ADVANTECH

AIMB-292
THIN AI Motherboard with Intel® Core™ i9/i7/i5/i3 Processor
MXM GPU Module Integration
Startup Manual

Packing List

Before installation, please ensure that the following items have been included in your shipment:

1. AIMB-292 THIN AI Motherboard
2. 1 x SATA HDD cable
3. 1 x SATA power cable
4. 1 x serial port cable
5. 1 x I/O port bracket
6. 1 x Startup Manual
7. 1 x Warranty Card
8. 2 x screws M3x4.5L

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

Note: Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: get. adobe.com/reader (Acrobat is a trademark of Adobe.).

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

http://www.advantech.com

For AIMB-292 drivers and user manual download, technical support, and service, please visit our support website at:

http://www.advantech.com/support

This manual is for the AIMB-292 series Rev.A1.

Specifications

Standard SBC Functions

- **CPU:** Supports Intel® Core™ i9/i7/i5/i3 LGA1700 CPU (up to 65W)
- **BIOS:** AMI EFI 256 Mbit SPI
- **Chipset:** Intel® Q670E Chipset
- **System memory:** Up to 96GB in two 262-pin SODIMM sockets. It supports DDR5 5600 MT/s SDRAM
- **Note:** Due to the inherent limitations of the PC architecture, the system may not fully detect 96GB RAM when 96GB RAM is installed.
- **Storage:**
  - 1 x M.2 M-Key (2280), for NVMe storage
  - 1 x M.2 E-Key (2230), for Wi-Fi/BT or
    1 x M.2 B-Key (3042), only for LTE by option
  - 1 x SATA III connector
- **Serial ports:** 2 x RS-232/422/485 with auto flow control
- **Watchdog timer:** 1~255 level timer intervals
- **USB 3.2/2.0:** Supports up to 4 x USB 3.2 Gen2x1 and 2 x USB 2.0

Graphics Interface

- **Chipset for data processing:** Both native Intel® UHD Graphics 770 and discrete NVIDIA RTX/Quadro MXM GPU.
- **Display resolution:**
  DP: Supports 2 x DP 1.4a up to 4K at 120Hz from MXM module and 1 x DP++ up to 4096 x 2160 @60 Hz from the CPU
  LVDS/eDP: Supports 1 x LVDS up to 1920x1200 @60Hz or eDP up to 1920x1080 @60Hz by pass mode

Ethernet Interface

- **Interface:** 10/100/1000/2500 Mbps
- **Controller:**
  - LAN1: 2.5 GbE Intel I226-V
  - LAN2: 2.5 GbE Intel I226-V
  - LAN3: 1 GbE Intel I210-AT

Mechanical and Environmental

- **Dimensions (L x W):** 170 x 230 mm
- **Power supply voltage:** 24V
- **Power requirements:** Boost 100.2W; Typical 62.5W (configuration: Intel® Core™ i9-14900 5.4 GHz, 2pcs 48 GB DDR5 5600 MT/s SODIMM)
- **Operating temperature:** 0 ~ 55°C
- **Weight:** 1.5 kg (weight of board)

Jumpers and Connectors

The board has a number of connectors and jumpers that help configure the system to suit your application requirements. The tables below list the functions of the connectors and jumpers.

Connectors

	Description	Part Reference
1	DC-in connector	DCIN1
2	RJ-45 single LAN port	LAN3
3	DisplayPort	DP1
4	Dual DisplayPort	DP2_DP3
5	USB power switch	SW_USB1
6	USB Port 1234	USB1234
7	RJ-45 dual LAN ports	LAN1_LAN2
8	Audio	AUDIO1
9	AMP	AMP1
9-1	MXM	MXM16-1
10	Front panel header	JFP1
11	COM2 connector	COM2
12	COM1 connector	COM1
13	Debug port	ESPI_P80
14	General purpose I/O pin header	GPIO1
15	Program EC header	JEC1
15-1	Power LED pin header	JFP2
16	SATA power connector	SATA_PWR1
17	CMOS reset header	JCMOS1
18	SATA	SATA1
19	USB 56	USB56
20	MXM FAN	MXMFAN1
21	EDP/LVDS backlight inverter power connector	INV1
22	EDP panel/LVDS panel voltage selection	JLVDS1
23	EDP/LVDS connector	EDP1_LVDS1
24	ATX 5V/PSON connector	ATX_5VSB1
25	AT/ATX mode selection	PSON1
26	SYSFAN	SYSFAN1
27	SYSFAN	SYSFAN2
28	CPUFAN	CPUFAN1
29	Program VCORE header	VR_PMB1
31	SIM CARD	SIM1
32	M.2 B-Key	M2_B1
33	M.2 E-Key	M2_E1

Jumpers and Connectors (Cont.)

