



## Microcontrollers 8-Bit 8051-Compatible

The 8051 microcontroller family remains one of the most popular processors in the world. Its ease of use and relatively high performance make it ideal for many applications, including portable and handheld products. The introduction of a new line of high-performance derivatives has many positive implications for improving the power efficiency of 8051-based designs. First, the use of a high-speed 8051 microcontroller can significantly improve power efficiency. A high performance CPU allows the processor clock to be slowed, resulting in the same level of performance at less power. Alternatively, the performance of an existing system can be increased without increasing power consumption. Second, a device which incorporates all needed peripherals should be selected if possible. If extra data memory is required, a device such as the DS87C520 should be used, which incorporates 1 kilobyte of internal MOVX SRAM. One of the strengths of the 8051 product family is the wide variety of on-chip peripherals. Features such as watchdog timers, additional UARTs, and precision reset circuits are available on high-speed microcontrollers. The introduction of two new low-power modes provides a low-power alternative to the idle mode.

Internal Program Memory	Internal MOVX SRAM	Serial Ports	16-Bit Timers	Watchdog	Power Fail Reset and Interrupt	Power Mgmt. Mode	Supply Voltage (V)	Features	Speed (MHz)	Package	Digi-Key Part No.	Price Each	
												1	25
ROM-less	—	1	3	No	No	No	4.5 - 5.5	80C32 Compatible	25	40-DIP 44-PLCC	DS80C310-MCG+-ND DS80C310-QCG+-ND	14.10 12.72	10.64 9.60
		2	3	Yes	Yes	No	4.5 - 5.5 4.5 - 5.5 4.5 - 5.6	80C32 Compatible	25 25 33	44-TQFP 40-DIP 40-DIP	DS80C320-ECG+-ND DS80C320-MCG+-ND DS80C320-MCL+-ND	22.15 14.84 20.14	16.72 11.20 15.20
	1kB	2	3	Yes	Yes	No	4.5 - 5.5	80C32 Compatible	33	40-DIP	DS80C320-MNG+-ND <b>NEW!</b>	20.14	15.20
ROM-less	—	2	3	Yes	Yes	No	4.5 - 5.6 4.5 - 5.6 4.5 - 5.5	80C32 Compatible	25 33 33	44-PLCC 44-PLCC 44-PLCC	DS80C320-QCG+-ND DS80C320-QCL+-ND DS80C320-ONG+-ND	19.13 22.15 22.15	14.44 16.72 16.72
	—	2	3	Yes	Yes	No	4.5 - 5.5 2.7 - 5.5 2.7 - 5.5	80C32 Compatible	33 18 18	44-PLCC 44-TQFP 40-DIP	DS80C320-ONL+-ND DS80C323-ECD+-ND DS80C323-MCD+-ND	25.68 7.18 7.18	19.38 5.42 5.42
	4kB	2	3	Yes	Yes	Yes	4.5 - 5.5	Dual CAN	100	64-LQFP	DS80C390-FNR+-ND <b>NEW!</b>	34.24	25.84
64kB ROM	1kB	3	4	Yes	Yes	Yes	1.8 - 3.3	80C32 Compatible	75	100-LQFP	DS80C400-FNY+-ND	16.13	15.56
	73.5kB	3	4	Yes	Yes	Yes	1.8 - 3.3	Ethernet, CAN	75	100-LQFP	DS80C411-FNY+-ND <b>NEW!</b>	21.20	16.00
16kB EPROM	1kB	2	3	Yes	Yes	Yes	4.5 - 5.5	80C52 Compatible	33	44-TQFP 40-DIP 40-DIP	DS87C520-ECL+-ND DS87C520-MCL+-ND DS87C520-MNL+-ND	44.31 44.20 47.83	33.44 33.36 36.10
											DS87C520-ONL+-ND DS87C530-QCL+-ND DS87C530-ONL+-ND	48.84 47.33 54.38	36.86 35.72 41.04
16kB Flash	1kB	2	3	Yes	Yes	Yes	4.5 - 5.5	80C52 Compatible	33	44-PLCC	DS89C430-ONL+-ND <b>NEW!</b>	18.55	14.00
											DS89C450-ENL+-ND DS89C450-MNL+-ND	22.60 22.55	17.06 17.02
64kB Flash	1kB	2	3	Yes	Yes	Yes	4.5 - 5.5	80C52 Compatible	33	40-DIP 44-PLCC	DS89C450-ONL+-ND <b>NEW!</b>	22.39	16.90

## DS80C400 Evaluation Kit

The DS80C400 Evaluation Kit is a proven platform to conveniently evaluate the capabilities of the DS80C400 networked microcontroller. This kit contains the DSTINIm400 evaluation module, a fully functional and tested reference design based on the DS80C400 networked microcontroller. In addition, the kit contains the DSTINIS400 sockets board, which functions as the motherboard designed to host the DSTINIm400 evaluation module.

