

AIMB-228 AMD V1000/R1000 Mini-ITX with 4DP, 6 x USB, 6 x COM, and Dual LAN

Startup Manual

Packing List

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

1. AIMB-228 AMD V-series/R-series Mini-ITX motherboard
2. SATA HDD cable x 1
3. SATA power cable x 1
4. Serial port cable (1 to 1) x 2
5. I/O port bracket x 1
6. Startup manual x 1
7. Warranty card x 1
8. CPU Cooler x1

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

Specifications

Standard SBC Functions

- **CPU:** AMD V-series SOC V1807B QC 3.35GHz & V1605B QC 2.0GHz & V1202B DC 2.3GHz, R-Series R1606G TC 2.6GHz & R1505G TC 2.4GHz
- **BIOS:** AMI 128-Mbit SPI
- **System memory:** Up to 32 GB; 260-pin SODIMM x 2, dual channel DDR4 2400/2666/3200 MHz SDRAM
- **SATA Interface:** Two onboard Serial ATA connectors and data transfers up to 600 MB/s, and one onboard
- **Serial ports:** Six serial ports; COM1 support 5V/12V, COM2 COM5 is RS-232/422/485, COM3 support CCTalk, COM4 support TTL, COM6 is RS-232
- **Watchdog timer:** 1~255 level timer intervals
- **USB:** Supports up to two USB 3.1 and two USB 2.0 ports, and 2 USB 2.0 onboard pin headers
- **GPIO:** 16-bit general purpose Input/Output

Graphic Interface

- **Controller:** AMD Vega GPU with up to 11 compute units
- **LVDS:** supports dual channel 48-bit up to 1920 x 1200 colay 1st DP port (Optional)
- **DP:** Supports DP++, resolution up to 4096 x 2160 @ 60Hz

Ethernet Interface

- **Connector:** RJ-45 x 2
- **LAN1:** 10/100/1000 Mbps GbE Realtek 8111G
- **LAN2:** 10/100/1000 Mbps GbE Realtek 8111G

Mechanical and Environmental

- **Dimensions (L x W):** 170 mm x 170 mm (6.69" x 6.69")
- **Power supply voltage:** 3.3V, 5V, 12V
- **Power requirements:**
Wide Voltage 12~24V DC input; or AT/ATX via jumper
- **Operating temperature:** 0 ~ 60 °C (32 ~ 140 °F)
- **Weight:** 0.228 kg (weight of board)

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

<http://www.advantech.com>

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

For technical support and service, please visit our support website at:

<http://support.advantech.com/>

This manual is for the AIMB-228 series Rev.A1.

Part No. 2046022800

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1st Edition,

June 2019

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 function of each of the connectors and jumpers.

Connector / Header List		
	Description	Part Reference
1	ATX 12V power supply connector	ATX12V1
2	DC input Jack	DCIN1
3	DisplayPort #1(Up) + Display-Port #2(Down) Stack connector	DP1+DP2
4	DisplayPort #3(Up) + Display-Port #4(Down) Stack connector	DP3+DP4
5	USB3.1 GEN2 Stack connector	USB23
6	Serial ATA interface connector #1	SATA1
7	USB2.0 Stack connector	USB14
8	5VSB input connector	ATX_5VSB1
9	AT/ATX Mode selection	PS0N1
10	Dual port RJ45 Connector	LAN1+LAN2
11	Audio amplifier output pin header	AMP1
12	HD Audio Interface (LINE-OUT)	AUDIO1
13	HD Audio Interface (MIC-IN)	AUDIO2
14	Front panel audio header	FPAUD1
15	Coin Battery wafer box	BAT1
16	Serial ATA interface connector #2	SATA2
17	HD Audio interface (Digital)	SPDIF1
18	LVDS VESA, JEIDA format selection pin header	JLVDS_VCON1
19	M.2 KEY-B connector	NGFF_B1
20	Low Voltage Differential Signaling	LVDS1
21	Nano SIM Card holder	SIM1
22	PCI Express x16 slot	PCIEX16_1
23	USB2.0 Front panel Header	USB56
24	CPU FAN #1 connector	CPUFAN1
25	USB Power selection for USB12 / USB34 / USB56	JUSBPWR1
26	M.2 KEY-E connector	NGFF_E1
27	COM2 Box Header	SATA1

Jumpers and Connectors (Cont.)