34	USB Power Switch	SW_VBUS1
35	M.2 M-Key	M2_M1

JCMOS1: Clear CMOS

Function	Jumper Setting
1-2 (Default)	Keep CMOS data*
2-3	Clear CMOS data

Keep CMOS data   Clear CMOS

JFP1

Pin	Signal	Pin	Signal
1	3.3V	2	FP_PANSWIN#
3	FP_HDD_LED#	4	GND
5	SMB_DAT_RESUME	6	FP_SYS_RESET#
7	SMB_CLK_RESUME	8	GND
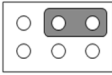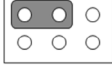
PSON1: ATX, AT Mode Selector

Function	Jumper Setting
1-2	AT Mode
2-3 (Default)	ATX Mode*

AT Mode   ATX Mode

Jumpers and Connectors (Cont.)

JLVDS1	
Function	Jumper Setting
Jumper position for 3.3V (Default)	2 4 6 ○ ● ● ○ ○ ○ 1 3 5
Jumper position for 5V	2 4 6 ● ● ○ ○ ○ ○ 1 3 5
Jumper position for 12V	2 4 6 ○ ● ○ ○ ● ○ 1 3 5

Declaration of Conformity

The 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.

Download

Please kindly download the user manual and product driver from the Advantech support website: http://support.advantech.com

The driver installer program will lead you through the installation as various drivers are required to take full advantage of your motherboard.

Software Installation

The computer is supplied with a battery-powered real-time clock circuit. There is 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.

Figure 1: Top Side
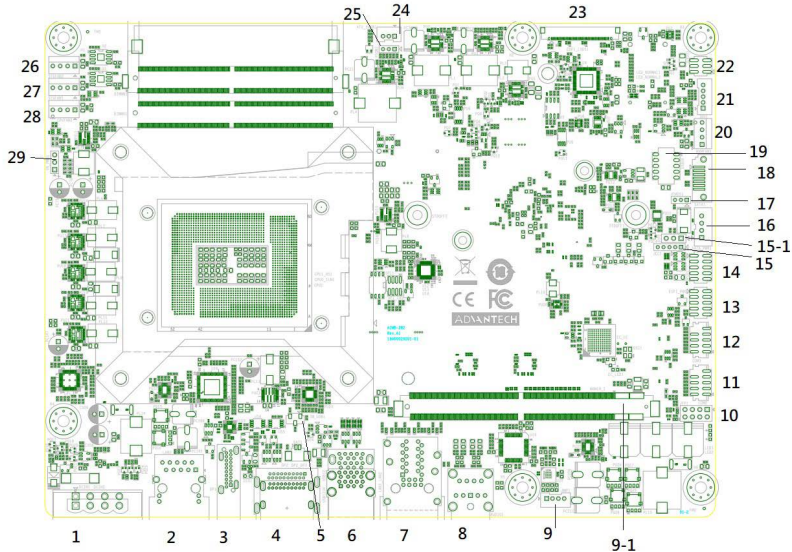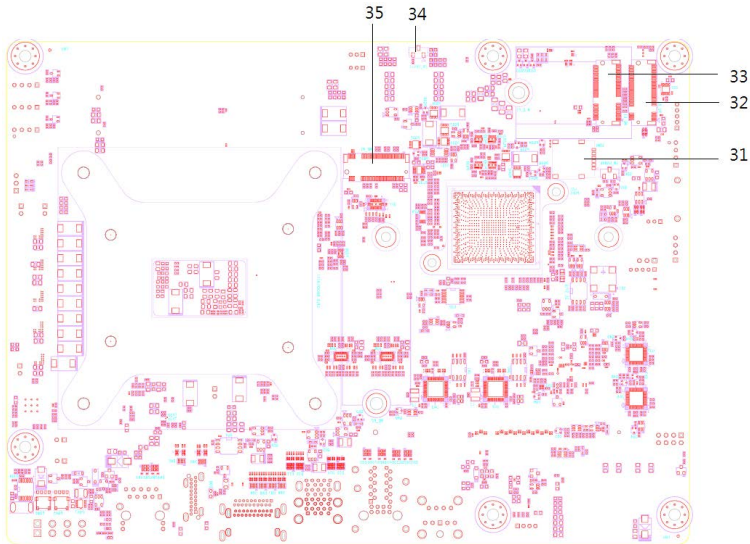

Figure 2: Bottom Side