

# AIMB-580

Intel® Core™ i7/i5/i3/Pentium® Processor  
VGA/DVI, 4 COM, Dual LAN mATX with VGA/  
DVI, 4 COM, Dual LAN

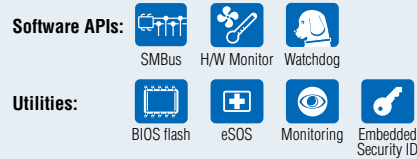
NEW



CE FCC

## Features

- Supports Intel® Core™ i7/i5/i3/Pentium processor with Q57 chipset
- Four DIMM socket supports up to 16 GB DDR3 800/1066/1333
- 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

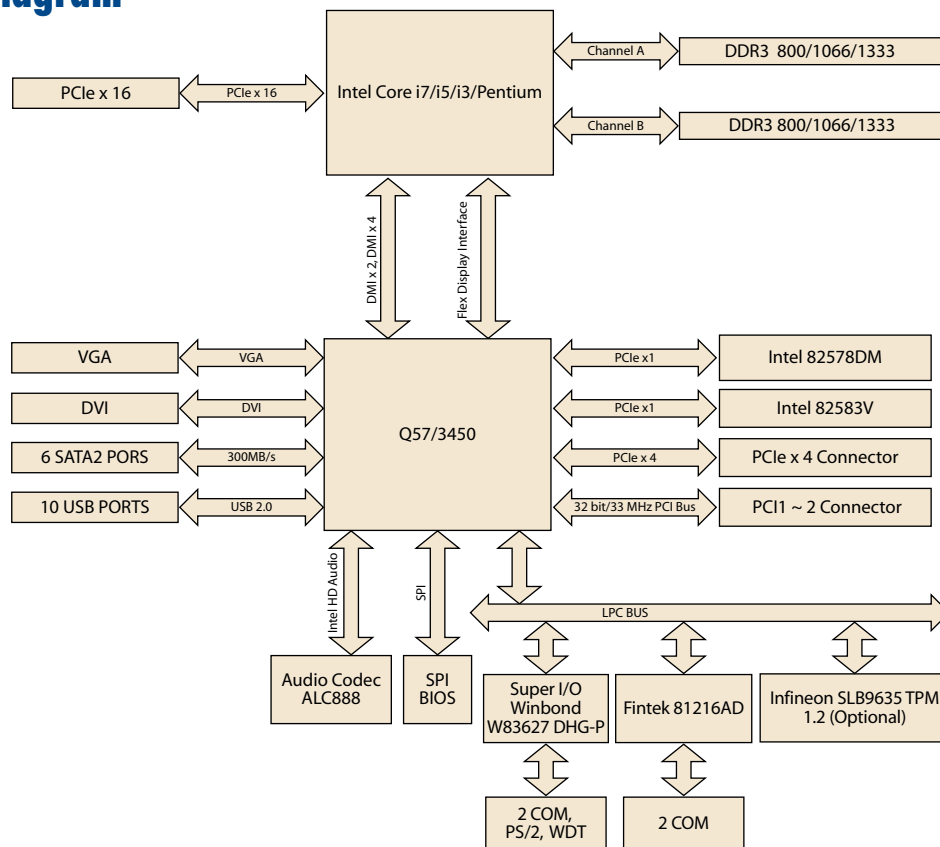


Note: eSOS need ODM BIOS by request

## Specifications

Processor System	CPU	Intel® Core™ i7	Intel® Core™ i5 700	Intel® Core™ i5 600	Intel® Core™ i3	Intel® Pentium™
	Core number	4	4	2	2	2
	Max. speed	2.93 GHz	2.66 GHz	3.3 GHz	3.06 GHz	2.8 GHz
	Integrated Graphic	No	No	Yes	Yes	Yes
	L2 Cache	8 MB	8 MB	4 MB	4 MB	3 MB
	Chipset	Q57/3450				
	BIOS	AMI 64 Mbit SPI				
Expansion Slot	PCI	32-bit/33 MHz, 2 slots				
	PCIe x4	1.0 GB/s per direction, 1 slot				
	PCIe x16 (Gen2)	8 GB/s per direction, 1 slot				
Memory	Technology	Dual Channel DDR3 800/1066/1333				
	Max. Capacity	16 GB				
	Socket	4 x 240-pin DIMM				
Graphics	Controller	Intel HD Graphics				
	VRAM	1 GB maximum shared memory with 2 GB and above system memory installed				
Ethernet	Interface	10/100/1000 Mbps				
	Controller	GbE LAN1: Intel 82578DM, GbE LAN2: Intel 82583V				
	Connector	RJ-45 x 2				
SATA	Max Data Transfer Rate	300 MB/s				
	Channel	6				
Rear I/O	VGA	1				
	DVI	1				
	Ethernet	2				
	USB	4 (USB 2.0 compliant)				
	Audio	2 (Mic-in, Line-out)				
	Serial	2 (RS-232)				
	PS/2	2 (1 x keyboard and 1 x mouse)				
Internal Connector	USB	6 (USB 2.0 compliant)				
	Serial	2 (1 x RS-232, 1 x RS-232/422/485 to support auto flow control)				
	IDE	-				
	SATA	6				
	FDD	1				
	Parallel	1				
	IrDA	-				
Watchdog Timer	Output	System reset				
	Interval	Programmable 1 ~ 255 sec/min				
Power Requirements	Power On	5V	3.3V	12V	5Vsb	-12V
		4.17A	0.77A	0.01A	0.84A	0.13A
Environment	Temperature	Operating			Non-Operating	
		0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution			-20 ~ 70° C (-4 ~ 158° F)	
Physical Characteristics	Dimensions	244 mm x 244 mm (9.6" x 9.6")				

## Board Diagram



## Ordering Information

Part Number	Chipset	VGA	DVI	SW RAID	USB	COM	GbE LAN
AIMB-580QG2-00A1E	Q57	Yes	Yes	Yes	10	4	2
AIMB-580WG2-00A1E	3450	Yes	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-RP3P8-12A1E	2U riser card with 1 PCIe x 16 & 2 PCI slots expansion (For WG Sku)

## Bracket View



## 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
2002058010	Startup manual	1
2066058000	Driver CD	1

## Optional Accessories

Part Number	Description
1700002204	Dual port USB cable (27 cm) with bracket
1960047669N001	LGA1156 CPU cooler for 2U and wallmount chassis

## Embedded OS/API

Embedded OS/API	Part No.	Description
Win XPE	2070009652	XPE WES2009 Q57_AIMB-280/580/780 V4.0 ENG
	2070009653	XPE WES2009 Q57_AIMB-280/580/780 V4.0 MUI24
Software API	205EB58000	SUSI 3.0 SW API for AIMB-580 XP

# 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**

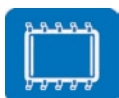
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**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.