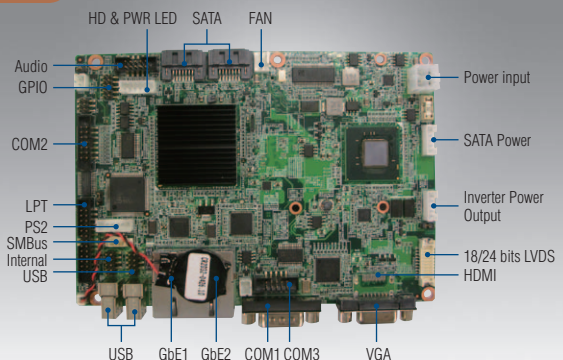


# PCM-9363

**Intel® Atom™ N455/D525 3.5" SBC,  
DDR3, 18/24-bit LVDS, VGA or HDMI,  
2 GbE, Mini PCIe, 3 COM**

**NEW**



## Features

- Embedded Intel® Atom™ N455 Single Core/ D525 Dual Core processor + ICH8M, DDR3 memory support
- Intel Gen 3.5 DX9, MPEG2 Decode in HW, multiple display: 18/24-bit LVDS, VGA or 1080P HDMI
- Supports 12V input power for PCM-9363, easy for power integration
- 2 Intel GbE support, Rich I/O interface with 3COM, 2 SATA, 6 USB and GPIO
- Supports embedded software APIs and Utilities

### Software APIs:



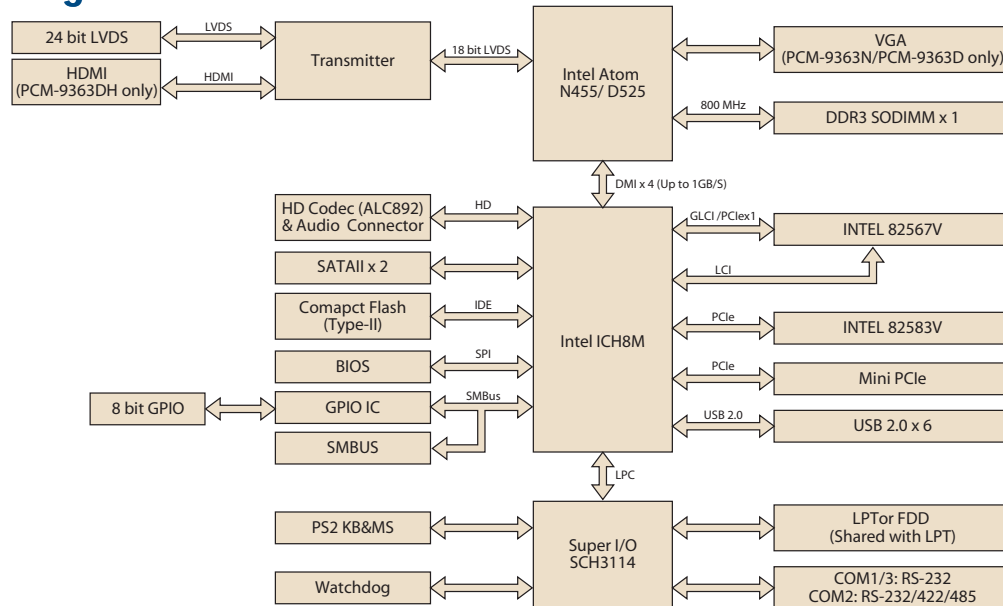
### Utilities:



## Specifications

Processor System	CPU	Intel Atom N455 Single Core 1.66 GHz Processor Intel Atom D525 Dual Core 1.8 GHz Processor
	Front Side Bus	667 MHz for N455, 800 MHz for D525
	Frequency	1.66 GHz on N455, 1.8 GHz on D525
	L2 Cache	512 KB/1 MB
	System Chipset	Intel N455/D525 + ICH8M
Memory	BIOS	AMI 16 Mbit Flash BIOS
	Technology	DDR3 800 MHz
	Max. Capacity	4GB for D525, and 2GB for N455
Display	Socket	1 x 204-pin SODIMM
	Chipset	Intel Atom Processor N455 1.66GHz/D525 1.8GHz
	VRAM	Optimized Shared Memory Architecture up to 224 MB system memory
	Graphic Engine	Intel Gen 3.5 DX9, MPEG2 Decode in HW Embedded Gen3.5+ GFX Core
	LVDS	LVDS: Single channel 18/24-bit LVDS up to WXGA 1366 x 768
	VGA	Intel Atom N455 Single Core up to 1400 x 1050 (SXGA), Intel Atom D525 Dual Core up to 2048 x 1536
	HDMI	Supported by request. Support 1080P and scale function Supports Hot Plug Detection (HPD) for HDMI
Ethernet	Dual Display	VGA+LVDS
	Speed	10/100/1000 Mbps (Supports Wake on LAN)
	Controller	GbE1 Intel 82567V, GbE2 Intel 82583V
Audio	Connector	RJ45 on GbE1, GbE2
	Chipset	Realtek ALC892
WatchDog Timer		High Definition Audio (HD), Line-in, Line out, Mic-in Output System reset, Programmable counter from 1 ~ 255 minutes/ seconds
Storage	Compact Flash	Supports CompactFlash Card TYPE I/II (Primary Master IDE Channel)
	SATA	2 SATA II (Max. Data Transfer Rate 300 MB/s), 1 internal SATA power connector
Rear I/O	Serial	1 (COM1 supports RS-232) (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)
	Ethernet	2 (10/100/1000Mbps)
	VGA	1
	HDMI	1 (only on PCM-9363DH)
	USB	2
Internal I/O	USB	4 x USB 2.0
	Serial	2 x COM (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV) COM3 supports RS-232, COM2 supports RS-232/422/485 (Supports RS-485 auto flow control)
	Parallel(LPT)	1
	SMBUS	1
	PS/2 KB/Mouse	1
Expansion	GPIO	8-bit GPIO
	Mini PCI Express	1
Power	Power Type	AT
	Power Supply Voltage	Support single 12V input, ± 10%
	Power Consumption (Typical)	0.74 A @ 12 V (N455/ DDR3 1 GB) 0.86 A @ 12 V (D525/ DDR3 1 GB)
	Power Consumption (Max, test in HCT)	0.86 A @ 12 V (N455/ DDR3 1 GB) 1.18 A @ 12 V (D525/ DDR3 1 GB)
	Power Management	APM, ACPI
	Battery	Lithium 3 V/210 mAh
Environment	Operational	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational	-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
	Total Height	30.5mm for PCM-9363N 34.5mm for PCM-9363D/DH

