SPEAr®

Embedded microprocessors

Overview

- SPEAr is ST's family of embedded MPUs with state-of-the-art architecture, silicon technology and intellectual property
- Highly-integrated 32-bit ARM® MPU cores (ARM926 and ARM Cortex-A9)
- Offers significant processing and connectivity capabilities at lower power consumption

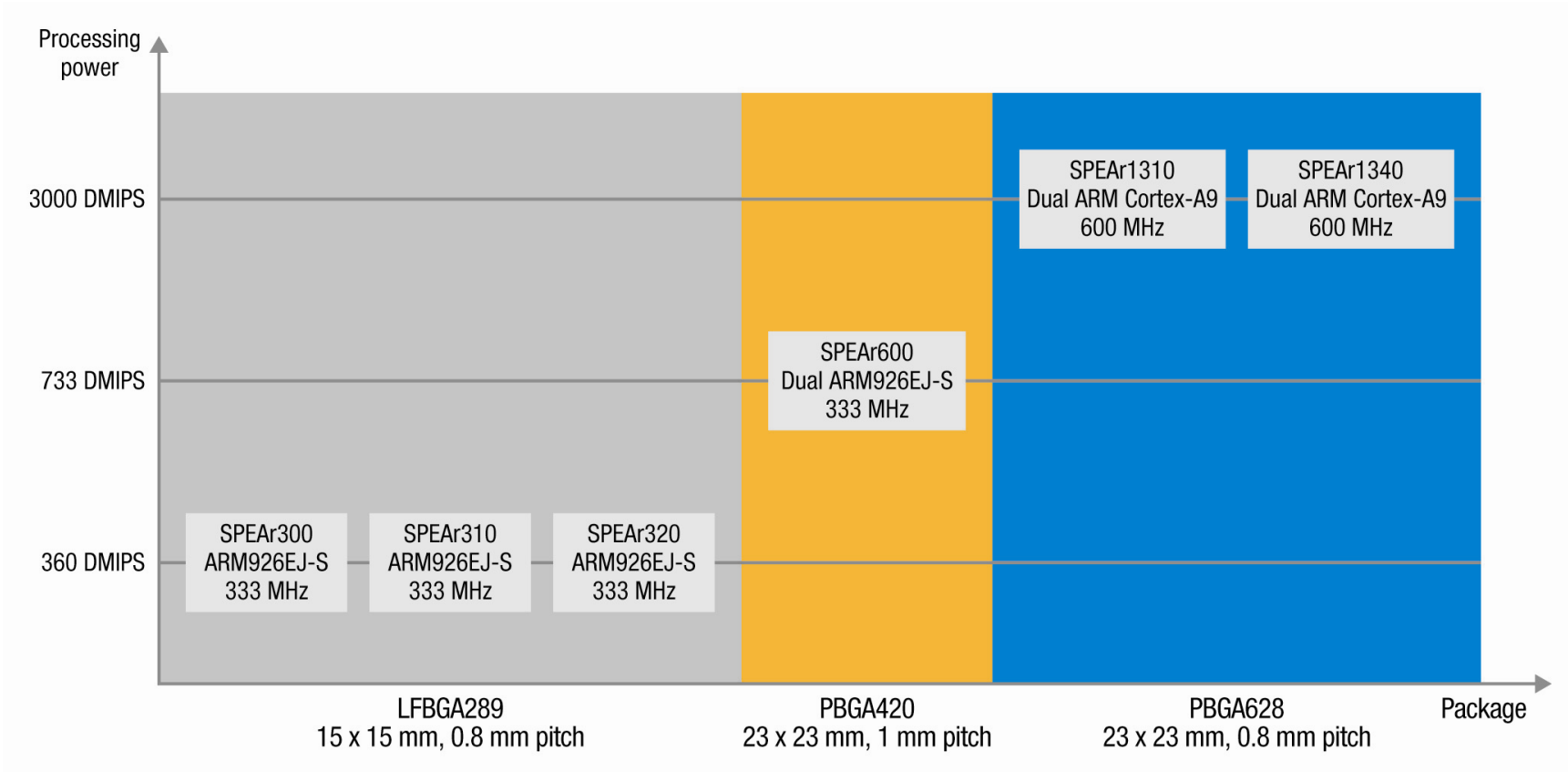
Why SPEAr®?

