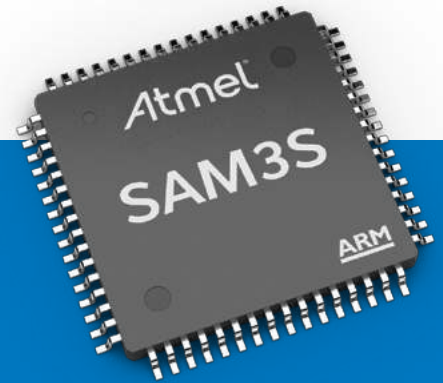# Atmel | SMART SAM3S Series MCU

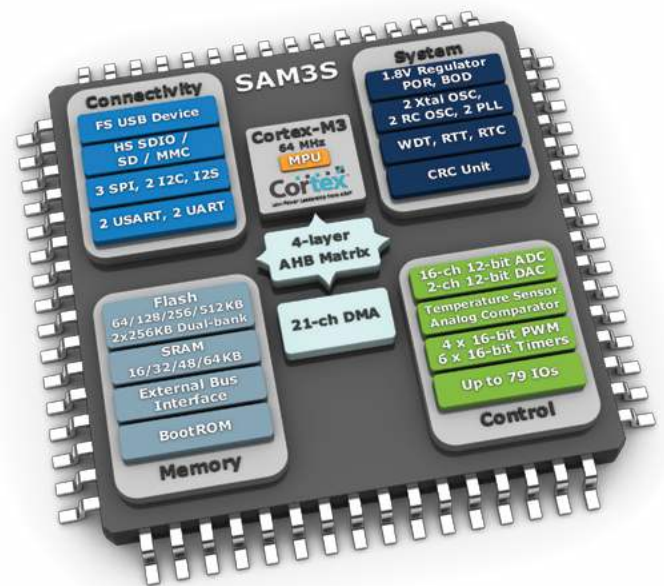## ARM Cortex-M3 Flash Microcontroller Delivers High Integration and Low Power

Benefits

- ARM® Cortex®-M3 technology
- Pin-to-pin compatible with best-selling Atmel® | SMART SAM7S series MCU
- Highly-integrated peripheral set, including Full Speed USB device
- Native Atmel QTouch® capacitive touch support
- Low power consumption
- Simplified PCB design and low system cost
- Parallel input/output (I/O) signal capture
- Safety features

Key Features

- 1.62V to 3.6V supply
- ARM Cortex-M3 rev 2.0 processor running at up to 64MHz
- Memory protection unit (MPU)
- Optional dual-bank Flash
- Native 4-layer AHB bus matrix, 21 DMA channels
- Embedded regulator, power-on reset, brown-out detection and multiple clock sources, including 32kHz oscillator and factory-trimmed RC
- High-speed peripherals, including USB2.0 FS device, HS SD/SDIO/MMC, USART, SPI
- Up to 16-channel 12-bit 1Msps ADC with PGA stage and differential inputs, 2-channel 12-bit 1Msps DAC, analog comparator
- Powerful and flexible 16-bit timers with quadrature decoder and gray counter. Powerful PWM unit, calendar RTC, watchdog timer
- Power consumption 2.3mW@1MHz, 1.3mW@500kHz, backup mode down to 1.8µA
- ECC on Flash, independent watchdog, dual-bank Flash, clock failure detection. On-the-fly external memory scrambling.
- 8-bit parallel data capture on PIO controller
- Up to 79 I/O lines with integrated serial resistors (on-die termination)
- 48-, 64- and 100-pin packages

Application Areas

- Consumer goods and toys
- Industrial control
- Metering
- Medical
- Test and measurement
- 802.15.4 wireless networking
- PC, cell phone, gaming peripherals

Atmel | SMART SAM3S Series MCU
ARM Cortex-M3 Flash Microcontroller Delivers High Integration and Low Power

Evaluation Kit and Ecosystem

- Full-featured evaluation board and software library
- Atmel BitCloud® (ZigBee PRO) stack available
- QTouch library support for buttons, sliders and wheels
- Worldwide support ecosystem of industry-leading suppliers of development tools, real-time operating systems and middleware products
- **Kit Ordering Code ATSAM3S-EK2**

Device Ordering Information

Ordering Code	Flash	Package
ATSAM3S8CA-AU	512kB	LQFP100
ATSAM3S8CA-CU	512kB	BGA100
ATSAM3S8BA-AU	512kB	LQFP64
ATSAM3S8BA-MU	512kB	QFN64
ATSAM3SD8CA-AU	512kB*	LQFP100
ATSAM3SD8CA-CU	512kB*	BGA100
ATSAM3SD8BA-AU	512kB*	LQFP64
ATSAM3SD8BA-MU	512kB*	QFN64
ATSAM3S4CA-AU	256kB	LQFP100
ATSAM3S4CA-CU	256kB	BGA100
ATSAM3S4BA-AU	256kB	LQFP64
ATSAM3S4BA-MU	256kB	QFN64
ATSAM3S4AA-AU	256kB	LQFP48

Ordering Code	Flash	Package
ATSAM3S4AA-MU	256kB	QFN48
ATSAM3S2CA-AU	128kB	LQFP100
ATSAM3S2CA-CU	128kB	BGA100
ATSAM3S2BA-AU	128kB	LQFP64
ATSAM3S2BA-MU	128kB	QFN64
ATSAM3S2AA-AU	128kB	LQFP48
ATSAM3S2AA-MU	128kB	QFN48
ATSAM3S1CA-AU	64kB	LQFP100
ATSAM3S1CA-CU	64kB	BGA100
ATSAM3S1BA-AU	64kB	LQFP64
ATSAM3S1BA-MU	64kB	QFN64
ATSAM3S1AA-AU	64kB	LQFP48
ATSAM3S1AA-MU	64kB	QFN48

* 2x256kB dual-bank Flash

Enabling Unlimited Possibilities®