28	COM1 RI# selection pin header	JSETCOM1_V1
29	Inverter power connector	INV1
30	16-bits General Purpose I/O Pin Header	GPIO1
31	PS2 Keyboard & Mouse connector	KBMS1
32	COM4 RI# selection pin header	JSETCOM4_V1
33	CCTALK Voltage selection pin header	JCCT_VCON1
34	COM3 ~ COM6 Box Header	COM3456
35	COM1 Box Header	COM1
36	Low pin count interface connector	LPC1
37	Serial ATA Power connector #1	SATA_PWR1
38	Serial ATA Power connector #2	SATA_PWR2
39	DDR4 SO-DIMM Socket CH-A	DIMMA1
40	DDR4 SO-DIMM Socket CH-B	DIMMB1
41	Power LED and keyboard lock pin header	JFP2
42	Watch Dog timer output and OBS beep	JWDT1+JOBS1
43	Case Open connector	JCASE1
44	PWRBTN#/ RESET#/HDD LED/ Serial bus from HW monitor IC/Internal Buzzer / External Speaker header	JFP1
45	System Fan #2 connector	SYSFAN2
46	System Fan #1 connector	SYSFAN1
47	SPI Pin Header	SPI1_CN1
48	SPI BIOS Flash Socket	SPI1
49	VDD select for LVDS1 Panel	JLVDS1
50	COMS Mode selection	JCMOS1

Jumpers and Connectors (Cont.)

Jumper Setting List

	Description	Part Reference
1	USB Power selection for USB12 / USB34 / USB56	JUSBPWR1
2	VDD select for LVDS1 Panel	JLVDS1
3	CMOS clear	JCOMS1
4	COM1_RI# Pin Selection	JSETCOM1_V1
5	COM4_RI# Pin Selection	JSETCOM4_V1
6	CCTALK selection pin header	JCCT_VCON1
7	AT / ATX Mode selection	PSON1
8	PWRBTN# / RESET# / HDD LED / Serial bus / Internal Buzzer / External Speaker header	JFP1
9	Watch Dog Timer output and OBS Beep	JWDT1+JOBS1

USB Power selection for USB12 / USB34 / USB56 (JUSBPWR1)

Function	Setting
Set USB VBUS as +5VSB (Default)	
Set USB VBUS as +5V	

VDD select for LVDS1 Panel (JLVDS1)

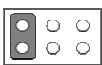
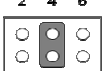
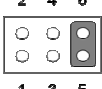
Function	Setting
Jumper position for +3.3V (Default)	
Jumper position for +5V	
Jumper position for +12V	

CMOS clear (JCOMS1)

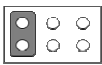
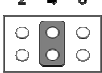
Function	Setting
Normal (Default)	
Clear CMOS Data	

Jumpers and Connectors (Cont.)

COM1_RI# Pin Selection (JSETCOM1_V1)

Function	Setting
Jumper position for RI# (Default)	
Jumper position for +5V	
Jumper position for +12V	

COM4_RI# Pin Selection (JSETCOM4_V1)

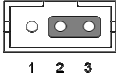
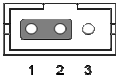
Function	Setting
Jumper position for RI# (Default)	
Jumper position for +5V	
Jumper position for +12V	

CCTALK selection pin header (JCCT_VCON1)

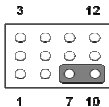
Function	Setting
CCTALK 12V (Default)	
CCTALK 5V	

Jumpers and Connectors (Cont.)

