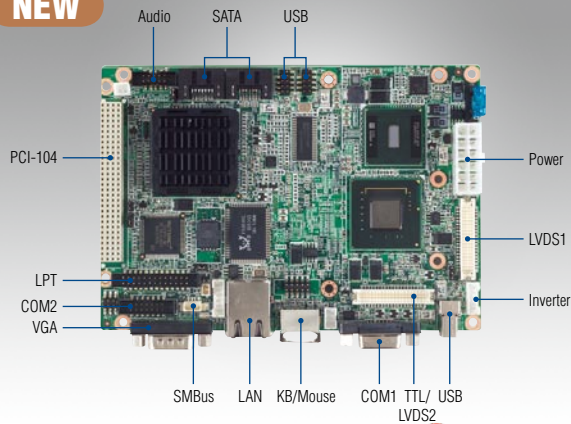


# PCM-9361

Intel® Atom™ N270 3.5" SBC, Dual LVDS, TTL, CRT, LAN, USB, SATA, PCI-104

**NEW**



## Features

- Intel® Atom™ Processor N270+ 945GSE+ ICH7M
- Supports 18-bit TTL/CRT/36-bit LVDS1/48-bit LVDS2 (including Wide screen)
- Supports Giga LAN/HD Audio
- Supports up to 2 COM ports, 5 USB 2.0 ports, 2 SATA Interfaces
- Supports embedded software API and utility
- Supported OS: Win XP embedded, Win XP Pro, WinCE6.0, Linux, QNX

### Software APIs:



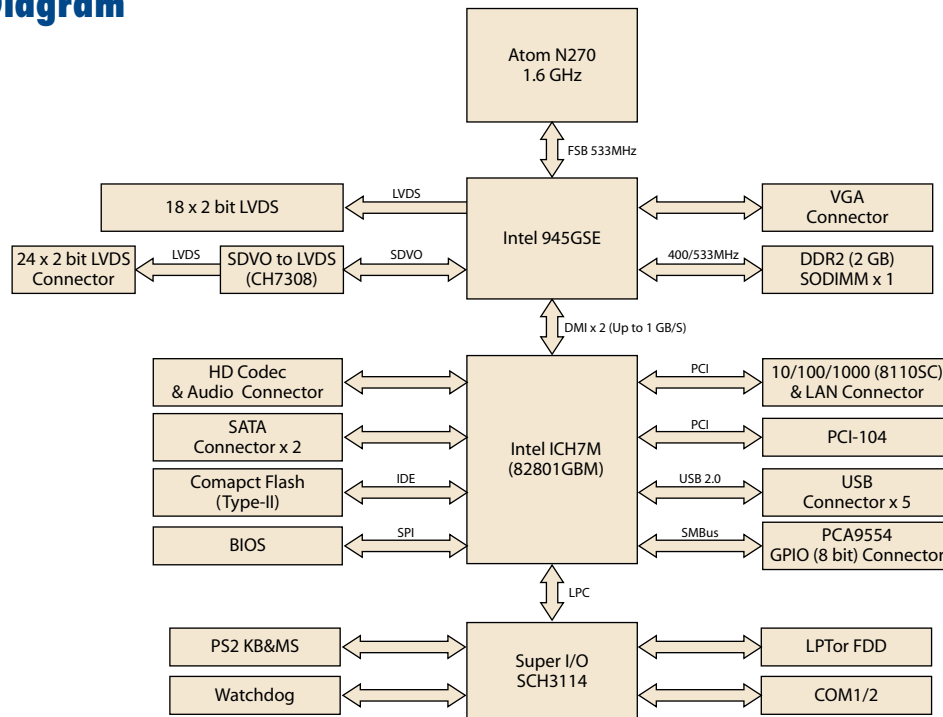
### Utilities:



## Specifications

Processor System	CPU	Intel Atom N270 1.60 GHz		
	Front Side Bus	533 MHz		
	Frequency	1.60 GHz		
	L2 Cache	512 KB		
	System Chipset	Intel 945GSE+ ICH7M		
Memory	BIOS	Award 4 Mbit		
	Technology	DDR2 400/533 MHz		
	Max. Capacity	2 GB		
Display	Socket	1 x 200-pin SODIMM		
	Chipset	Intel 945GSE		
	VRAM	Optimized shared memory architecture up to 224 MB system memory		
	Graphics Engine	Intel 3.5 Gen integrated graphics engine		
	LVDS	LVDS1: Supports 2 channel 36-bit LVDS panel LVDS2: Supports 2 channel 48-bit LVDS panel (only for PCM-9361EVG)		
	VGA	LVDS2 wide screen supports: EX:1366 x 768 (24-bit), 1440 x 900 (48-bit), 1680 x 1050 (48-bit), 1920 x 1080 (48-bit)		
	TTL LCD	Supports QXGA Up to 2048 x 1536 18-bit TTL: Up to 640 x 480, 800 x 600		
Ethernet	Dual Display	- CRT + LVDS - CRT + TTL - LVDS1 + LVDS2 (not supported in DOS mode, only for PCM-9361EVG )		
	Speed	10/100/1000 Mbps		
	Controller	Realtek 8110SC		
WatchDog Timer	Connector	RJ-45 on LAN		
	Chipset	Realtek ALC888, High Definition Audio (HD), Line-in, Line out, Mic-in		
Storage	Output system reset, Programmable 1 ~ 255 sec			
	CompactFlash	Supports CompactFlash card TYPE I/II (Primary Master IDE Channel)		
	SATA	2		
Rear I/O	Floppy	1 (shared with LPT)		
	Serial	1 (COM1 supports RS-232)		
	Ethernet	1 (10/100/1000 Mbps LAN1)		
	KB/Mouse	1		
	VGA	1		
	USB	1		
Internal I/O	USB	4 x USB 2.0		
	Serial	1 x COM COM2 supports RS-232/422/485		
	Parallel(LPT)	1		
	FDD	1 (shared with LPT)		
	SMBUS	1		
	GPIO	8-bit GPIO		
	I <sup>2</sup> C	1		
Expansion	PCI-104 slot	PCI-104 Expansion		
	Power Type	AT/ATX		
Power	Power Supply Voltage	ATX: +5 V ± 5%, ±12 V ± 5% AT: 5V only to boot up (12 V is optional for LCD inverter and add on card)*		
	Power Consumption (Typical)	5 V	12 V	
		Typical	1.90 A	0.07 A
	Power Consumption (Max, test in HCT)	Suspend	1.36 A	0.06 A
		5V: 2.38A	12V: 0.09A	
Power Management	APM1.2, ACPI3.0, wake on LAN, and modem ring-in functions			
Environment	Battery	Lithium 3 V / 210 mAH		
	Operational	0 ~ 60° C (32 ~ 140° F)		
	Non-Operational	Operating: 0 ~ 60° C (32 ~ 140° F) (Operating humidity: 40° C @ 85% RH non-condensing) Non-Operating: -40° C ~ 85° C and 60° C @ 95% RH non-condensing		
Physical Characteristics	Dimensions (L x W)	146 x 102 mm (5.7" x 4")		
	Weight	0.85 kg (1.87 lb), weight of total package		

## Board Diagram



## Ordering Information

Part No.	CPU	Memory	CRT	LVDS	LVDS2	TTL	LAN	Audio	USB 2.0	RS-232	RS-232/422/485	LPT	KB/MS	Expansion	Thermal Solution	Operating Temp.
PCM-9361FG-S6A1E	Atom N270 1.6G	DIMM	1	-	-	1	1 GE	HD	5	1	1	1	1	PCI-104	Passive	0 ~ 60° C
PCM-9361EG-S6A1E	Atom N270 1.6G	DIMM	1	36-bit	-	-	1 GE	HD	5	1	1	1	1	PCI-104	Passive	0 ~ 60° C
PCM-9361EVG-S6A1E	Atom N270 1.6G	DIMM	1	36-bit	48-bit	-	1 GE	HD	5	1	1	1	1	PCI-104	Passive	0 ~ 60° C
PCM-9361L-S6A1E (W/O cables)	Atom N270 1.6G	DIMM	1	36-bit	-	-	1 GE	HD	5	1	1	1	1	-	Passive	0 ~ 60° C
PCM-9361FZ-1GS6A1E	Atom N270 1.6G	1G bundle	1	-	-	1	1 GE	HD	5	1	1	1	1	PCI-104	Passive	-20 ~ 80° C
PCM-9361VZ-1GS6A1E	Atom N270 1.6G	1Gbundle	1	36-bit	48-bit	-	1 GE	HD	5	1	1	1	1	PCI-104	Passive	-20 ~ 80° C

## Packing List

Part No.	Description	Quantity
	PCM-9361 SBC	
	Startup Manual	
	Utility CD	
9689000002	mini Jumper pack	x 1
1700000265	ATX Power Cable	x 1
1700006291	SATA Cable	x 1
1700060202	PS/2 cable	x 1
1701140201	COM2 IDE D-SUB 20 cm cable	x 1
1703100121	USB 2 x 5P-2.0 12 cm W/BKT cable	x 2
1703100152	Audio Cable	x 1
1700260250	LPT IDE 26P D-SUB 25 cm cable	x 1
1703150102	SATA 10 cm power cable	x 1

## Optional Accessories

Part No.	Description
1700001531	LPT to FDD cable
1700016161	AT Power cable, 2 x 6P to 3 x 4P 10 cm
1700016141	AT power cable, 2 x 6P to 2 x 10P 10 cm

## Embedded OS/API

Embedded OS/API	Part No.	Description
WinCE 6.0	2070008069	Image CE60 Pro PCM-9361 V1.1 JPN
	2070006670	Image XPE FP2007 PCM-9361 V3.01 ENG
Win XPE	2070007911	XPE WES2009 Intel-Multitprocess V4.0 MUI24
	2070007789	XPE WES2009 Intel-Multitprocess V4.0 ENG
QNX	2070006929	Image QNX V6.4 PCM-9361 V1.0 ENG
Software API	205E936000	EmbCore PCM-9361 3.5" SUSI package V3.08

# 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**

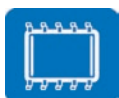
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**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.