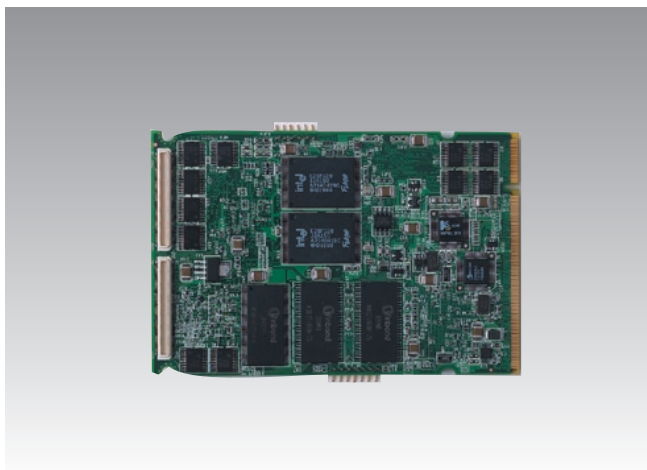


# SOM-A255F series System On Module

Intel® PXA255 + SMI SM501 graphic  
chip + Advantech EVA-C210 +  
Microsoft® Windows® CE .NET 4.2



## Features

- Triple-Chip integration offers full SBC-level functionality on a 68 mm x 102 mm x 6.8 mm compact-sized module with 64/128 MB SDRAM/ flash on board
- Ultra low power platform with additional high performance graphic controller (with external 8MB SDRAM) offers high mobility, fanless operation and multimedia display advantages
- OS-ready package for Windows CE .NET 4.2/Linux Installation
- Local bus (AMI Bus), comprehensive I/O interfaces, such as Ethernet, PS/2 ports, USB Host and PCI interface support
- Boot option by onboard Flash or CFC makes easy maintenance and cost savings
- Design-in Kit Package available for complete design-in support
- Optional RISC CE-Builder assist with customer image development

## Introduction

### Ultra low Power, Multimedia engine, I/O intensive, high multimedia performance, OS-Ready System On Module

Using a triple-chip design principle, SOM-A255F Series integrates an Intel PXA255 ultra low power CPU, SMI Multimedia graphic chip SM501 & an Advantech EVA-C210 PCI I/O expansion chip as companion chips that offer customers excellent ultra low power use, high graphic performance & rich I/O expansion on a system on module approach

### Design-in Package ensures fast, low-risk project implementation

the comprehensive design-in package provides developers with not only a complete design-in kit and detailed design guide documentation, but also contains a testing tool set and Windows CE Board Support Package (BSP) for customer target platform image building.

Five supporting mechanisms are included in the design-in package:

- **Design-in kit:** Provides developers a complete reference design-in suit for application evaluation/development and customer Customer Solution Board (CSB) development.
- **LCD Kit:** Supplies a full range of certified LCD kits in different sizes and types for customers to fit into their target CSB and application.
- **Windows CE builder:** Optional Software Support Platform that allows customers to create/customize/Integrate their own target image
- **Design-in Zone:** Assist Customers with their own CSB development by providing direct and professional technique support in an efficient way.
- **Design-in Forum:** Conducts a series worldwide SOM Design-in Forums/Seminars/Conferences thru various types of activities/formats, giving developers an opportunity/ channels to receive and share the most updated information.

## Applications

SOM-A255F platform offers low power consumption, extensive I/O support and high graphic performance ideal for graphic-based smart platforms, such as :

- High computing, graphic & I/O expansion platforms
- Mobile, multimedia and battery-powered device platforms with large display & multi-I/O expansion demands
- Wireless broadband terminals
- Smart display devices
- Security surveillance platforms with digital or analog video input/output

## Specifications

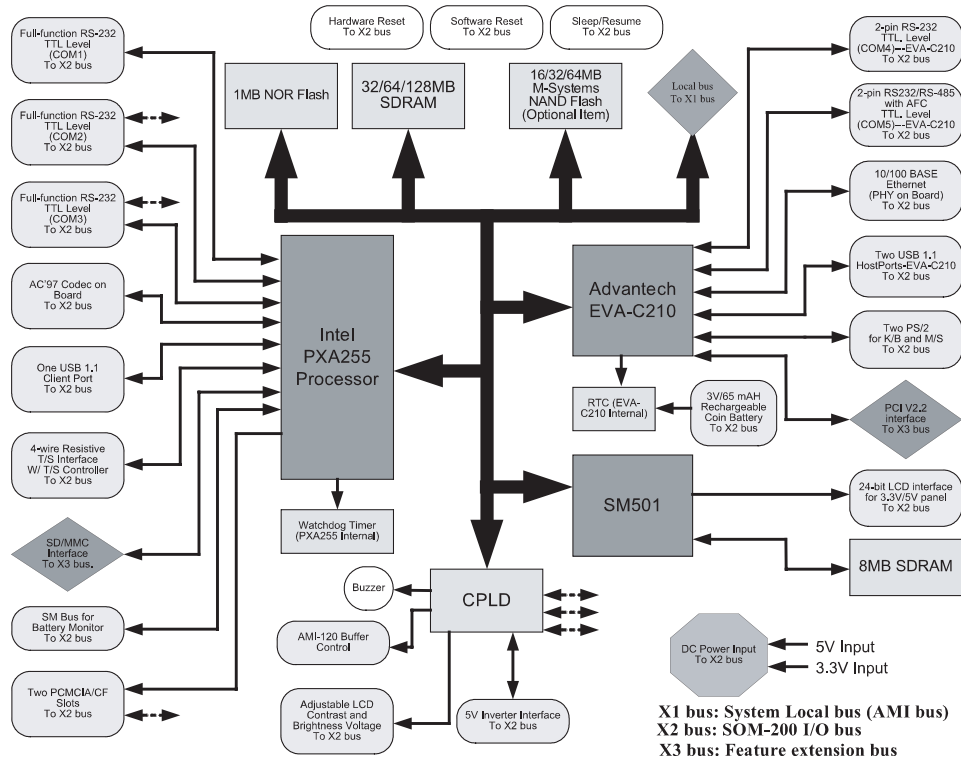
Model Name	SOM-A255F-440B0	Reconfiguration Option
Spec.		
CPU	Intel XScale PXA255 - 400 MHz	200/300/400 MHz
I/O Enhance Chip	Advantech EVA-C210	-
Graphic Chip	SMI SM501 (with 8MB external SDRAM)	Without 8 MB embedded SDRAM
System Memory (SDRAM)	64 MB	32/64/128 MB
Boot loader Flash	1 MB NOR Flash	-
On-board Flash (Image & Storage )	0 MB	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 (X3 Bus)	100-pin B2B conn (the conn. Include PCI.ZV & SD/MMC I/F)	Yes
Watch Dog	PXA255 Built-in	-

