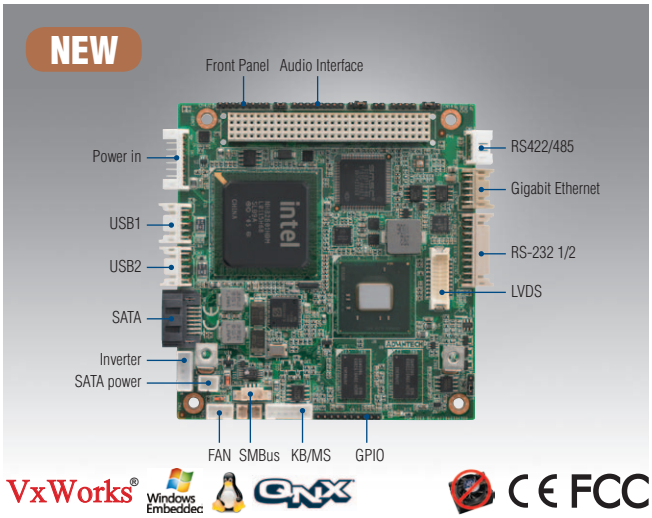
PCM-3363

Intel® Atom™ N455/D525 PCI-104 SBC, CRT, LVDS, Ethernet, USB, COM, SATA, Onboard Memory



Features

- Intel® Atom N455 1.66 GHz Single Core/D525 Dual Core 1.8 GHz Processor
- Supports extended temperature -40 ~ 85° C
- 24-bit LVDS support and onboard 1 GB DDR3 800 MHz memory
- HALT tested and 100% locked connector
- Supports Lite iManager and embedded software APIs and Utilities

Software APIs: Watchdog, SMBus, I²C, Brightness, H/W Monitor, GPIO, Backlight On/Off, CPU Speed, System Throttling

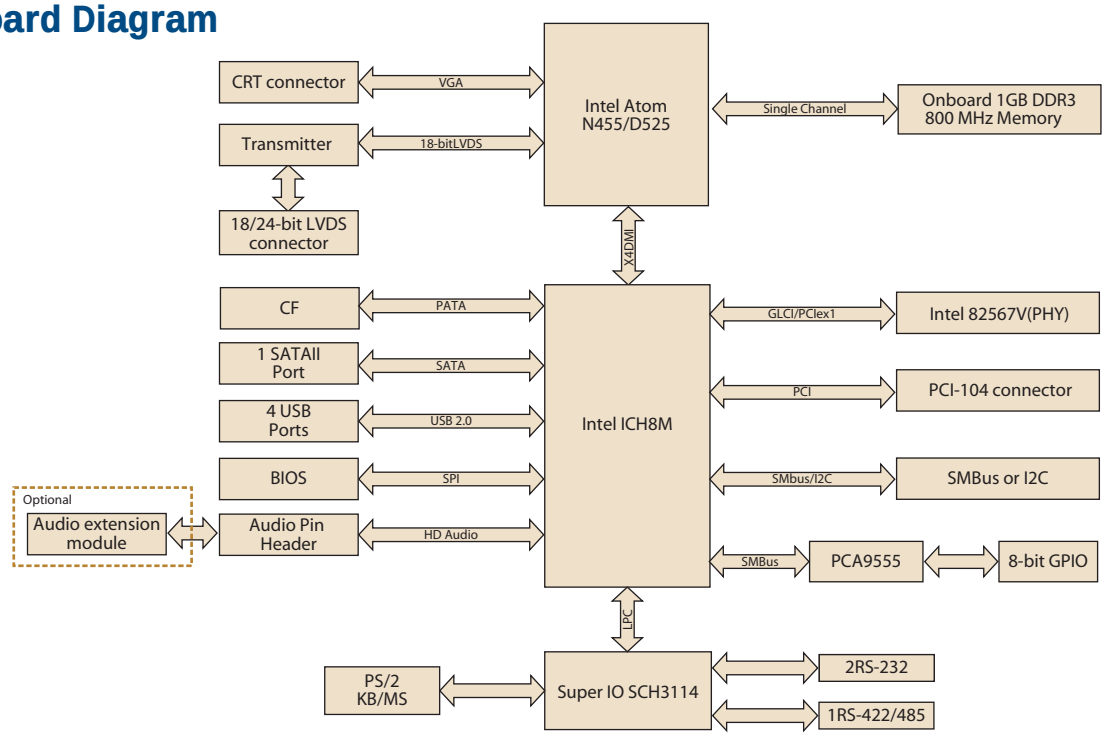
Utilities: Monitoring, eSOS, Embedded Security ID, Flash Lock

