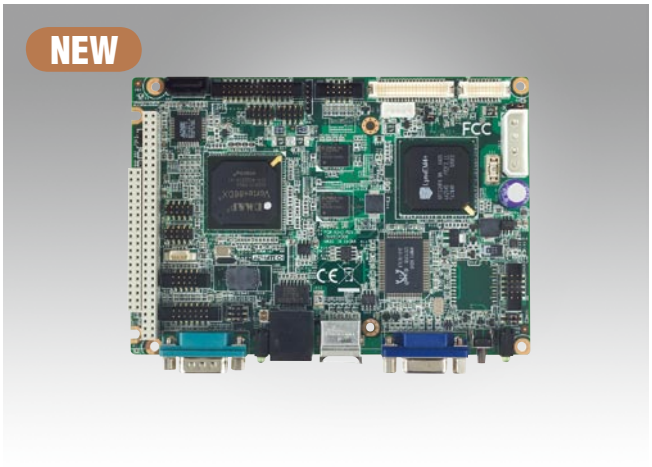
PCM-9343

DM&P Vortex86DX-1.0 GHz 3.5" SBC, Ultra Low Power, Onboard Memory, Dual LAN, PC/104



Features

- DM&P Vortex86DX, onboard DDR2 memory up to 512 MB
- Display type: CRT, 24-bit LVDS, 24-bit TTL
- Supports Floating Point Unit, total power consumption 4 ~ 6 Watts
- Dual Lan: 10/100 LAN1 and 10/100 LAN2, supports PC/104 (8-bit/16-bit ISA) expansion
- Supports embedded software APIs and utilities, OS: DOS, WinCE, WinXPE and Linux

Software APIs: Watchdog, I²C, Brightness, GPIO, Backlight On/Off

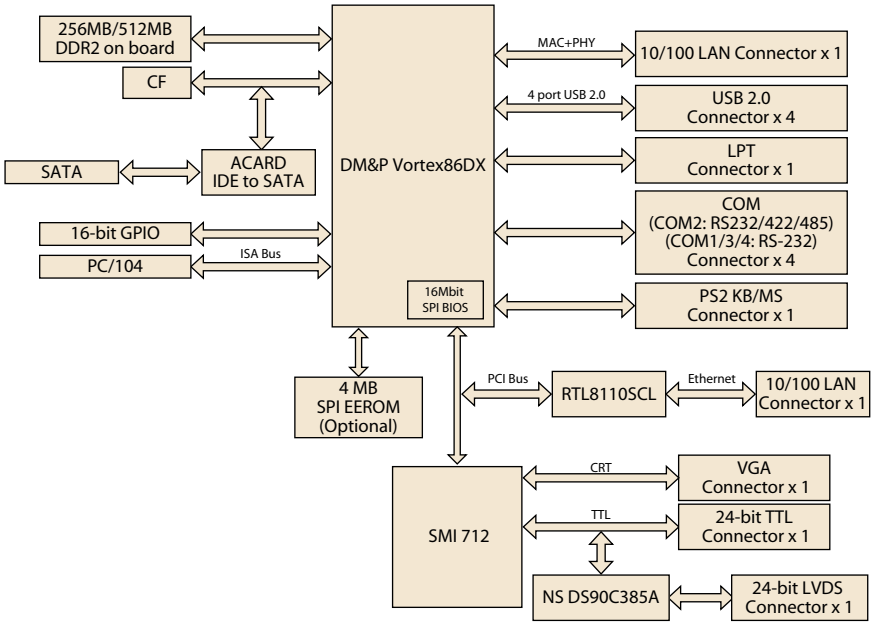
Utilities: BIOS flash, eSOS, Flash Lock, Embedded Security ID

