

AIMB-581

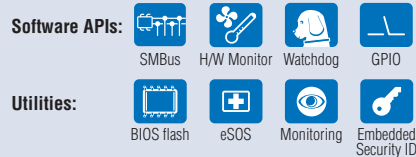
Intel® Xeon® E3/ Core™ i7/i5/i3
LGA1155 MicroATX with VGA/DVI/LVDS,
6 COM, Dual LAN, DDR3 and SATAIII

NEW



Features

- Supports Intel® Xeon®/ Core™ i7/i5/i3 processor with Q67/C206 chipset
- Four DIMM socket supports up to 16 GB DDR3 1066/1333 MHz SDRAM
- Supports dual display of VGA, DVI, LVDS and dual GbE LAN
- Supports Intel vPro, AMT 7.0, PECI 3.0, USB 3.0, Software RAID 0, 1, 5, 10, TPM 1.2 (optional)
- Supports embedded software APIs and utilities

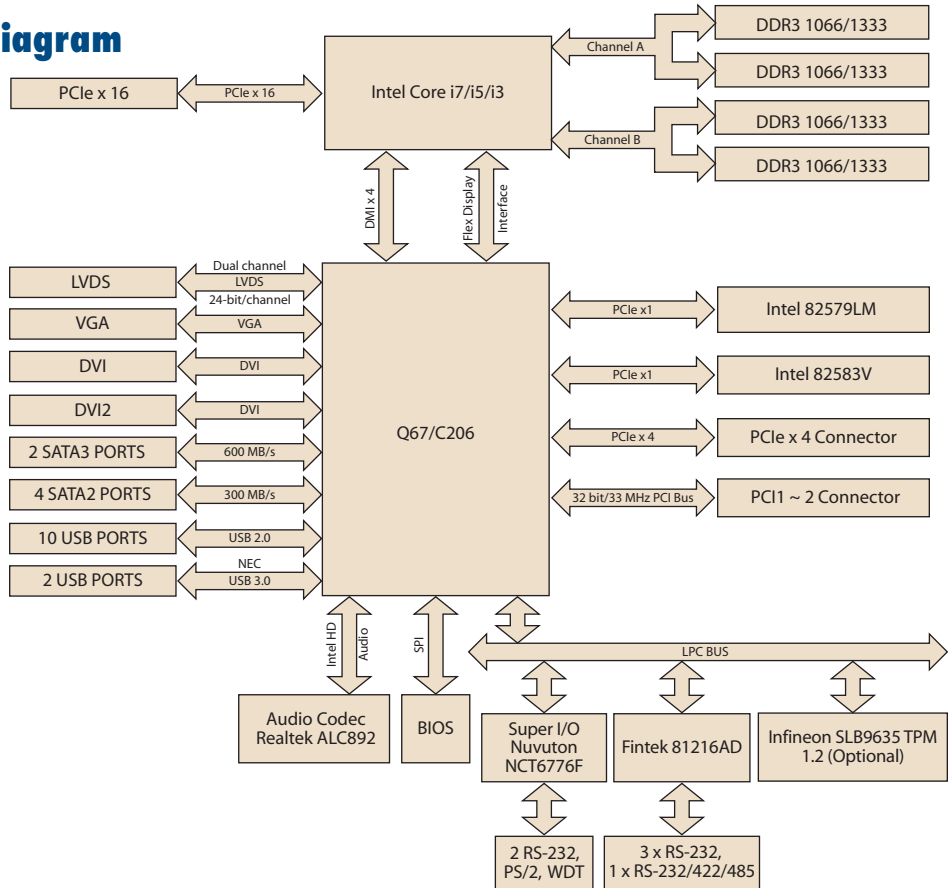


Note: eSOS requires ODM BIOS, available by request

Specifications

Processor System	CPU	Intel Xeon E3-1275	Intel Xeon E3-1225	Intel Core i3-2120	Intel Pentium G850	Intel Core i7-2600	Intel Core i5-2400	Intel Core i3-2120	
	Core Number	4	4	2	2	4	4	2	
	Max. Speed	3.4 GHz	3.1 GHz	3.3 GHz	2.9 GHz	3.4 GHz	3.1 GHz	3.3 GHz	
	Integrated Graphic	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	L3 Cache	8 MB	6 MB	3 MB	3 MB	8 MB	6 MB	3 MB	
	Support Model	WG2	WG2	WG2	WG2	QG2	QG2	QG2	
	Chipset	Q67/C206							
Expansion Slot	BIOS	AMI64 Mbit SPI							
	PCI	32-bit/33 MHz, 2 slots							
	PCIe x4 (Gen2)	2.0 GB/s per direction, 1 slot							
Memory	PCIe x16 (Gen2)	8 GB/s per direction, 1 slot							
	Technology	Dual Channel DDR3 1066/1333 MHz SDRAM							
	Max. Capacity	16 GB							
Graphics	Socket	4 x 240-pin DIMM							
	Controller	Intel HD Graphics							
	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed							
	LVDS	Single channel 24-bit/dual channel 48-bit LVDS							
	1st DVI	Yes, supports max. resolution 1920 x 1200							
	2nd DVI	Yes, with internal pin header, supports max. resolution 1920 x 1200							
Ethernet	Dual Display	CRT+LVDS, CRT+DVI, LVDS+DVI							
	Interface	10/100/1000 Mbps							
	Controller	GbE LAN1: Intel 82579LM, GbE LAN2: Intel 82583V							
SATA	Connector	RJ-45 x 2							
	Max Data Transfer Rate	600 MB/s (SATA 3.0)/ 300 MB/s (SATA 2.0)							
Rear I/O	Channel	2/4							
	VGA	1							
	DVI	1							
	Ethernet	2							
	USB	4 (2 USB 2.0, 2 USB 3.0)							
	Audio	2 (Mic-in, Line-out)							
	Serial	2 (RS-232)							
Internal Connector	PS/2	2 (1 x keyboard and 1 x mouse)							
	USB	8 (USB 2.0 compliant)							
	Serial	4 (3 x RS-232, 1 x RS-232/422/485 to support auto flow control)							
