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Samsung S3C2440 Application Processor

The Industry's Fastest Processor for Smartphones and PDAs

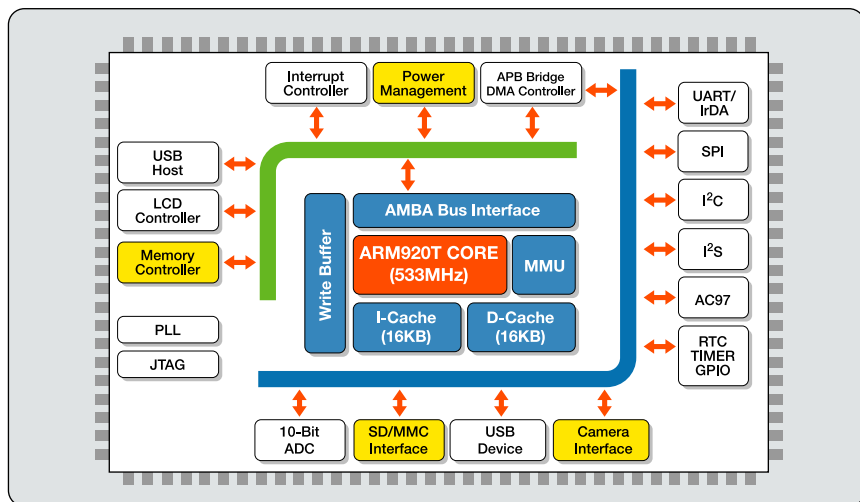
Design Innovation for Mobile Computing

Designers of next-generation handsets require an advanced microprocessor solution to optimize multimedia functionality. Samsung's S3C2440 is the industry's fastest ARM-based Application Processor. With an advanced CPU Core, the S3C2440 provides versatility of platform design by supporting 300, 400 and 533MHz core speeds, delivering the highest performance and flexibility to next-generation Smartphones and PDAs.

Low Power & High Performance

Samsung's S3C2440 is a cost-effective, low-power microcontroller solution in a small form factor. Developed using 0.13um CMOS standard cells and a memory compiler, the S3C2440 features an ARM920T core, a 16/32-bit RISC microprocessor core and an Advanced Microcontroller Bus Architecture (AMBA).

- ▶ Samsung's S3C2440 Application Processor, with the industry's fastest CPU core, supports multimedia file formats and optimizes the performance of cost- and power-sensitive PDAs and Smartphones.



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everyone's invited™

The Cost-Effective Solution

Samsung's S3C2440 Application Processor minimizes system cost and eliminates the need to configure additional components. This is accomplished by providing a complete set of common system peripherals.

Features

ARM920T CPU Core

- 64-way set-associative cache with: Cache (16KB) & D-Cache (16KB)
- Write-through and write-back cache operation
- MMU supports Microsoft® WinCE®, Linux, Palm and Symbian operating systems
- Internal AMBA bus architecture

System Manager

- Little/big-endian support
- Address space: Total 1GB
- NOR/Strata Flash, ROM, SRAM, and SDRAM
- NAND Flash Bootloading

Operating Conditions

- Internal: 1.2V / 1.3V
- External: I/O: 3.3V
- Speed: 300/400/533MHz @ 1.1-1.3V
- Memory Interface: 2.5V / 3.3V

Package

- 289 FPBGA (14 Body)

Benefits

- Best-in-class mobile computing performance by the industry's fastest core
- Best fit for cost-effective system design
- Built-in NAND Flash bootloader and camera interface
- Highly integrated design
- Reference Board and RTOS reduce design time
- Various Design Applications

For more information on Samsung's S3C2440 Application Processor, visit: www.samsungsemi.com

On-Chip Peripherals

- NAND Flash Controller
- LCD Controller (up to 4K color STN and 256K color TFT) with 1-channel LCD dedicated to DMA
- Camera interface supports up to 16-megapixel resolution
- USB Host/Device interface
 - 2 Port USB Host (Version 1.1 Compliant)
 - 1 Port USB Device (Version 1.1 Compliant)
- 4-Channel DMA controllers
- 3-Channel UART with IrDA 1.0 (Including 64-byte FIFO)
- 1-Channel multi-master I²C-Bus interface
- 1-Channel I²S-Bus Interface
- AC97 Audio Codec
- 4-Channel 16-bit PWM (Pulse Width Modulation), & 1-Channel 16-bit timer for OS
- 130 General-purpose I/O ports
- 8-Channel 10-bit A/D (Max. 500KSPS), including TSP controller
- 16-bit Watch-dog timer
- RTC with calendar function
- On-chip clock generator with PLL
- 2-Channel SPI (Synchronous Serial I/O)
- SD Host/MMC (Multi Media Card) I/F
- Debug & TEST

Applications

- PDAs, Smartphones, Telematics, MP3 Players, Game Machines



- ▶ *Samsung's S3C2440 Application Processor, with an advanced CPU Core, supports 300, 400 and 533MHz core speeds and delivers the highest performance to media-rich Smartphones and PDAs.*



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