

# ATMEL Microcontrollers



This product is RoHS compliant.



## AVR 8-BIT WIRELESS RISC MICROCONTROLLER

The ATmega128RFA1 is a low-power CMOS 8 bit microcontroller based on the AVR enhanced RISC architecture combined with a high data rate transceiver for the 2.4 GHz ISM band. It is derived from the ATmega1281 microcontroller and AT86RF231 radio transceiver.

### Features:

- High Performance, Low Power AVR® 8-Bit Microcontroller
- Advanced RISC Architecture
- Non-volatile Program and Data Memories
- Endurance: 2000 Write/Erase Cycles @ 85°C
- JTAG (IEEE std. 1149.1 compliant) Interface
- Advanced Interrupt Handler
- Watchdog Timer with Separate On-Chip Oscillator
- Power-on Reset and Low Current Brown-Out Detector
- Advanced Power Save Modes
- Fully integrated Low Power Transceiver for 2.4 GHz ISM Band
- Hardware Security (AES, True Random Generator)
- Integrated Crystal Oscillators (32.768 kHz & 16 MHz)
- Temperature Range: -40°C to 85°C Industrial
- Supply voltage range 1.8V to 3.6V with integrated voltage regulators
- Ultra Low Power consumption (1.8 to 3.6V) for Rx/Tx & AVR: <18.6 mA

### Peripheral Features:

- Multiple Timer/Counter & PWM channels
- Real Time Counter with Separate Oscillator
- 10-bit, 330 ks/s A/D Converter; Analog Comparator;
- On-chip Temperature Sensor
- Master/Slave SPI Serial Interface
- Two Programmable Serial USART
- Byte Oriented 2-wire Serial Interface

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	Atmel Part No.	Package	Flash	EEPROM	SRAM	Max. I/O Pins	Power Supply	Speed	Price Each			
									1	10	25	100
556-ATMEGA128RFA1-ZU	ATMEGA128RFA1-ZU	DFN-64	128KB	4096 Bytes	16384 Bytes	38	1.8V-3.6V	16MHz	6.65	6.45	5.94	5.81

## XMEGA 8-BIT AVR MICROCONTROLLERS

AVR XMEGA microcontrollers have the same acclaimed characteristics as the established AVR devices, and operate from just 1.6 volts with up to 32 MIPS at 32 MHz. The XMEGA devices are general purpose microcontrollers well suited for a variety of applications including audio systems, ZigBee®, power tools, medical, board controllers, networking, metering, optical transceivers, motor control, white goods and any battery powered product.



For quantities greater than listed, call for quote.

