AIMB-223

Mobile AMD G-series Dual Core/Single Core Mini-ITX with VGA/LVDS/HDMI,6COM and Dual LAN

NEW

Features

- Supports AMD Mobile G-series Dual Core/Single Core processor
- One 204-pin SODIMM up to 2 GB DDR3 1333 MHz SDRAM
- Supports VGA/LVDS/HDMI
- Dual LANs, 6COM, Mini PCIe, and Cfast
- Supports embedded software APIs and Utilities

Software APIs:
SMBus | H/W Monitor | Watchdog | GPIO | Brightness

Utilities:
BIOS flash | eSOS | Monitoring | Embedded Security ID | Flash Lock

Note: eSOS requires ODM BIOS, available by request

RoHS COMPLIANT CE FCC

Windows Embeddec   Linux

Specifications

Processor System	CPU	AMD Dual Core T56N	AMD Dual Core T40
	Max. Speed	1.6 GHz (dual core 18W TDP)	1.0 GHz (dual core 5 W TDP)
	L2 Cache	512 KB	
	Chipset	AMD G-series + A55E	
	BIOS	AMI 16 Mbit SPI	
Expansion Slot	PCI	1	
	Mini-PCIe	1	
	PCIe	PCIe x1 (PCIe gen2)	
Memory	Technology	One channels DDR3 1333 MHz	
	Max. Capacity	2 GB	
	Socket	1 x 204 pin SODIMM	
Graphics	Controller	ATI Radeon HD 6310, support DirectX 11, UVD3	
	VRAM	TBD	
	VGA	Supports up to 2560 x 1536 @ 32bpp	
	LVDS	Supports 24-bit dual channel and up to 1920 x 1200	
	HDMI	1920 x 1200 @ 60 MHz	
	Dual Display	Supports dual display of any two display device (CRT, LVDS, HDMI)	
Ethernet	Interface	10/100/1000 Mbps	
	Controller	GbE LAN1: RTL8111DL; GbE LAN2: RTL8111DL	
	Connector	RJ-45 x 2	
SATA	Max Data Transfer Rate	6 GB/s	
	Channel	4	
EIDE	Mode	None	
	Channel	None	
SSD	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)	
	DCjack	1 (2.5 mm)	
Internal Connector	LVDS & Inverter	1	
	USB	4 (USB 2.0 compliant)	
	Serial	4 (RS-232, 5V/12V by jumper selection)	
	IDE	None	
	SATA	4	
	Cfast compactFlash	1	
	Parallel	None	
	GPIO	8-bit	
Watchdog Timer	Output	System reset	
	Interval	Programmable 1 ~ 255 sec/min	
Power Requirement	Typical	TBD	
Environment		Operating	Non-Operating
	Temperature	0 ~ 60° C (32 ~ 140° F)	-40 ~ 85° C (-40 ~ 185° F)
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")	

Board Diagram
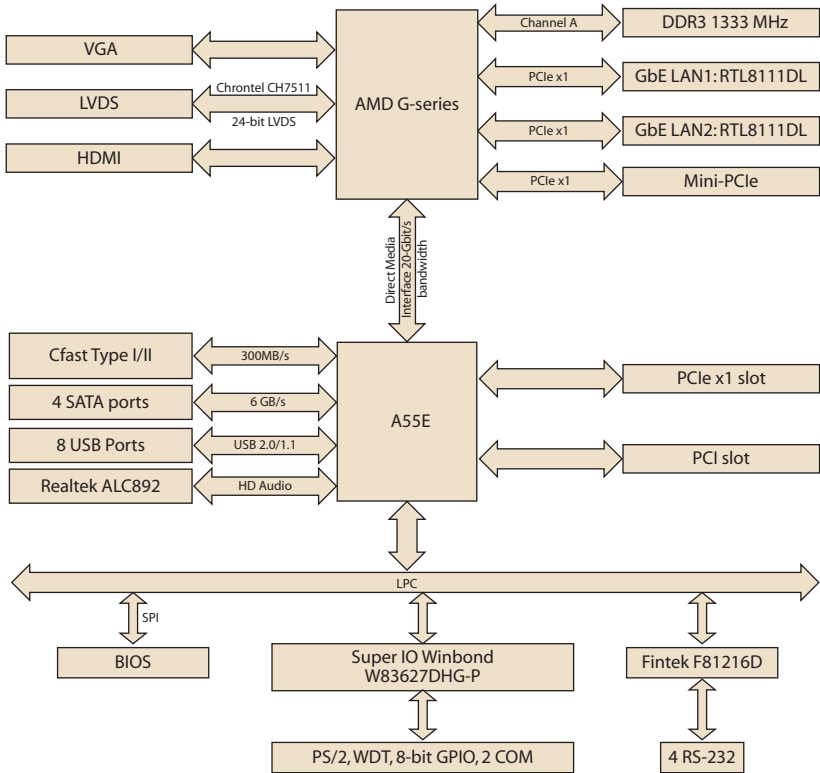
Ordering Information

Part Number	CPU	Display	LAN	COM
AIMB-223G2-S0A1E	1.0 GHz	CRT/LVDS/HDMI	2	6
AIMB-223G2-S1A1E	1.6 GH	CRT/LVDS/HDMI	2	6