AT/ATX Mode selection (PSON1)

Function	Setting
ATX Mode (Default)	 1 2 3
AT Mode	 1 2 3

PWRBTN# / RESET# / HDD LED / Serial bus / Internal Buzzer / External Speaker header (JFP1)

Function	Setting
Internal Buzzer (Default)	 3 12 1 7 10

Watchdog timer output and OBS beep (JWDT1+JOBS1)

Function	Setting
Watch Dog Timer Enable (2-3) (Default) OBS BEEP(4-5) (Default)	 1 2 3 4 5
Watch Dog Timer Disable (1-2) OBS BEEP(4-5) (Default)	 1 2 3 4 5

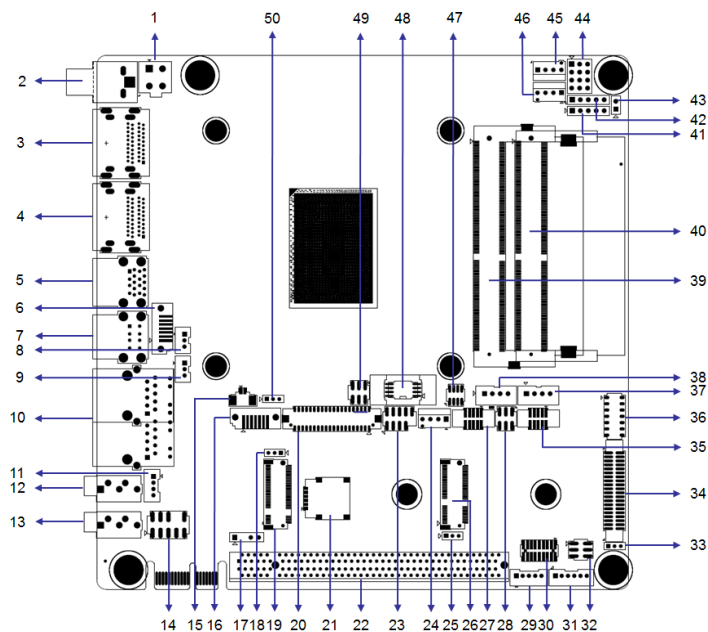
Software Installation

The package and web link will lead you through the installation process as various device drivers are needed to take full advantage of your motherboard.

[Click here to visit the website.](#)

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 same or equivalent type recommended by the manufacturer. Discard used batteries according to manufacturer's instructions.

Board Diagram



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|---------------|-----------------|----------------|
| 1. ATX12V1 | 18. JLVDS_VCON1 | 35. COM1 |
| 2. DCIN1 | 19. NGFF_B1 | 36. LPC1 |
| 3. DP1+DP2 | 20. LVDS1 | 37. SATA_PWR1 |
| 4. DP3+DP4 | 21. SIM1 | 38. SATA_PWR2 |
| 5. USB23 | 22. PCIEX16_1 | 39. DIMMA1 |
| 6. SATA1 | 23. USB56 | 40. DIMMB1 |
| 7. USB14 | 24. CPUFAN1 | 41. JFP2 |
| 8. ATX_5VSB1 | 25. JUSBPWR1 | 42. JWD1+JOBS1 |
| 9. PSON1 | 26. NGFF_E1 | 43. JCASE1 |
| 10. LAN1+LAN2 | 27. COM2 | 44. JFP1 |
| 11. AMP1 | 28. JSETCOM1_V1 | 45. SYSFAN2 |
| 12. AUDIO1 | 29. INV1 | 46. SYSFAN1 |
| 13. AUDIO2 | 30. GPIO1 | 47. SPI1_CN1 |
| 14. FPAUD1 | 31. KBMS1 | 48. SPI1 |
| 15. BAT1 | 32. JSETCOM4_V1 | 49. JLVDS1 |
| 16. SATA2 | 33. JCCT_VCON1 | 50. JCMOS1 |
| 17. SPDIF1 | 34. COM3456 | |

Bottom Layer Overview:

