

# AIMB-222

## AMD Mobile Athlon™ II Neo/Turion™ II Neo Mini ITX with VGA/LVDS/HDMI/DVI, 4 COM and Dual LAN

**NEW**



### Features

- Supports AMD Mobile Athlon™ II Neo/AMD Turion™ II Neo ASB2 BGA processors
- Two 204-pin SODIMM up to 4 GB DDR3 1066 MHz SDRAM
- Supports VGA/LVDS/HDMI, DVI is optional
- Dual LANs, 4COM, Mini PCIe, and CFast
- Supports embedded software APIs and Utilities

**Software APIs:**

- SMBus
- H/W Monitor
- Watchdog
- GPIO
- Brightness

**Utilities:**

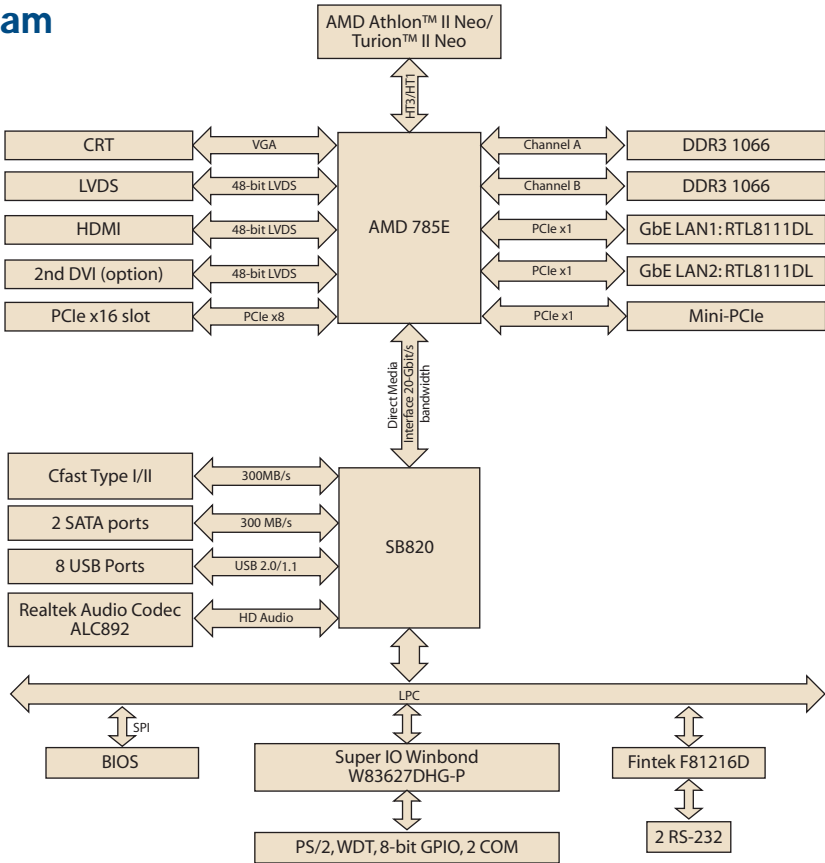
- BIOS flash
- eSOS
- Monitoring
- Embedded Security ID
- Flash Lock

Note: eSOS requires ODM BIOS, available by request

### Specifications

Processor System	CPU	AMD Turion II Neo	AMD Turion II Neo	AMD Athlon II Neo	
	Max. Speed	2.2 GHz (dual-core 25W TDP)	1.5 GHz (Dual-Core 15W TDP)	1.7 GHz (Single-Core 12W TDP)	
	L2 Cache	2 MB			
	Chipset	AMD 785E + SB820			
	BIOS	AMI 16 Mbit SPI			
Expansion Slot	PCI	-			
	Mini-PCIe	1			
	PCIe	PCIe x8 (PCIe gen 2)			
Memory	Technology	Dual channels DDR3 1066 MHz SDRAM			
	Max. Capacity	4 GB			
	Socket	2 x 204-pin SODIMM			
Graphics	Controller	ATI Radeon™ HD4200 serial, supports OpenGL 2.0, DirectX10, H.264, VC1			
	VRAM	Side port memory 128 MB (Optional)			
	VGA	Supports up to 2560 x 1536 @ 32bpp			
	LVDS	Supports 24-bit dual channel and up to 1920 x 1200			
	DVI (optional)	1920 x 1200 @ 60 MHz			
	HDMI	1920 x 1200 @ 60 MHz			
	Dual Display	Supports dual display of any two display device (CRT, LVDS, HDMI, DVI)			
Ethernet	Interface	10/100/1000 Mbps			
	Controller	GbE LAN1: RTL8111DL; GbE LAN2: RTL8111DL			
	Connector	RJ-45 x 2			
SATA	Max Data Transfer Rate	300 MB/s			
	Channel	2			
EIDE	Mode	None			
	Channel	None			
SSD	CFast compactFlash	CFast type I/II			
Rear I/O	VGA	1			
	DVI	1			
	Ethernet	2			
	USB	4			
	Audio	3 (Mic-in, Line-out, Line-in)			
	Serial	2 (RS-232)			
Internal Connector	LVDS & Inverter	1			
	DVI	1 (optional)			
	USB	4 (USB 2.0 compliant)			
	Serial	2 (RS-232, 5V/12V by jumper selection)			
	IDE	None			
	SATA	2			
	CFast compactFlash	1			
	Parallel	None			
Watchdog Timer	Output	System reset			
	Interval	Programmable 1 ~ 255 sec/min			
Power Requirement	Power On	AMD Turion II Neo Dual Core Processor, 4GB DDR3 DIMM			
		+5 V	+ 3.3 V	+12 V	+5 VSB
		2.88 A	0.89 A	1.79 A	0.09 A
		Operating		Non-Operating	
Environment	Temperature	0 ~ 60° C (32 ~ 140° F)		-40 ~ 85° C (-40 ~ 185° F)	
	Dimensions	170 mm x 170 mm (6.69" x 6.69")			

**Board Diagram**



**Ordering Information**

Part Number	CPU	Display	LAN	COM
AIMB-222G2-S0A1E	1.7 GHz	CRT/LVDS/HDMI	2	4
AIMB-222G2-S1A1E	1.5 GHz	CRT/LVDS/HDMI	2	4
AIMB-222G2-S2A1E	2.2 GHz	CRT/LVDS/HDMI/DVI	2	4

**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

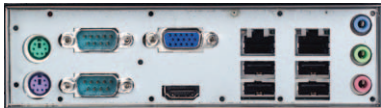
**Packing List**

Description	Quantity
AIMB-222 SBC	1
SATA HDD cable	2
Serial port cable	2
CPU cooler	1
I/O port bracket	1
Startup manual	1
Driver CD	1

**Embedded OS/API**

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

**I/O View**



AIMB-222G2-S0A1E  
AIMB-222G2-S1A1E  
AIMB-222G2-S2A1E

# 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**

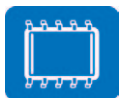
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**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.