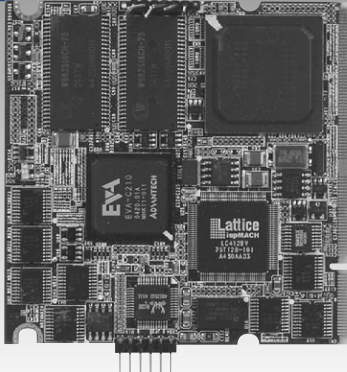# SOM-A2708 Series System On Module

Intel XScale® PXA270 (Bulverde CE), Advantech EVA-C210 & Windows® CE .NET 5.0

Preliminary

CE FCC

Features

- SOM-A2708 is SOM-A2558's enhanced version. Pin definitions are fully compatible with SOM-A2558
- 68 mm x 68 mm x 6.8 mm compact size module
- Power management ready support with normal, idle, suspend, and off modes
- OS-ready package for Windows® CE .NET / Linux installation
- Local bus (AMI Bus), comprehensive I/O interfaces: PS2 port, Ethernet, USB host, and PCI I/F support
- Boot option by onboard flash or CFC for easy maintenance and cost saving
- Provides a variety of reconfiguration options to fulfill specific requirements
- Design-in Kit package is available for complete design-in support

Introduction

Mobile computing, I/O Intensive SOM

Using a dual-chip design principle, SOM-A2708 series System On Module (SOM) integrates both Intel XScale® PXA270 (Bulverde CE) ultra low power CPU design, with Advantech's EVA-C210 companion chip, achieving the aim of using the lowest cost integrated controllers, with the most I/Os, such as touch screen, CompactFlash®, PCMCIA, SD/MMC, USB Host/USB OTG, USB Client, PCI Bus Rev. 2.2, 10/100 based-T Ethernet, PS/2 ports, RS-232 and RS-485.

Design-in Package Ensures Fast, Risk-free Implementation

The comprehensive design-in package provides developers with a complete design-in kit, detailed design guide documentation, as well as the Windows CE Board Support Package (BSP) by project request and a set of testing tools for custom target platform image building.

Four supporting mechanisms are included in design-in package:

- **Reference Kit:** Provides developers with a complete design-in suite reference for application evaluation/development and Customer Solution Board (CSB) development
- **LCD Kit:** A full range of certified LCD kits in different sizes and types for custom fit target CSB and applications
- **Design-in Zone:** Assists customers own CSB development by providing direct and professional technical support
- **Design-in Forum:** A series of worldwide SOM Design-in Forums/Seminars/Conferences through various types of activities/formats, giving developers an opportunity and channels to receive and share the most updated information
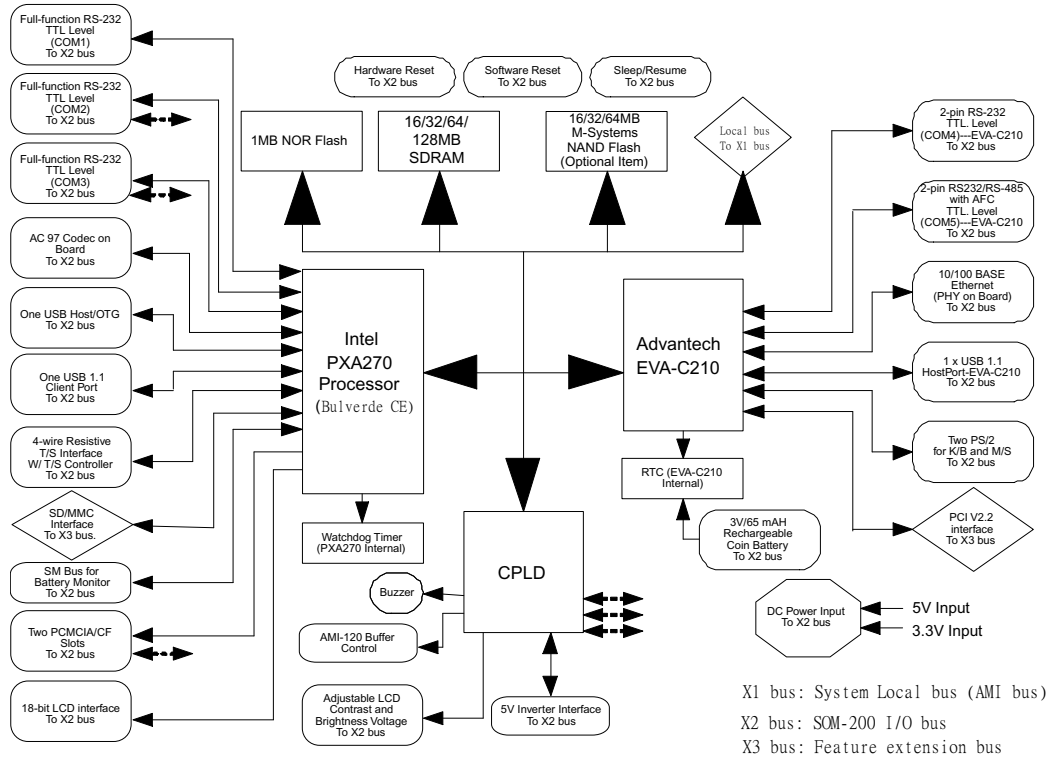
Specifications