**Kit Includes:**  
• DSTINIm400 Reference Board • DSTINIS400 Socket Board • DS80C400 Software CD-ROM • Quick Start Guide • Cables

**DS80C400-KIT#-ND** Evaluation Kit for DS80C400..... **\$112.32**

## Soft Microcontroller Modules

**DS5000(T)** Soft Microcontroller Module is a fully 8051-compatible 8-bit CMOS microcontroller that offers "softness" in all aspects of its application. This is accomplished through the comprehensive use of nonvolatile technology to preserve all information in the absence of system Vcc. The internal program/data memory space is implemented using either 8 or 32 kilobytes of nonvolatile CMOS SRAM. **DS2250-32** has the same features as the DS5000 but with an added feature. The program/data memory space is implemented using 8, 32, or 64 kilobytes of nonvolatile CMOS SRAM.

Module with Internal Battery	NV RAM	Real-Time Memory Encryption Key	Real-Time Clock	Package	Speed (MHz)	Digi-Key Part No.	Price Each	
							1	25
Yes	32K x 8 Int.	40-Bit	No	40-EDIP	16	DS5000-32-16+-ND	125.88	95.00
Yes	32K x 8 Int.	40-Bit	No	40-EDIP	16	DS5000T-32-16+-ND	138.46	104.50
Yes	64K x 8 Int.	User Defined	Yes	40-SIMM	16	DS2250-32-16-ND	95.67	72.20
No	128K x 8 Ext.	64-Bit	No	80-MQFP	16	DS5002FPM-16+-ND <b>NEW!</b>	40.28	30.40

◆ RoHS Compliant

## MAXQ™ 16-Bit RISC Microcontrollers

The MAXQ family of 16-bit reduced instruction set computing (RISC) microcontrollers is targeted toward low-cost, low-power, embedded-application designs. The flexible, modular architecture design used in these microcontrollers allows development of targeted designs for specific applications with minimal effort. Microcontrollers in the MAXQ family provide many different combinations of program memory, data memory, and peripherals while supporting a common feature set. This shared functionality provides maximum reusability for hardware and software systems developed using these microcontrollers.

Internal Program Memory	Internal MOVX SRAM	Serial Ports	1-Wire Master	Timers	PWM	Data Pointers	Watchdog	Power Management Mode	Ring Osc.	LCD	LCD Segments	Supply Voltage	Package	Digi-Key Part No.	Price Each		Dallas Part No.	
															1	25	50	
64kB Flash	2kB	2	Yes	3 x 16-Bit	3	3	Yes	Yes	Yes	Yes	132	1.8 - 2.75	68-OFN	MAXQ2000-RAX+-ND	8.11	6.12	4.00	MAXQ2000-RAX+
32kB Flash	2kB	2	Yes	3 x 16-Bit	3	3	Yes	Yes	Yes	Yes	132	1.8 - 2.75	100-LQFP	MAXQ2000-RFX+-ND	8.11	6.12	4.90	MAXQ2000-RFX+
2kB	64B	—	—	1 x 16-Bit	—	2	Yes	Yes	—	—	—	6 - 9.5	24-TSSOP	MAXQ3210-EJX+-ND	4.48	3.38	2.88	MAXQ3210-EJX+
2kB	64B	—	—	1 x 16-Bit	—	2	Yes	Yes	—	—	—	6 - 9.5	24-DIP	MAXQ3210-EMX+-ND	4.74	3.58	3.05	MAXQ3210-EMX+
2kB	64B	—	—	1 x 16-Bit	—	2	Yes	Yes	—	—	—	4.5 - 5.5	24-TSSOP	MAXQ3212-EJX+-ND	4.48	3.38	2.88	MAXQ3212-EJX+

## MAXQ2000 Evaluation Kit

The MAXQ2000 Evaluation Kit (EV kit) is a proven platform to conveniently evaluate the capabilities of the MAXQ2000 low-power LCD microcontroller. The kit contains the MAXQ2000 with pins brought out to headers, a JTAG programming interface, fixed and adjustable power supplies, a DB-9 serial connector, an LCD display, and switches and LEDs to control and display board operation. **Kit Includes:** • MAXQ2000 Evaluation Kit Board • Serial-to-JTAG Interface Board • JTAG Cable • MAXQ2000 LCD Display Daughterboard • MAXQ2000 Evaluation Kit CD-ROM

