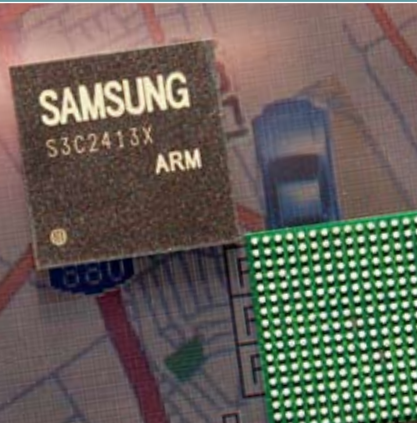


SAMSUNG

Samsung S3C2413 Mobile Processor

Cost-effective Solution for Smartphones and Other Handhelds



The Samsung S3C2413 mobile processor gives designers of products such as smartphones, portable GPS devices and PDAs a solution for reducing system costs while providing maximum flexibility.

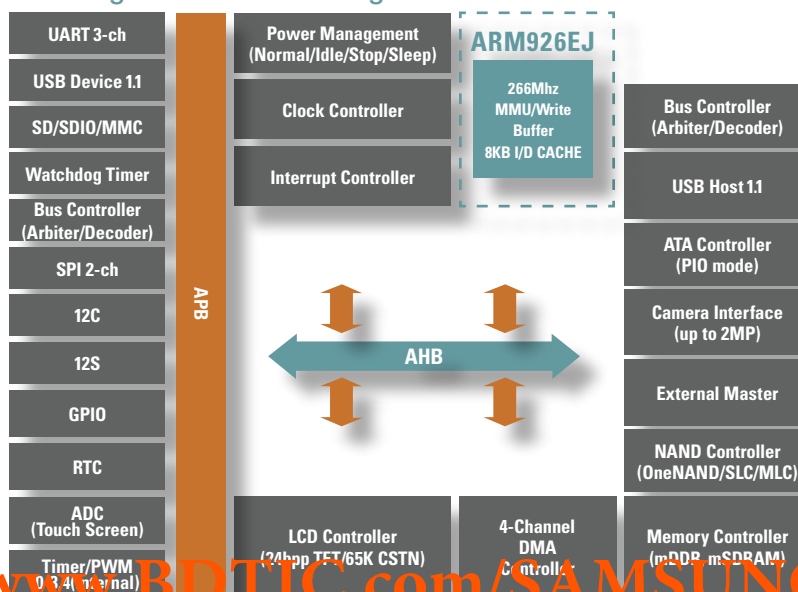
Delivers Optimized Price/Performance in a Small Package

The new Samsung S3C2413 is optimized for embedded and mobile applications, featuring a 16/32-bit ARM926EJ-S core, on-chip peripherals that include a camera interface and low voltage supported by Samsung's 0.13µm low-power technology. This mobile processor gives designers of products such as smartphones, VoIP phones, portable GPS devices and PDAs a solution for reducing system costs while providing maximum flexibility.

An enhanced NAND controller on the S3C2413 interfaces with an array of NAND flash types,

highlighted by OneNAND™, Flash. This advanced fusion memory features high-density NAND with a NOR interface, delivering high performance and fast boot up. The controller also supports MLC and SLC NAND flash. In addition, the 266MHz Samsung processor interfaces with NOR, SRAM, low-power mobile SDRAM and mobile DDR, as well as removable storage like SD and MMC. The S3C2413 also supports an enhanced set of power modes to reduce power consumption. Displays types range from 65K-color STN to 16M-color TFT-LCD in a variety of resolutions, thus enhancing design flexibility. Samsung created the S3C2413 to give handheld devices extremely broad features and performance while offering attractive price points.

Samsung S3C2413 Block Diagram





The new Samsung S3C2413 is optimized for embedded and mobile applications, featuring a 266MHz, 16/32-bit ARM926EJ-S core, many on-chip peripherals and low voltage supported by Samsung's 0.13 μ m low-power technology.

Samsung S3C2413 Key Features

Architecture

- 16/32-bit RISC ARM926EJ-S core
- 8KB I-cache; 8KB D-cache/MMU
 - Supports WinCE, Symbian, Linux
- AMBA 2.0, AHB/APB

System Manager

- Little/Big Endian support
- Address space: 128MB for each bank (total 1GB)
- Mobile SDRAM controller (supports mDDR)
- NAND flash controller (SLC/MLC; large/small block; OneNAND)
- 4KB internal buffer

Power Management

- On-chip MPLL and UPLL
- Power modes: normal, idle, stop, power-off
- 0.13 μ m low-power technology

On-Chip Peripherals

- Camera interface (up to 2 MP)
 - ITU-R BT 601/656 8-bit mode support
 - DZI (Digital Zoom In) capability
 - Image mirror and rotation (X-axis mirror, Y-axis mirror and 180° rotation)
 - Camera output formats: RGB 16/24-bit and YCbCr 4:2:0/4:2:2
- 4-channel DMAs with external request pins
- 2-port USB host; 1-port USB device
 - D host interface v1.0 & MMC v2.11
- RTC with calendar function

- On-chip clock generator with PLL
- Watch-dog timer
- 4-channel PWM timers; 1-channel internal timer
- 3-channel UART; 2-channel SPI
- 115-bit general-purpose I/O ports
 - 24-channel external interrupt source
- CD controller (up to 65K-color STN and 16M-color TFT)
 - 1 channel LCD-dedicated DMA
- A/D converter & touch-screen interface

Operating Conditions

- Operating frequency: 266MHz
- Memory voltage options: 1.8/2.5/3.0

Package

- 272 FBGA 14x14mm

Benefits

- Cost effective
- Low power
- Full set of on-board peripherals
- High performance
- Flexibility

Key Applications

- Entry-level smartphone
- VoIP phone
- Portable GPS
- PDA



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