

## AIMB-707 LGA1200 Intel® Core™ i9/i7/i5/i3 ATX with Dual Display, M.2, USB 3.2, and DDR4 Startup Manual

### Packing List

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

- 1x AIMB-707 Startup Manual
- 2x Serial ATA HDD data cables
- 1x I/O port bracket

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

### Specifications

#### Standard Functions

- **CPU:** LGA1200 socket supporting 10th Gen. Intel® Core™ i9/i7/i5/i3 and Pentium™/Celeron™ processor.
- **BIOS:** AMI 128 Mbit SPI BIOS.
- **Chipset:** Intel® H420E PCH.

**Note:** Legacy platforms are not supported.

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This manual is for the AIMB-707 series Rev. A1.

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### Specifications (Cont.)

- **System memory:** Up to 64 GB in two 288-pin DIMM sockets supporting dual-channel DDR4 2400/2666/2933 SDRAM. AIMB-707 supports non-ECC unbuffered DIMMs and does not support any memory configuration that mixes non-ECC with ECC unbuffered DIMMs.
- **M.2 socket:** One M.2 socket supports up to PCIe x2 M-key 2280 type storage devices.
- **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:** One PCIe x16 expansion slot, 2x PCIe x4 expansion slots (x1 link), 4x PCI slots 32-bit/33 MHz PCI 2.2 compliant.
- **USB 3.2/2.0:** Six USB 3.2 Gen 1 ports (6 rear), 4x USB 2.0 ports (2x via header, 2x internal Type-A).
- **LPC interface:** Advantech-designed LPC connector supports TPM module and COM port extension modules.
- **Serial port:** Up to 6x serial ports: COMD1, COMD2 and COM 4 ~ 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:** The motherboard is not equipped with rear PS/2 connector for keyboard/mouse. A 6-pin onboard header is supported for an optional PS/2 keyboard/mouse cable.
- **Watchdog timer:** 255 sec timer level intervals.

#### Graphic Interface

- **Chipset:** CPU integrated graphics controller.
- **Display memory:** One GB maximum shared memory with 2x 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 in).
- **Power supply voltage:** +3.3 V, +5 V, ±12 V, +5 Vsb.
- **Power consumption:**  
Intel® Core™ i9-10900E; DDR4 32 GB x 2.  
Maximum: +3.3 V at 0.72 A, +5 V at 1.29 A, +12 V at 6.5 A, +5 Vsb at 0.11 A, -12 V at 0.04 A.
- **Operating temperature:** 0 ~ 60 °C/32 ~ 140 °F (depending on the 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, USB3C3	4x USB 3.2 Gen 1 port
USB3C2	2x USB 3.2 Gen 1 port (G2 sku only)
USB2A1	USB 2.0 internal Type-A port
USB2A2	USB 2.0 internal Type-A port (G2 sku only)
USB2H1	2x USB 2.0 port (10-pin header)
VGA1+DV11	VGA connector / DVI-D connector (DV11 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	External keyboard/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 (ATX/AT)
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
NVME1	M.2 2280 M-key socket (G2 sku only)
SATA0 ~ SATA3	Serial ATA 3.0 port
PCI1 ~ PCI4	PCI slot
PCIE1	PCIe x16 slot
PCIE2 ~ PCIE3	PCIe x4 slot (x1 link)

## Jumpers and Connectors (Cont.)

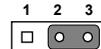
DIMMA1	Channel A DIMM1
DIMMB1	Channel B DIMM1
ATX12V1	ATX 12 V auxiliary power connector (for CPU)
EATXPWR1	ATX 24-pin main power connector (for system)
SPDIF_OUT1	SPDIF audio out pin header
GPIO1	8 bit GPIO from super I/O
SMBUS1	SMBus connector from PCH
FPAUD1	Front panel audio connector
LPC1	Low pin count connector

### JCMOS1: CMOS clear JME1: Intel ME update

Closed Pins	Result
1-2	*Keep CMOS data *ME normal mode
2-3	Clear CMOS data ME recovery mode
* Default	



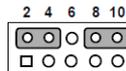
\*Keep CMOS data  
\*ME normal mode



Clear CMOS data  
ME recovery mode

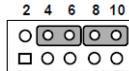
### JWDT1+JOBS1: Watchdog timer output and OBS alarm

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	



1

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



1

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

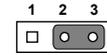
## Jumpers and Connectors (Cont.)

