# **AIMB-580**

## Intel<sup>®</sup> Core<sup>™</sup> i7/i5/i3/Pentium<sup>®</sup>/Xeon LGA1156 mATX with VGA/DVI, 4 COM, Dual LAN, DDR3



#### **Features**

- Supports Intel<sup>®</sup> Core<sup>™</sup> i7/i5/i3/Pentium/Xeon processor with Q57/3450 chipset
- Four DIMM socket supports up to 16 GB DDR3 800/1066/1333 MHz SDRAM
- Supports dual display of VGA and DVI and dual GbE LAN
- Supports SATA RAID 0, 1, 5, 10, AMT 6.0, TPM 1.2 (optional)
- Supports embedded software APIs and utilities

Software APIs:		*/		
	SMBus	H/W Monitor	Watchdog	GPI0
Utilities:	BIOS flash	eSOS	Monitoring	Embedded Security ID

Note: eSOS requires ODM BIOS, available by request

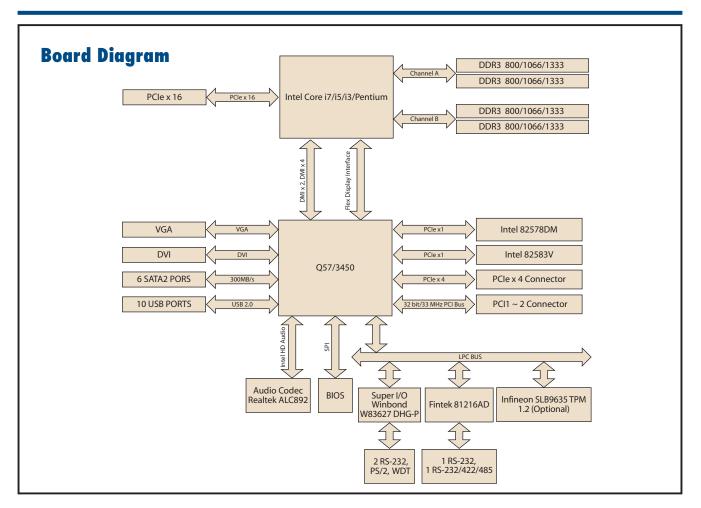
## **Specifications**

Windows

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	CPU.	Xeon 34xx	Intel Core i7 8xx	Intel Core i5 7xx	Intel Core i5 6xx	Intel Core i3 5xx	Intel Pentium G69xx
	Core number	4	4	4	2	2	2
	Max.speed	2.93 GHz	2.93 GHz	2.66 GHz	3.3 GHz	3.06 GHz	2.8 GHz
Processor System	Integrated Graphic	No	No	No	Yes	Yes	Yes
	L2 Cache	8 MB	8 MB	8 MB	4 MB	4 MB	3 MB
	Support model	WG2	QG2	QG2	WG2/QG2	WG2/QG2	WG2/QG2
	Chipset	Q57/3450					
	BIOS	AMI 64 Mbit SPI					
	PCI	32-bit/33 MHz, 2					
Expansion Slot	PCIe x4	1.0 GB/s per dire					
	PCIe x16 (Gen2)	8 GB/s per direct	tion, 1 slot				
	Technology	Dual Channel DE	DR3 800/1066/1333	MHz SDRAM			
/lemory	Max. Capacity	16 GB					
	Socket	4 x 240-pin DIM					
Graphics	Controller	Intel HD Graphic	S				
arapillus	VRAM	1 GB maximum s	shared memory with	2 GB and above sys	tem memory installe	bd	
	Interface	10/100/1000 Mb	ops				
Ethernet	Controller	GbE LAN1: Intel	82578DM, GbE LAN	12: Intel 82583V			
	Connector	RJ-45 x 2					
אדא	Max Data Transfer Rate	300 MB/s					
SATA	Channel	6					
	VGA	1					
	DVI-I	1					
	Ethernet	2					
Rear I/O	USB	4 (USB 2.0 comp	pliant)				
	Audio	2 (Mic-in, Line-o					
	Serial	2 (RS-232)	,				
	PS/2	2 (1 x keyboard a	and 1 x mouse)				
	USB	6 (USB 2.0 comp	pliant)				
	Serial			to support auto flow	control)		
	IDE	-					
starnal Connector	SATA	6					
Internal Connector FDD 1							
	Parallel	1					
	IrDA	-					
	GPIO	-					
Matabala a Timaan	Output	System reset					
Vatchdog Timer	Interval	Programmable 1	~ 255 sec/min				
Intel Core i5-660 3.33GHz, 2GB DDR3 1333 MHz x 4pcs							
				3.3V	12V	5Vsb	-12V
Power Requirements	Power On	5V					
Power Requirements	Power On	5V 3.9A		0.67A	3.84A	0.23A	0.24A
Power Requirements	Power On					0.23A Non-Operating	0.24A
Power Requirements	Power On Temperature	3.9A Operating	140° F), depends or		3.84A		

ROHS CEFCC

#### **AIMB-580**



### **Ordering Information**

Part Number	Chipset	Memory	VGA	DVI	USB	COM	GbE LAN
AIMB-580QG2-00A1E	Q57	Non-ECC	Yes	Yes	10	4	2
AIMB-580WG2-00A1E	3450	ECC/Non-ECC	Yes	Yes	10	4	2

### **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-21A1E	2U riser card for 1 PCIe x 16 abd 2 PCI expansion
AIMB-RP3P8-12A1E	2U riser card with 2 PCIe x 8 & 1 PCI slots expansion (For WG2 Sku)

#### I/O View



AIMB-580QG2-00A1E AIMB-580WG2-00A1E

## **Packing List**

Part Number	Description	Quantity
1700340640	FDD cable	1
1700003194	SATA HDD cable	2
1703150102	SATA power cable	2
1960019193T100	I/O port bracket	1
2002058000	Startup manual	1
2062058000	Driver CD	1

## **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

Note: Purchasing AIMB-580's proprietary CPU cooler from Advantech is a must. Other brands' CPU cooler are NOT compatible with AIMB-580.

#### **Embedded OS/API**

OS/API	Part No.	Description
Win XPF	2070009652	XPE WES2009 Q57_AIMB-280/580/780 V4.0 ENG
WIII APE	2070009653	XPE WES2009 Q57_AIMB-280/580/780 V4.0 MUI24
Software API	205E580000	SUSI 3.0 SW API for AIMB-580 XP

**Online Download** www.advantech.com/products

# **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



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 is the System Management Bus defined by Intel<sup>®</sup> 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.



I<sup>2</sup>C is a bi-directional two wire bus that was developed by Philips for use in their televisions in the 1980s. The I<sup>2</sup>C API allows a developer to interface with an embedded system environment and transfer serial messages using the I<sup>2</sup>C protocols, allowing multiple simultaneous device control.

Display



Control

The Brightness Control API allows a developer to interface with an embedded device to easily control brightness.



The Backlight API allows a developer to control the backlight (screen) on/off in an embedded device.

Backlight

### **Software Utilities**



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.



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.



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.

#### Monitor



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.



The Hardware Monitor (HWM) API is a system health supervision API that inspects certain condition indexes, such as fan speed, temperature and voltage.



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**



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



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%.



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 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.