## Board Diagram



## Ordering Information

Part No.	CPU	Memory	L2 Cache	LVDS	HDMI	VGA	GbE1	GbE2	Audio	RS-232	RS-232/422/485	USB 2.0	SATAII	GPIO	LPT	CF	mini PCIe	Thermal Solution	Operational Temp.
PCM-9363N-S6A1E	Intel Atom N455 1.66 GHz	DDR3 SO-SIMM	512 KB	18/24-bit	By request	Yes	1	1	Yes	2	1	6	2	8-bit	1	1	1	Passive	0 ~ 60° C
PCM-9363NL-S6A1E	Intel Atom N455 1.66 GHz	DDR3 SO-SIMM	512 KB	18-bit	By request	Yes	1	-	Yes	2	1	6	2	8-bit	1	1	1	Passive	0 ~ 60° C
PCM-9363D-S8A1E	Intel Atom D525 1.8 GHz	DDR3 SO-SIMM	1 MB	18/24-bit	-	Yes	1	1	Yes	2	1	6	2	8-bit	1	1	1	Active	0 ~ 60° C
PCM-9363DH-S8A1E	Intel Atom D525 1.8 GHz	DDR3 SO-SIMM	1 MB	18/24-bit	1	-	1	1	Yes	2	1	6	2	8-bit	1	1	1	Active	0 ~ 60° C
PCM-9363NZ-1GS6A1E	Intel Atom N455 1.66 GHz	1GB bundle	512 KB	18/24-bit	By request	Yes	1	1	Yes	2	1	6	2	8-bit	1	1	1	Passive	-20 ~ 80° C
PCM-9363NZ21GS6A1E	Intel Atom N455 1.66 GHz	1GB bundle	512 KB	18/24-bit	By request	Yes	1	1	Yes	2	1	6	2	8-bit	1	1	1	Passive	-40 ~ 85° C

## Packing List

Part No.	Description	Quantity
	PCM-9363 SBC	
	Startup Manual	
	Utility CD	
9689000002	mini Jumper pack	
1700008941	SATA Cable w/lock 30 cm	1
1703060191	PS/2 cable 19 cm	1
1701140201	COM2 IDE D-SUB 20 cm cable	1
1703100121	USB 2 x 5P-2.0 12 cm W/BKT cable	2
1700018839	Audio Cable 20 cm	1
1700260250	LPT IDE 26P D-SUB 25 cm cable	1
1703150102	SATA 10 cm Power cable	1
1700100250	COM3 Cable IDE#2 10P-2.0/D-SUB 9P (M) 25 cm	1
1960050034N001	CPU N455 heatsink (75 x 62 x 19.9 mm) for PCM-9363N series	1
1960050035N001	CPU D525 cooler (75 x 62 x 24.4 mm) for PCM-9363D	1
1960024933S00B	ICH8M Heatsink for PCM-9363 series (38.1 x 33.6 x 7.5 mm)	1

## Optional Accessories

Part No.	Description
1960047470N001	Heat spreader (97 x 75 x 18.5 mm)
1700018785	Internal SATA power cable 35cm (power source is from PCM-9363)

## Embedded OS/API

Embedded OS/API	Part No.	Description
Win XPE	2070010314	XPE WES2009 PCM-9363 V4.0 24MUI
	2070010313	XPE WES2009 PCM-9363 V4.0 ENG
WinCE	2070010331	CE 6.0 R3 Pro PCM-9363 V6.0.0 ENG (3COM)
WES7 QNX	2070009835	Image WES7E Intel Lunar V5.0 ENG
Vxwork		V6.5
Linux		V6.8
Software API		Ubuntu V10.04

## Rear I/O View



PCM-9363N-S6A1E  
PCM-9363D-S8A1E  
PCM-9363NZ-1GS6A1E  
PCM-9363NZ21GS6A1E

PCM-9363DH-S8A1E

# 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**

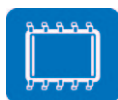
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**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.