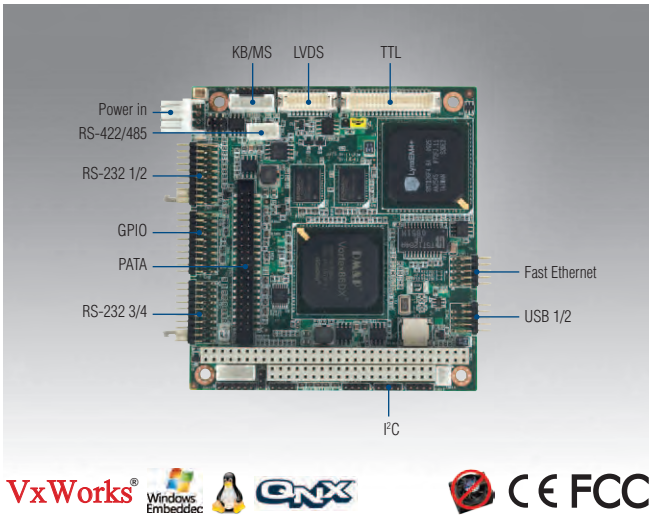
PCM-3343

DM&P Vortex86DX-1 GHz PC/104 SBC, LCD, Ethernet, CFC, Onboard Memory



VxWorks® Windows Embedded Linux QNX

CE FCC

Features

- Ultra low power, fanless DM&P Vortex86DX- 1 GHz and 256 MB onboard DDR2 memory
- CRT+LCD dual display outputs, 24-bit LVDS/TTL supported
- Integrated Floating-point Unit
- Supports 2 Fast Ethernet ports in standard PC/104 96 x 90 mm dimensions
- Supports Embedded Software APIs and Utilities

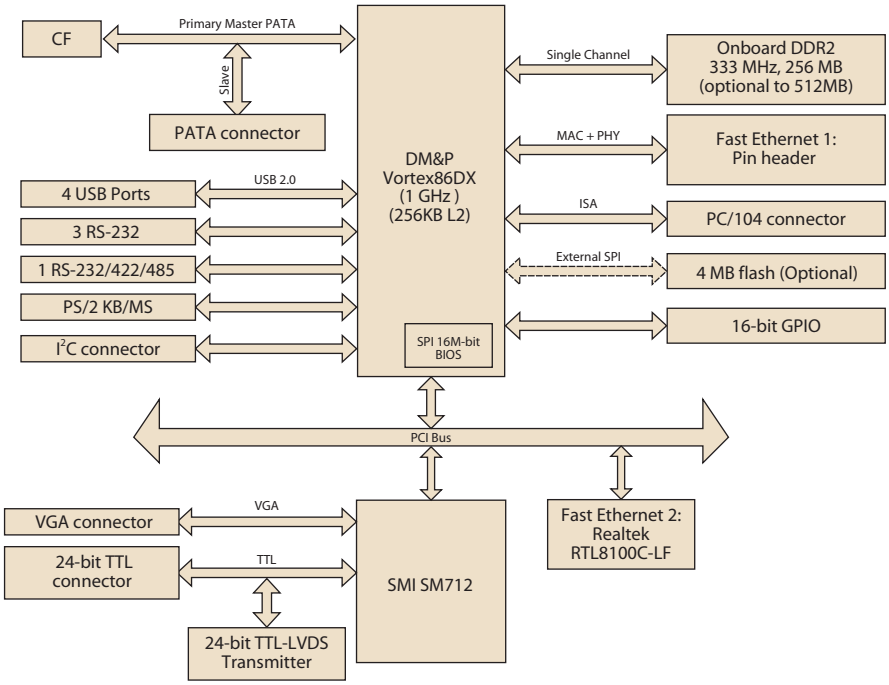
Software APIs: Watchdog, I²C, Brightness, GPIO, Backlight On/Off

