



AT91 ARM® Thumb® Microcontrollers



The best combination of low-power consumption, 32-bit performance and 16-bit system cost. The AT91 series provides the optimal combination of processing power, peripherals and memory blocks for demanding real-time applications that require high performance on a tight power budget. Its wide range of Real Time Operating Systems and sophisticated application development tools minimize the risk and time taken to bring new applications to the market.

Features: • 3-stage instruction execution pipeline for high instruction throughput • Single-cycle memory access through EBI • Hardware multiplier-plus-barrel shifter gives DSP capability • PDC channels (on-chip DMA) free the processor for the application • Advanced power management provides idle mode and disables unused peripherals • Low-latency Advanced Interrupt Controller • Operating Temperature: Industrial -40°C - 85°C • Watchdog Timer

Program Memory Type	Memory Size			I/O Pins	USART	TWI	SPI	Timer/Counters (16-bit)	ADC	DAC	Clock Speed (MHz)	VCC (Core)	Package	Digi-Key Part No.	Price Each		
	Program Bytes	RAM Bytes	Boot ROM Bytes												1	25	100
—	—	8K	—	32	2	—	—	3	—	—	40	1.8 - 3.6V	100-TQFP	AT91M40800-33AU-ND	8.28	6.42	5.78
—	—	8K	—	54	2	—	2	6	—	—	33	2.7 - 3.6V	144-LQFP	AT91M42800A-33AU-ND	12.58	9.75	8.78
—	—	8K	—	58	3	—	1	6	8-ch/10-bit	—	33	2.7 - 3.6V	176-LQFP	AT91M55800A-33AU-ND	15.27	11.84	10.65
—	—	2K	—	58	3	—	1	6	—	—	25	2.7 - 3.6V	176-TQFP	AT91M63200-25AU-ND	18.06	14.00	12.60
—	—	256K	—	32	2	—	—	3	—	—	75	1.65 - 1.95V	100-LQFP	AT91R40008-66AU-ND	13.65	10.59	9.53
ROM	256K	96K	—	63	4	1	1	6	—	—	66	1.65 - 1.95V	100-LQFP	AT91RM3400-AU-ND	15.48	12.00	10.80
ROM	32K	16K	128K	122	4	1	1	6	—	—	180	1.65 - 1.95V	256-BGA	AT91RM9200-CJ-002-ND	21.14	13.61	12.59
ROM	32K	16K	128K	122	4	1	1	6	—	—	180	1.65 - 1.95V	208-PQFP	AT91RM9200-QU-002-ND	23.76	18.42	16.58
—	—	4K	—	49	3	—	1	9	8-ch/10-bit	—	40	3.0 - 3.6V	144-LQFP	AT91SAM7A1-AU-ND	13.33	10.34	9.30
—	—	16K	—	57	2	—	1	10	16-ch/10-bit	—	30	3.0 - 3.6V	176-LQFP	AT91SAM7A2-AU-ND	18.17	14.09	12.68
Flash	256K	32K	—	62	3	1	2	9	16-ch/10-bit	—	60	3.0 - 3.6V	100-LQFP	AT91SAM7A3-AU-ND	14.84	11.50	10.35
Flash	32K	8K	—	21	1	1	1	2	8-ch/10-bit	—	55	3.0 - 3.6V	48-LQFP	AT91SAM7S32-AU001-ND	5.48	4.25	3.83
Flash	32K	8K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-LQFP	AT91SAM7S321-AU-ND	6.13	4.75	4.28
Flash	64K	16K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-LQFP	AT91SAM7S64-AU001-ND	7.63	5.92	5.33
Flash	128K	32K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-LQFP	AT91SAM7S128AU001-ND	10.00	7.75	6.98