Packing List

Part Number	Quantity
AIMB-223 SBC	1
SATA HDD cable	2
Serial port cable	2
CPU cooler	1
I/O port bracket	1
Startup manual	1
Driver CD	1

Optional Accessories

Part Number	Description
1700003195	USB cable with two ports, 17.5 cm
1700002204	USB cable with two ports, 27 cm
1700008461	USB cable with four ports, 30.5 cm
1757003064	Adapter AC100-240V, 84W, +12V/ 7A FSP
1757003062	Adapter AC100-240V, 60W, +12V/ 5A FSP

Embedded OS/API

OS/API	Description
Win XPE	XPE WES 2009
Software API	SUSI V3.0

I/O View

AIMB-223G2-S0A1E
AIMB-223G2-S1A1E

Value-Added Software Services

Software API: An interface that defines the ways by which an application program may request services from libraries and/or operating systems. Provides not only the underlying drivers required but also a rich set of user-friendly, intelligent and integrated interfaces, which speeds development, enhances security and offers add-on value for Advantech platforms. It plays the role of catalyst between developer and solution, and makes Advantech embedded platforms easier and simpler to adopt and operate with customer applications.

Software APIs

Control

GPIO

General Purpose Input/Output is a flexible parallel interface that allows a variety of custom connections. It allows users to monitor the level of signal input or set the output status to switch on/off a device. Our API also provides Programmable GPIO, which allows developers to dynamically set the GPIO input or output status.

SMBus

SMBus is the System Management Bus defined by Intel® Corporation in 1995. It is used in personal computers and servers for low-speed system management communications. The SMBus API allows a developer to interface a embedded system environment and transfer serial messages using the SMBus protocols, allowing multiple simultaneous device control.

I²C

I²C is a bi-directional two wire bus that was developed by Philips for use in their televisions in the 1980s.
The I²C API allows a developer to interface with an embedded system environment and transfer serial messages using the I²C protocols, allowing multiple simultaneous device control.

Display

Brightness Control

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.

Backlight

The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

Monitor

Watchdog

A watchdog timer (WDT) is a device that performs a specific operation after a certain period of time if something goes wrong and the system does not recover on its own.
A watchdog timer can be programmed to perform a warm boot (restarting the system) after a certain number of seconds.

Hardware Monitor

The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.

Hardware Control

The Hardware Control API allows developers to set the PWM (Pulse Width Modulation) value to adjust fan speed or other devices; it can also be used to adjust the LCD brightness.

Power Saving

CPU Speed

Make use of Intel SpeedStep technology to reduce power power consumption. The system will automatically adjust the CPU Speed depending on system loading.

System Throttling

Refers to a series of methods for reducing power consumption in computers by lowering the clock frequency. These APIs allow the user to lower the clock from 87.5% to 12.5%.

Software Utilities
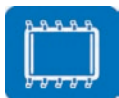
BIOS Flash

The BIOS Flash utility allows customers to update the flash ROM BIOS version, or use it to back up current BIOS by copying it from the flash chip to a file on customers' disk. The BIOS Flash utility also provides a command line version and API for fast implementation into customized applications.

Embedded Security ID

The embedded application is the most important property of a system integrator. It contains valuable intellectual property, design knowledge and innovation, but it is easily copied! The Embedded Security ID utility provides reliable security functions for customers to secure their application data within embedded BIOS.

Monitoring

The Monitoring utility allows the customer to monitor system health, including voltage, CPU and system temperature and fan speed. These items are important to a device; if critical errors happen and are not solved immediately, permanent damage may be caused.

eSOS

The eSOS is a small OS stored in BIOS ROM. It will boot up in case of a main OS crash. It will diagnose the hardware status, and then send an e-mail to a designated administrator. The eSOS also provides remote connection: Telnet server and FTP server, allowing the administrator to rescue the system.

Flash Lock

Flash Lock is a mechanism that binds the board and CF card (SQFlash) together. The user can "Lock" SQFlash via the Flash Lock function and "Unlock" it via BIOS while booting. A locked SQFlash cannot be read by any card reader or boot from other platforms without a BIOS with the "Unlock" feature.