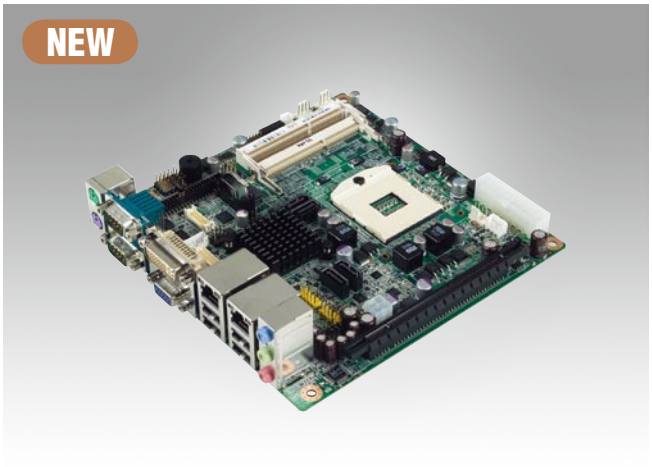
AIMB-270

Intel® Core™ i7/i5/Celeron Mini-ITX with VGA/2DVI/LVDS, 6 COM, Dual LAN, PCIe x16



Features

- Supports Intel® Core™ i7 and i5 mobile processor (PGA) with Intel QM57 chipset
- Supports dual display of 2 DVI, LVDS, and VGA
- Supports PCIe x16 (Gen 2) and mini PCIe
- Supports, AMT6.0 and software RAID 0, 1, 5, 10
- Supports embedded software APIs and Utilities

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

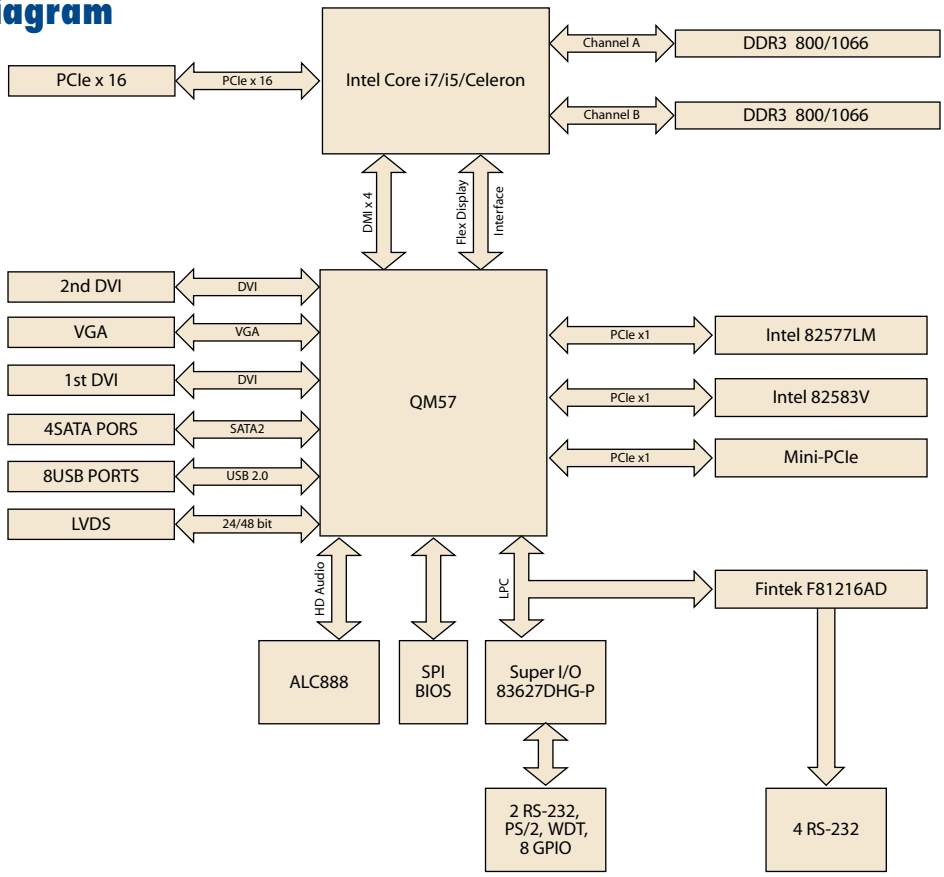
Utilities: BIOS flash, eSOS, Monitoring, Embedded Security ID, Flash Lock

