



## 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 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