**SOM-A2708 Series**

**System On Module**

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### 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

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

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 To X2 bus
- Full-function RS-232 TTL Level (COM1) To X2 bus
- Full-function RS-232 TTL Level (COM3) To X2 bus
- AC 97 Codec on Board To X2 bus
- USB Host/OTG To X2 bus
- One USB 1.1 Device Port To X2 bus
- 4-wire Resistive Touch Interface To X2 bus
- SD/MMC Interface To X2 bus
- SLI Bus for Battery Monitor To X2 bus
- Two PCI/ISA/CAT Steer To X2 bus
- 18-64 LCD Interface To X2 bus
- Intel PXA270 Processor (Bulverde CE)
- 1MB NOR Flash
- 16/32/64/128MB SDRAM
- 16/24/68MB M-Systems NAND Flash (Optional Item)
- Software Reset To X2 bus
- Hardware Reset To X2 bus
- Suspend/Resume To X2 bus
- Advantech EVA-C210
- Spartan II CPLD
- 10/100BASE Ethernet (PHY on Board) To X2 bus
- 2 USB 2.0 To X3 bus
- 3.3V Input
- 5V Input

**Ordering Information**

**SOM-A2708 Design-in Package**
- SOM-ADK2708-800 (Item for design-in)
- SOM-A2708 series Design-in Kit
  (** without panel bundle, please order suitable LCD kit**)
- LCD-A057-ST01-0 (Optional Item)
  5.7” STN VGA LCD kit. The kit includes 4-wires resistive T/S, inverter, cables and installation guide
- LCD-A064-TT01-0 (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-A2708-54080
  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 HMIs terminal
- Outdoor, fully enclosed, intelligent remote I/O controller
- LCD-based vehicle/telemetric platform for navigation & communication

**Mechanical dimensions**

- **SOM-A2708 Series System On Module**
- **Unit: mm**
- **Board dimensions:**
  - Standard Size: 60.5 x 60.5
  - Full Size: 67.0 x 67.0
- **Height:**
  - Standard Size: 8.50
  - Full Size: 9.00
- **Depth:**
  - Standard Size: 4.5
  - Full Size: 5.0
- **Pitch:**
  - Standard Size: 4.00
  - Full Size: 4.5
- **DIY holes:**
  - Standard Size: 1.0
  - Full Size: 1.0
- **Display Screen:**
  - Standard Size: 65.0 x 30.0
  - Full Size: 70.0 x 35.0
- **Pitch:**
  - Standard Size: 1.5
  - Full Size: 2.0
- **Standard Size:**
  - Height: 8.50
  - Pitch: 4.00
  - Depth: 4.5
- **Full Size:**
  - Height: 9.00
  - Pitch: 4.5
  - Depth: 5.0

**Applications**

- System On Module