Flash	128K	32K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-QFN	AT91SAM7S128-AU-ND	10.32	8.00	7.20
Flash	256K	64K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-LQFP	AT91SAM7S256AU001-ND	11.93	9.25	8.33
Flash	256K	64K	—	32	2	1	1	3	8-ch/10-bit	—	55	3.0 - 3.6V	64-QFN	AT91SAM7S256-AU-ND	12.26	9.50	8.55
Flash	256K	32K	—	88	2	1	1	3	8-ch/10-bit	—	48	3.0 - 3.6V	128-LQFP	AT91SAM7SE256-AU-ND	14.19	11.00	9.90
Flash	256K	32K	—	88	2	1	1	3	8-ch/10-bit	—	48	3.0 - 3.6V	144-BGA	AT91SAM7SE256-CU-ND	15.70	12.17	10.95
Flash	512K	32K	—	88	2	1	1	3	8-ch/10-bit	—	48	3.0 - 3.6V	128-LQFP	AT91SAM7SE512-AU-ND	16.77	13.00	11.70
Flash	512K	32K	—	88	2	1	1	3	8-ch/10-bit	—	48	3.0 - 3.6V	144-BGA	AT91SAM7SE512-CU-ND	18.06	14.00	12.60
Flash	128K	32K	—	62	2	1	2	3	8-ch/10-bit	—	55	3.0 - 3.6V	100-LQFP	AT91SAM7X128-AU-ND	10.97	8.50	7.65
Flash	256K	64K	—	62	2	1	2	3	8-ch/10-bit	—	55	3.0 - 3.6V	100-LQFP	AT91SAM7X256-AU-ND	13.12	10.17	9.15
Flash	256K	64K	—	62	2	1	2	3	8-ch/10-bit	—	55	3.0 - 3.6V	100-LQFP	AT91SAM7X256-AU-999TR-ND	8619.00	1/1000	
Flash	128K	32K	—	62	2	1	2	3	8-ch/10-bit	—	55	3.0 - 3.6V	100-LQFP	AT91SAM7XC128-AU-ND	11.93	9.25	8.33
Flash	256K	64K	—	62	2	1	2	3	8-ch/10-bit	—	55	3.0 - 3.6V	100-LQFP	AT91SAM7XC256-AU-ND	14.08	10.92	9.83
ROM	16K	8K	32K	96	4	1	2	6	4-ch/10-bit	—	210	3.0 - 3.6V	208-PQFP	AT91SAM9260-QU-ND	16.23	12.84	10.76
ROM	16K	8K	32K	96	4	1	2	6	4-ch/10-bit	—	210	3.0 - 3.6V	217-BGA	AT91SAM9260-CJ-ND	16.23	12.08	9.06
ROM	16K	8K	32K	96	4	1	2	2	4-ch/10-bit	—	210	3.0 - 3.6V	217-LFBGA	AT91SAM9260B-CU-ND	15.27	11.84	10.65
ROM	16K	8K	32K	96	4	1	2	2	4-ch/10-bit	—	210	3.0 - 3.6V	208-PQFP	AT91SAM9260B-QU-ND	15.27	11.84	10.65
ROM	32K	160K	32K	96	3	1	2	3	—	—	240	3.0 - 3.6V	217-BGA	AT91SAM9261-CJ-ND	19.67	15.25	13.73
ROM	32K	64K	—	118	4	2	1	3	6-ch/10-bit	—	240	3.0 - 3.6V	217-LFBGA	AT91SAM9RL64-CU-ND	16.77	13.00	11.70

AT91 ARM® Thumb® Evaluation Kits

These kits are complete low-cost evaluation platforms, which enable real-time code development and exploration of the AT91 ARM Thumb microcontrollers. The kits include: • Sample microcontroller • Evaluation Board with the Angel™ debug monitor • AT91 Getting Started CD-ROM with data sheets and examples • DB9 serial cable • 2.1mm power jack (power supply not included) • Evaluation

copies of compilers and debuggers from Green Hills and ARM • SRAM • Flash • 2 Serial Ports • Reset button and controller • Push buttons • LEDs • 20-pin JTAG ICE interface connector • Voltage regulation • Clock generator • Board self-test program • Current consumption measurement capability • Expansion slots for add-on cards with user specific memories and peripherals