Model / Func.	SOM-A2708 series	Reconfiguration Option
CPU	Intel XScale PXA270 520 MHz	312/416/520 MHz
I/O Enhance Chip	Advantech EVA-C210	-
Graphic Chip	PXA270 built-in	-
System Memory (SDRAM)	64MB SDRAM	16/32/64/128 MB
Boot loader Flash	1MB NOR Flash	-
Onboard Flash (Image & Storage)	0MB	0/16/32/64 MB
OS Image Storage	Thru CFC	-
AMI Bus (X1 bus)	100-pin B2B conn w/ buffer drive	Yes
Feature Extension Bus (X2 Bus)	100-pin B2B conn (the conn. Include PCI, ZV & SD/MMC I/F)	Yes
Watch Dog	PXA270 Built-in	-
RTC	EVA-C210 Built-in	-
Serial Port	3 x Full RS-232 (TTL); 1 x 2-wires RS-232 (TTL); 1 x 3-wires for RS-232 or RS-485	-
Ethernet	1 x 10/100Base-T	-
PCMCIA/ Compact Flash	2 Slots PCMCIA/CF or 1 x PCMCIA & 1 x CF	-
USB Host/OTG	2 x USB 1.1 Host	2 x USB 1.1 Host 1 x USB 1.1 Host & 1 USB OTG
USB Client	1 x USB 1.1 Client	-
SD/MMC	Yes (support 4 bit memory/IO mode)	

PS/2	2 x Ch for K/B & MS	-
LCD (TTL level)	Up to VGA LCD 18-bit TFT/STN/DSTN	-
T/S	4-wire resistive	5-wire resistive/ SPI interface I/F
Audio Codec	AC'97 codec on board. Support Mic-in, Line-in, Line-out speaker-out	Yes
Buzzer Control	Yes	-
SM Bus	Yes	-
Hardware Reset	Yes	-
Software Reset	Yes	-
Resume	Yes	-
OS Support	WinCE 5.0	Embedded Linux (customers request)
Power Input	3.3 V/5 V	-
Operating Temperature	0 ~ 60° C	Support Advantech Phoenix product golden level: -20° C ~ 80° C platinum level: -40° C ~ 85° C
Operating Humidity	0% ~ 90%	-
Certification	FCC/CE	-
Form Factor	68 mm x 68 mm x 6.8 mm	-

Ps: 1. "Reconfiguration Option" column provides the user with many choices. "-": means no option. If standard product SOM-A2708 specification does not fit developer's requirement, developer can contact Advantech for SOM-A2708 reconfiguration.
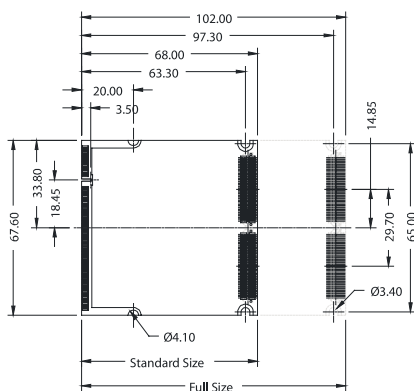
Board Diagram

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

Full-function RS-232 TTL Level (COM2) To X2 bus

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

AC 97 Codec on Board To X2 bus

One USB Host/OTG To X2 bus

One USB 1.1 Client Port To X2 bus

4-wire Resistive T/S Interface W/ T/S Controller To X2 bus

SD/MMC Interface To X3 bus.

SM Bus for Battery Monitor To X2 bus

Two PCMCIA/CF Slots To X2 bus

18-bit LCD interface To X2 bus

Hardware Reset To X2 bus

Software Reset To X2 bus

Sleep/Resume To X2 bus

1MB NOR Flash

16/32/64/128MB SDRAM

16/32/64MB M-Systems NAND Flash (Optional Item)

Local bus To X1 bus

Intel PXA270 Processor (Bulverde CE)

Advantech EVA-C210

Watchdog Timer (PXA270 Internal)

Buzzer

CPLD

AMI-120 Buffer Control

Adjustable LCD Contrast and Brightness Voltage To X2 bus

5V Inverter Interface To X2 bus

RTC (EVA-C210 Internal)

3V/65 mAH Rechargeable Coin Battery To X2 bus

DC Power Input To X2 bus

2-pin RS-232 TTL. Level (COM4)---EVA-C210 To X2 bus

2-pin RS232/RS-485 with AFC TTL. Level (COM5)---EVA-C210 To X2 bus

10/100 BASE Ethernet (PHY on Board) To X2 bus

1 x USB 1.1 HostPort-EVA-C210 To X2 bus

Two PS/2 for K/B and M/S To X2 bus

PCI V2.2 interface To X3 bus

5V Input

3.3V Input

X1 bus: System Local bus (AMI bus)
X2 bus: SOM-200 I/O bus
X3 bus: Feature extension bus

Mechanical dimensions

Unit: mm

102.00
97.30
68.00
63.30
20.00
3.50
14.85
33.80
18.45
67.60
29.70
65.00
Ø3.40
Ø4.10
Standard Size
Full Size

Ordering Information

SOM-A2708 Design-in Package

- **SOM-ADK2708-B00 (Item for design-in)**
  SOM-A2708 series Design-in Kit
  (** without panel bundle, please order suitable LCD kit)
- **LCD-A057-STQ1-0 (Optional item)**
  5.7" STN QVGA LCD kit. The kit includes 4-wires resistive T/S, inverter, cables and installation guide
- **LCD-A064-TTV1-0 (Optional item)**
  6.4" TFT VGA LCD kit. The kit includes 4-wires resistive T/S, inverter, cables and installation guide

SOM-A2708 SOM alone

- **SOM-A2708-540B0**
  PXA270, 520MHz, EVA-C210 I/O extension chip, 64MB SDRAM, 1MB boot flash, X1 and X3 extension bus connectors on board (Minimum 20 pcs/per order)

Applications

- Mobile, battery-powered device platform with multi-I/O I/F demand
- Compact diagnostic, monitoring, control equipment or HMI terminal
- Outdoor, fully enclosured, intelligent remote I/O controller
- LCD-based vehicle/telemetric platform for navigation & communication