AIMB-293
Mini-ITX Motherboard
Qualcomm IQ-X™ Series Processor
Startup Manual

Packing List

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

- AIMB-293 Mini-ITX Motherboard
- 1 x Serial port cable
- 1 x I/O port bracket
- 1 x Startup manual
- 1 x Warranty card
- 3 x screws M3x4L

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: 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
http://www.advantech.com/eplatform

For AIMB-293 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-293 series Rev. A1.

Part No. 2046029300 1st Edition
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Specifications

Standard SBC Functions

- **CPU:** Supports Qualcomm IQ-X series
- **BIOS:** Insys EFI 512 Mbit SPI
- **Chipset:** Qualcomm IQ-X
- **System memory:** Up to 16 GB in IQ-X SiP module. Supports LPDDR5 8533 MHz SDRAM

Note: Due to the inherent limitations of IQ-X SiP module RAM capacity, the LPDDR5 capacity will be depend on the variant IQ-X SiP sku.

- **Storage Interface:** One on-board 256GB UFS supporting the booting MS Windows 11 IoT Enterprise image. One M.2 (M key) with data transmission rate of up to 16 GT/s supports M.2 (M key) storage module;
- **Serial ports:** Four serial ports support 2x 4 wires RS-232 with 5/12V@0.5A, 2x RS-232/422/485 support by DIP switch.
- **Watchdog timer:** 1~255 level timer intervals
- **USB 3.2:** Supports up to nine USB 3.2(Gen 1) ports

Graphic Interface

- **Chipset:** Adreno GPU
- **Resolution:** Supports
  - DP: Supports 2 x DP with maximum resolution up to 4096 x 2160 @ 60Hz
  - LVDS: Supports 1 x 2ch. maximum resolution up to 1920 x 1200 @ 60Hz

Ethernet interface

- **Interface:** 10/100/1000 Mbps
- **Controller:**
  - GbE LAN1: Realtek RTL8153BI-CG
  - GbE LAN2: Realtek RTL8153BI-CG
  - GbE LAN3: Realtek RTL8153BI-CG

Mechanical and Environmental

- **Dimensions (L x W):** 170 x 170 mm
- **Power supply voltage:** +12V ~ 24V
- **Operating temperature:** 0 ~ 60°C
- **Weight:** 0.365 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		
	Description	**Part Reference**
1	DUAL DisplayPort	DP12
2	USB3.1 Stack Connector * 2	USB3_12
3	USB3.1 Stack Connector * 2	USB3_34
4	USB3.1 Stack Connector * 2	USB3_56
5	RJ45 Single LAN Port	LAN1
6	RJ45 Single LAN Port	LAN2
7	RJ45 Single LAN Port	LAN3
8	Internal USB 3.1 Vertical Connector	USB3_7
9	Internal USB 2.0 Connector * 2	USB2_12
10	EDP Connector / LVDS Connector	EDP1_LVDS1
11	Power LED Pin Header	JFP2
12	SPI BIOS Flash Socket	SPI1
13	M.2 B-KEY Connector	M2_B1
14	M.2 E-KEY Connector	M2_E1
15	M.2 M-KEY Connector	M2_M1
16	Internal USB3 PH	USB3_89
17	COM1 Connector	COM1
18	COM2 Connector	COM2
19	COM3 Connector	COM3
20	COM4 Connector	COM4
21	COM3 RI# Selection Pin Header	JSETCOM3_V1
22	COM4 RI# Selection Pin Header	JSETCOM4_V1
23	8-bit General Purpose I/O pin header	GPIO1
24	SIM Card Connector	SIM1
25	CMOS Battery Connector	BAT1
26	EDP / LVDS Backlight Inverter Power Connector	INV1
27	EDP Panel / LVDS Panel Voltage Selection	JEDP1_LVDS1
28	PWRBTN#/ RESET#/HDD LED/ SM Bus	JFP1
29	CPU FAN Connector	CPUFAN1

Jumpers and Connectors (Cont.)

