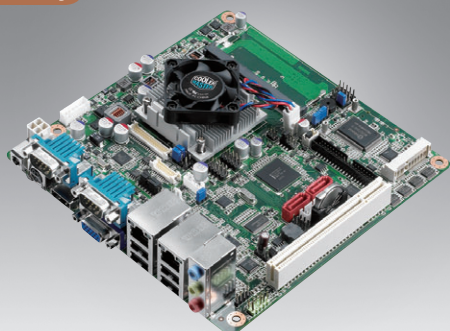


AIMB-214

Intel® Atom™ N2600/N2800/D2700 Mini-ITX
with VGA/HDMI/LVDS/eDP, 6COM, and Dual LAN

Preliminary



Features

- Supports Intel® Atom™ processor N2600, N2800 and D2700 dual core
- One 204-pin SODIMM up to 4 GB DDR3 1066 MHz SDRAM
- Supports 1 PCI and 1 Mini-PCIe expansion, 6 serial ports, 8 USB, and Cfast
- Lower total cost of ownership with DC12V support and support 18/24-bit LVDS
- Onboard TPM 1.2 support (optional)
- Supports embedded software APIs and Utilities

Software APIs:



Utilities

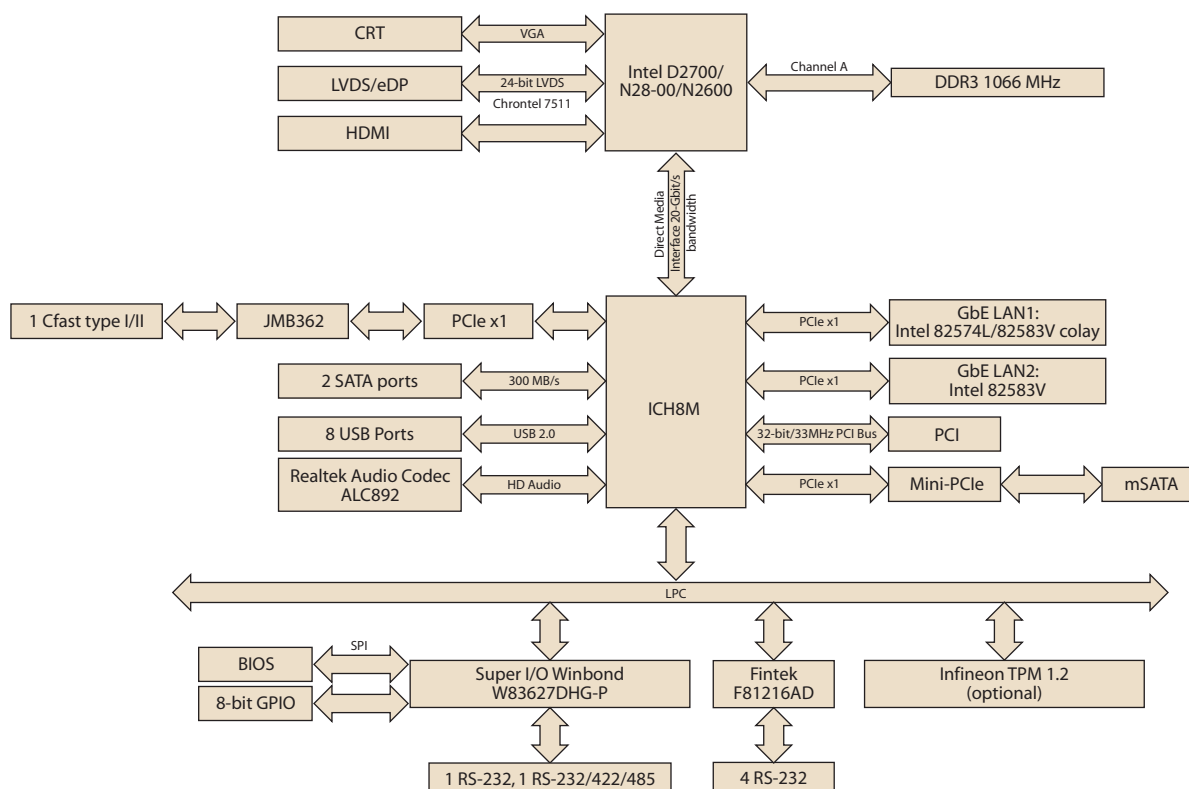


Note: eSOS requires ODM BIOS, available by request

Specifications

		Intel Atom N2600	Intel Atom N2800	Intel Atom D2700
Processor System	CPU (45 nm)	Intel Atom N2600	Intel Atom N2800	Intel Atom D2700
	Max. Speed	1.6 GHz (Dual core)	1.86 GHz (Dual core)	2.13 GHz (Dual core)
	L2 Cache	512 KB	512 KB	512 KB*2
	Chipset	NM10	NM10	NM10
	BIOS	AMI 16Mbit SPI	AMI 16Mbit SPI	AMI 16Mbit SPI
Expansion Slot	PCI	32-bit/33 MHz, 1 slot		
	Mini-PCIe	1		
	PCIe	-		
Memory	Technology	Single channel DDR3 1066 MHz SDRAM		
	Max. Capacity	2 GB/4 GB		
	Socket	1 x 204 pin SODIMM		
Graphics	Controller	Embedded Gen3.5+ GFX Core, 400/640 MHz render clock frequency for N2600/N2800/D2700		
	VRAM	Shared system memory up to 224 MB SDRAM		
	VGA	Support up to SXGA 1920 x 1200 @ 60 MHz		
	LVDS	Support 24-bit dual channel and up to 1920 x 1200 (Chrontel 7511). co-lay eDP port		
	HDMI	Support up to 1920 x 1200 @ 60 MHz		
Ethernet	Dual Display	VGA+HDMI, VGA+LVDS, VGA+eDP, Support extended mode and clone mode		
	Interface	10/100/1000 Mbps		
	Controller	GbE LAN1: Intel 82574L/82583V co-lay GbE LAN2: Intel 82583V		
SATA	Connector	RJ-45 x 2		
	Max Data Transfer Rate	300 MB/s		
EIDE	Channel	2		
	Mode	None		
SSD	Channel	None		
