

AIMB-224 Mobile AMD R-series Quad Core/Dual Core FS1r2 socket Mini-ITX Motherboard with VGA/LVDS/ Display Port, 6 COMs and Dual LAN

Startup Manual

Packing List

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

1. 1 x AIMB-224 Mini ITX Motherboard
2. 1 x CD-ROM or DVD-ROM contains the following:
 - User's Manual
 - Drivers
3. 1 x Serial port cable
4. 2 x SATA HDD Data cable
5. 2 x SATA Power cable
6. 1 x I/O shield
7. 1 x CPU cooler
8. 1 x Startup manual
9. 1 x Warranty card

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This manual is for the AIMB-224 series Rev. A1

Part No. 2006022410

1st Edition
October 2011

Specifications

Processor System

- **CPU:** Support AMD R-series Quad Core 2.3 GHz/Quad Core 1.9 GHz/ Dual Core 2.7 GHz / Dual Core 2.5 GHz FS1r2 socket type processor
- **Max. Speed:** 2.3 GHz (Quad Core)
- **L2 Cache:** 1 MB/per core
- **Chipset:** A75M
- **BIOS:** 16 Mbit SPI

Expansion Slot

- **Mini-PCIe:** 2 (1 Full-size colay mSATA/ 1 Half-size)
- **PCIe:** PCIe x 8 (PCIe gen 3)

Memory

- **Technology:** Dual channels DDR3 1333/1600 MHz
- **Max. Capacity:** 16 GB
- **Socket:** 2 x 204-pin SODIMM

Graphic Interface

- **Controller:** AMD Radeon™ GPUs (Radeon™ HD 7xxx), support DirectX 11, UVD3
- **VGA:** Supports up to 4096 x 2400 @ 60 Hz
- **LVDS:** Supports 24-bit dual channel and 1920 x 1200
- **Display Port:** Two dual model display port, max resolution: 1920 x 1200@60 Hz
- **Triple Display:** Supports Triple display of CRT/LVDS/DP
- **Dual Display:** Supports dual display of any two display device (CRT, LVDS, DP)

Ethernet Interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** GbE LAN1: RTL8111E;
GbE LAN2: RTL8111E
- **Connector:** RJ-45 x 2

SATA Interface

- **Max Data Transfer Rate:** 600 MB/s
- **Channel:** 3

Rear I/O

- **VGA:** 1
- **DP:** 2
- **Ethernet:** 2
- **USB:** 4 (2 USB 3.0 / 2 USB 2.0)
- **Audio:** 3 (Mic-in, Line-out, Line-in)
- **Serial:** 1 (RS-232)
- **PS/2:** 1
- **DCIN Jack:** 1

Specifications (Cont.)

Internal Connector

- **LVDS & Inverter:** 1
- **USB:** 6 (USB 2.0 compliant)
- **Serial:** 5 (1 RS-232/422/485, 4 RS-232, COM3 supports 5 V/12 V by jumper selection; COM6 supports RS-232/422/485 function)
- **SATA:** 3
- **DIO:** 8-bit GPIO

Watchdog Timer

- **Output:** System reset
- **Interval:** Programmable 1 ~ 255 sec/min

Power Requirement

- **Typical:** DCIN 12 V or ATX 4 pin 12 V

Environment

- **Temperature:**
0 ~ 60° C (32 ~ 140° F), Operating
-40 ~ 85° C (-40 ~ 185° F), Non-operating

Physical Characteristics

- **Dimensions:** 170 mm x 170 mm (6.69" x 6.69")

Jumpers & 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 List

Label	Function
FPAUD1	Front Panel audio connector
AUDIO1	Audio connector
CMOS1	CMOS clear (Default 1-2)
DIMM1_A1/B1	Memory connector channel
COM3-6	Serial port: 3RS232/1RS-232-422/485
COM2	Serial port: RS-232
CPU_FAN1	CPU FAN connector(3-pin)
DIO_CN1	GPIO Header
DCIN1	DC IN
ATX12V1	ATX 12V connector
ATX_5V1	PS_ON , 5VSB
LVDS2	LVDS connector (Internal)
INV2	LVDS Inverter Power
JVBR2	LVDS Brightness control selector for Analog or Digital (Default 1-2, Analog)
JLVDS3	LVDS voltage jumper (default 1-2, 3.3V)

Jumpers & Connectors

JLVDS4	LVDS 12V voltage jumper
VCON2	LVDS JEIDA/VESA jumper selection
JFP1+JFP2	Power switch/HDD LED/SMBus/speaker
JFP3	Power LED and Keyboard lock
JSETCOM6	COM6 RS-232/422/485 Jumper setting
JSETCOM3	COM3 5V/12V Jumper setting
PCIE_X8_1	PCI Express X8 slot
KBMS1	PS/2 Keyboard and Mouse external connector
KBMS2	PS/2 Keyboard and Mouse internal connector
LAN1_USB01	LAN1 / USB port 1, 2
LAN2_USB23	LAN2 / USB port 3, 4
MINI_PCIE1/2	Mini PCI express connector
PSON1	AT(1-2) / ATX(2-3) (Default 2-3)
SATA1	Serial ATA data connector 1
SATA2	Serial ATA data connector 2
SATA3	Serial ATA data connector 3
SATA_PWR1	SATA POWER
SATA_PWR2	SATA POWER
DOM_PWR	DOM POWER
SPI1	SPI connector
SPI_CN1	SPI flash update connector.
SPDIF_OUT1	Digital Audio connector
SYS_FAN1	System FAN connector(3-pin)
USB456789	USB port 4,5, 6,7,8,9 (on board)
DUAL_DP1	Two Display port connector
VGA1	VGA connector
COM1	COM PORT CONNECTOR
JOBS1+JWDT1	OBS Alarm and Watchdog Reset
BAT1	Battery holder

