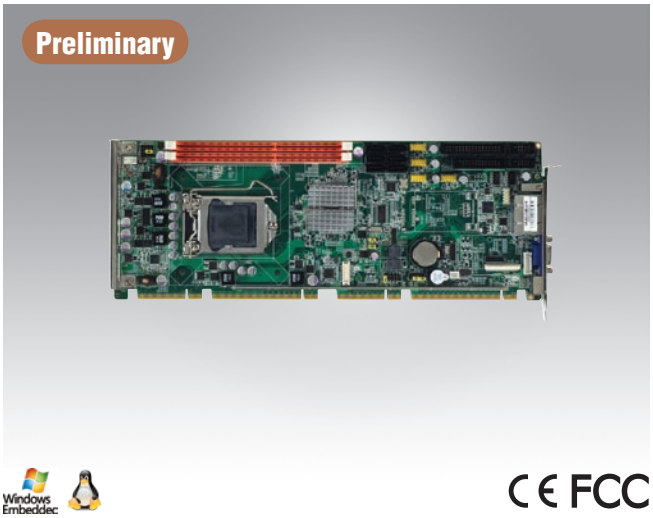
PCE-5125

Intel Core i7/i5/i3/Xeon SHB with DDR3/ Dual GbEs/SATA RAID/Dual Display



Features

- LGA 1156 Intel® Core™ i7/i5/i3/Pentium/Xeon CPUs.
- Dual Channel (ECC) DDR3 1333 MHz up to 8 GB
- Support PCE-7000 and 5000 series backplanes
- VGA and DVI dual display
- Supports embedded software APIs and Utilities

Note: Purchasing PCE-5125's proprietary CPU cooler from Advantech is a must. Other brands' CPU coolers are NOT compatible with PCE-5125.

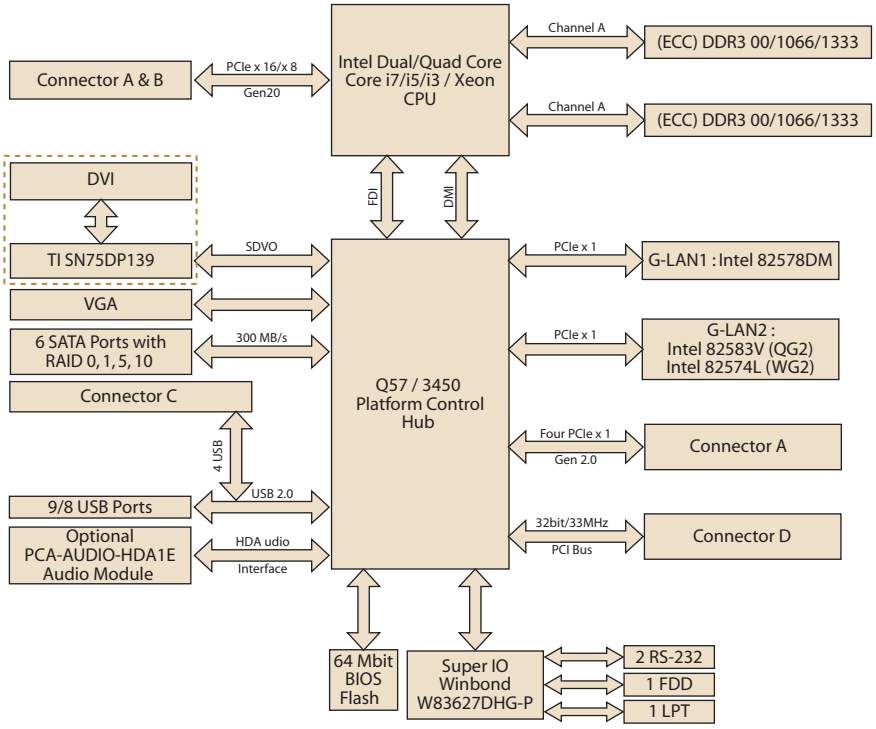
Software APIs: Watchdog, H/W Monitor, GPIO

