

EVA-C210

ARM-to-PCI Companion Chip for Intel® PXA255 RISC Processor



CE FCC

Features

- Companion to Intel Xscale® Core PXA255, Bulverde and Samsung ARM S3C2410X01 processors
- Supports up to 64 MB SDRAM
- PCI Bus Controller, compliant with PCI Spec. Rev. 2.2
- One 10/100Base-T Ethernet MAC
- Two USB Host Controllers with PHY, compliant with USB Spec. Rev. 1.1
- Two PS/2 ports
- I2C Controller and UARTs (RS-232 & RS-485)
- Up to 32-bit GPIO

Introduction

EVA-C210 is a companion chip to the Intel Xscale PXA255 and Samsung ARM S3C2410X01 processors. This companion chip interfaces directly to the RISC processor and integrates a variety of functions including PCI Rev. 2.2 Bus, PS/2, I2C, UART (RS-232/485), USB Host Rev. 1.1, RTC, 32 bit GPIO, Fast Ethernet 10/100 MAC, Interrupt controller, and power management. EVA-C210 is suitable for use in high-performance RISC systems and provides a cost-effective solution for RISC applications in Networking & Embedded devices.

Adding Value to Customers

As a platform provider, Advantech's EVA-C210 is ported with both Windows® CE .NET and Linux drivers. It provides complete hardware and software solutions, allowing customers to leverage Advantech's H/W and easy-to-use S/W design and development kit to shorten the product cycle and speed time-to-market response. With its highly integrated functions, EVA-C210 expands the PXA255's capability and utilities, adds value to customers, and is a convenient, flexible, and powerful addition to RISC systems.

SOC DTOS and "Mask Programmable" Technology

Utilizing the unique "mask programmable" technology feature, EVA-C210 has reserved an additional 128K of programmable functional block space for customers add-on functions IP (Intellectual Property). The silicon customization service is called "SOC DTOS" and lets customers easily own their own SOC with only a short lead time.

Specifications

System Bus Interface (SBI)

- Supports Intel PXA255, Bulverde and Samsung S3C2410 interface
- 64 MHz bus operation

Shared Memory Controller

- 32-bit data bus interface
- Supports 64 MB SDRAM

PS/2 Port

- IBM PS/2, AT compatible keyboard mouse interface
- Two PS/2 ports are provided
- Supports plug-and-play

Real Time Clock (RTC)

- 32.768 KHz operation
- Independent power input, onboard system power and battery power switch

I2C Controller

- Supports standard and fast mode
- Supports 7-bit and 10-bit addressing mode
- Provides Master-transmit, Master-receive, Slave-transmit and Slave-receive mode
- 1-ch Multi-Master I2C-Bus

UART Controller

- High-speed NS 16C550A-Compatible UART
- Supports Auto-Flow-Control function for RS-485
- FIFO depth is 16 bytes

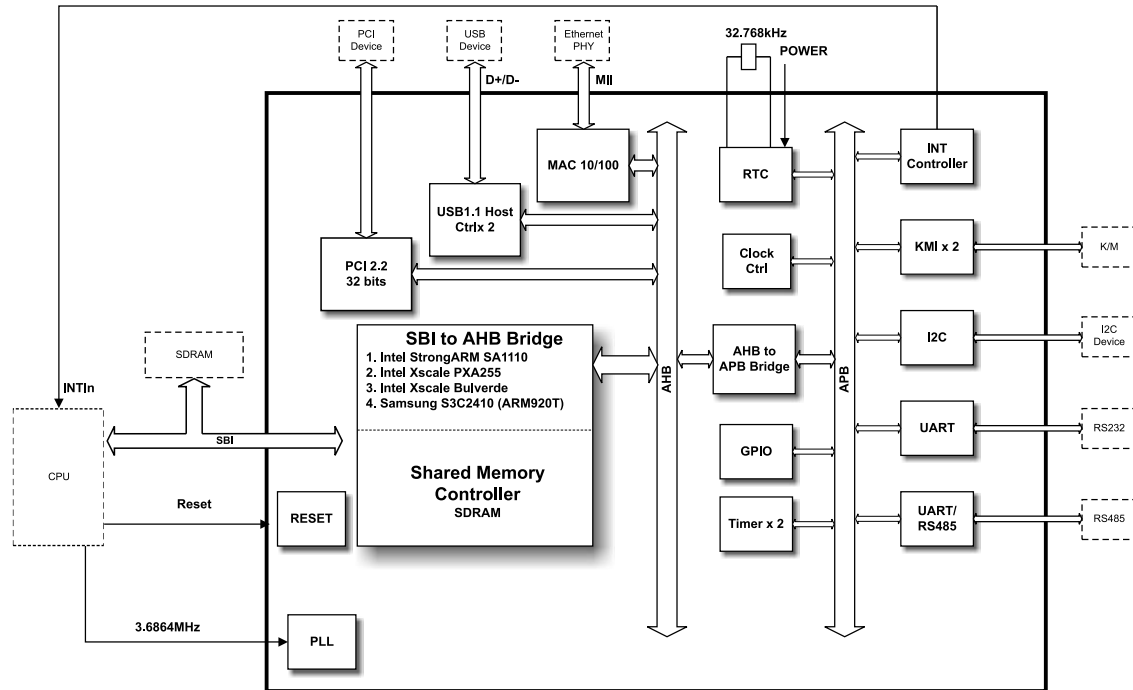
General Purpose I/O (GPIO) Function

- Up to 32-bits for GPIO functions
- GPIO pins can be programmed as inputs, output, or as interrupt inputs (8 bits)
- Mixed with PCI address/data bus

Timer

- Two independently programmable 16-bit timers
- Interrupt generated at either overflow or regular intervals

Board Diagram



Specifications cont.

USB Host Controller

- Supports two USB ports
- Fully compatible with USB specification version 1.1
- Supports all four data transfer types
- Supports full-speed USB data rate
- Internal DMA controller

PCI Bus Controller

- Fully compatible with PCI specification version 2.2
- 32-bit data bus interface
- Supports up to 3 individual external bus master devices
- Internal DMA controller

10/100 Ethernet MAC

- One port 10/100 Ethernet MAC
- IEEE 802.3u compatible
- Direct interface to MII (media independent interface)
- Internal DMA controller

Interrupt Controller

- Supports one maskable interrupt to CPU
- Configurable up to 32 interrupt inputs

Power Management Unit

- Software controllable power management
- Provides Normal mode, Sleep mode, Deep sleep mode and power-off mode

Clock Generator

- USB Host Controller (48 MHz)
- Shared Memory Controller (64 MHz)
- PCI Controller (32 MHz/64 MHz)

Package

- BGA256
- Size: 17 x 17 mm

Ordering Information

- **EVA-C210** ARM-to-PCI Companion Chip for Intel PXA255 RISC processor
- **SOM-A2558-440B0** PXA255 plus EVA-C210 System On Module
- **SOM-ADK2558-B00** SOM-A2558 Design-in Kit