### PSON1: ATX/AT mode selection

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



AT mode



\*ATX mode

### JUSB\_1 (rear USB), JUSB\_2 (onboard USB): USB power source switch between +5V and +5V\_DUAL

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



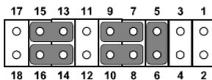
\*USB +5 V\_DUAL power



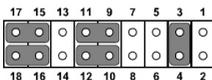
USB +5 V power

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

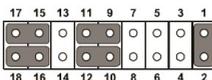
Closed Pins	Result
5-6, 7-9, 8-10, 13-15, 14-16	*RS-232
3-4, 9-11, 10-12, 15-17, 16-18	RS-422
1-2, 9-11, 10-12, 15-17, 16-18	RS-485
* Default	



\*RS-232



RS-422



RS-485

## Jumpers and Connectors (Cont.)

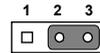
**Note:** BIOS setting changes are necessary if RS-422 or RS-485 is selected. Please refer to Chapter 3 of user manual for further settings.

### JT1(TX signal), JR1(RX signal): COM3 RS-422/485 termination resistor

Closed Pins	Result
1-2	Disable termination
2-3	*Enable termination
* Default	



Disable termination



\*Enable termination

### JFV1: VGA dummy load setting

Closed Pins	Result
1-2	Enable VGA dummy load
2-3	*Disable VGA dummy load
* Default	



Enable VGA dummy load



\*Disable VGA dummy load

**Note:** We recommend leaving this function disabled if you use DVI/DP as your main display.

### SMB1 (clock), SMB2 (data): PCIe SMBus connection setting

Closed Pins	Result
1-2	*Enable PCIe SMBus connection
2-3	Disable PCIe SMBus connection
* Default	



\*Enable PCIe SMBus connection



Disable PCIe SMBus connection

**Note:** Both SMB1 and SMB2 jumpers should be switched to the same setting, either 1-2 closed or 2-3 closed.

## Declaration of Conformity

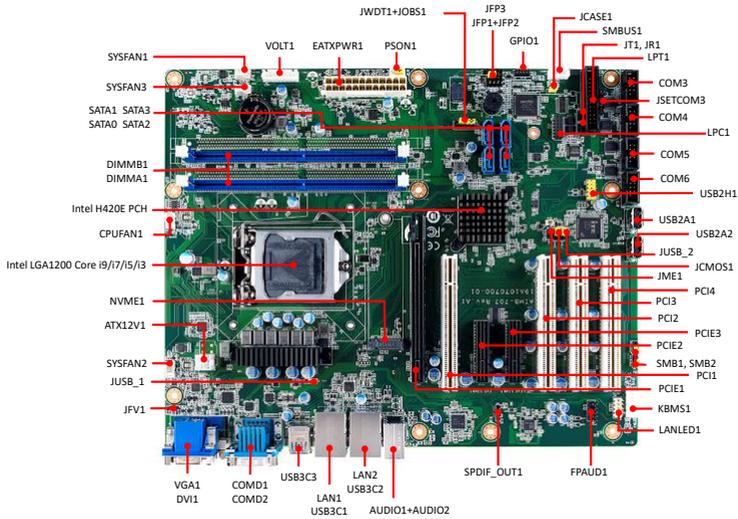
This device complies with the requirements in Part 15 of the FCC rules. Operation is subject to the following two conditions:

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
JFP2	1	4	7	10		SM_BUS
JFP3	1	2	3	4	5	SPEAKER
						PWRLED & KEYLOCK

**Figure 1: Board Layout: Jumper and Connector Locations**

## Order Information

Part Number	Chipset	Display	USB 3.2 Gen 1	USB 2.0	COM	GbE LAN	M.2
AIMB-707G2-00A1	H420E	VGA + DVI	6	4	6	2	1
AIMB-707VG-00A1	H420E	VGA	4	3	2	1	0