AIMB-723 LGA1718 AMD Ryzen™ 7000 ATX Motherboard with DP/HDMI/VGA, DDR5, USB 3.2, M.2 Startup Manual

Packing List

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

- 1 x AIMB-723 motherboard
- 1 x AIMB-723 startup manual
- 2 x Serial ATA HDD data cables
- 1 x 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:** LGA1718 socket supporting AMD Ryzen™ 7000 processors.
- **BIOS:** AMI 256 Mbit SPI BIOS
- **Chipset:** AMD PRO 665 Chipset

Note: Legacy platforms are not supported.

- **System memory:** Up to 128 GB in four 288-pin DIMM sockets, supporting dual-channel DDR5 5600 SDRAM. AIMB-723 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 Gen 4 M-Key 2280 type storage devices.

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

http://www.advantech.com

For technical support and service, please visit our support website for AIMB-723 at:

http://advt.ch/aimb723spt

Register your products on our website and get 2 months extra warranty for free at:

http://www.register.advantech.com

This manual is for the AIMB-723 series Rev. A1, and all specifications are subject to the datasheet on the official website. The information in this manual is subject to change without notice.

Part No. 2041072300 1st Edition
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Specifications (Cont.)

- **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 slots:** One PCIe x16 Gen 4 expansion slot, Four PCIe x4 Gen 4 expansion slots (One x2 Gen 4 link), One PCI slot 32-bit/33 MHz PCI 2.2 compliant.
- **USB 3.2/2.0:** Four USB 3.2 Gen 2 ports, Four USB 3.2 Gen 1 ports (two on rear, two via header), Four USB 2.0 ports (two via header, two internal Type A).
- **Serial port:** Six serial ports: COM1, COM2 and COM4 ~ 6 are RS-232; COM3 is RS-232/422/485 with jumper and BIOS menu options.
- **SPI interface:** Advantech-designed SPI connector supports optional dTPM 2.0 module.
- **Watchdog timer:** 255 timer level intervals.

Graphics Interface

- **GPU:** CPU integrated AMD Radeon™ Graphics.
- **Display memory:** Shared system memory is subject to the OS.
- **DisplayPort:** Resolution up to 3840 x 2160 @ 60 Hz refresh rate.
- **HDMI:** Resolution up to 3840 x 2160 @ 60 Hz refresh rate.
- **VGA:** Resolution up to 1920 x 1200 @ 60 Hz refresh rate.

Ethernet Interface

- **Interface:** 10/100/1000/2500 Mbps.
- **Controller:** LAN1: Intel® I226-V; LAN2: Intel® I226-V.

Mechanical and Environmental

- **Dimensions (L x W):** 304.8 x 244 mm (12” x 9.6”)
- **Power consumption:** AMD Ryzen™ 7 7700X 105W; DDR5 32 GB x 4
  Maximum: +3.3 V at 2.72 A, +5 V at 1.28 A, +12 V at 1.33 A, -12 V at 0.08 A, -5 V at 0.03 A
- **Operating temperature:** 0 ~ 60°C (depending on CPU loading and thermal solution)
- **Weight of board:** 0.8 kg (1.71 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**
PCIe1	PCIe x16 slot (Gen4)
NVME1	M.2 M key 2280 slot (via PCIe x2 Gen4)
PCIe2	PCIe x1 slot (Gen3)
PCIe3	PCIe x4 slot (Gen4)
PCIe4	PCIe x4 slot (Gen4)
PCIe5	PCIe x4 slot (x2 link, Gen4)
PCI1	PCI slot
AUDIO1~AUDIO2	AUDIO connectors (Line-Out & MIC-In)
LAN2_USB3C3	GbE LAN port & USB 3.2 Gen 1 port *2
LAN2_USB3C2	GbE LAN port & USB 3.2 Gen 2 port *2
HDMI1_USB3C1	USB 3.2 Gen 2 port *2 & HDMI connector
DP1	DP connector
COM2	Serial port: RS-232 (DB-9 connector)
VGA1	VGA connector
COM1	Serial port: RS-232 (DB-9 connector)
USB3H1	USB 3.2 Gen1 port *2 (20-pin header)
USB2H1	USB 2.0 port *2 (10-pin header)
USB2A1~USB2A2	Internal USB 2.0 Type-A port *2
COM3	Serial port: RS-232/422/485 (9-pin header)
COM4~COM6	Serial port: RS-232 (9-pin header)
ATX12V1, ATX12V2	ATX 12 V auxiliary power connector (for CPU)
EATXPWR1	ATX 24-pin main power connector (for system)
SATA0~3	Serial ATA 3.0 port
SYSFAN1~3	System fan connector (4-pin)
CPUFAN1	CPU fan connector (4-pin)
VOLT1	LED board power connector
GPIO1	8-bit GPIO connector from super I/O

Jumpers and Connectors (Cont.)

