SOM-4430

Advantech EVA-X4300 SoC ETX CPU Module

Features

- Embedded Advantech x86 SoC
- SMI 712, Supports 18-bit TTL/VGA
- Onboard DDR2 memory 128MB/64MB
- Supports ISA, 4 PCI Master, 1 IDE, 4 USB2.0, 2 COMs, LPT
- Supports embedded software APIs and Utilities

Software APIs: Watchdog, GPIO

Utilities: Monitoring

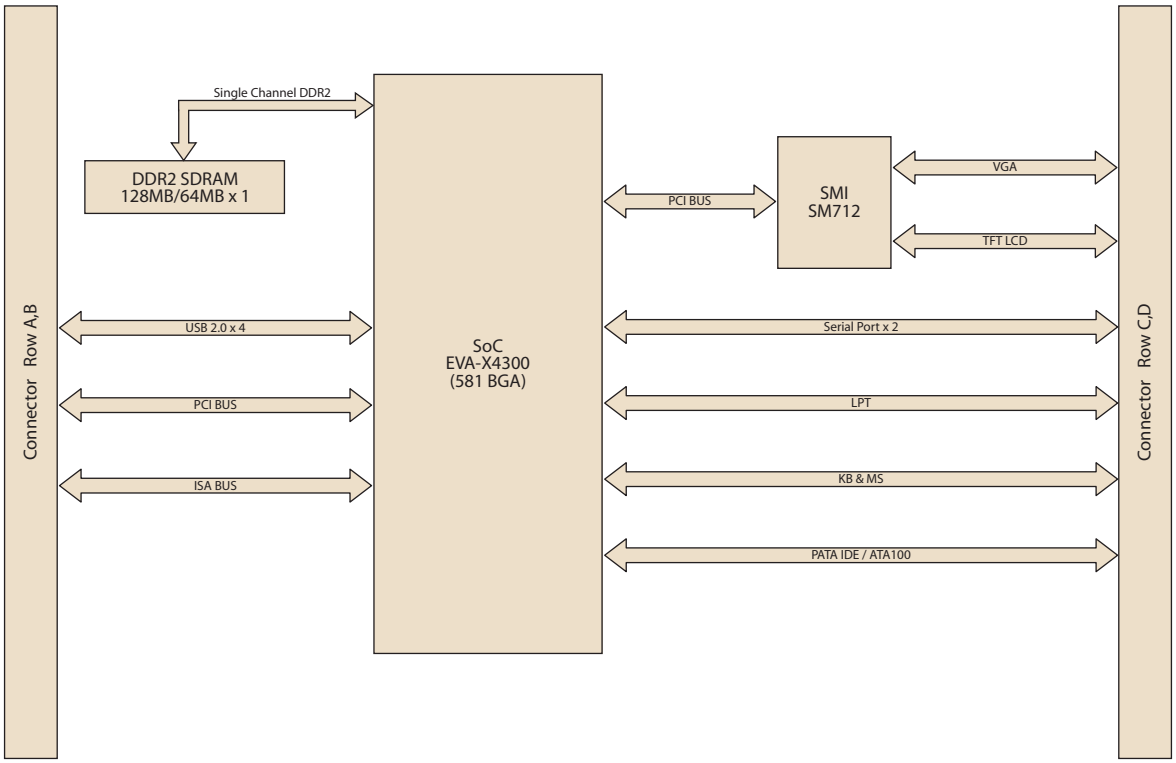
Specifications

Form Factor		ETX
Processor System	x86 SoC	Advantech EVA-X4300 SoC
	Front Side Bus	33 MHz
	BIOS	AWARD 2 Mbit Flash BIOS
Memory	Technology	DDR2
	Max. Capacity	On-board 128MB/64MB memory
Display	Chipset	SMI 712
	VRAM	4 MB graphic memory
	Graphics Engine	SMI 712
	LCD	18-bit TTL
	VGA	up to 1024 x 768
	Dual Display	CRT + LCD (Simultaneous mode)
WatchDog Timer		24-bit timer interval, from 30.5μ sec. to 512 sec. setup by software, jumperless selection, generates system reset
Expansion		* 4 x PCI Master, ISA
I/O	PATA	1 x EIDE (UDMA 100)
	USB	4 x USB 2.0
	COM	2 x COM ports
	FDD/LPT	1 x LPT
Power	Power Type	AT
	Power Supply Voltage	+5 V only
	Power Consumption (Max, test in HCT)	Max: +5 V @ 0.7 A
Environment	Operating Temperature	0 ~ 60° C (32 ~ 140° F)
	Operating Humidity	0% ~ 90% relative humidity, non-condensing
Mechanical	Dimensions	114 x 95 mm (4.5" x 3.74")

*For the PCI design of SOM-4430, please refer to Advantech ETX design guide.

All product specifications are subject to change without notice

Board Diagram



Ordering Information

Part No.	SoC	On Board Memory	VGA	PCI	USB 2.0	AT Power	Thermal Solution	Operating Temp.
SOM-4430F-GDA1E	EVA-X4300	64 MB	Yes	4	4	Yes	Passive	0 ~ 60° C
SOM-4430F-GEA1E	EVA-X4300	128 MB	Yes	4	4	Yes	Passive	0 ~ 60° C

Development Board

Part No.	Description
SOM-DB4700-00A1E	Development Board for ETX Rev.A1

Embedded OS

OS	Part No.	Description
WinCE	2070006949	Image CE 6.0 Pro EVA-4150-4COM V1.1 ENG

Packing List

Part.No.	Description	Quantity
-	SOM-4430 CPU Module	1
-	Utility CD	1

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

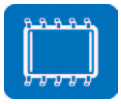
CPU Speed

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.

All product specifications are subject to change without notice

Last updated : 9-May-2011