RTC	EVA-C210 Built-in	-
System Backup battery	RTC/SDRAM	-
Serial Port	3 x Full RS-232 (TTL), 1 x 2-wire RS-232 (TTL), 1 x 3-wires for RS-232 or RS-485	-
Ethernet	10/100Base-T	Yes
PCMCIA/Compact Flash Slot	2 slots PCMCIA/CF or 1 x PCMCIA, 1 x CF	-
SD/MMC slot	1 x Ch (Support 1-bit memory mode)	-
USB Host	2 x USB 1.1 Host	-
USB Client	1 x USB Client	-
PS/2	2 x PS/2 ports for keyboard & mouse	-
T/S	4-wire resistive	Yes
CRT-out	Resolution up to 1024 x 768	-
LCD (TTL Level)	SM501 24-bit LCD interface, resolution up to 1024 x 768	-
ZV port	Yes	-
Audio Codec	AC'97 codec output. Supports Mic-in, Line-in, Line-out speaker-out	Yes
Buzzer control	Yes	-
SM Bus	Yes	-
System Reset	H/W Reset, S/W Reset, Suspend/ Wake I/F	-
OS support	Windows CE .NET 4.2	Linux (By customer request)
Power input	3.3 V/5 V	-
Operating temperature	0 ~ 60° C	Optional -10 ~ 70° C & -20 ~80° C certification
Operating humidity	0% ~ 90% relative humidity	-
Certification	FCC/CE	-
PCB Form factor	68 mm x 102 mm x 6.8 mm	-

Note: "Reconfiguration Option" column provides users many choices. "-" means no option. If standard product SOM-A255F-440B0's spec. doesn't fit user's requirements, users could contact with Advantech for SOM-A255F reconfiguration. .

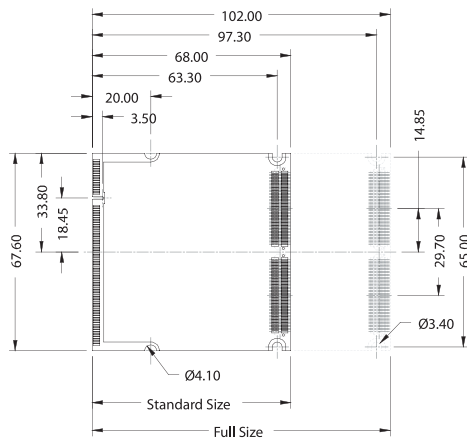
# SOM-A255F Series System On Module

## Board Diagram



## Mechanical dimension

Unit: mm



## Packing List

- Bulk packing with 20 pcs in one box
- SOM comes with bootloader pre-install only

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

\*\*SOM does not include Microsoft Windows CE .Net License.

## Ordering Information

### SOM-A255F Design-in Package

- **SOM-ADK255F-B00** SOM-A255F Series design-in kit.
- **(Must order for design-in)\*\*** without Panel bundle, please order designated LCD kit)
- **LCD-A057-STQ1-0 (Optional item)** 5.7" STN QVGA LCD kit. The kit includes 4-wire resistive T/S, inverter, cables and installation guide.
- **LCD-A064-TTV1-0 (Optional item)** 6.4" TFT VGA LCD kit. The kit includes 4-wire resistive T/S, inverter, cables and installation guide.
- **LCD-A104-TTS1-0 (Optional item)** 10.4" TFT SVGA LCD kit. The kit includes 4-wire resistive T/S, inverter, cables and installation guide.
- **LCD-A150-TTX2-0** 15" TFT XGA kit. This kit includes 4-wire resistive T/S, inverter, cables and installation guide.
- **RSW-ACEBW01-042** RISC CE-Builder Windows CE .Net 4.2 version 1.

### SOM-A255F Series SOM alone (Minimum 20 pcs/per order)

- **SOM-A255F-440B0** PXA255-400 MHz, SMI SM501 (without external 8 MB SDRAM) & Advantech EVA-C210, 64 MB SDRAM, 1 MB Boot Flash, Both X1 and X3 extension bus connectors on board.
- **SOM-A255F-345B0** PXA255-300MHZ, 32MB flash, 64MB SDRAM with AMI connector and Feature extension connector on board.
- **SOM-A255F-440E0** PXA-255 - 400MHZ, 64MB SDRAM, with extension connector on board..
- **Order your own reconfigured SOM** Developers can check the reconfiguration option of the above specification table to order a customized SOM-A255F Series product. If a customer has a reconfiguration demand, please contact the local Advantech RBU, distributor or enter <http://www.advantech.com/risc> to apply SOM-A255F reconfiguration demands.