SOM-A2709

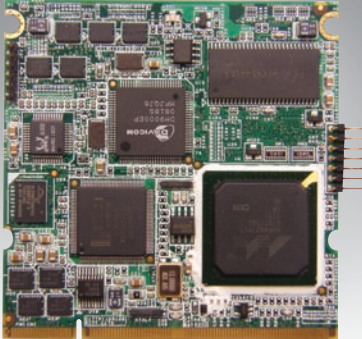## COM with Marvell XScale PXA270 Processor + Windows® Embedded CE 5.0

Project based

Features

- Marvell XScale PXA270 processor+ Microsoft Windows CE 5.0
- Linux 2.6 supported per project basis
- Form factor & pin definition are compatible w/ Advantech SOM-A2558 series
- Power management mechanism for sleep mode support
- Rich I/O support: USB, COM, CF/PCMCIA. SDIO, LAN
- Multi source boot-up from on-board flash, CF, PCMCIA & SD
- SOM-ADK2709 Design-in kit package is available for efficient evaluation, application development and design-in support

RoHS COMPLIANT 2002/95/EC   XScale®   Windows Embedded

Introduction

Mobile computing, I/O Intensive COM

SOM-A2709 series Computer On Module (COM) integrates the Marvell XScale PXA270 ultra low power SoC and I/O solution chips together with Windows CE OS support. SOM-A2709 supports rich I/O such as CF/PCMCIA, SD, USB, LAN, multi-COMs, LCD and audio. SOM-A2709 is designed for portable/handheld applications, it supports deep sleep mode and CPU power Speedstep mechanism for power saving and better power management.

Design-in Package ensures effcient evaluation/implementation

The Design-in Package not only includes all the necessary H/W boards, fixtures and LCD related cables, but also includes the Advantech-customized API, utility & reference codes. And of course, it includes all design related documentation including, a white paper for detailed technical know-how.

Three support mechanisms are included in the Design-in Package:

Reference Kit: Includes the Advantech reference Customer Solution Board (CSB) and all documentation relating to CSB design and manufacture. ex : BOM, placement, gerber file, layout etc. file.

LCD Kit: Includes the LCD, inverter, T/S and related cables. All goods are pre-verified and supported in Advantech's reference S/W package.

Design-in Zone: The web portal for customers to download design-related documentation, SOPs and sample code, also provides end-to-end technical support. (http://risc-designin.advantech.com.tw/)

Specifications

Kernel	O.S.	Microsoft Win CE 5.0 English professional ver.
	SoC	Marvell XScale PXA270 520 MHz (default)/ 312 MHz
	SDRAM	64 MB (default)/128 MB
	Boot Flash	1 MB NOR type
	Storage Flash	NOR type Flash 0 MB/64 MB (default)
	Watchdog	PXA270 built-in
	RTC	HT1381
	System Control	H/W reset & S/W reset
	Power Management	Supports normal, idle and sleep mode
	JTAG	Yes
	System Bus (ARM bus) Expansion	Yes (2 chip select pins reserve for CSB to use)
IO	COM	4 x RS-232 (3 x FF, 1 x 4 wires), 1 x RS-485*
	USB Host	2 x USB host 1.1
	USB Client	1 x USB client 1.1
	PS/2	-
	PCI	-
	T/S	4 wires resistive
	LAN	1 x 10/100-T
	PCMCIA/CF	2 x PCMCIA/CF (supports IO & memory mode, bootable I/F)
	SD/MMC	1 x (supports SDIO & memory mode, bootable I/F)
	SM bus/I2C	1 x (default SM bus support)

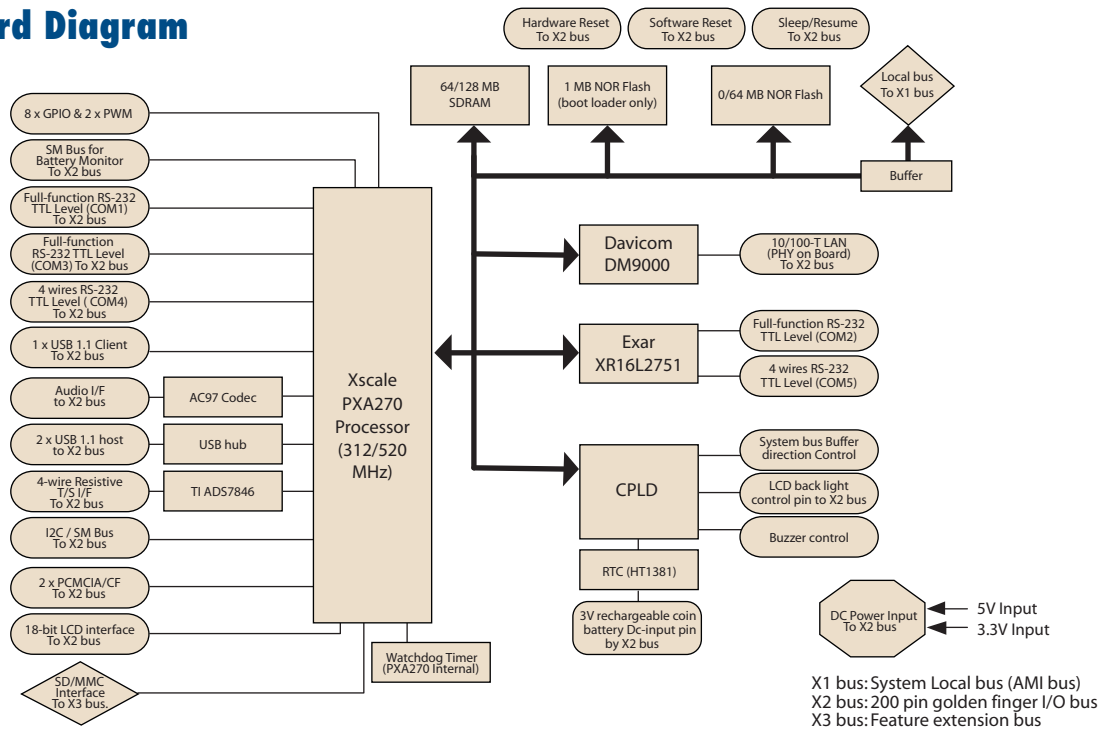|		
IO	PWM	2 x
	GPIO	8" (Default 4 x In, 4 x Out)
	SPI	1 x
Multimedia	Graphics Chip	PXA270 buit-in 18-bit LCD controller
	LCD I/F	18 bit 3.3V TTL level
	LCD Resolution Support	320 x 240, 640 x 480 (default) & 800 x 600**
	Audio	Line-in ,Line-out and Mic-in
	Inverter I/F	Backlight on/off & dimming control
Power	DC-input	3.3 V + -5% & 5.0 V + -5%
	SOM Power Consumption	Normal mode: 2.3 ~ 2.5 watt*** Sleep mode: 15 mW ~ 30 mW***
Other	External Connector	1 x JTAG conn. by 6 x 12 mm pin header 2 x 100 pin board to board conn. 1 x 200 pin golden fingers
	Temperature	Operating: 0° C ~ 60° C ; -40/-20° C ~ 70/85° C by project base
	Humidity	10% ~ 90%
	Certification	CE/FCC class A
	Form Factor	68 x 68 x 6.8 mm (Advantech standard RISC SOM RTX architecture)