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- 1 GHz
	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 (512 MB supported by request)
Display	Chipset	SMI SM712
	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 single channel LCD Panel
	CRT	Supports up to 1024 x 768 @ 85 Hz
	TTL LCD	Supports up to 1024 x 768 @ 24 bit single channel TFT LCD Panel
	Dual Display	CRT+TTL, CRT+LVDS
Ethernet	Speed	10/100 Mbps
	Controller	Fast Ethernet1: Vortex86DX SOC integrated Fast Ethernet2: Realtek RTL8100C-LF
	Connector	Pin Header
Watchdog Timer		System reset Software programmable counter from 30.5μ sec. to 512 sec. x 2 sets
Storage	CompactFlash	CompactFlash socket (Type I/II),shared with primary master PATA
	PATA	1 Channel
	SPI Flash	Optional onboard 4 MB SPI Flash Disk (Support by request for boot device or storage on DOS OS)
Internal I/O	USB	4 x USB 2.0
	Serial	3 RS-232 from COM1/3/4, 1 RS-232/422/485 from COM2 (ESD protection for RS-232: Air gap ±15kV, Contact ±8kV)
	Keyboard/Mouse	1
	GPIO	16-bit general purpose input/output
	I²C	1
Expansion	PC/104 Slot	1
Power	Power Type	AT
	Power Supply Voltage	5V ± 5% only to boot up (12 V is optional for LCD inverter and add-on card)
	Power Consumption (Typical: Idle in WinXPe)	0.74 @ +5 V (Vortex86DX 1 GHz, DDR2 667 256 MB)
	Power Consumption (Max, test in passmark burn-in program)	0.85 A @ +5 V (Vortex86DX 1 GHz, DDR2 667 256 MB)
	Battery	3 V/210 mAH
	Power Management	APM 1.2
Environment	Operational	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 85% 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	0.097 kg (0.214 lb)
	Height	Top Side: 8.6 mm; Bottom Side: 10.6 mm

Board Diagram



Ordering Information

Model	CPU	L2 Cache	Memory	CRT	LVDS	TTL	Fast Ethernet	USB 2.0	RS-232	RS-232/ 422/485	PATA	KB/ MS	Thermal solution	Expansion	Operational Temp
PCM-3343L-256A1E	DM&P Vortex86DX 1 GHz	256 KB	Onboard 256 MB	-	-	-	1	2	1	1	1	Yes	Passive	PC/104	0 ~ 60° C
PCM-3343F-256A1E	DM&P Vortex86DX 1 GHz	256 KB	Onboard 256 MB	Yes	Yes	1	2	4	3	1	1	Yes	Passive	PC/104	0 ~ 60° C
PCM-3343Z-256A1E	DM&P Vortex86DX 800 MHz	256 KB	Onboard 256 MB	Yes	Yes	1	2	4	3	1	1	Yes	Passive	PC/104	-20 ~ 80° C
PCM-3343Z2-256A1E	DM&P Vortex86DX 800 MHz	256 KB	Onboard 256 MB	Yes	Yes	1	2	4	3	1	1	Yes	Passive	PC/104	-40 ~ 85° C

Packing List

Part No.	Description	Quantity
	PCM-3343 SBC	
	Startup Manual	
	Utility CD	
1700060202	Cable 6P-6P-6P PS/2 KB & MOUSE 20 cm	1
1703060053	PS2 Cable 6P (MINI-DIN)-6P (Wafer 2.0 mm) 6 cm	1
1703100260	USB cable 2 port 2.0 mm pitch w/ bracket 26 cm	1
1701200220	RS-232 x 2 ports 2.0mm pitch 22 cm	1
1703040157	RS-422/485 W/D-SUB COM 4P 15 cm	1
1700000898	VGA cable D-SUB 15P(F)/12P-1.25 mm 15 cm	1
1700017863	LAN cable RJ45/2 x 5P-2.0 15 cm	1
9660104000	PC/104 screw and copper post package	1
1960047356N001	Heatsink for DMP Vortex86DX (27 x 27 x 6.3 mm)	1

Optional Accessories

Part No.	Description
1701440350	PATA cable 44P/44P/44P 35 cm

Embedded OS / API

Embedded OS/API	Part No.	Description
WinCE	2070009763	CE 5.0 Pro PCM-3343 V1.3 ENG
	2070009536	CE 6.0 Pro PCM-3343 V1.3 ENG
Win XPE	2070009528	XPE WES2009 Vortex86DX V4.0 ENG
	2070009529	XPE WES2009 Vortex86DX V4.0 MUI24
QNX		6.4.1
Linux		Ubuntu 10.04.1/ 9.04
VxWorks		5.5
Software API	205E343000	SUSI 3.0 SW API for PCM-3343 B:20091209 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

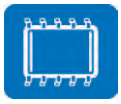
CPU Speed

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.

Last updated : 9-May-2011