SPI_TPM1	SPI (Serial Peripheral Interface) connector for Advantech dTPM 2.0 module.
SMBUS1	SMBus connector from PCH
LANLED1	Front panel LAN indicator connector
JCASE1	Case open connector

JCMOS1: CMOS clear data	
Closed Pins	**Result**
1-2	*Keep CMOS data
2-3	Clear CMOS data
* Default	

*Keep CMOS data

Clear CMOS data

PSON1: ATX/AT mode selection	
Closed Pins	**Result**
1-2	AT mode
2-3	*ATX mode
* Default	

AT mode

*ATX mode

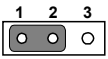
JPCICLK1: PCI clock selection	
Closed Pins	**Result**
1-2	*33/66 MHz autodetected
2-3	33 MHz
* Default	

*33/66 MHz autodetected

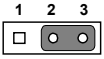
33 MHz

Jumpers and Connectors (Cont.)

SMB1 (clock), SMB2 (data): PCIe SMBus connection setting for PCIE1 slots SMB3 (clock), SMB4 (data): PCIe SMBus connection setting for PCIE2~PCIE5 slots	
Closed Pins	**Result**
1-2	*Enable PCIe SMBus connection
2-3	Disable PCIe SMBus connection
* Default	



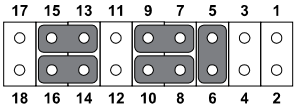
*Enable PCIe SMBus connection

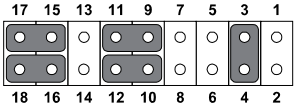


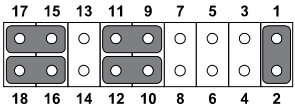
Disable PCIe SMBus connection

Note: SMB1+SMB2 or SMB3+SMB4 jumpers should be switched to the same setting, either 1-2 closed or 2-3 closed.

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



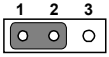




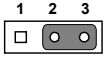
Note: BIOS setting change is necessary if RS-422 or RS-485 is selected. Please refer to the User Manual Chapter 3 for further settings information.

Jumpers and Connectors (Cont.)

JT1 (TX signal), JR1 (RX signal): COM3 RS-422/485 termination resistor	
Closed Pins	**Result**
1-2	Disable termination
2-3	*Enable termination
* Default	

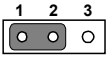


Disable termination

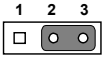


*Enable termination

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

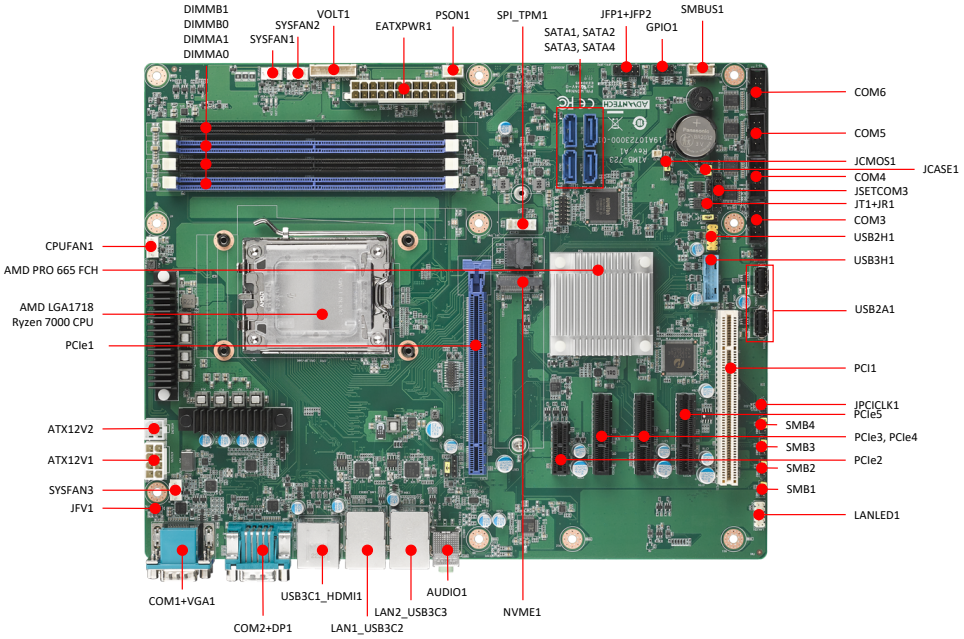
Note: It is recommended to leave this function disabled if you use DVI/DP as your main display.

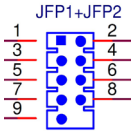
Declaration of Conformity

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

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.





Front Panel Connector (JFP1+JFP2)

Pin	Signal	Pin	Signal
1	HDD_LED+	2	PANSWIN#
3	HDD_LED-	4	GND
5	POWER_LED+	6	SYSTEM RESET#
7	POWER_LED-	8	GND
9	POWER_LED-		

Figure 1: Board Layout: Jumper and Connector Locations