Notes:
* - RS-485 function needs to add a RS-485 transceiver chip on CSB.
** - CPU will spend more resources handling LCD-output at 800 x 600 resolution which will impact other I/O performance. If customers choose 800 x 600 resolution, they need to double check the whole platform performance first.
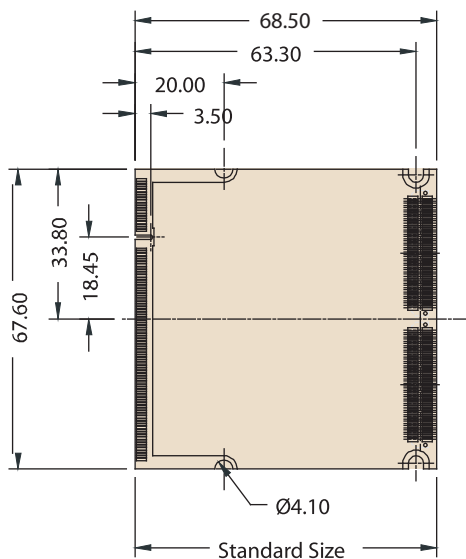*** - SOM power consumption only.

Board Diagram

Hardware Reset To X2 bus

Software Reset To X2 bus

Sleep/Resume To X2 bus

64/128 MB SDRAM

1 MB NOR Flash (boot loader only)

0/64 MB NOR Flash

Local bus To X1 bus

8 x GPIO & 2 x PWM

SM Bus for Battery Monitor To X2 bus

Full-function RS-232 TTL Level (COM1) To X2 bus

Full-function RS-232 TTL Level (COM3) To X2 bus

4 wires RS-232 TTL Level (COM4) To X2 bus

1 x USB 1.1 Client To X2 bus

Audio I/F to X2 bus

2 x USB 1.1 host to X2 bus

4-wire Resistive T/S I/F To X2 bus

I2C / SM Bus To X2 bus

2 x PCMCIA/CF To X2 bus

18-bit LCD interface To X2 bus

SD/MMC Interface To X3 bus

AC97 Codec

USB hub

TI ADS7846

Xscale PXA270 Processor (312/520 MHz)

Watchdog Timer (PXA270 Internal)

Buffer

Davicom DM9000

10/100-T LAN (PHY on Board) To X2 bus

Exar XR16L2751

Full-function RS-232 TTL Level (COM2)

4 wires RS-232 TTL Level (COM5)

CPLD

System bus Buffer direction Control

LCD back light control pin to X2 bus

Buzzer control

RTC (HT1381)

3V rechargeable coin battery Dc-input pin by X2 bus

DC Power Input To X2 bus

5V Input

3.3V Input

X1 bus: System Local bus (AMI bus)
X2 bus: 200 pin golden finger I/O bus
X3 bus: Feature extension bus

Mechanical Dimensions

Unit: mm

68.50
63.30
20.00
3.50
33.80
18.45
67.60
Ø4.10
Standard Size

Ordering Information

SOM-A2709 Design-in Package

Part No.	Description
SOM-ADK2709-B00 (Must Item)	SOM-A2709 Series Design-in Kit.
LCD-A064-TTV1-0 (Must Item)	6.4" TFT VGA (640 X 480) LCD kit. The kit includes LCD (PRIMEVIEW PD064VT2), 4-wire resistive touch screen, inverter
Power cord	1700001524 for 3pin 180cm USA type power cord 170203180A for 3pin 180cm UK type power cord 170203183C for 3pin 183cm Europe type power cord

SOM-A2709 Series COM (Module only)

Part No.	Description
SOM-A2709-546B0E	COM XScale PXA270 520 MHz, 64 MB SDRAM, 64 MB Flash, & Win CE5.0
Order your own reconfigured COM	After Developers have evaluated the kit and decided to order a reconfigured sample run COM, they can check the reconfiguration options in the above specification table to order their customized SOM-A2709 product. Contact local Advantech sales or distributor for reconfiguration requests.

Packing List

Bulk packing with 20 pcs in one box
COM only comes with the bootloader pre-installed and Win CE professional version license sticker

**Sample image and related documentation included with Design-in kit only.