

AIMB-706 LGA1151 Intel® Core™ i7/i5/i3 ATX with Dual Display, SATA 3.0, USB 3.1, DDR4 Startup Manual

Packing List

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

- 1 AIMB-706 Startup Manual
- 2 Serial ATA HDD data cables
- 1 Serial ATA HDD power cables
- 1 I/O port bracket

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)

Specifications

Standard Functions

- **CPU:** LGA1151 socket supporting 8th generation Intel® Core™ i7/i5/i3/Pentium/Celeron processor.
- Note:** Intel 8th generation processors only support Windows 10 (64-bit).
- **BIOS:** AMI 128 Mbit SPI BIOS.
- **Chipset:** Intel® H310 PCH.

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For technical support and service, please visit our support website for AIMB-706 at:

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This manual is for the AIMB-706 series Rev. A1.

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Specifications (Cont.)

- **System Memory:** Up to 32 GB in two 288-pin DIMM sockets supporting dual-channel DDR4 2400/2666 SDRAM. AIMB-706 supports non-ECC unbuffered DIMMs and does not support any memory configuration that mixes non-ECC with ECC unbuffered DIMMs.
- 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:** Four on-board Serial ATA 3.0 connectors support data transmission rates up to 600 MB/s. All four SATA 3.0 ports support Advanced Host Controller Interface (AHCI) technology.
- **PCIe and PCI Slot:** 1 PCIe x16 expansion slot, 1 PCIe x4 expansion slot, 5 PCI slots 32-bit/33 MHz PCI 2.2 compliant.
- **LPC Interface:** Advantech-designed LPC connector supports TPM module.
- **Serial Port:** Up to six serial ports: COMD1, COMD2 and COM4 ~ 6 are RS-232; COM3 is RS-232/422/485 with jumper and BIOS menu options.
- **Parallel Port:** One parallel port, which supports SPP/EPP/ECP mode.
- **Keyboard/Mouse Connector:** Supports standard PS/2 keyboard and mouse.
- **Watchdog Timer:** 255 sec timer level intervals.
- **USB 3.1/2.0:** 4 USB 3.1 Gen 1 ports (2 rear, 2 via header), 5 USB 2.0 ports (2 rear, 2 via header, 1 internal Type-A).

Graphic Interface

- **Chipset:** CPU integrated graphics controller.
- **Display Memory:** 1 GB maximum shared memory with 2 GB and above system memory installed.
- **DVI-D:** Resolution up to 1920 x 1200 @ 60 Hz refresh rate.
- **VGA:** Resolution up to 1920 x 1200 @ 60 Hz refresh rate.

Ethernet Interface

- **Interface:** 10/100/1000 Mbps.
- **Controller:** LAN1: Intel® I219-V; LAN2 (G2 sku only): Intel® I211-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:**
Intel Core i7-8700 3.2 GHz; DDR4 16GB x 2
Maximum: +3.3 V at 2.74 A, +5 V at 3.5 A, +12 V at 5.92 A, +5 Vsb at 0.05 A, -5 V at 0.01 A, -12 V at 0.08 A
- **Operating Temperature:** 0 ~ 60° C (depending on CPU)
- **Weight of Board:** 0.7 kg (1.54 lb)

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
LPT1	Parallel port, supporting SPP/EPP/ECP mode
LAN1	LAN1
LAN2	LAN2 (G2 sku only)
USB3C1	USB 3.1 Gen 1 port 1, 2
USB3H1	USB 3.1 Gen 1 port 1, 2 (20-pin header)
USB2C1	USB 2.0 port 1, 2
USB2A1	USB 2.0 port (internal Type-A)
USB2H1	USB 2.0 port 1, 2 (10-pin header)
VGA1+DV11	VGA connector / DVI-D connector (DVI1 for G2 sku only)
COMD1+COMD2	Serial port: RS-232 (DB-9 connector)
COM4 ~ COM6	Serial port: RS-232 (9-pin header, G2 sku only)
COM3	Serial port: RS-232/422/485 (9-pin header, G2 sku only)
KBMS1	PS/2 keyboard and mouse connector
KBMS2	External keyboard and mouse connector (6-pin header)
CPUFAN1	CPU fan connector (4-pin)
SYSFAN1 ~ SYSFAN3	System fan connector (4-pin)
JFP3	Keyboard lock and power LED Suspend: fast flash (ATX/AT) System on: on (ATX/AT) System off: off (AT/ATX)
JFP2	External speaker / HDD LED connector / SMBus connector
JFP1	Power switch / reset connector
AUDIO1+AUDIO2	Audio connector (Line Out, Mic In)
VOLT1	Alarm board power connector
JCASE1	Case open connector
LANLED1	Front panel LAN indicator connector
SATA0 ~ SATA3	Serial ATA 3.0 port
PCI1	PCI slot
PCI2	PCI slot
PCI3	PCI slot
PCI4	PCI slot

Jumpers and Connectors (Cont.)

