

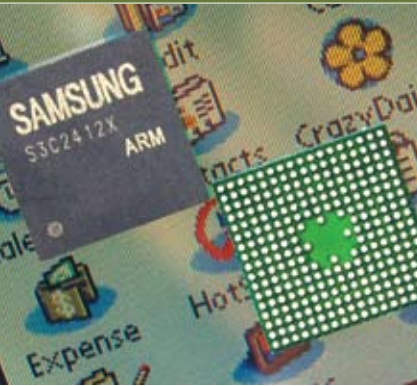


SAMSUNG

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Samsung S3C2412 Mobile Processor

High-performance, Low-power, Cost-effective
Solution for Handhelds



The Samsung S3C2412 mobile processor gives designers of products such as portable GPS devices, PDAs, point-of-sale terminals and a variety of other embedded applications a solution for reducing system costs while providing maximum flexibility.

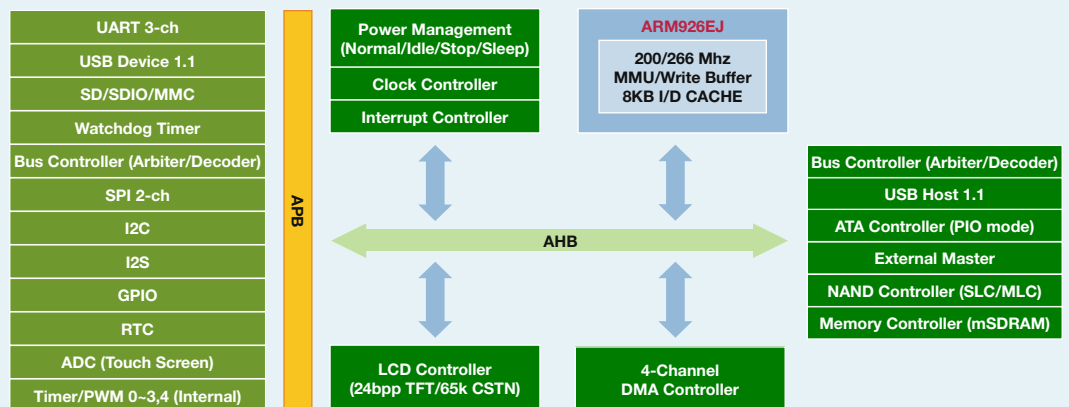
Processor Includes Set of Common System Peripherals

The new Samsung S3C2412 is optimized for embedded and mobile applications, featuring a 16/32-bit ARM926EJ-S core, on-chip peripherals and low voltage supported by Samsung's 0.13µm low-power technology. This mobile processor gives designers of products such as portable GPS devices, PDAs and handheld POS and gaming systems a solution for reducing system costs while providing maximum flexibility.

In terms of flexibility, the S3C2412 has an enhanced NAND controller that enables both small- and large-block transfers as well as 4-bit

ECC support to interface with an array of NAND flash such as MLC and SLC. The Samsung processor supports a variety of memory types such as NOR, SRAM and low-power mobile SDRAM as well as removable storage like SD and MMC. The S3C2412 also supports an enhanced set of power modes to reduce power consumption. Displays are supported that range from 65K-color STN to 16M-color TFT-LCD in a variety of resolutions, thus enhancing design flexibility. Samsung created the S3C2412 to power price-sensitive devices while still enabling broad features and performance.

Samsung S3C2412 Block Diagram





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Samsung S3C2412 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
- NAND flash controller (SLC/MLC; large/small block)
- 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

- 4-channel DMAs with external request pins
- 2-port USB host; 1-port USB device
 - SD host interface v1.0 and 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
- LCD controller (up to 65K-color STN and 16M-color TFT)
 - 1 channel LCD-dedicated DMA
- A/D converter & touchscreen interface

Operating Conditions

- Operating frequency: 200/266MHz
- Memory voltage: 1.8/2.5/3.0v

Package

- 272 FBGA

Benefits

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

Key Applications

- Portable GPS
- PDA
- POS devices
- VoIP phone
- E-book/e-dictionary