MOUSER STOCK NO.	Atmel Part No.	Package	Flash	EEPROM	SRAM	Max. I/O Pins	Power Supply	Speed	Temperature	Price Each			
										1	10	25	100
556-ATXMEGA16A4-AU	ATXMEGA16A4-AU	TQFP-44	16KB	1KB	2KB	34	1.6V-3.6V	32MHz	-40 to 85°C	3.65	3.46	3.14	3.13
556-ATXMEGA16A4-CU	ATXMEGA16A4-CU	PBGA-49	16KB	1KB	2KB	34	1.6V-3.6V	32MHz	-40 to 85°C	3.38	3.27	3.24	3.20
556-ATXMEGA16A4-MH	ATXMEGA16A4-MH	QFN-64	16KB	1KB	2KB	34	1.6V-3.6V	32MHz	-40 to 85°C	4.47	3.46	3.19	3.08
556-ATXMEGA32A4-AU	ATXMEGA32A4-AU	TQFP-44	32KB	1KB	4KB	34	1.6V-3.6V	32MHz	-40 to 85°C	4.13	3.90	3.60	3.34
556-ATXMEGA32A4-CU	ATXMEGA32A4-CU	PBGA-49	32KB	1KB	4KB	34	1.6V-3.6V	32MHz	-40 to 85°C	6.26	5.38	3.93	3.56
556-ATXMEGA32A4-MH	ATXMEGA32A4-MH	QFN-64	32KB	1KB	4KB	34	1.6V-3.6V	32MHz	-40 to 85°C	5.05	3.90	3.60	3.42
556-ATXMEGA32A4U-AU	ATXMEGA32A4U-AU	TQFP-44	36KB	1KB	4KB	34	1.6-3.6V	32 MHz	-40 to 85°C	5.35	3.74	3.36	3.06
556-ATXMEGA32A4U-CU	ATXMEGA32A4U-CU	VFBGA-44	36KB	1KB	4KB	34	1.6-3.6V	32 MHz	-40 to 85°C	5.74	4.01	3.60	3.28
556-ATXMEGA32A4U-MH	ATXMEGA32A4U-MH	VQFN-44	36KB	1KB	4KB	34	1.6-3.6V	32 MHz	-40 to 85°C	5.35	3.74	3.36	3.06
556-ATXMEGA64A1-AU	ATXMEGA64A1-AU	TQFP	64KB+4KB	2KB	8KB	78	1.6V-3.6V	32MHz	-40 to 85°C	7.53	6.48	5.06	4.63
556-ATXMEGA64A1-CU	ATXMEGA64A1-CU	CBGA	64KB+4KB	2KB	8KB	78	1.6V-3.6V	32MHz	-40 to 85°C	6.54	6.34	5.73	5.20
556-ATXMEGA64A3-AU	ATXMEGA64A3-AU	TQFP-64	64KB	2KB	4KB	50	1.6V-3.6V	32MHz	-40 to 85°C	5.88	5.47	5.04	4.71
556-ATXMEGA64A3-MH	ATXMEGA64A3-MH	QFN-64	64KB	2KB	4KB	50	1.6V-3.6V	32MHz	-40 to 85°C	8.21	7.06	5.47	5.04
556-ATXMEGA256A3U-AU	ATXMEGA256A3U-AU	TQFP-64	64KB	2KB	16KB	50	1.6-3.6V	32 MHz	-40 to 85°C	9.52	8.66	7.93	6.80
556-ATXMEGA128A1-AU	ATXMEGA128A1-AU	TQFP	128KB+8KB	2KB	8KB	78	1.6V-3.6V	32MHz	-40 to 85°C	7.30	6.78	6.25	6.20
556-ATXMEGA128A1-CU	ATXMEGA128A1-CU	CBGA	128KB+8KB	2KB	8KB	78	1.6V-3.6V	32MHz	-40 to 85°C	8.07	7.82	7.07	6.91
556-ATXMEGA128A3-AU	ATXMEGA128A3-AU	TQFP-64	128KB	2KB	8KB	50	1.6V-3.6V	32MHz	-40 to 85°C	7.46	6.93	6.32	6.29
556-ATXMEGA128A3-MH	ATXMEGA128A3-MH	QFN-64	128KB	2KB	8KB	50	1.6V-3.6V	32MHz	-40 to 85°C	7.33	6.93	6.39	6.29
556-ATXMEGA192A3-AU	ATXMEGA192A3-AU	TQFP-64	192KB	4KB	16KB	50	1.6V-3.6V	32MHz	-40 to 85°C	8.24	7.67	7.06	7.00
556-ATXMEGA192A3-MH	ATXMEGA192A3-MH	QFN-64	192KB	4KB	16KB	50	1.6V-3.6V	32MHz	-40 to 85°C	8.24	7.99	7.23	7.20
556-ATXMEGA256A3-AU	ATXMEGA256A3-AU	TQFP-64	256KB	4KB	16KB	50	1.6V-3.6V	32MHz	-40 to 85°C	9.52	9.23	8.50	8.18
556-ATXMEGA256A3-MH	ATXMEGA256A3-MH	QFN-64	256KB	4KB	16KB	50	1.6V-3.6V	32MHz	-40 to 85°C	11.64	9.01	8.30	7.99
556-ATXMEGA256A3B-MH	ATXMEGA256A3B-MH	QFN-64	256KB	4KB	16KB	49	1.6V-3.6V	32MHz	-40 to 85°C	14.48	12.45	11.27	10.43
556-ATXMEGA256A3BUAU	ATXMEGA256A3BU-AU	TQFP-64	256KB	4KB	16KB	49	1.6-3.6V	32 MHz	-40 to 85°C	8.15	6.74	6.33	6.10
556-ATXMEGA256A3BUMH	ATXMEGA256A3BU-MH	TQFP-64	256KB	4KB	16KB	49	1.6-3.6V	32 MHz	-40 to 85°C	8.15	6.74	6.33	6.10
556-ATXMEGA256A3U-MH	ATXMEGA256A3U-MH	QFN-64	264KB	4KB	16KB	50	1.6-3.6V	32 MHz	-40 to 85°C	9.52	8.66	7.93	6.80

## AT32UC3A0/A1 MICROCONTROLLERS

Designed for high data throughput, low power consumption and outstanding computing performance, the A0 and A1 Series features high connectivity with USB device and host, Ethernet MAC and SDRAM interfaces. These communication features, together with fast flash and large internal SRAM, make it ideally suited for data-intensive applications.