- Based on an industry-standard ARM® core
- Architecture includes proven IPs for connectivity, memory interfaces and high-performance internal bus system
- Customized SPEAr solutions for a specific businesses/applications
- Ready-to-use development kits for full custom project approach

Highly integrated 32-bit ARM MPU cores

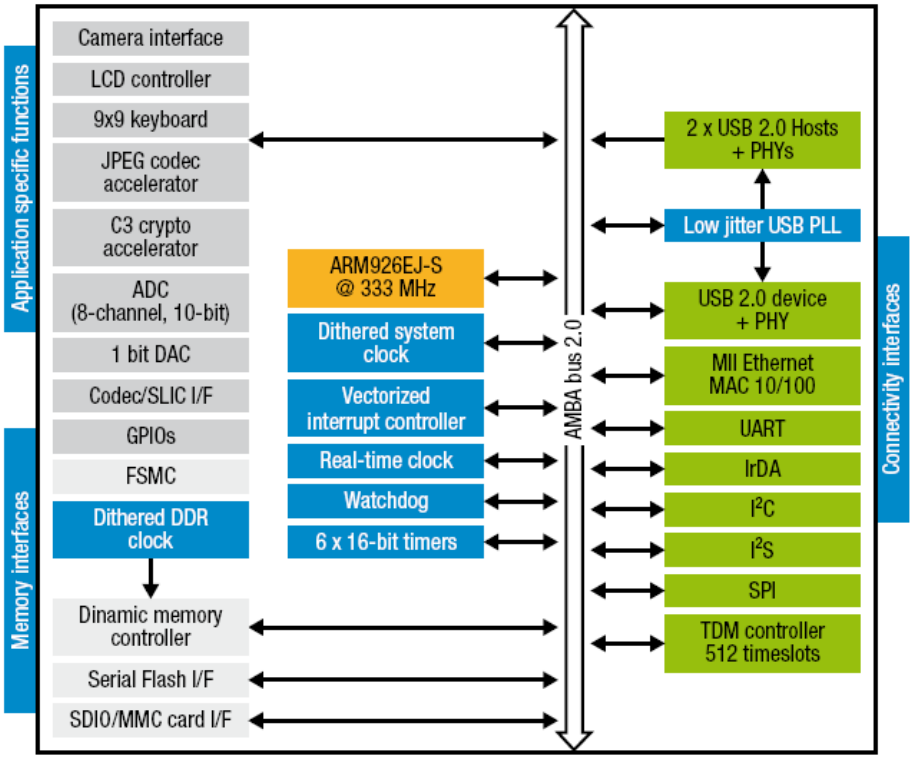
- Clear architecture and technology evolution: ARM926 to Cortex-A9, 90 nm to 40 nm CMOS technology
- High computation power (starting from 366 DMIPS… up to 3000 DMIPS)
- Full capability for high-end operating systems (Linux, VxWORKS, WinCE, Android and more)
- State of the art peripherals/subsystems for high-speed connectivity, high-performance memory interfaces and internal bus systems

SPEAr® eMPU standard products



SPEAr300: Quick view

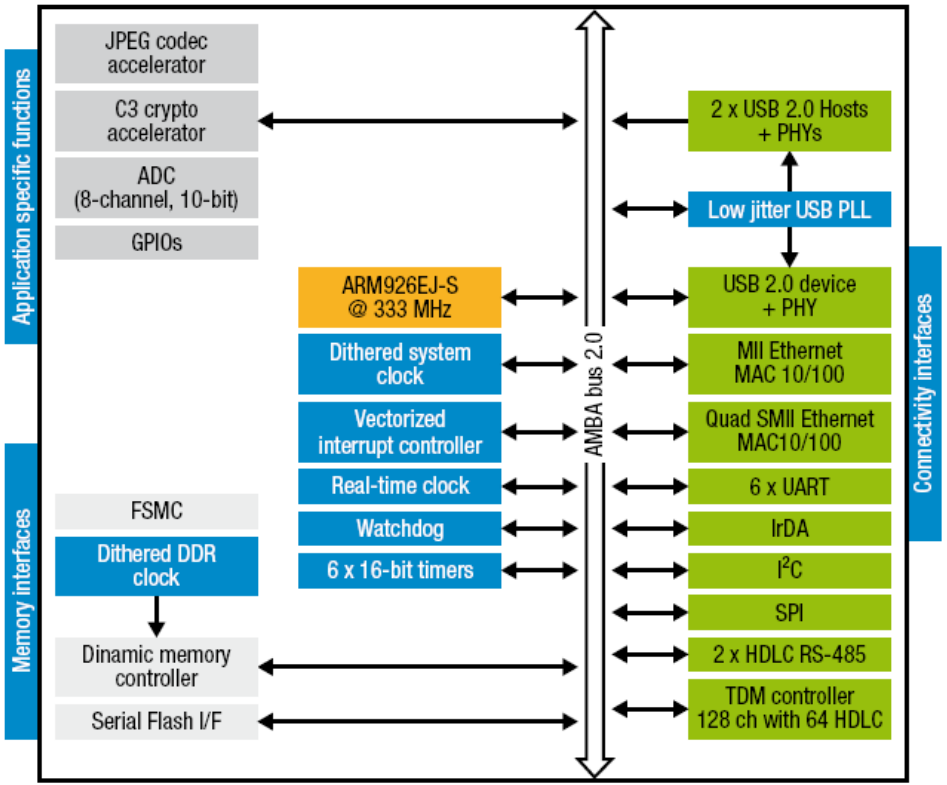
- ARM926EJ-S @ 333 MHz (minimum)
- High-performance 8-channel DMA
- External memories supported:
  - LP-DDR, DDR2, SRAM, NAND/NOR Flash
  - SDIO/MMC card
- Connectivity
  - USB 2.0 with PHYs
  - Ethernet MAC
  - SPI/I²C (up to 8 chip selects)
  - I²S, UART, IrDA, TDM bus
- Cryptographic engine
- Peripherals
  - Camera interface
  - LCD panel
  - Touchscreen
  - 9 x 9 keyboard
  - Timeslot management



