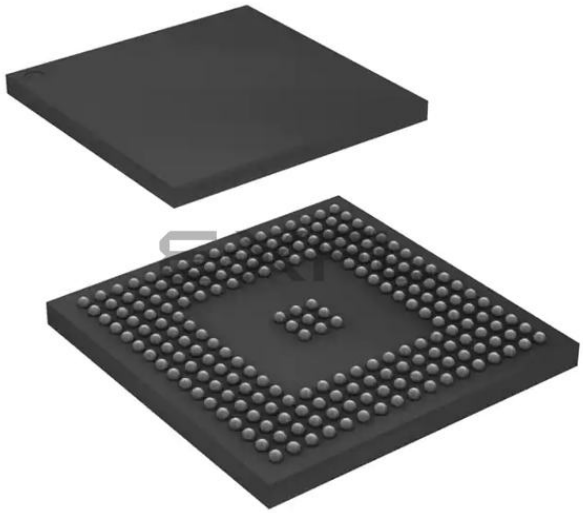


Welcome to E-XFL.COM

Understanding Embedded - Microprocessors

Embedded microprocessors are specialized computing chips designed to perform specific tasks within an embedded system. Unlike general-purpose microprocessors found in personal computers, embedded microprocessors are tailored for dedicated functions within larger systems, offering optimized performance, efficiency, and reliability. These microprocessors are integral to the operation of countless electronic devices, providing the computational power necessary for controlling processes, handling data, and managing communications.

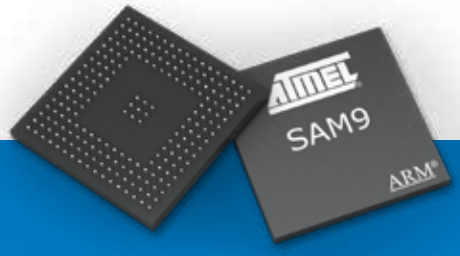
Applications of Embedded - Microprocessors

Embedded microprocessors are utilized across a broad spectrum of applications, making them indispensable in

Details	
Product Status	Active
Core Processor	ARM926EJ-S
Number of Cores/Bus Width	1 Core, 32-Bit
Speed	400MHz
Co-Processors/DSP	-
RAM Controllers	LPDDR, LPDDR2, DDR2, DDR, SDR, SRAM
Graphics Acceleration	No
Display & Interface Controllers	LCD, Touchscreen
Ethernet	10/100Mbps
SATA	-
USB	USB 2.0 (3)
Voltage - I/O	1.8V, 2.5V, 3.0V, 3.3V
Operating Temperature	-40°C ~ 85°C (TA)
Security Features	-
Package / Case	217-LFBGA
Supplier Device Package	217-LFBGA (15x15)
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/at91sam9x35-cu

Atmel SAM9G15, SAM9G25, SAM9G35, SAM9X25, SAM9X35

400MHz ARM926 with Enhanced Connectivity and Advanced LCD Control



Benefits

- DDR2, LPDDR support and NAND Flash controller with 24-bit ECC ensure market availability and low cost
- Enables refined user interfaces
- Extended connectivity/networking capabilities
- Highly efficient through low voltage and low power consumption
- High level of integration reduces BOM cost

Key Features

- 400MHz ARM926™ core with 16kB I&D cache
- LPDDR and 8-bank DDR2 support, SDRAM support via External Bus Interface
- MLC/SLC NAND Controller with integrated ECC up to 24 bits
- Dual 8-channel central Direct Memory Access (DMA) controllers
- 133MHz twelve-layer 32-bit Advanced High-performance Bus (AHB) matrix
- Soft modem with exclusive support for the Conexant SmartDAA line driver, delivered with free-of-charge software
- Three USB ports comprising EHCI-compatible high-speed and OHCI-compatible full-speed USB Host, high-speed USB Device
- Up to two IEEE Std 802.3-compatible 10/100Mbps Ethernet MAC and two CAN controllers
- Multiple connectivity features include USARTs, UARTs, TWI, I2S
- Graphics LCD Controller with 4-layer overlay, picture-in-picture, alpha-blending, scaling, rotation, color conversion
- Camera interface with direct connection to ITU-R BT. 601/656 8-bit mode compliant sensors and up to 12-bit grayscale sensors
- 4/5-wire resistive touchscreen support 3.3V I/Os eliminate need for external level shifters
- I/O drive controller simplifies PCB design
- 0.8mm ball pitch, BGA217 package for reduced cost PCB manufacturing (BGA247 option with 0.5mm pitch for SAM9G25 only)
- Power consumption below 300µW/MHz at 400MHz operation with 8µA in backup mode
- Backup unit with RTC, timer and four 32-bit registers and fast wake-up

Application Areas

- Home & commercial building automation
- HMI, control panel
- M2M, smart grid
- Point-of-Sale (POS) terminals
- Medical
- White goods

Atmel SAM9G15, SAM9G25, SAM9G35, SAM9X25, SAM9X35

400MHz ARM926 with Enhanced Connectivity and Advanced LCD Control

Atmel Evaluation Kit and Ecosystem

- Full-featured evaluation kits include
  - CPU Module Board equipped with SAM9 processor
  - Main board with interface connectors
  - Display Module for evaluation of processors featuring LCD Controller
  - Free Board Support Packages (BSP) for Linux®
- Worldwide support ecosystem of industry-leading suppliers of development tools, operating systems, protocol stacks and applications

Atmel Product Selector

All devices are -40°C to 85°C temperature range and are available in a BGA217 package with 0.8mm ball pitch. The Atmel® SAM9G25 is available in a BGA247 with 0.5mm ball pitch.

Ordering Code / Feature Set	LCD Controller	Resistive Touchscreen	Camera Interface	EMAC	Dual CAN	Soft Modem	UART/SPI/TWI	USB Host	USB Device	Kit Ordering Code
AT91SAM9G15-CU	✓	✓	-	-	-	Y	6/5/3	1 HS, 1 FS	HS	AT91SAM9G15-EK
AT91SAM9G25-CU AT91SAM9G25-CFU (BGA247)	-	-	✓	✓	-	Y	7/6/3	1 HS, 1 FS	HS	AT91SAM9G25-EK
AT91SAM9G35-CU	✓	✓	-	✓	-	Y	6/5/3	1 HS, 1 FS	HS	AT91SAMG35-EK
AT91SAM9X25-CU	-	-	-	✓✓	✓	Y	7/6/3	1 HS, 1 FS	HS	AT91SAM9X25-EK
AT91SAM9X35-CU	✓	✓	-	✓	✓	Y	6/5/3	1 HS, 1 FS	HS	AT91SAM9X35-EK

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