

AIMB-784 LGA1150 Intel® Core™ i7/i5/i3 ATX with Dual DVI/VGA, USB 3.0, DDR3 and SATA III Startup Manual

Packing List

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

- 1 AIMB-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: www.adobe.com/Products/acrobat/readstep2.html (Acrobat is a trademark of Adobe)

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

<http://www.advantech.com>

<http://www.advantech.com/eplatform>

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

<http://www.advantech.com/support>

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

Part No. 2006078410

Printed in China

1st Edition

May 2013

Specifications

Standard Functions

- **CPU:** LGA1150 Intel® Core™ i7/i5/i3
- **BIOS:** AMI 128 Mb SPI BIOS
- **Chipset:** Intel® Q87 chipset
- **System memory:** Up to 32 GB with four 240-pin DIMM sockets. Supports dual channel non-ECC DDR3 1333/1600 SDRAM.

Note: Due to the inherent limitations of PC architecture, the system may not fully detect 32 GB RAM when 32 GB RAM is installed.

- **SATA interface:** Six on-board Serial ATAIII connectors support data transmission rate up to 600 MB/s. All six SATAIII ports support Advanced Host Controller Interface (AHCI) technology.
- **LPC interface:** Advantech-designed LPC connector supports TPM module
- **Serial ports:** Six serial ports: COM1, COM2 and COM4 ~ 6 are RS-232; COM3 is RS-232/422/485 with BIOS menu options.
- **Parallel port:** One parallel port, which supports SPP/EPP/ECP modes.
- **Keyboard/mouse connector:** Supports standard PS/2 keyboard and mouse.
- **Watchdog timer:** 255 sec timer level intervals
- **USB 3.0/2.0:** Thirteen USB ports: USB1/2/13/14 are USB3.0; others are USB2.0

Graphic Interface

- **Chipset:** CPU integrated graphics controller
- **Display Memory:** 1 GB maximum shared memory with 2 GB and above system memory installed
- **Resolution:** Supports DVI up to 1920 x 2000 resolution @ 60 Hz refresh rate
Supports VGA up to 2048 x 1536 resolution @ 60 Hz refresh rate

Ethernet interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** LAN1: Intel® I217LM; LAN2: Intel® I211AT

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:**
Intel Core i7 4770S 3.1 GHz; DDR3 8G x 4
Maximum: +5 V at 2.07 A, +3.3 V at 1.02 A, +12 V at 4.17 A, +5 Vsb at 0.55 A
- **Operating temperature:** 0 ~ 60° C (depending on CPU)
- **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 / Jumper List	
Label	Function
JWDT1	Watchdog Reset
LPC1	Low pin count connector for Advantech designed LPC modules
LPT1	Parallel port supports SPP/ EPP/ECP mode
LAN1_USB910	LAN1 / USB port 9, 10
LAN2_USB12	LAN2 / USB port 1, 2
VGA1	VGA connector
DVI1+DVI2	Dual DVI-D connectors
COM1 COM2 COM4 COM5 COM6	Serial port: RS-232
COM3	Serial port: COM3; RS-232/422/485 (9-pin connector)
KBMS1	PS/2 Keyboard and Mouse connector
KBMS2	External Keyboard and Mouse PS/2 connector (6-pin)
JIR1	Infrared connector
JFP3	Keyboard Lock and Power/Sleep LED Suspend: Fast flash (ATX/ AT) System On: ON (ATX/ AT) System Off: OFF (AT/ATX)
JFP2	External speaker / HDD LED connector SNMP / SM Bus connector
JFP1	Power Switch / Reset connector
JCASE1	Case Open connector
PSON1	AT(1-2) / ATX(2-3) mode selector
VOLT1	Alarm Board Power connector
JOBS1	Close: Enable OBS Alarm Open: Disable OBS Alarm
CPUFAN1	CPU FAN connector (4-pin)
SYSFAN1	System FAN power connector (3-pin)
SYSFAN2	System FAN power connector (3-pin)
LANLED1	Front Panel LAN indicator connector
AUDIO1	Audio connector (Line-out, Mic-In)
FPAUD1	Front Panel Audio pin header

USB3	USB port 3 (Type A)
USB56	USB port 5, 6
USB78	USB port 7, 8
USB1112	USB port 11,12
USB1314	USB port 13,14
SATA1	Serial ATA1
SATA2	Serial ATA2
SATA3	Serial ATA3
SATA4	Serial ATA4
SATA5	Serial ATA5
SATA6	Serial ATA6
ATX12V1	ATX 12V Auxiliary power connector (for CPU)
EATXPWR1	ATX 24 Pin Main power connector (for System)
SPDIF_OUT1	Digital audio output pin header
SPI_CN1	SPI flash card pin header
JCMOS1	CMOS clear
JME1	Intel ME Enable/Disable jumper
JPCICLK1	PCI Clock selection (1-2):66MHz (2-3):33MHz (default)
JUSB_1	USB power source switch between +5V and +5V_DUAL for Rear USB ports
JUSB_2	USB power source switch between +5V and +5V_DUAL for On Board USB ports
GPIO1	8 bit digital I/O connector
SMBUS1	SMBus connector

JCMOS1: CMOS and ME clear function

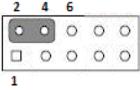
Pins	Result
1-2	Keep CMOS data*
2-3	Clear CMOS data
* Default	



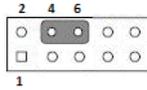
Jumpers and Connectors

JWDT1: Watchdog timer output option

Closed Pins	Result
2-4	NC
4-6	System reset*
* Default	



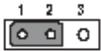
NC 2-4 Closed



*System Reset 4-6 Closed

PSO1: ATX, AT mode selector

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



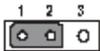
AT Mode 1-2 closed



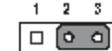
*ATX Mode 2-3 closed

JUSB

Closed Pins	Result
1-2	*USB +5V_DUAL Power
2-3	USB +5V Power
* Default	



*USB +5V_DUAL Power



USB +5V Power

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.

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.



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

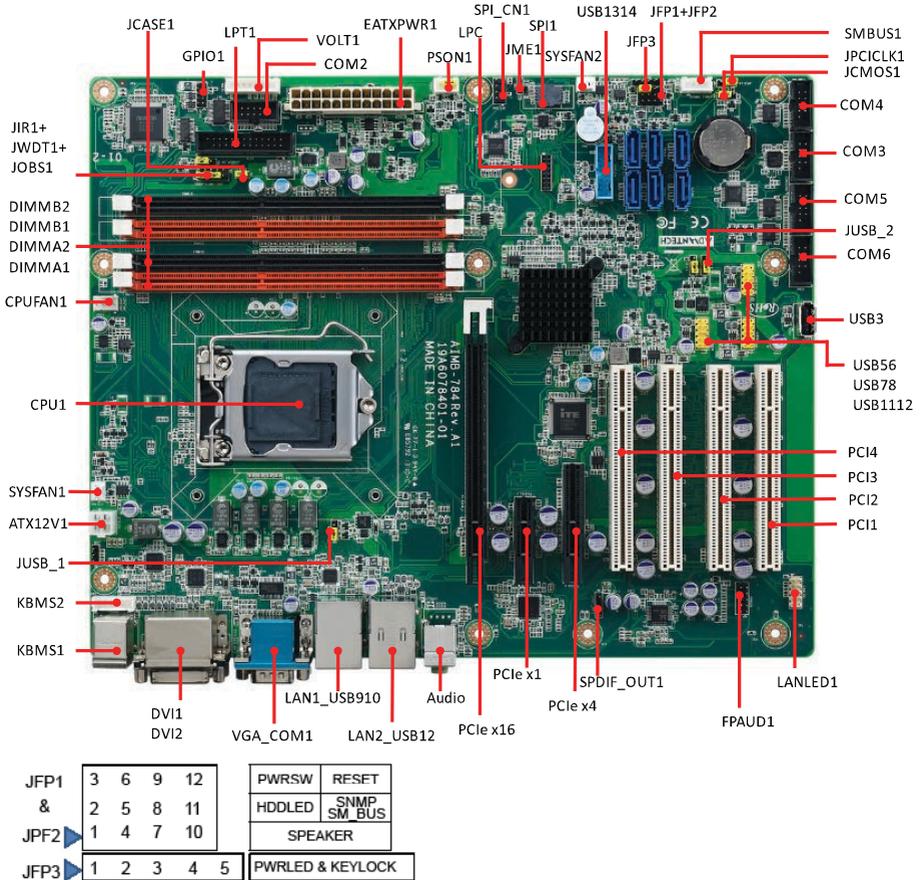


Figure 1: Board Layout: Jumper and Connector Locations