AT91EB40A-ND	Evaluation Kit for the AT91R40008	\$250.00	AT91SAM7S-EK-ND	Evaluation Kit for AT91SAM7S	\$150.00
AT91EB55-ND	Evaluation Kit for the AT91M55800A	\$300.00	AT91SAM7X-EK-ND	Evaluation Kit for AT91SAM7X256/128	\$200.00
AT91EB42-ND	Evaluation Kit for the AT91M42800A	\$300.00	AT91SAM7XC-EK-ND	Evaluation Kit for AT91SAM7XC256/128	\$200.00
AT91RM3400-DK-ND	Evaluation Kit for the AT91RM3400	\$250.01	AT91SAM9LE-EK-ND	NEW! Evaluation Kit for AT91SAM9RL — RoHS Compliant	\$1250.00
AT91SAM7A1-EK-ND	Evaluation Board for AT91SAM7A1	\$1000.00	AT91SAM9XE-EK-ND	NEW! Evaluation Kit for AT91SAM9XE — RoHS Compliant	\$750.00
AT91SAM7A2-EK-ND	Evaluation Board for AT91SAM7A2	\$1000.00	AT91SAM9260-EK-ND	Evaluation Kit for AT91SAM9260 — RoHS Compliant	\$750.00
AT91SAM7A3-EK-ND	Evaluation Board for AT91SAM7A3	\$250.00	AT91SAM9261-EK-ND	Evaluation Kit for AT91SAM9261-JS — RoHS Compliant	\$1000.00
AT91SAM7L-STK-ND	NEW! Evaluation Kit for AT91SAM7L — RoHS Compliant	\$212.80	AT91SAM9ICE-ND	Emulator for AT91 ARM7 / ARM9	\$150.00
AT91SAM7SE-EK-ND	Evaluation Board for the AT91SAM7SE — RoHS Compliant	\$200.00	AT91SAM9263-EK-ND	Evaluation Kit for AT91SAM9263 — RoHS Compliant	\$1000.00

FPSLIC® — Field Programmable System Level Integrated Circuit

FPSLIC — PGA + AVR in one Package! The AT94K Series (FPSLIC family) is a combination of the popular Atmel AT40K Series SRAM FPGAs and the high-performance Atmel AVR 8-bit RISC microcontroller with standard peripherals. • 2K - 18.4Kbits of Distributed Single/Dual Port FPGA User SRAM • High-performance DSP Optimized FPGA Core Cell • Dynamically Reconfigurable In-System - FPGA Configuration Access

• FPGA Macro Library of Custom Peripherals • 16 FPGA Supplied Internal Interrupts to AVR • Up to Four External Interrupts to AVR • 8 Global FPGA Clocks: • 2 FPGA Clocks Driven from AVR Logic • FPGA Global Clock Access Available from FPGA Core • Timer/Counters 8/16-bit: 2/1 • Watchdog Timer • UART: 2 • TWI (I2C) • PWM: 3 • JTAG • Clock Speed: 25MHz • V_{CC}: 3.0V - 3.6V