Package: LFBGA289 (15 x 15 mm, pitch 0.8 mm)

SPEAr310: Quick view

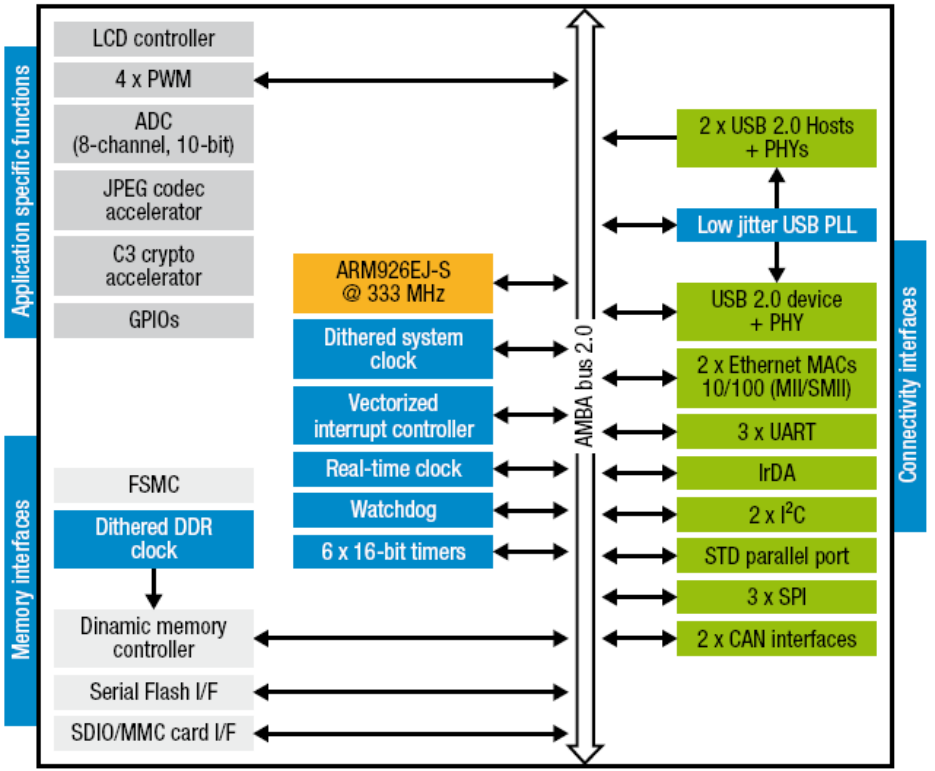
- ARM926EJ-S @ 333 MHz (minimum)
- High-performance 8-channel DMA
- External memories supported
  - LP-DDR, DDR2, SRAM, NAND/NOR Flash
- FPGA connections
- Connectivity
  - USB 2.0 (2 hosts, 1 device) with PHYs
  - 5 Ethernet MACs (MII and 4 x SMII)
  - SPI (up to 4 chip selects)
  - I²S, UART, IrDA, TDM/HDLC bus
- Cryptographic engine



Package: LFBGA289 (15 x 15 mm, pitch 0.8 mm)