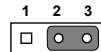
PCI5	PCI slot
PCIE1	PCIe x16 slot
PCIE2	PCIe x4 slot
DIMMA1	Channel A DIMM1
DIMMB1	Channel B DIMM1
ATX12V1	ATX 12 V auxiliary power connector (for CPU)
EATXPWR1	ATX 24-pin main power connector (for system)
SPI_CN1	Update BIOS pin header
SPDIF_OUT1	SPDIF audio out pin header
GPIO1	8 bit GPIO from super I/O
SMBUS1	SMBus connector from PCH
FPAUD1	Front panel audio connector
LPC1	Low pin count connector
JCMOS1	CMOS clear
JME1	Intel ME update
JWDT1	Watchdog timer reset
JOBS1	Hardware monitor alarm
PSON1	AT/ATX mode selection
JUSB_1	USB power source switch between +5 V and +5 V_ DUAL for rear USB ports
JUSB_2	USB power source switch between +5 V and +5 V_ DUAL for onboard USB ports
JSETCOM3	COM3 RS-232/422/485 jumper setting
JT1, JR1	COM3 RS-422/485 termination resistor

JCMOS1: CMOS clear JME1: Intel ME update

Pins	Result
1-2	*Keep CMOS data *Enable ME update
2-3	Clear CMOS data Disable ME update
* Default	



*Keep CMOS data
*Enable ME update

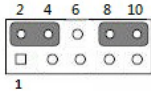


Clear CMOS data
Disable ME update

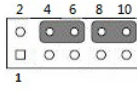
Jumpers and Connectors (Cont.)

JWDT1+JOBS1: Watchdog timer output and OBS alarm

Closed Pins	Result
2-4, 8-10	Watchdog timer disable (2-4) OBS beep (8-10)
4-6, 8-10	*Watchdog timer reset (4-6) OBS beep (8-10)
* Default	



Watchdog timer disable (2-4) *Watchdog timer reset (4-6)
OBS beep (8-10) OBS beep (8-10)



PSO1: ATX/AT mode selection

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



AT mode



*ATX mode

JUSB1, JUSB2: USB power source switch between +5V and +5V_DUAL

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



*USB +5V_DUAL power

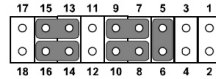


USB +5V power

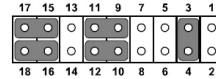
Jumpers and Connectors (Cont.)

JSETCOM3: COM3 RS-232/422/485 jumper setting

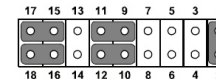
Closed Pins	Result
5-6, 7-9, 8-10, 13-15, 14-16	*RS-232
3-4, 9-11, 10-12, 15-17, 16-18	RS-422
1-2, 9-11, 10-12, 15-17, 16-18	RS-485
* Default	



*RS-232



RS-422



RS-485

Declaration of Conformity

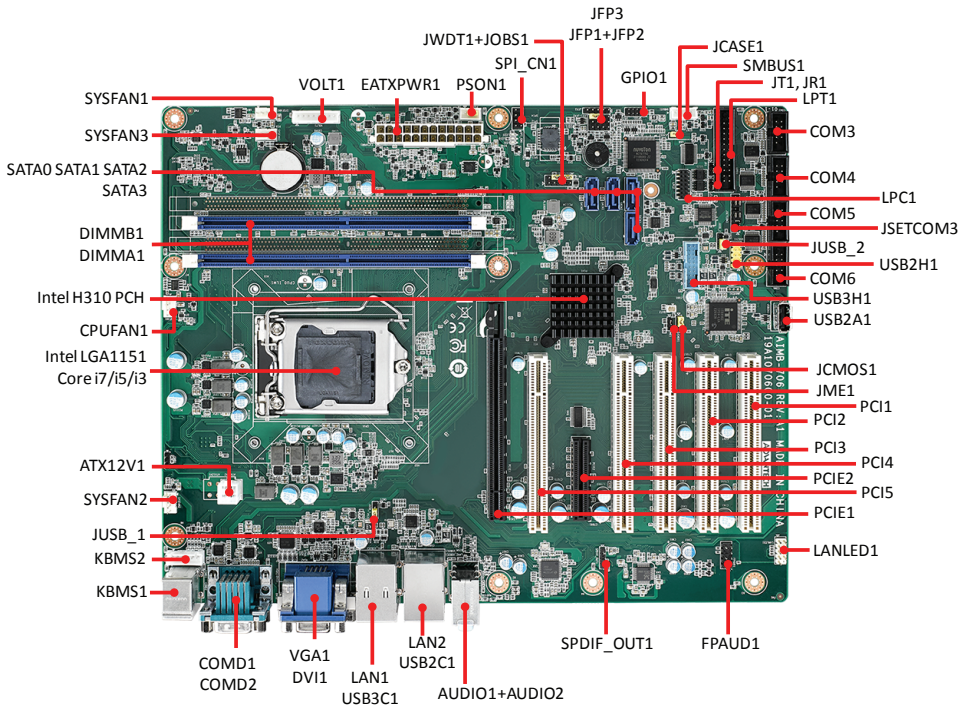
This device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

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.



Board Layout



JFP1	3	6	9	12	PWRSW	RESET
&	2	5	8	11	HDDLED	SNMP SM BUS
JFP2	1	4	7	10	SPEAKER	
JFP3	1	2	3	4	PWRLD & KEYLOCK	

Figure 1: Board Layout: Jumper and Connector Locations