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

Specifications

Processor System	CPU	Xeon	Core i7	Core i5 700	Core i5 600	Core i3	Pentium
	Core Number	4	4	4	2	2	2
	Speed	2.93 GHz	2.93 GHz	2.66 GHz	3.33 GHz	3.06 GHz	2.8 GHz
	L2 Cache	8 MB	8 MB	8 MB	4 MB	4 MB	3 MB
	Integrated Graphic	Only those Core i5 600, Core i3 and Pentium CPUs with core are embedded with integrated graphics					
	Socket	LGA1156					
	Chipset	Q57 for QG2, QVG SKUs; 3450 for WG2 SKU					
	BIOS	AMI 64Mb SPI Flash					
	Note: Xeon 3400 series are only supported by WG2 SKU.						
Bus	PCI-Express	One PCIe x16 or two x8, plus four x1 to backplane (Gen 2.0) (Only WG2 SKU supports two PCIe x8)					
	PCI	Four 32bit/33MHz PCI Masters to Backplane					
Memory	Technology	Dual channel DDR3 800/1066/1333 MHz					
	Max. Cap.	4 GB per DIMM, total 8 GB, non-ECC for QG2, QVG SKUs; ECC for WG2 SKU					
	Socket	Two 240-pin DDR3 memory socket					
Graphic	On board	?? MHz ?? graphics engine, Direct X ??/Pixel Shader ?? compliant					
	VRAM	Max. 1 GB shared video memory with system memory ≥ 2 GB.					
	Video Output	15 pin VGA D-sub connector x1/On-board DVI pin header x 1					
Ethernet	Interface	10/100/1000Base-T					
	Controller	LAN1: Intel 82578DM LAN2: Intel 82583V for QG2, QVG SKUs; Intel 82574L for WG2 SKU					
	Connector	RJ45 with LED Connector x 2 for QG2, WG2 SKUs/x 1 for QVG SKU					
SATA 2	Max. transfer rate	300MB/s					
	Channel	6					
	RAID	0, 1, 5, 10					
EIDE	Mode	N/A					
	Channel	N/A					
I/O Interface	USB 2.0	Maximum 9 ports on the SHB, 4 ports to the BP					
	Serial	2 RS-232 with Pin Headers					
	Parallel	1 (EPP/ECP)					
	FDD	1					
	PS/2	1 (for mouse and keyboard, an Y cable is included in the package)					
Watchdog Timer	Output	System reset					
	Interval	Programmable 1, 2, 4, 8,…, 256 sec					
Miscellaneous	Audio Output	Intel High Definition audio interface (requires an audio extension module, P/N: PCA-AUDIO-HDA1E)					
Power Requirement	Test Equipments	Core i7 ?? CPU ?? GHz, TDP ??W, 2 Piece of 8 GB DDR3 1333 MHz					
	Voltage	+12 V	+5 V	+3.3 V	+5 VSB	-12 V	-5 V
	Current	TBD	TBD	TBD	TBD	N/A	N/A
	Test Equipments	Xeon ?? CPU ?? GHz, TDP ??W, 2 Piece of 8GB ECC DDR3 1333 MHz					
	Voltage	+12 V	+5 V	+3.3 V	+5 VSB	-12 V	-5 V
	Current	TBD	TBD	TBD	TBD	N/A	N/A
Environment	Status	Operating			Non-Operating		
	Temperature	0 ~ 60° C (32 ~ 140° F) (operation humidity: 40° C @ 85% RH Non-Condensing)			-40 ~ 85° C and 60° C @ 95% RH Non-Condensing		
Physical	Dimensions	185 mm (L) x 122 mm (W) (7.3" x 4.8")					

Board Diagram



Ordering Information

Model Name	Memory	BP Support	LAN	VGA	DVI	USB	COM	IPMI/SNMP
PCE-5125QG2-00A1E	Non-ECC	PCE-5000	2 GbE	Yes	Yes	13	2	Yes
PCE-5125QVG-00A1E	Non-ECC	PCE-5000	1 GbE	Yes	-	13	2	Yes
PCE-5125WG2-00A1E	ECC/Non-ECC	PCE-5000/7000	2 GbE	Yes	-	13	2	Yes

Packing List

Part Number	Description	Quantity
1700340640	FDD cable	x 1
1700003194	Serial ATA HDD data cable	x 2
1703150102	Serial ATA HDD power cable	x 2
1701260305	COM + printer ports cable kit	x 1
1700060202	Keyboard and mouse Y-cable	x 1
1700008461	4-port USB cable kit	x 1
9689000068	Jumper package	x 1
2002721020	User Note for Full-Sized CPU Card	x 1
-	Warranty Card	x 1
-	Startup manual	x 1
-	Utility CD	x 1

Bracket View

PCE-5125QG2-00A1E
PCE-5125WG2-00A1E

PCE-5125QVG-00A1E

Accessories

Part Number	Description
PCA-AUDIO-HDA1E	Audio extension module

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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

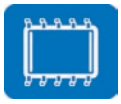
CPU Speed

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.