30	System Fan Connector	SYSFAN1
31	ATX 8 Pin Power Connector (180D)	ATX12V1
32	ATX 5V / PSON Connector	ATX_5VSB1
33	AT / ATX Mode Selection	PSON1
34	12V~24V Power Supply Connector	DCIN1
35	Audio Output Pin Header	AMP1
36	HD Analog Audio Interface Front Panel	FPAUD1
37	VESA & JEIDA support selection	JLVDS_VCON1
38	COM1 mode selection (default: RS232)	COM1_SW1
39	COM2 mode selection (default: RS232)	COM2_SW1
40	Force USB_P0 Download Mode header	EDL1

eDP Panel Voltage Selection (JEDP1_LVDS1)	
Function	**Jumper Setting**
Jumper position for 3.3V (default)	
Jumper position for 5V	
Jumper position for 12V	

EDL1: USB_P0 Download Mode Header	
Pins	**Result**
100K TO +V3.3_DUAL EDL1 (1-2)	
100K TO GND (default) EDL1 (2-3)	

Jumpers and Connectors (Cont.)

JSETCOM1_V1~COM4_V1_Ring Voltage Setting	
Function	**Jumper Setting**
Jumper position for RI# (default)	
Jumper position for +5V	
Jumper position for +12V	

JLVDS_VCON1: LVDS VESA & JEIDA Setting	
Closed Pins	**Result**
1-2	100 OHM TO +V3.3
2-3 (Default)	GND





PSON1: ATX, AT Mode Selector	
Closed Pins	**Result**
1-2	AT Mode
2-3 (Default)	ATX Mode*





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.

Caution! The computer is provided with a battery-powered real-time 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 manufac turer's instructions.

Software Installation

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

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

Board Diagram

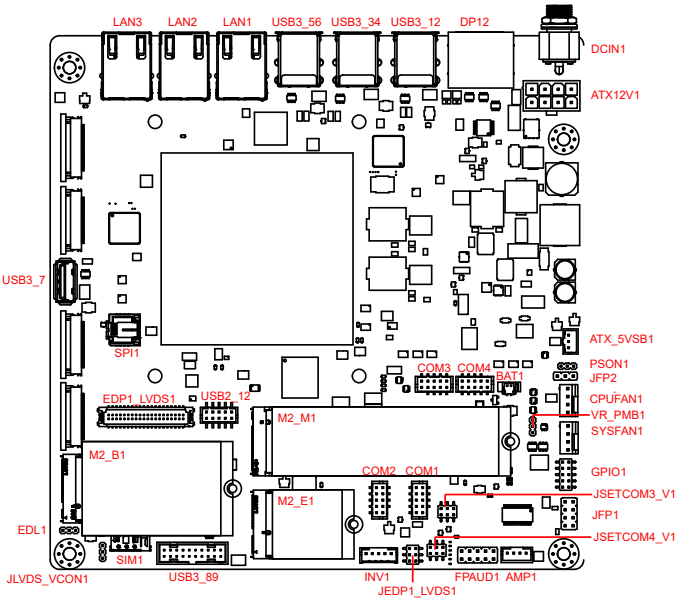


Figure 1 Top Side

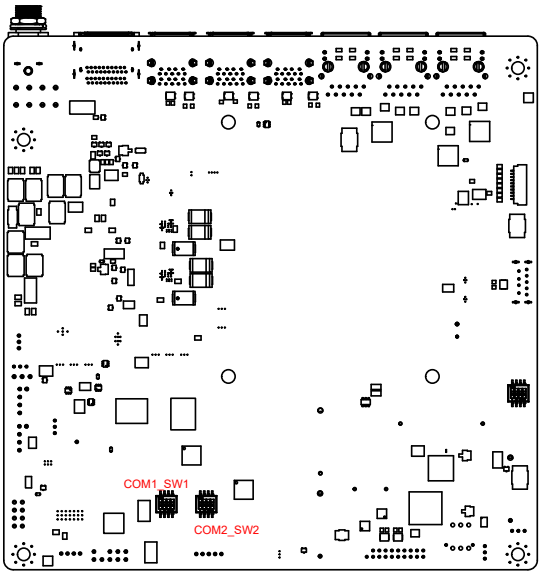


Figure 2 Bottom Side