SPEAr320: Quick view

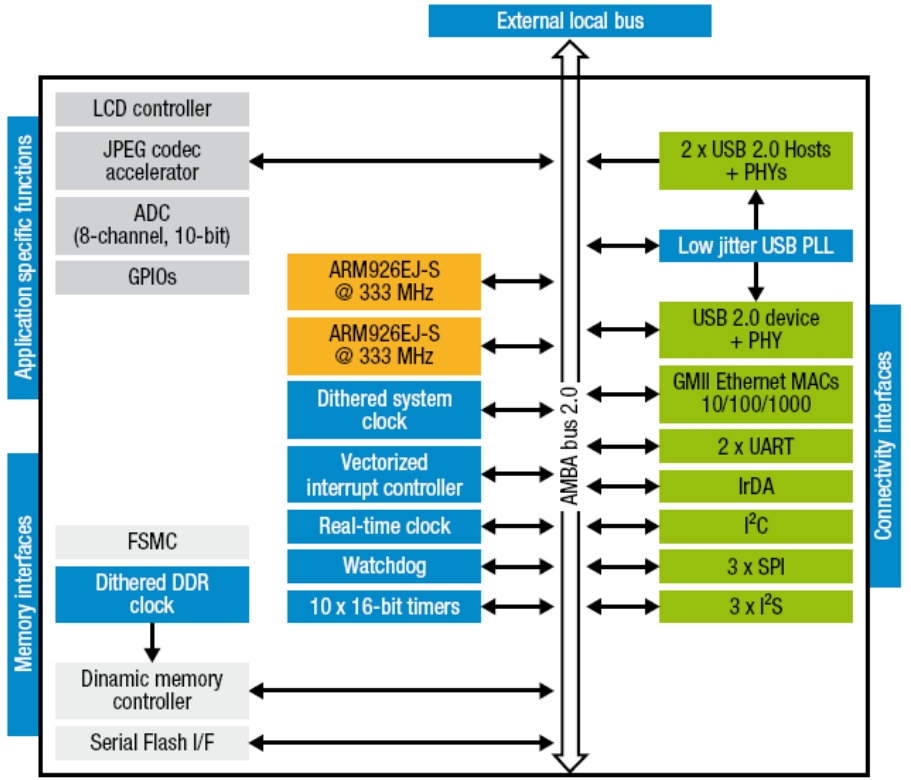
- ARM926EJ-S @ 333 MHz (minimum)
- High-performance 8-channel DMA
- External memories supported
  - LP-DDR, DDR2, SRAM, NAND/NOR Flash
  - SDIO/MMC card
- FPGA connections
- Connectivity
  - USB 2.0 (2 hosts, 1 device) with PHYs
  - Dual Ethernet MAC (SMII/MII)
  - Dual CAN
  - SPI/I²C (up to 6 chip selects)
  - I²S, UART, IrDA
- Cryptographic engine
- Peripherals
  - LCD panel
  - Touchscreen



Package: LFBGA289 (15 x 15 mm, pitch 0.8 mm)

SPEAr600: Quick view

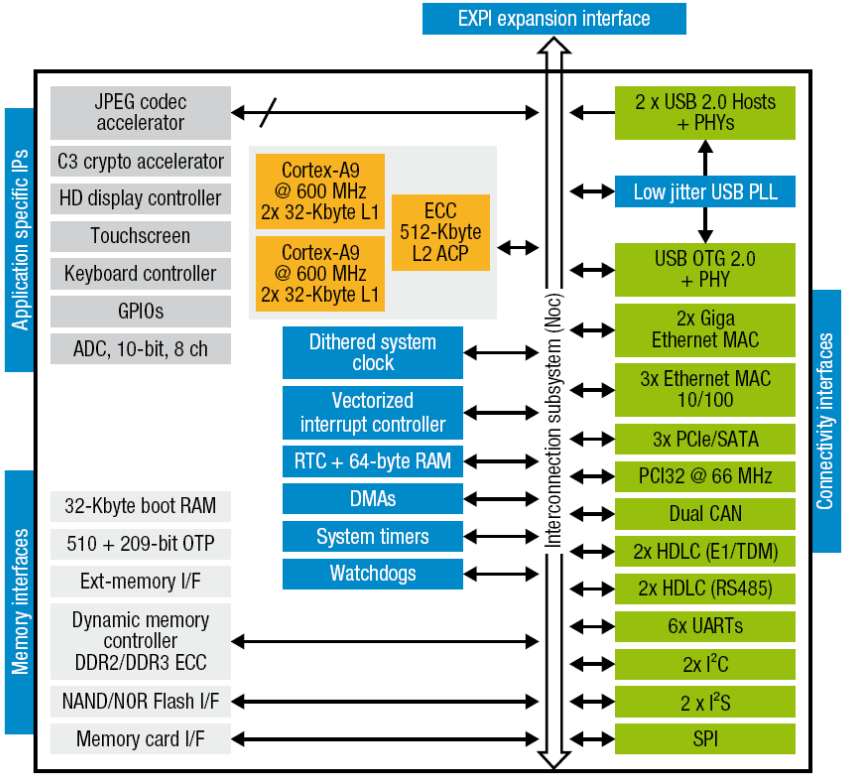
- Dual ARM926EJ-S @ 333 MHz (minimum)
- High-performance 8-channel DMA
- External memories supported
  - DDR, DDR2, NAND/NOR Flash
- Connectivity
  - USB 2.0 (2 hosts, 1 device) with PHYs
  - Giga-Ethernet MAC
  - SPI, I²S, UART, IrDA
- Peripherals
  - LCD panel
  - Touchscreen
  - External local bus



