Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

AIMB-224

Mobile AMD R-series Quad Core/Dual Core Mini-ITX
with VGA/LVDS/HDMI/DP/eDP, 6COM and Dual LAN
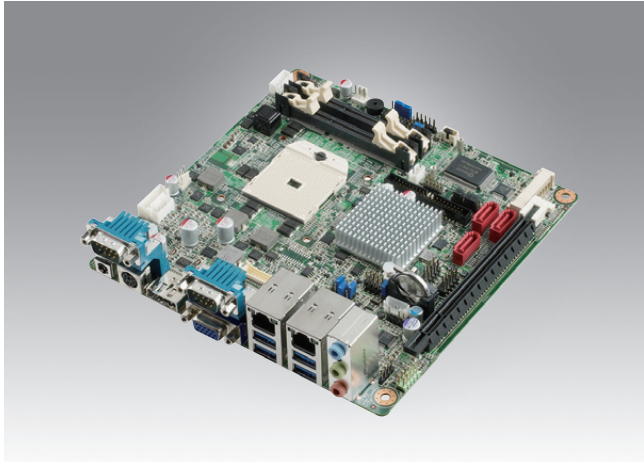
Features

- Supprt AMD Mobile eTrinity Quard core/Dual Core processor
- Two 204-pin SODIMM up to 16 GB DDR3 1066/1333/1600 MHz SDRAM
- Supports VGA/LVDS/HDMI/DP/eDP
- Daul LANs, 6COM, 2Mini PCIe
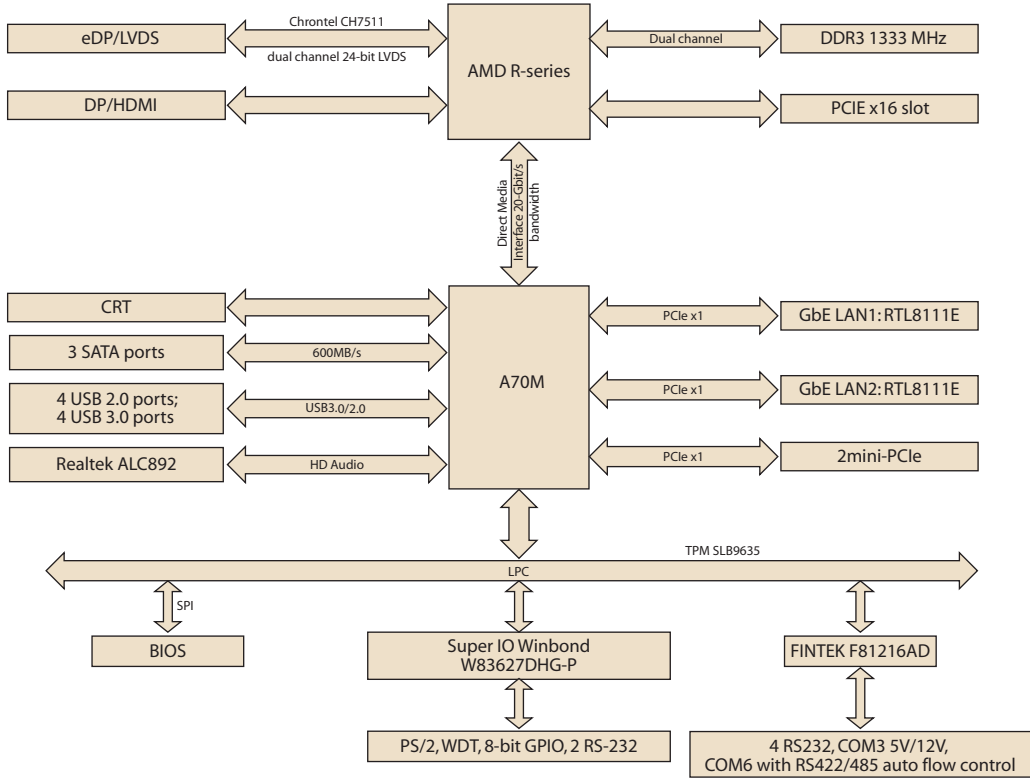- Supports embedded software APIs and Utilities

Software APIs:

SMBus   H/W Monitor   Watchdog   GPIO   Brightness

Utilities:

BIOS flash   Monitoring

SUSIAccess   RoHS COMPLIANT 2002/95/EC   CE   FCC

Specifications

Processor System	CPU	AMD Quad Core R-464L	AMD Quad Core R-460H	AMD Dual Core R-272F
	Max. Speed	2.3 GHz (quard core 35W)	2.1 GHz (quard core 35W)	2.6 GHz (dual core 35W)
	L2 Cache	1M/per core		
	Chipset	AMD R-series+A70M		
	BIOS	AMI 32 Mbit SPI		
Expansion Slot	PCI	None		
	Mini-PCIe	2		
	PCIe	PCIex16		
Memory	Technology	Dual Channel DDR3 1066/1333/1600 MHz		
	Max. Capacity	16 GB		
	Socket	2 x 204 pin SODIMM		
Graphics	Controller	AMD Radeon™ GPUs, support DX11, UVD3		
	VRAM	None		
	VGA	Supports up to 4096 x 2400 @ 60 Hx		
	LVDS	Supports 24-bit dual channel up to 1920 x 1200. co-lay eDP (by BOM option).		
	HDMI	1920 x 1200 @ 60 MHz co-lay Display port (by BOM option)		
	Triple Display	Support triple display of any three display device (CRT, LVDS or eDP, HDMI or DP)		
Ethernet	Interface	10/100/1000 Mbps		
	Controller	GbE LAN1: Realtek 8111E; GbE LAN2: Realtek 8111E		
	Connector	RJ-45 x 2		
SATA	Max Data Transfer Rate	600 MB/s		
	Channel	3		
EIDE	Mode	None		
	Channel	None		
Rear I/O	VGA	1		
	HDMI	1 colay DP (by BOM option)		
	Ethernet	2		
	USB	4 (four USB 3.0)		
	Audio	3 (Mic-in, Line-out, Line-in)		
	Serial	2 (2 RS-232)		
	DCjack	1 (2.5 mm)		
	KB/MB	1		
Internal Connector	LVDS & Inverter	1		
	USB	4 (USB2.0)		
	Serial	4 (3 RS-232; 1 RS-232/422/485; COM3 support 5v/12V by jumper selection)		
	IDE	None		
	SATA	4		
	Parallel	None		
	GPIO	8 bit		
Watchdog Timer	Output	System reset		
	Interval	Programmable 1 ~ 255 sec/min		
Power Requirement	Typical	Single Voltage 12V DC input by 1x External DC phone Jack or 1x Internal 2x2-pin Power Connector; AT/ATX Supported by Jumper max power consumption: 90W(R-464L/R-460H+16G DDR3 RAM)		
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")		

ADVANTECH | **Industrial Motherboards**

Block Diagram

eDP/LVDS — Chrontel CH7511 dual channel 24-bit LVDS — **AMD R-series**
DP/HDMI
Dual channel — **DDR3 1333 MHz**
PCIE x16 slot
Direct Media Interface 20-Gbit/s bandwidth
CRT — **A70M**
3 SATA ports — 600MB/s
4 USB 2.0 ports; 4 USB 3.0 ports — USB3.0/2.0
Realtek ALC892 — HD Audio
PCIe x1 — **GbE LAN1: RTL8111E**
PCIe x1 — **GbE LAN2: RTL8111E**
PCIe x1 — **2mini-PCIe**
TPM SLB9635
LPC
SPI
BIOS
Super IO Winbond W83627DHG-P
FINTEK F81216AD
PS/2, WDT, 8-bit GPIO, 2 RS-232
4 RS232, COM3 5V/12V, COM6 with RS422/485 auto flow control

Ordering Information

Part Number	Display	LAN	COM	TPM
AIMB-224G2-00A1E	VGA/LVDS/DP	2	6	Yes
AIMB-224G2-01A1E	VGA/eDP/HDMI	2	6	Yes

Packing List

Part Number	Quantity
AIMB-224 SBC	1
SATA HDD cable	2
Serial port cable	1
I/O port bracket	1
Startup manual	1
Driver CD	1
CPU cooler	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

Embedded OS/API

OS/API	Description
Win XPE	WES 2009
Software API	SUSI V3.0
WES7E	WIN 7 Embedded

ADVANTECH

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.

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.

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.

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.
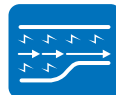
System Throttling

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
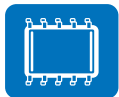
BIOS Flash

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.