Note: eSOS need ODM BIOS by request

Specifications

Processor System	CPU	Intel Core i7	Core i5	Intel Celeron		
	Max. Speed	2.66 GHz	2.4 GHz	1.86 GHz		
	DMI/FDI	DMI/FDI				
	L2 Cache	4 MB	3 MB	2 MB		
	Chipset	Intel 5 series Chipset (QM57)				
	BIOS	AMI EFI 64 Mbit SPI				
Expansion Slot	PCI	-				
	Mini-PCIe	1				
	PCIe x16 (Gen2)	8 GB/s per direction, 1 slot				
Memory	Technology	DDR3 800/1066				
	Max. Capacity	8 GB				
	Socket	2x 204 PIN DDR3 Socket				
Graphics	Controller	Integrated Gfx Gen5.75, supports DirectX 10 and OpenGL 2.1				
	VRAM	Shared system memory, 2 GB and above, total system memory shared 1 GB maximum video memory				
	VGA	Yes, supports max. resolution 2048 x 1536				
	LVDS	Single channel 18/24-bit/Dual channel 36/48-bit LVDS, supports max resolution 1920 x 1200				
	1st DVI	Yes, supports max. resolution 1920 x 1200				
	2nd DVI	Yes, with internal pin header, supports max. resolution 1920 x 1200				
	Dual Display	CRT+LVDS, CRT+DVI, LVDS+DVI				
Ethernet	Interface	10/100/1000 Mbps				
	Controller	GbE LAN1: Intel 82577LM, LAN2: Intel 82583V				
	Connector	RJ-45 x 2				
SATA	Max Data Transfer Rate	300 MB/s				
	Channel	4				
Rear I/O	VGA	1				
	DVI	1				
	Ethernet	2				
	USB	4 (USB 2.0 compliant)				
	Audio	3 (Mic-in, Line-out, Line-in)				
	Serial	2 (RS-232)				
	PS/2	2 (1 x keyboard and 1 x mouse)				
Internal Connector	USB	4 (USB 2.0 compliant)				
	LVDS/inverter	1				
	2nd DVI	1				
	Serial	4 (RS-232)				
	IDE	-				
	SATA	4				
	Mini-PCIe	1				
	Parallel	-				
	IrDA	-				
	DIO	8 bit				
Watchdog Timer	Output	System reset				
	Interval	Programmable 1 ~ 255 sec/min				
Power Requirements	Power On	5 V	3.3 V	12 V	5 Vsb	-12 V
		3.42 A	1.1 A	1.19 A	0.5 A	0.07A
Environment		Operating		Non-Operating		
	Temperature	0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution		-20 ~ 70° C (-4 ~ 158° F)		
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")				

Board Diagram



Ordering Information

Part Number	VGA	2 DVI	GbE LAN	COM
AIMB-270G2-00A1E	Yes	Yes	2	6

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1703150102	SATA power cable	2
1960047209N001	CPU cooler	2
1701400181	Cable kit for 4 serial ports	1
1960019193T100	I/O port bracket	1
20060270010	Startup manual	1
20660270000	Driver CD	1

Bracket View

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
1700008822	DVI cable

Embedded OS

OS	Part No.	Description
Win XPE	2070009655	XPE WES2009 QM57 AIMB-270 V4.0 ENG
	2070009656	XPE WES2009 QM57 AIMB-270 V4.0 MUI24

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

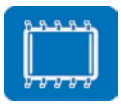
CPU Speed

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.