
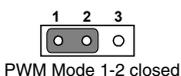
PSON1: ATX, AT mode selector

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



GPUFAN_SEL1: CPU FAN PWM / DC Mode Selection

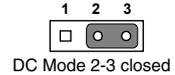
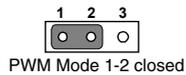
Closed Pins	Result
1-2	PWM Mode*
2-3	DC Mode
*: Default	



Jumpers and Connectors

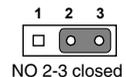
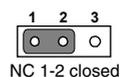
SYSFAN_SEL1: SYSTEM FAN PWM / DC Mode Selection

Closed Pins	Result
1-2	PWM Mode*
2-3	DC Mode
*: Default	



JCASEOP_SW1: Chassis intrusion switch type

Closed Pins	Result
1-2	NC* (Normal Close)
2-3	NO (Normal Open)
*: Default	



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.

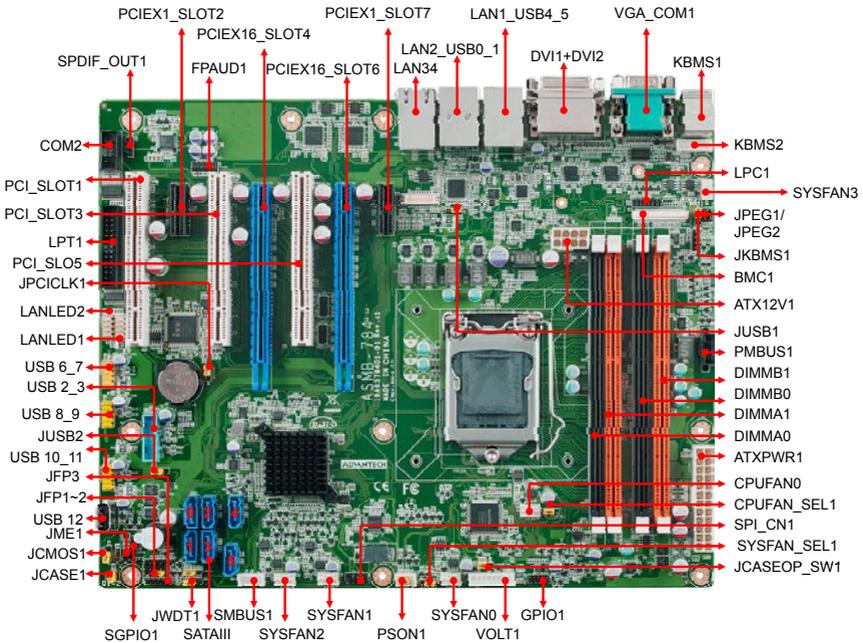
The computer is supplied with a battery-powered realtime clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.

Declaration of Conformity

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



JFP1	3	6	9	12	PWRSW	RESET
&	2	5	8	11		HDDLED
JPF2	1	4	7	10	SPEAKER	
JFP3	1	2	3	4	5	PWRLED & KEYLOCK

Board Layout: Jumper and Connector Locations