

AIMB-223 Mobile AMD G-series Dual Core Mini-ITX with VGA/LVDS/HDMI,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-223 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-223 series Rev. A2

Part No. 2006022311

2nd Edition
July 2015

Specifications

Processor System

- **CPU:** AMD G-series Dual core 1.65 GHz
- **Max. Speed:** 1.65 GHz (dual core)
- **L2 Cache:** 512 KB
- **Chipset:** A55E
- **BIOS:** 16 M-bit SPI

Expansion Slot

- **Mini-PCle:** 1
- **PCle:** PCIe x1 (PCIe gen2)
- **PCI:** 32 bit/33 MHz PCI

Memory

- **Technology:** Dual channels DDR3 1066/1333 MHz
- **Max. Capacity:** 4 GB
- **Socket:** 1 x 204-pin SODIMM

Graphic Interface

- **Controller:** ATI Radeon HD 6310, support DirectX 11, UVD3
- **VGA:** Supports up to 2560 x 1536 @32bpp
- **LVDS:** Supports 24-bit dual channel and 1920 x 1200
- **HDMI:** 1920 x 1200 @ 60 MHz
- **Dual Display:** Supports dual display of any two display device (CRT, LVDS, HDMI)

Ethernet Interface

- **Interface:** 10/100/1000 Mbps
- **Controller:** GbE LAN1: RTL8111G-CG;
GbE LAN2: RTL8111G-CG
- **Connector:** RJ-45 x 2

SATA Interface

- **Max Data Transfer Rate:** 600 MB/s
- **Channel:** 4

SSD Interface

- **Cfast compactFlash:** Cfast type I/II

Rear I/O

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

Specifications

Internal Connector

- **LVDS & Inverter:** 1
- **USB:** 4 (USB 2.0 compliant)
- **Serial:** 2 (RS-232, 5V/12V by jumper selection)
- **SATA:** 4
- **Cfast CompactFlash:** 1
- **DIO:** 8-bit GPIO

Watchdog Timer

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

Power Requirement

- **Typical:** TBD

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.

Jumpers and Connectors	
Label	Function
AAFP	Front panel audio connector
AUDIO1	Audio connector
CMOS1	CMOS clear (Default 1-2)
CN1	Memory connector channel
CN17	CFast socket
COM3-6	Serial port: COM RS232
CPU_FAN1	CPU FAN connector(3-pin)
GPIO1	GPIO header
CN18	DC IN
CN19	ATX 12 V connector
CN21	PS_ON , 5VSB
JBL1	LVDS1 inverter power
JBL8	Brightness control selector for analog or digital (Default 1-2, Analog)
JBL3	LVDS1 voltage jumper (default 1-2, 3.3V)
JCASE1	CASE open setting
JFP1+JFP2	Power switch/HDD LED/SMBus/speaker

Jumpers & Connectors

JFP3	Power LED and keyboard lock
JBL6	LVDS1 PIN40 . Default 2-3
JSETCOM3	COM3 5 V/12 V jumper setting
PCIE1	PCI express X1 connector
CN20	PS/2 keyboard and mouse connector
LAN1_ USB12	LAN1 / USB port 1, 2
LAN2_ USB34	LAN2 / USB port 3, 4
LVDS1	LVDS connector (Internal)
MINIPCE1	Mini PCI express connector
PCI	PCI slot
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
SATA4	Serial ATA data connector 4
SATA_PWR1	SATA POWER
SATA_PWR2	SATA POWER
CN4	SPI flash update connector.
SPDIF_OUT	Digital Audio connector
SYS_FAN1	System FAN connector(3-pin)
USB56	USB port 5, 6 (on board)
USB78	USB port 7, 8 (on board)
HDMI	HDMI connector
VGA	VGA connector
COM12-1	COM PORT CONNECTOR
COM12-2	COM PORT CONNECTOR
JOBS1	OBS alarm
JWDT1	Watchdog reset

Jumpers & Connectors

LVDS Connector

DDSAFE_1	☐	VDDSAFE_2
GND_1	☐	GND_7
DDSAFE_3	☐	VDDSAFE_4
OD0-	☐	NC
OD0+	☐	NC
GND_2	☐	GND_8
OD1-	☐	NC
OD1+	☐	NC
GND_3	☐	GND_9
OD2-	☐	NC
OD2+	☐	NC
GND_4	☐	GND_10
OD3-	☐	NC
OD3+	☐	NC
GND_5	☐	GND_11
DDC_CLK	☐	DDC_DAT
GND_6	☐	GND_12
OD3-	☐	NC
OD3+	☐	NC
HPLG	☐	VCON

JBL3 (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_PWM
5	5 V

JBL8 (Brightness control selection)

Pin	Signal
1	SIO_LVDS0_VBR
2	GND
3	NC

JBL6

Pin	Signal
1	3.3 V
2	VCON
3	GND

JWDT1+JOBS1

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

JFP1+JFP2

Pin	Signal
1	+5 V
2	HDLED+
3	PWRBT
4	NC
5	HDLED-
6	PULL LOW
7	SPK_P3
8	I2C DATA
9	SYS_RST
10	SPK_P4
11	I2CCLK
12	GND

JFP3

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

Jumpers & Connectors

CN21 (PS_ON)

Pin	Function
1	5VSB_IN
2	GND
3	PS_ON#

GPIO1

Pin	Function
1	DIO0
2	DIO4
3	DIO1
4	DIO5
5	DIO2
6	DIO6
7	DIO3
8	DIO7
9	+5 V
10	GND

ATX / AT

Pin	Function
PIN2-3	ATX Mode
PIN1-2	AT Mode

AAFP

Pin	Signal
1	MIC2_L
2	GND
3	MIC2_R
4	PRESENSE
5	LIN2_R
6	SENSE1_RTN
7	SENSE_B
9	LIN2_L
10	SENSE2_RTN

SPDIF

Pin	Function
1	+5 V
3	SPDIF_0
4	GND

JSETCOM3

Pin	Function
1	COM3P9SEL
2	RRI3
3	COM3P9SEL
4	5 V
5	COM3P9SEL
6	12V

USB56

Pin	Signal
1	+5VPWR
2	+5VPWR
3	USBD4-
4	USBD5-
5	USBD4+
6	USBD5+
7	GND
8	GND
10	GND

USB78

Pin	Signal
1	+5VPWR
2	+5VPWR
3	USBD4-
4	USBD5-
5	USBD4+
6	USBD5+
7	GND
8	GND
10	GND

Jumpers & Connectors

CMOS

Pin	Signal
PIN1-2	NORMAL
PIN2-3	CMOS CLEAR

CN4

Pin	Function
1	+5VPWR
2	GND
3	SPI_CS#-
4	SPI_CLK
5	SPI_MISO
6	SPI_MOSI
8	NC

JCASE1

Pin	Signal
1	CASEOP IN
2	GND

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

JFP

PIN7-10	EN_SPK1
PIN3-6	POWER BT
PIN1-10	EXT_SPK
PIN9-12	SYS_RESET

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