Package: PBGA420 (23 x 23 mm, pitch 1 mm)

SPEAr1310: Quick view

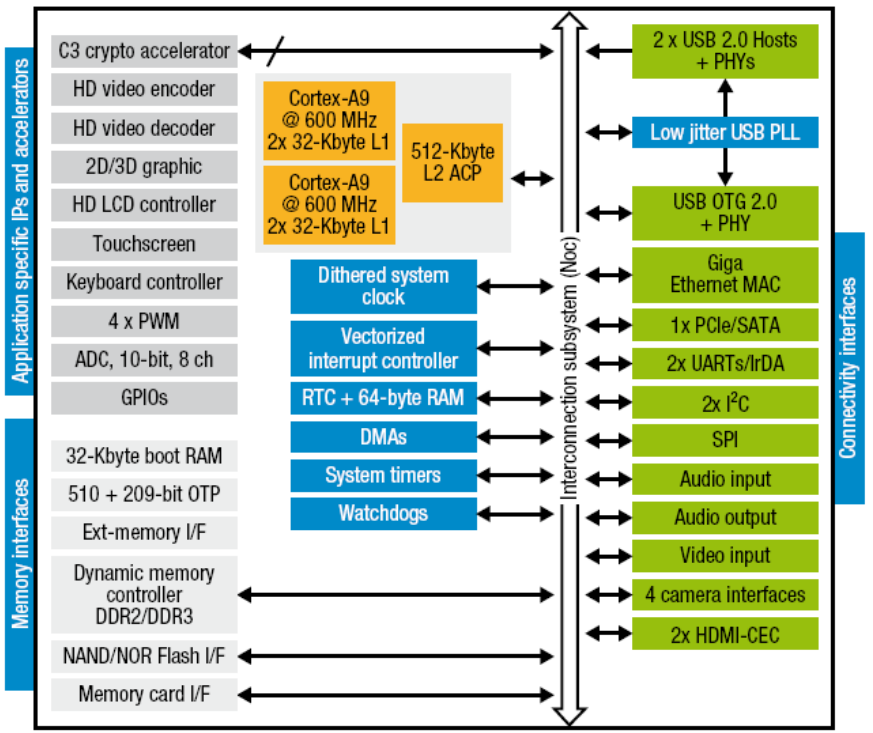
- Dual ARM Cortex A9 @ 600 MHz
  - 2 x 32 KB L1 cache (each core) and 512 KB L2 cache with ECC and accelerator coherency port (ACP)
- High-performance 16-channel DMA
- DDR3/DDR2 support
- Connectivity
  - USB 2.0 (2 hosts, 1 OTG) with PHYs
  - Giga-Ethernet
  - PCIe and SATA
  - HDLC and TDM
  - Dual CAN
  - SPI, I²S, I²C,UARTs
- Peripherals and hardware accelerators
  - HD display controller
  - Touchscreen
  - External local bus connectivity
  - JPEG codec
  - Crypto accelerator



Package: PBGA628 (23 x 23 mm, pitch 0.8 mm)

SPEAr1340: Quick view

- Dual ARM Cortex A9 @ 600 MHz
  - 2 x 32 KB L1 cache (each core) and 512 KB L2 cache and accelerator coherency port (ACP)
- High-performance 16-channel DMA
- DDR3/DDR2 support
- Connectivity
  - USB 2.0 (2 hosts, 1 OTG) with PHYs
  - Giga-Ethernet
  - PCIe and SATA
  - SPI, I²S, I²C,UARTs
- Peripherals and hardware accelerators
  - HD display controller
  - Touchscreen
  - External local bus connectivity
  - 1080p video encoder (H.264, JPEG64, JFIF)
  - 1080p video decoder (H.263, H.264, MPEG-4, VC-1…
  - MALI 200 graphic engine
  - Crypto accelerator



Package: PBGA628 (23 x 23 mm, pitch 0.8 mm)