Gates	Core Cells	FPGA SRAM Bytes	Registers	I/O	AVR Program Memory Type	AVR Memory Size		AVR I/O Pins	ISP	Operating Temp. †	Package	Digi-Key Part No.	Price Each		
						RAM Bytes	EEPROM Bytes						1	25	100
5K	256	2048	436	46	ROMless	20K	—	8	—	Com. Ind.	84-PLCC	AT94K05AL-25AJC-ND	19.35	13.15	12.40
					ROMless	20K	—	8	—	Ind.	100-TQFP	AT94K05AL-25AJI-ND	22.25	15.10	14.30
					ROMless	20K	—	8	—	Com. Ind.	144-LQFP	AT94K05AL-25BQC-ND	20.32	13.80	13.05
					ROMless	20K	—	8	—	Ind.	144-LQFP	AT94K05AL-25BQI-ND	24.62	16.70	15.75
					EEPROM	20K	256K	8	Yes	Ind.	208-PQFP	AT94K05AL-25DQC-ND	23.65	16.05	15.15
10K	576	4096	846	46	ROMless	36K	—	16	—	Com. Ind.	84-PLCC	AT94K10AL-25AJC-ND	32.25	21.90	20.70
					ROMless	36K	—	16	—	Ind.	100-TQFP	AT94K10AL-25AJI-ND	37.09	25.20	23.80
					ROMless	36K	—	16	—	Com. Ind.	144-LQFP	AT94K10AL-25AQC-ND	33.86	23.00	21.75
					EEPROM	36K	512K	16	Yes	Ind.	144-LQFP	AT94K10AL-25BQC-ND	39.02	26.50	25.06
					EEPROM	36K	512K	16	Yes	Com. Ind.	256-CABGA	AT94S10AL-25DGC-ND	24.94	16.80	15.65
40K	2304	18432	2862	84	ROMless	36K	—	16	—	Ind.	144-LQFP	AT94S10AL-25DGI-ND	53.43	36.00	33.55
					ROMless	36K	—	16	—	Ind.	144-LQFP	AT94K40AL-25BQC-ND	43.00	29.00	27.00
					EEPROM	36K	1024K	16	Yes	Com. Ind.	256-CABGA	AT94S40AL-25DGC-ND	81.59	55.40	52.36
				162	EEPROM	36K	1024K	16	Yes	Com. Ind.	256-CABGA	AT94S40AL-25DGI-ND	93.85	63.70	60.26

◆ RoHS Compliant † Operating Temperature: Industrial: -40°C - 85°C Commercial: 0°C - 70°C

ATSTK94 FPSLIC® Starter Kit

This low-cost development kit is for the designer who wishes to begin working with Atmel's award-winning AT94K series FPSLIC family of devices. The kit allows designers to design, synthesize, simulate and program Atmel's new FPSLIC products. A comprehensive tutorial takes designers through the complete FPSLIC development process. **Features:** • AT94K40 Device • AT17LV010 Device • ISP Port for Direct Download from PC • Push-button Switches and LEDs • 4 Alphanumeric LED Displays • 2 RS232 Transmitter/Receiver Ports • 18.432MHz, 4MHz and 32kHz Clock Sources • Power Management Circuitry (9V Power Supply included) • Access to all FPSLIC Pins via Headers • The System Designer™ Software (4-Month License)

ATSTK94-ND FPSLIC Starter Kit \$495.00

STK594 Development Kit

This kit allows designers to design, simulate, synthesize and program Atmel's FPSLIC devices. It includes hardware allowing full support for the new features found on FPSLIC devices and consists of a development kit board. An additional RS-232 Driver, a 32kHz Real-Time Clock and a Two-Wire Serial Interface are among the new features. **Features:** • STK500 Compatibility • AT94K10AL and AT17S10 devices • Access to all FPSLIC Pins via Headers • JTAG Header for On-Chip Debugging using the JTAG ICE • System Designer Software Suite with a four-month license • ATDH2225 In-System Programming Cable • Comprehensive User Guide and Tutorial

ATSTK594-ND STK594 Development Kit \$99.00

MARC 4 Programmer

The TMEB893 is the programmer for Atmel's MARC 4 MTPS M48C893, M48C510 and the U9380. This programmer works together with the PC or stand alone. In the stand alone mode the programmer writes the last stored MARC 4 program to the target chip. The memory inside the programmer is buffered by an accumulator. Two buttons and two LEDs on top control the operation of the programmer. It allows single-chip as well as in-system programming.

TMEB893-ND MARC 4 Programmer \$371.07

More Product Available Online: www.digkey.com

Toll-Free: 1-800-344-4539 • Phone 218-681-6674 • Fax: 218-681-3380