Specifications

Processor System	CPU	DM&P Vortex86DX 1.0 GHz, supports floating Point Unit (FPU)
	Frequency	1.0 GHz
	L2 Cache	256 KB
	System Chipset	DM&P Vortex86DX + SMI SM712
	BIOS	Award integrated 16 Mbit ROM in SOC
Memory	Technology	DDR2 333 MHz SDRAM on board
	Max. Capacity	512 MB
	Onboard memory	Onboard 256 MB or 512 MB
Display	Chipset	SMI SM712 2D graphics chip
	VRAM	4 MB internal memory
	Graphics Engine	62.5 MHz single clock/cycle engine (EM+) 86 MHz single clock/cycle engine (EM4+) Designed to accelerate DirectDraw
	LVDS	Supports up to 1024 x 768 @ 24-bit LVDS LCD Panel
	VGA	Supports up to 1024 x 768 @ 85 Hz
	TTL LCD	Supports up to 1024 x 768 @ 24-bit TFT LCD Panel
	Dual Display	CRT + TTL, CRT + LVDS
Ethernet	Speed	10/100 Mbps on LAN1 10/100 Mbps on LAN2
	Controller	LAN1: 10/100 Mbps on DM&P Vortex86DX LAN2: 10/100 Mbps on Realtek RTL8110SC
	Connector	RJ-45 on LAN1, box header on LAN2
WatchDog Timer		Internal: 2 sets, 32.768 kHz frequency source to count a 24-bit counter so the time range is from 30.5μ sec to 512 sec with resolution 30.5μ sec
Storage	CompactFlash	Supports CompactFlash card TYPE I/II (Primary Master IDE Channel) Supports 2 channels Ultra-DMA 100
	SATA	1
	SPI Flash	Optional onboard 4MB SPI Flash Disk (Supported by request)
Rear I/O	Serial	1 (COM1 supports RS-232)
	Ethernet	1 (10/100 Mbps LAN1)
	KB/Mouse	1
	VGA	1
	Reset Button	1
Internal I/O	USB	4 x USB 2.0
	Serial	3 COM (COM2, COM3, COM4) COM2 supports RS-232/422/485 COM3/COM4 supports RS-232
	Parallel(LPT)	1
	GPIO	16-bit GPIO
	I²C	1
Expansion	PC/104 slot	PC/104 Expansion(8/16-Bit ISA)
Power	Power Type	AT
	Power Supply Voltage	Single +5V boot up, (+12V for LCD, ISA)
	Power Consumption (Typical)	PCM-9343L-S6A1E: 5V : 0.44A PCM-9343F-S6A1E: 5V : 0.81A PCM-9343FG-S6A1E: 5 V : 1.03A
	Power Consumption (Max, test in HCT)	PCM-9343L-S6A1E: 5V : 0.746 A PCM-9343F-S6A1E: 5V : 1.09 A PCM-9343FG-S6A1E: 5 V : 1.18 A
	Battery	Lithium 3 V / 210 mAH
Environment	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

Last updated : 05-Aug-2010

Board Diagram



Ordering Information

Part No.	Onboard Memory	TTL	LVDS	CRT	10/100 LAN1	10/100 LAN2	Buzzer	LPT	RS-232/ 422/485	RS-232	USB 2.0	CF	SATA	Expansion	ATX Power	AT Power	Thermal Solution	Operational Temp.
PCM-9343L-S6A1E	256 MB	-	-	-	1	-	Yes	1	1	1	2	1	-	PC/104	-	Yes	Passive	0 ~ 60° C
PCM-9343F-S6A1E	256 MB	24-bit	24-bit	Yes	1	-	Yes	1	1	3	4	1	1	PC/104	-	Yes	Passive	0 ~ 60° C
PCM-9343FG-S6A1E	512 MB	24-bit	24-bit	Yes	1	1	Yes	1	1	3	4	1	1	PC/104	-	Yes	Passive	0 ~ 60° C
PCM-9343FGZ-S6A1E	512 MB	24-bit	24-bit	Yes	1	1	Yes	1	1	3	4	1	1	PC/104	-	Yes	Passive	-20 ~ 80° C

Packing List

Part No.	Description	Quantity
	PCM-9343 SBC	
	Startup Manual	
	Utility CD	
1700008894	SATA 7P 30 cm cable	x 1
1700060202	PS2 6P x 2 20 cm cable	x 1
1700100250	COM3/4 IDE D-SUB 25 cm cable	x 2
1701140201	COM2 IDE D-SUB 20 cm cable	x 1
1700260250	LPT IDE 26P D-SUB 25 cm cable	x 1
1703100121	USB 2 x 5P-2.0 12 cm W/BKT cable	x 1
1700002142	LAN IDE 2.0 15 cm cable	x 1

Optional Accessories

Part No.	Description
1703150102	SATA 10 cm Power cable

Embedded OS/API

Embedded OS/API	Part No.	Description
WinCE 5.0	2070009764	CE 5.0 Pro PCM-9343 V1.3 ENG
WinCE 6.0	2070009537	Image CE 6.0 Pro PCM-9343 V1.3 ENG
Win XPE	20070009528	Image XPE for PCM-9343
Software API	2056343000	SUSI 3.0 SW API for PCM-9343 B:20100122 XP

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.