Jumpers & Connectors

LVDS2

Pin	Signal
1	VDDSAFE
2	VDDSAFE
3	GND
4	GND
5	VDDSAFE
6	VDDSAFE
7	LVDS_L0_N
8	LVDS_U0_N
9	LVDS_L0_P
10	LVDS_U0_P
11	GND
12	GND
13	LVDS_L1_N
14	LVDS_U1_N
15	LVDS_L1_P
16	LVDS_U1_P
17	GND
18	GND
19	LVDS_L2_N
20	LVDS_U2_N
21	LVDS_L2_P
22	LVDS_U2_P
23	GND
24	GND
25	LVDS_CLKL_N
26	LVDS_CLKU_N
27	LVDS_CLKL_P
28	LVDS_CLKU_P
29	GND
30	GND
31	LVDS_CH7511_DDC_CLK
32	LVDS_CH7511_DDC_DATA
33	GND
34	GND
35	LVDS_L3_N
36	LVDS_U3_N

37	LVDS_L3_P
38	LVDS_U3_P
39	N22140709
40	VCON

JLVDS3 (LVDS Voltage jumper selection)

Pin	Signal
pin1	12 V
pin 2	VDDSAFE_IN

JLVDS4 (LVDS voltage jumper selection)

Pin	Signal
PIN1-2	3 V
PIN2-3	5 V

LVDS Inverter PWR

Pin	Signal
1	12 V
2	GND
3	BL_EN
4	BL_CNL
5	5 V

JVBR2 (Brightness control selection)

Pin	Signal
1	BL_Control
2	GND
3	NC

JWDT1+JOBS1

Pin	Signal
1	NC
2	SIO_WG
3	SYS_RST
4	ERR_BEEP
5	BEEP

Jumpers & Connectors

JFP1+JFP2

Pin	Signal
1	+5 V
2	HDLED+
3	FRP_PANSWIN#
4	SPK_CN17P2
5	HDD_LED-
6	GND(R1160:100OHM)
7	SPK_CN17P4
8	SMBDATA_R
9	FRP_RST#
10	SPK_CN17P3
11	SMBCLK_R
12	GND

JFP3

Pin	Signal
1	POWER LED
2	NC
3	GND
4	KEYLOCK
5	GND

ATX5V1

Pin	Function
1	5 VSB_IN
2	GND
3	PS_ON#

DIO_CN1

Pin	Function
1	DIO0
2	DIO4
3	DIO1
4	DIO5
5	DIO2
6	DIO6
7	DIO3
8	DIO7

9	+5 V
10	GND

PS0N1

Pin	Function
1	FRP_PANSWIN#_AT
2	FRP_PANSWIN#
3	NC

SPDIF_OUT

Pin	Function
1	+5 V
3	SPDIF_0
4	GND

JSETCOM3

Pin	Function
1	COM3P9SEL
2	RR13
3	COM3P9SEL
4	5 V
5	COM3P9SEL
6	12V

JSETCOM3

Pin	Signal
1	+12 V
2	RI6xPOWERxJMP
3	COM6_RI#
4	RI6xPOWERxJMP
5	+5 V
6	RI6xPOWERxJMP

USB45

Pin	Signal
1	+SBV45
2	+SBV45
3	USBP4-
4	USBP5-

Jumpers & Connectors

5	USBP4+
6	USBP5+
7	GND
8	GND
10	GND

USB67

Pin	Signal
1	+SBV67
2	+SBV67
3	USBP6-
4	USBP7-
5	USBP6+
6	USBP7+
7	GND
8	GND
10	GND

JCMOS1

Pin	Signal
1	NC
2	RTC_RST#
3	GND

SPI_CN1

Pin	Signal
1	+V3.3M_SPI
2	GND
3	SPI_CS#
4	SPI_CLK
5	SPI_MISO
6	SPI_MOSI
8	NC

CPU_FAN, SYS_FAN

Pin	Signal
1	GND
2	+12VPWM
3	Sensor

Installation Note

3	6	9	12
2	5	8	11
1	4	7	10

JFP1+JFP2

PIN	Signal
1	+5V
2	HDLED+
3	FRP_PANSWIN#
4	SPK_CN17P2
5	HDD_LED-
6	GND(R1160:100OHM)
7	SPK_CN17P4
8	SMBDATA_R
9	FRP_RST#
10	SPK_CN17P3
11	SMBCLK_R
12	GND

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.

Software Installation

The CD disc contains a driver installer program that will lead you through the installation as various device drivers are needed to take full advantage of your motherboard.

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



Board Diagram