Specifications

Processor System	CPU	Intel Atom N455 Single Core 1.66 GHz Intel Atom D525 Dual Core 1.8 GHz
	Front Side Bus	667/800 MHz
	Frequency	1.66 GHz/1.8 GHz
	L2 Cache	512 KB/1 MB
	System Chipset	Intel Atom N455/D525 + ICH8M
	BIOS	AMI 16 Mbit
Memory	Technology	DDR3 800 MHz
	Max. Capacity	1 GB
	On board memory	1GB DDR3 800 MHz Memory
Display	Chipset	Intel Atom N455/D525
	VRAM	Shared system memory up to 224 MB
	Graphics Engine	Intel Atom N455 Single Core: Gen 3.5 graphic core, DX9 compliant, MPEG2 Hardware Acceleration, 200 MHz Intel Atom D525 Dual Core: Gen 3.5 graphic core, DX9 compliant, MPEG2 Hardware Acceleration, 400 MHz
	LVDS	Singe channel 18/24-bit single channel LVDS up to 1366 x 768 (WXGA)
	VGA	Intel Atom N455 Single Core up to 1400 x 1050(SXGA) Intel Atom D525 Dual Core up to 2048 x 1536
	Dual Display	CRT+LVDS
Ethernet	Interface	10/100/1000 Mbps
	Controller	ICH8M + Intel 82567V (PHY), support Wake-on-LAN
	Connector	Locked Box Header
WatchDog Timer		Output System Reset, Programmable counter from 1 ~ 255 minutes/ seconds
Storage	CompactFlash	1 CompactFlash socket (Type I/II)
	SATA	SATAII, up to 3.0 GB/s (300 MB/s)
Internal I/O	USB	4 x USB 2.0
	Serial	2 RS-232 from COM1/2, 1 RS-422/485 from COM3 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)
	SMBus	1 (allow to configure to I²C by customer's request)
	Keyboard/Mouse	1
	GPIO	8-bit general purpose input/output
	Audio	Intel High Definition audio interface (requires an audio extension module P/N: PCA-AUDIO-HDA1E)
Expansion	PCI-104 slot	1
Power	Power Type	AT
	Power Supply Voltage	5 V ± 5% only to boot up (12 V is optional for LCD inverter and add on card)
	Power Management	ACPI
	Power Consumption (Typical)	N455: 1.404A @ +5V; D525: 1.85 A @ +5V
	Power Consumption (Max, test in HCT)	N455: 2.365A @ +5V; D525: 2.695 A @ +5V
	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)	96 x 90 mm (3.8" x 3.5")
	Weight	0.162 kg (0.357 lb)) (with heat-sink)
	Height	Top Side: 14.4 mm, 19.4 mm (D, Z & Z2); Bottom Side: 10.6 mm

All product specifications are subject to change without notice

Board Diagram



Ordering Information

Part Number	CPU	L2 Cache	Memory	CRT	LVDS	GbE	USB 2.0	RS-232	RS-485	Thermal Solution	Operating Temp
PCM-3363N-1GS6A1E	Atom N455 (1.66 GHz)	512 KB	Onboard 1 GB DDR3	1	18/24-bit	1	4	2	1	Passive	0 ~ 60° C
PCM-3363D-1GS8A1E	Atom D525 (1.8 GHz)	1 MB	Onboard 1 GB DDR3	1	18/24-bit	1	4	2	1	Active	0 ~ 60° C
PCM-3363Z-1GS6A1E	Atom N455 (1.66 GHz)	512 KB	Onboard 1 GB DDR3	1	18/24-bit	1	4	2	1	Passive	-20 ~ 80° C
PCM-3363Z2-1GS6A1E	Atom N455 (1.66 GHz)	512 KB	Onboard 1 GB DDR3	1	18/24-bit	1	4	2	1	Passive	-40 ~ 85° C

Packing List

Part No.	Description	Quantity
	PCM-3363 SBC	
	Startup Manual	
	Utility CD	
1700000898	VGA cable D-SUB 15P(F)/12P-1.25 MM 15 cm	1
1700003491	AT power cable 1*8P-2.0/B4P-5.08*2 15 cm	1
1700060202	Cable 6P-6P-6P PS/2 KB & Mouse 20cm	1
1703040157	RS-422/485 W/D-SUB COM 4P 15 cm	1
1703060053	PS2 Cable 6P (MINI-DIN)-6P (Wafer 2.0 mm) 6 cm	1
1700019000	USB cable 2-port 2.0 mm pitch w/ bracket 26 cm (w/ locked)	1
1700008941	SATA data cable 7p 32 cm (w/ locked)	1
1703150102	SATA power cable B4P-5.08/SATA 15P 10 cm	1
1700018999	RS232 x2 ports 2.0 mm 22 cm (w/ locked)	1
1700019001	LAN cable RJ-45/2*5P-2.0 15 cm (w/ locked)	1
9660104000	PC/104 screw and copper post package	1
1960051405N001	Heatsink with FAN for PCM-3363D only (79.66 x 77.97 x 17.22 mm)	1
1960051403N001	Heatsink for PCM-3363N only (79.66 x 77.97 x 12.22 mm)	1
1960051404N001	Heatsink for PCM-3363Z series only (79.66 x 77.97 x 17.22 mm)	1

Optional Accessories

Part No.	Description
1960051701N001	Heat spreader (79.66 x 77.98 x 10.32 mm) for PCM-3363
1653130421	PCI-104 connector 120-pin (Long pin)
PCA-AUDIO-HDA1E	Audio Extension module with bracket
1700018427	Audio cable connecting PCM-3363 and PCA-AUDIO-HDA1E
1700018259	SATA power cable for onboard connector (5V only)

Embedded OS / API

Embedded OS/API	Part No.	Description
WinCE		CE 6.0 R3
Win XPE	2070009030	XPE WES2009 Luna Pier V4.0 ENG
	2070009031	XPE WES2009 Luna Pier V4.0 MUI24
QNX		V6.5
Linux		Ubuntu 10.04
VxWorks		V6.8
Software API		SUSI V3.0

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

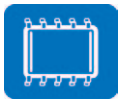
CPU Speed

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.

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Last updated : 9-May-2011