# ADVANTECH

# AIMB-780 Intel® Core™ i7/i5/i3/Pentium®/Xeon® ATX Motherboard with DVI/VGA, 4 COM, Dual LAN, DDR3 Startup Manual

## Packing List

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

- 1 AIMB-780 Startup Manual
- 1 Driver CD (user's manual is included)
- 2 Serial ATA HDD data cables
- 2 Serial ATA HDD power cables
- 1 COM Port cables (2 to 2)
- 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-780 series Rev. A1

## Specifications

### Standard SBC Functions

- **CPU:** LGA1156 Intel® Core™ i7/i5/i3/Pentium/Xeon
- **BIOS:** AMI 64 Mb SPI BIOS
- **Chipset:** Intel® Q57 (QG2 SKU) and 3450 (WG2 SKU) Chipset
- **System memory:** Up to 16 GB four 240-pin DIMM sockets. Supports dual channel DDR3 800/1066/1333 SDRAM (Only WG2 SKU supports ECC memory)

Note: Due to the inherent limitations of PC architecture, the system may not fully detect 16 GB RAM when 16 GB RAM is installed.

- **SATA2 Interface:** Six on-board Serial ATA2 connectors with a data transmission rate of up to 300 MB/s supporting Advanced Host Controller Interface (AHCI) technology
- **FDD interface:** Supports one FDD
- **Serial ports:** Four serial ports, COM1, COM2 and COM4 are RS-232; COM3 is RS-232/422/485 with auto flow control support
- **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
- **USB 2.0:** Supports up to fourteen USB 2.0 ports

### VGA Interface

- **Chipset:** Only Core i5 6xx; Core i3 and Pentium CPUs with dual core are embedded with integrated graphics
- **Display Memory:** 1 GB maximum shared memory with 2 GB and above system memory installed
- **Resolution:** Supports DVI up to resolution 1920 x 1200 @ 60 Hz refresh rate Supports RGB up to resolution 2048 x 1536 @ 75 Hz refresh rate

### Ethernet interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** LAN1: Intel 82578DM; LAN2: Intel 82583V

### 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:** Maximum: +5 V at 4.23 A, +3.3 V at 0.96 A, +12 V at 3.93 A, +5 Vsb at 1.18 A, -12 V at 0.01 A (Intel i5 660 3.3 GHz processor and disable C state , 4 x 2 GB DDR3 Memory)
- **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 |
| FDD1 | FDD connector |
| LPT1 | Parallel port, Parallel port x 1, supports SPP/ EPP/ECP mode |
| LAN1_USB12 | LAN1 / USB port 1, 2 |
| LAN2_USB34 | LAN2 / USB port 3, 4 |
| VGA1 | VGA connector |
| DVI1 | DVI Connector |
| COM1 COM2 COM4 | Serial port: RS-232 |
| COM3 | Serial port: COM3; RS-232/422/485 (9-pin connector) |
| JSETCOM3 | COM3 RS-232/422/485 Jumper Setting |
| KBMS1 | PS/2 Keyboard and Mouse connector |
| KBMS2 | External Keyboard connector (6-pin) |
| JIR1 | Infrared connector |
| JFP3 | Keyboard Lock and Power LED Suspend: Fast flash (ATX/ AT) System On: ON (ATX/ AT) System Off: OFF (AT) System Off: Slow flash (ATX) |
| JFP2 | External speaker / SATA HDD LED connector / SM Bus connector |
| JFP1 | Power Switch / Reset connector |
| JCASE1 | Case Open |
| PSON1 | AT(1-2) / ATX(2-3) |
| VOLT1 | Voltage Display |
| JOBS1 | Close: Enable OBS Alarm Open: Disable OBS Alarm |
| CPUFAN1 | CPU FAN connector (4-pin) |
| SYSFAN1 | System FAN connector (4-pin) |
| SYYFAN2 | System FAN connector (4-pin) |
| LANLED1 | LAN1/2 LED extension connector |
| AUDIO1 | Audio connector |
| FPAUD1 | HD Audio Front Panel Pin Header |
| USB56 | USB port 5, 6 |

# Jumpers and Connectors

| | |
|---|---|
| USB78 | USB port 7, 8 |
| USB910 | USB port 9, 10 |
| 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 | SPDIF Audio out pin header |
| SPI_CN1 | SPI flash card pin header |
| JCMOS1 | CMOS and ME clear |

| JCMOS1: CMOS and ME clear function | |
|---|---|
| Pins | Result |
| 1-2 | Keep CMOS and ME data* |
| 2-3 | Clear CMOS and ME data |
| *: Default | |



Keep CMOS data          Clear CMOS data
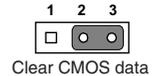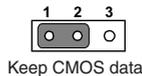
# Jumpers and Connectors

## JSETCOM3: COM3 RS-232/422/485 Mode Selector

Users can use JSETCOM3 to select RS-232, RS-422 or RS-485 mode for COM3. The default setting is RS-232.

**RS232**   **RS422**   **RS485**
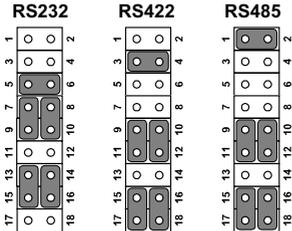


| JWDT1: Watchdog timer output option | |
|---|---|
| Closed Pins | Result |
| 1-2 | NC |
| 2-3 | System reset* |
| *: Default | |



IRQ11 1-2 Closed          System Reset 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

# 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
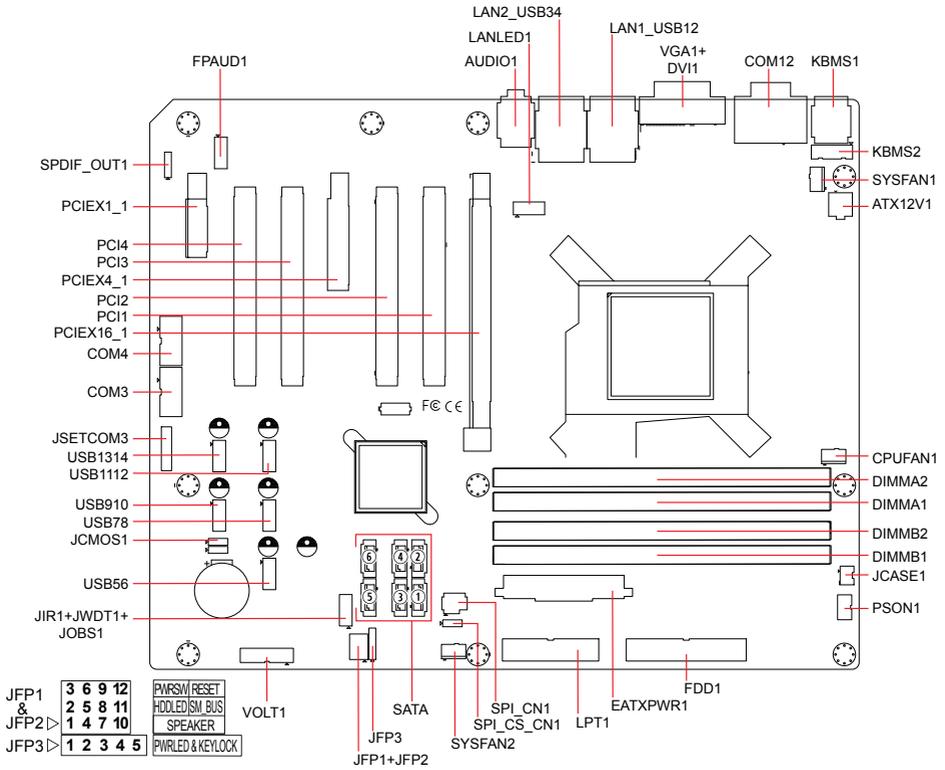


*Board Layout: Jumper and Connector Locations*