	Cfast CompactFlash	Support 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 (1 of RS-232, 1 of RS-232/422/485)		
	KB/MS	1		
	DC jack	1 (2.5 mm)		
Internal Connector	LVDS & Inverter	1		
	eDP	1		
	USB	4 (USB 2.0 compliant)		
	Serial	4 (RS-232), only COM6 supply 5V/12V		
	IDE	None		
	SATA	2		
	SATA PWR connector	2		
	Cfast	1		
Watchdog Timer	Parallel	None		
	DIO	8-bit GPIO		
Power Requirements	Output	System reset		
	Interval	Programmable 1 ~ 255 sec/min		
Environment	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: TBD		
	Operating	0 ~ 60° C (32 ~ 140° F)		
Physical Characteristics	Non-Operating	-40 ~ 85° C (-40 ~ 185° F)		
	Dimensions	170 mm x 170 mm (6.69" x 6.69")		

Board Diagram



Ordering Information

Part Number	CPU	SC/DC	GbE	COM	LVDS
AIMB-214D-S6A1E	D2700	Dual core	2	6	1, 24bit dual channel
AIMB-214N-S6A1E	N2800	Dual core	2	6	1, 24bit dual channel
AIMB-214M-S6A1E	N2600	Dual core	2	6	1, 24bit dual channel

Optional Accessories

Part Number	Description
1700003195	USB cable with four ports, 17.5 cm
1700002204	USB cable with four ports, 27 cm
1700008461	USB cable with four ports, 30.5 cm
1757003082	Adapter AC100-240V 60 W +12V/5A FSP
1757003062	Adapter AC100-240V 60W +12V/5A(Delta)
1700018699	KBMS cable 1*6P-2.5/DIN-6P(F)*2, 25 cm

Packing List

Part number	Description	Quantity
1700003194	SATA HDD cable	3
1700018785	SATA power cable	3
1700008876	Serial port cable 1 to 4	1
1960046526N001	CPU cooler (For Atom D2700 only)	1
TBD	I/O port bracket	1
TBD	Startup manual	1
2062021300	Driver CD	1

Embedded OS/API

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

I/O View



AIMB-214D-S6A1E
AIMB-214N-S6A1E
AIMB-214M-S6A1E

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

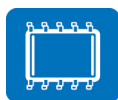
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



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.