	IDE	-							
	SATA	2 x 600 MB/s (SATA 3.0)/4 x 300 MB/s (SATA 2.0)							
	LVDS & Inverter	1							
	Parallel	1							
	IrDA	-							
	GPIO	8-bit GPIO							
Watchdog Timer	Output	System reset							
	Interval	Programmable 1 ~ 255 sec/min							
Power Requirements	Intel Core i7-2600 3.4GHz, 2GB DDR3 1333 MHz x 4pcs								
	Power On	5V	3.3V	12V	5Vsb	-12V			
Environment	2.88A					0.01A			
	Temperature	Operating					Non-Operating		
Physical Characteristics	0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution					-20 ~ 70° C (-4 ~ 158° F)			
	Dimensions	244 mm x 244 mm (9.6" x 9.6")							

Board Diagram



Ordering Information

Part Number	Chipset	Memory	USB 3.0	VGA	DVI 1/2	LVDS	USB	COM	TPM	GbE LAN
AIMB-581QG2-00A1E	Q67	Non-ECC	2	Yes	1/(1)	(1)	12	6	(1)	2
AIMB-581WG2-00A1E	C206	ECC/Non-ECC	2	Yes	1/(1)	(1)	12	6	(1)	2

*() means do not populated on MP version.

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1703150102	SATA power cable	2
1960050472T000	I/O port bracket	1
2002058100	Startup manual	1
2062058100	Driver CD	1

Riser Card

Part Number	Description
AIMB-RP10P-01A1E	1U riser card with 1 PCI expansion
AIMB-RP30P-03A1E	2U riser card with 3 PCI expansion
AIMB-RP3PF-12A1E	2U riser card for 1 PCIe x 16 and 2 PCI expansion
AIMB-RP3P8-12A1E	2U riser card with 2 PCIe x 8 & 1 PCI slots expansion (For WG2 Sku)

Optional Accessories

Part Number	Description
1700002204	Dual port USB cable (27 cm) with bracket
1960047669N001	LGA1156 CPU cooler for 4U and wallmount chassis
1960047831N001	LGA1156 CPU cooler for 2U and wallmount chassis
1960049408N001	LGA1156 CPU cooler for 1U and wallmount chassis
1700008809	Printer port cable kit
1700018699	KBMS cable 1*6P-2.5/DIN-6P(F)*2, 25 cm

Note. Purchasing AIMB-581's proprietary CPU cooler from Advantech is a must, other brand's CPU cooler are NOT compatible with AIMB-581.

I/O View



AIMB-581QG2-00A1E
AIMB-581WG2-00A1E

Embedded OS/API

OS/API	Part No.	Description
Win XPE	2070010800	XPE WES 2009 V4.0 ENG with Acronis PSLN
Software API	2070010820	XPE WES09 AIMB-581 V4.0 ENG_CHT ATI PSLN
		SUSI V3.0

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

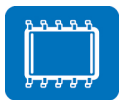
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



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.