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	Atmel Part No.	Package	Flash	USB	SRAM	Max. I/O Pins	Power Supply	Price Each			
								1	10	25	100
556-AT32UC3A0128ALUT	AT32UC3A0128-ALUT	LQFP-144	128KB	Full speed + On the Go	32KB	109	1.8V-3.3V	10.18	8.21	7.56	7.00
556-AT32UC3A1128-AUT	AT32UC3A1128-AUT	TQFP-100	128KB	Full speed + On the Go	32KB	69	1.8V-3.3V	7.90	7.66	6.93	6.34
556-AT32UC3A0256ALUT	AT32UC3A0256-ALUT	LQFP-144	256KB	Full speed + On the Go	64KB	109	1.8V-3.3V	10.83	9.70	9.50	8.68
556-AT32UC3A1256-AUT	AT32UC3A1256-AUT	TQFP-100	256KB	Full speed + On the Go	64KB	69	1.8V-3.3V	9.54	9.04	8.32	8.00
556-AT32UC3B0256A2UT	AT32UC3B0256-A2UT	TQFP-64	256KB	Full speed + On the Go	32KB	44	1.8V-3.3V	8.83	8.33	7.86	7.56
556-AT32UC3A0512ALUT	AT32UC3A0512-ALUT	LQFP-144	512KB	Full speed + On the Go	64KB	109	1.8V-3.3V	12.78	11.90	11.12	10.25
556-AT32UC3A1512-AUT	AT32UC3A1512-AUT	TQFP-100	512KB	Full speed + On the Go	64KB	69	1.8V-3.3V	11.29	10.95	10.05	9.19

## AT32UC3A3/A4 MICROCONTROLLERS

The AVR UC3 A3/A4 Series is designed for exceptionally high data throughput with Hi-Speed USB device and host, SD/SDIO card, Multi-Level-Cell (MLC) NAND flash with ECC and SDRAM interfaces. With its multi-layered AVR databus, 128 KB on-chip SRAM split into 3 banks for higher throughput, and multi-channel peripheral and memory-to-memory DMA controller, the A3/A4 offers outstanding data transfer rates.

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	Atmel Part No.	Package	Flash	USB	SRAM	AES Crypto Module	Max. I/O Pins	Power Supply	Price Each			
									1	10	25	100
556-AT32UC3A364-ALUT	AT32UC3A364-ALUT	LQFP-144	64KB	Hi-Speed + On the Go	128KB	No	110	2.7V-3.6V	9.06	8.77	8.10	7.42
556-AT32UC3A364S-ALUT	AT32UC3A364S-ALUT	LQFP-144	64KB	Hi-Speed + On the Go	128KB	Yes	110	2.7V-3.6V	9.56	9.27	8.63	8.07
556-AT32UC3A3128ALUT	AT32UC3A3128-ALUT	LQFP-144	128KB	Hi-Speed + On the Go	128KB	No	110	2.7V-3.6V	10.34	9.75	9.00	8.25
556-AT32UC3A3128CTUT	AT32UC3A3128-CTUT	TBGA-144	128KB	Hi-Speed + On the Go	128KB	No	110	2.7V-3.6V	10.34	9.94	9.18	8.41
556-AT32UC3A3128S-ALUT	AT32UC3A3128S-ALUT	LQFP-144	128KB	Hi-Speed + On the Go	128KB	Yes	110	2.7V-3.6V	10.94	10.61	9.88	9.24
556-AT32UC3A3128SCTT	AT32UC3A3128S-CTUT	TBGA-144	128KB	Hi-Speed + On the Go	128KB	Yes	110	2.7V-3.6V	11.10	10.76	10.02	8.88
556-AT32UC3A3256ALUT	AT32UC3A3256-ALUT	LQFP-144	256KB	Hi-Speed + On the Go	128KB	No	110	2.7V-3.6V	12.51	12.13	11.11	10.18
556-AT32UC3A3256CTUT	AT32UC3A3256-CTUT	TBGA-144	256KB	Hi-Speed + On the Go	128KB	No	110	2.7V-3.6V	12.85	11.97	11.02	10.28
556-AT32UC3A3256S-ALUT	AT32UC3A3256S-ALUT	LQFP-144	256KB	Hi-Speed + On the Go	128KB	Yes	110	2.7V-3.6V	13.44	13.06	12.06	11.05
556-AT32UC3A3256SCTT	AT32UC3A3256S-CTUT	TBGA-144	256KB	Hi-Speed + On the Go	128KB	Yes	110	2.7V-3.6V	13.60	13.26	12.24	11.22

## AT32UC3L MICROCONTROLLER

The AVR UC3 L Series is Atmel's first picoPower 32-bit microcontroller that runs on 165 µA/MHz in active mode, 600 nA with RTC running, and down to 9 nA with all clocks stopped. The UC3 L-Series includes a built-in Capacitive Touch Peripheral and FlashVault allowing secure on-chip storage of software IP.

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	Atmel Part No.	Package	Flash	MIPS	SRAM	Max. I/O Pins	Speed	Power Supply	Price Each			
									1	10	25	100
556-AT32UC3L016-AUT	AT32UC3L016-AUT	TQFP-48	16KB	64	8192 Bytes	36	50MHz	1.8-3.3V	4.20	4.07	3.68	3.36
556-AT32UC3L032-AUT	AT32UC3L032-AUT	TQFP-48	32KB	64	16384 Bytes	36	50MHz	1.8-3.3V	4.74	4.59	4.16	3.80
556-AT32UC3L064-AUT	AT32UC3L064-AUT	TQFP-48	64KB	64	16384 Bytes	36	50MHz	1.8-3.3V	5.63	5.46	4.94	4.51