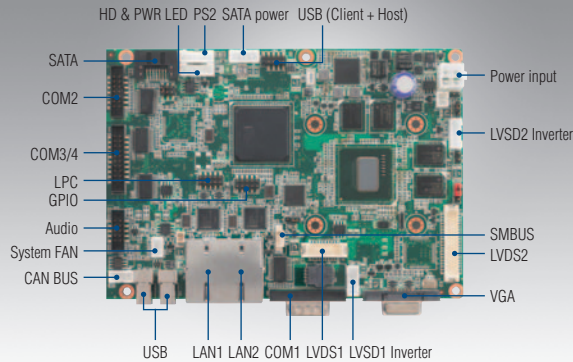


# PCM-9364

Intel® Atom™ E6XX series 3.5" SBC, 2 LVDS, 2 LAN, Onboard Memory, mini-PCIe, Cfast

## Preliminary



## Features

- Embedded Intel® Atom™ E6XX series platform, onboard memory up to 1 GB
- Display type: CRT, 24-bit LVDS1, 48-bit LVDS2,
- Supports H/W Decode and Encode
- Ultra low power, total power consumption under 7 Watts, fanless design
- Supports dual Giga LAN, HD Audio, 4 COM ports, 4 USB2.0 ports (1 for client), CFast, 8-bit GPIO and 1 SATA interface
- Supports embedded software APIs and utilities

### Software APIs:



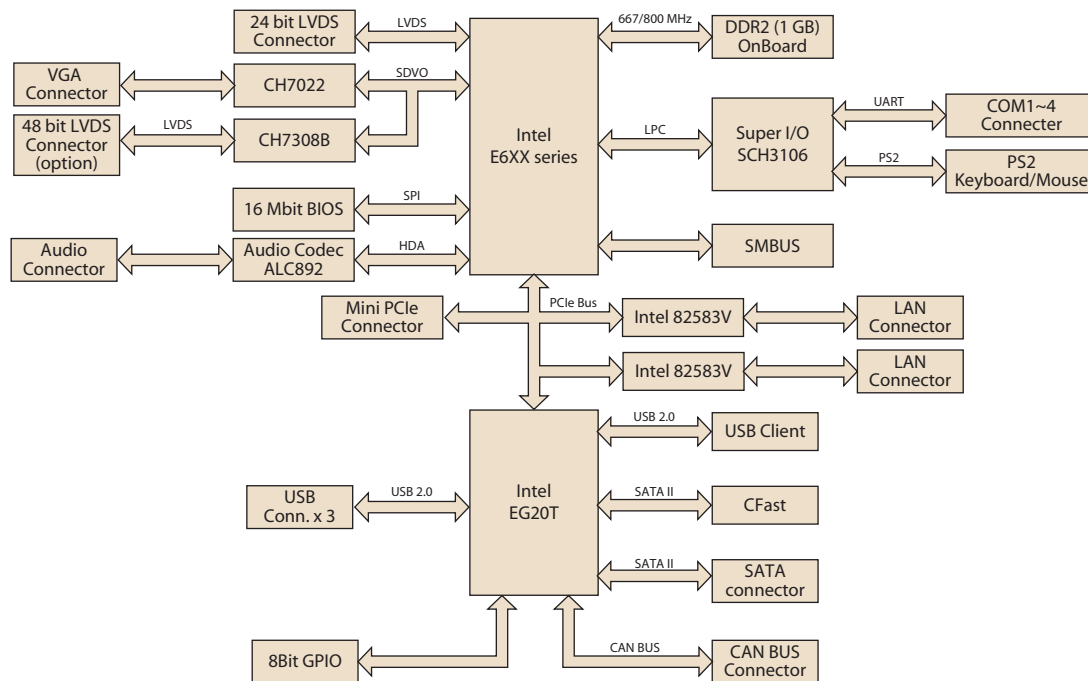
### Utilities:



## Specifications

Processor System	CPU	Intel Atom E620 600 MHz/ E640 1.0 GHz/ E660 1.3 GHz	
	Frequency	600 MHz/1.0 GHz/1.3 GHz	
	L2 Cache	512 KB	
	System Chipset	Intel E6XX series + Intel Platform Controller Hub EG20T	
Memory	BIOS	AMI UEFI 16 Mbit	
	Technology	DDR2 800 MHz onboard	
	Max. Capacity	1GB	
Display	On board memory	On board 512 MB/ 1 GB	
	Chipset	Intel E6XX series	
	VRAM	Optimized shared memory architecture up to 64 MB system memory	
	Graphic Engine		Integrated 2D/ 3D graphics engine up to 400 MHz in CPU
			Supports OpenGL* ES2.0, OpenVG* 1.0, DirectX9.0c* Decode & Encode in CPU Encode format: MPEG4, H.263, H.264 Decode format: MPEG2, MPEG4, VC1, WMV9, H.264
	LVDS	LVDS1: Supports 24-bit LVDS panel, 1280 x 768 @60 Hz (pixel clock rate = 80 MHz) LVDS2: Supports 2 channel 48-bit LVDS Panel, 1280 x 1024 @ 85 Hz (pixel clock rate = 160 MHz)	
	CRT	Supports 1280 x 1024 @ 85 Hz (pixel clock rate = 160 MHz)	
Dual Display	CRT + LVDS1 or LVDS1 + LVDS2		
Ethernet	Speed	10/100/1000Mbps	
	Controller	LAN1 Intel 82583V 10/100/1000Mbps Giga LAN LAN2 Intel 82583V 10/100/1000Mbps Giga LAN	
	Connector	RJ45 on LAN1, LAN2	
Audio	Chipset	Realtek ALC892, High Definition Audio (HD), Line-in, Line out, Mic-in	
WatchDog Timer		Output System reset Programmable 1 – 255 sec	
Storage	Cfast	1	
	SATA	1	
Rear I/O	Serial	1 (COM1 supports RS-232)	
	Ethernet	2 (10/100/1000Mbps)	
	CRT	1	
	USB	2	
Internal I/O	USB	1 USB 2.0 + 1 client	
	Serial		3 COM ports
			COM2 : RS-232/422/485
			COM3/4: RS-232
	SMBUS	Supported	
Expansion	KB/Mouse	1	
	GPIO	8-bit GPIO	
	MiniPCI socket	1 (Half-size)	
	CAN Bus	CANbus, protocol version 2.0B active	
Power	Power Type	AT (Support ACPI)	
	Power Supply Voltage	Supports single 12V input	
	Power Consumption (Typical)	TBD	
	Power Consumption (Max, test in HCT)	TBD	
	Power Management	APM, ACPI	
Environment	Battery	Lithium 3 V/220 mAH	
	Operation	0 – 60° C (32 – 140° F) (operation humidity: 40° C @ 85% RH Non-Condensing)	
Physical Characteristics	Non-Operation	-40° C – 85° C and 60° C @ 95% RH Non-Condensing	
	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	L2 Cache	Onboard Memory	LVDS1	LVDS2	CRT	Giga LAN1	Giga LAN2	CAN Bus	Audio	RS-232/422/485	RS-232	USB 2.0	USB Client	SATAII	Cfast	miniPCle	Thermal Solution	Operation Temp.
PCM-9364-M0A1E	Intel Atom 600 MHz	512 KB L2	512 MB	24-bit	-	-	1	-	-	-	1	3	3	1	1	1	1	Passive	0 ~ 60° C
PCM-9364-S0A1E	Intel Atom 1.0 Hz	512 KB L2	1 GB	24-bit	-	-	1	-	-	-	1	3	3	1	1	1	1	Passive	0 ~ 60° C
PCM-9364-S3A1E	Intel Atom 1.3 Hz	512K B L2	1 GB	24-bit	48-bit	-	1	1	-	-	1	3	3	1	1	1	1	Passive	0 ~ 60° C

Note1: Extended temperature P/N TBD.

## Packing List

Part No.	Description	Quantity
	PCM-9364 SBC	
	Startup Manual	
	Utility CD	
9689000002	mini Jumper pack	
1700006291	SATA Cable	x 1
1703060191	PS/2 cable	x 1
1700001795	COM3/4 20P-2.0/D-SUB-9P(M)*2 19CM cable	x 1
1701140201	COM2 IDE D-SUB 20CM cable	x 1
1703100152	Audio Cable	x 1
1703100121	USB 2 x 5P-2.0 12CM W/BKT cable	x 1
1703150102	SATA 10cm Power cable	x 1

## Optional Accessories

Part No.	Description
	Heat spreader

## Embedded OS/API

Embedded OS/API	Part No.	Description
Win XPE		TBD
WinCE		TBD
Software API		TBD

# 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**

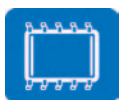
Make use of Intel SpeedStep technology to reduce power consumption. The system will automatically adjust the CPU Speed depending on system loading.



**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.