**MAXQ2000-KIT-ND** Evaluation Kit for MAXQ2000..... **\$174.90**

## MAXQ3120 Evaluation Kit

The MAXQ3120 Evaluation Kit (EV kit) is a proven platform to conveniently evaluate the capabilities of the MAXQ3120 dual analog-to-digital converter (ADC) microcontroller. The kit contains the MAXQ3120 with the ADC inputs and spare GPIO pins brought out to headers, a JTAG programming interface, an on-board 3.3V power supply, and a 3.5 digit LCD. **Kit Includes:** • MAXQ3120 Evaluation Board • Serial-to-JTAG (MAXQJTAG) Interface Board • Serial Cable • JTAG Cable • MAXQ3120 Evaluation Kit CD • Third Party Compiler Tools Evaluation CD

**MAXQ3120-KIT-ND** Evaluation Kit for MAXQ3120..... **\$174.90**

## MAXQ3210 Evaluation Kit

The MAXQ3210 evaluation kit (EV kit) is a proven platform to conveniently evaluate the capabilities of the MAXQ3210 voltage regulator microcontroller. The kit contains the MAXQ3210 with pins brought out to headers, JTAG programming interface, 9V battery clip, piezoelectric horn, pushbuttons, and LED's to control and display board operation. With the included power supply, software, serial-to-JTAG interface board, and an RS-232 cable connected to a personal computer, the kit provides a completely functional system ideal for evaluating the capabilities of the MAXQ3210

**MAXQ3210-KIT-ND** Evaluation Kit for MAXQ3210..... **\$177.44**

## FDI NXP Programmiers

USB-ICP supports In-Circuit Programming or ICP mode on NXP's microcontroller families such as the LPC9xx, 80C51, and ARM7. In-Circuit Programming uses a two-wire serial interface to program and erase ICP enabled microcontroller devices without removing them from the system. A small connector is all that is needed to interface your application to the USB-ICP programmer.

**Features:** • USB port power; no external power supply required • Supports USB 2.0  
• 18" cable for direct connection to board • ICP design guide  
The NXP LPC2468 ARM7 microcontroller based industrial reference design (IRD) is optimized to save development time in typical industrial control applications. Its modular format uses a base, core and application board for added flexibility and a range of configurations. The kit is preconfigured with the IAR EWARM development environment, Micrium uC/OSII operating system, and protocol stacks for Ethernet, USB Host/Device, CAN, and I2C. **Kit Includes:** • LPC2468 Core Board • IRD Base Board

<b>622-1001-ND</b>	(USB-ICP-80C51ISP)	\$69.00
<b>622-1002-ND</b>	(USB-ICP-LPC9XX)	\$69.00
<b>622-1005-ND</b>	(USB-ICP-LPC2K)	\$69.00
<b>622-1006-ND</b>	(USB-ICP-SAB9) (Socket adapter for USB-ICP-LPC9XX)	\$169.00
<b>622-1022-ND</b>	<b>NEW!</b> (Socket adapter for 100-TFBGA)	\$375.00
<b>622-1023-ND</b>	<b>NEW!</b> (Socket adapter for 180-TFBGA)	\$375.00
<b>622-1024-ND</b>	<b>NEW!</b> (Socket adapter for 208-TFBGA)	\$375.00
<b>622-1025-ND</b>	<b>NEW!</b> (Development kit for LPC2468)	\$523.75



## USB Programming Dongle

The USB-Dongle provides a Virtual COM Port interface to the PC and allows hex files to be downloaded and programmed using Flash Magic or other common utilities. The USB-Dongle provides all power needed by the various Derivative Boards so no external power supply is required. The USB-Dongle plugs directly into any standard USB port on a PC and supports both USB 1.0/1.1 and USB 2.0.

<b>622-1007-ND</b>	(USB-Dongle) USB Programming Dongle (Derivative Boards not included)	\$16.99
<b>622-1008-ND</b>	(DB-HVSON10-LPC9103) Board for LPC9103 10-HVSON	\$5.00
<b>622-1009-ND</b>	(DB-DIP8-LPC901) Board for LPC901 8-DIP	\$5.00
<b>622-1010-ND</b>	(DB-TSSOP-LPC922) Board for LPC922 TSSOP	\$6.00
<b>622-1011-ND</b>	(DB-TSSOP-LPC938) Board for LPC938 TSSOP	\$6.00
<b>622-1012-ND</b>	(DB-TQFP44-89V52X2) Board for P89V52X2 44-TQFP	\$7.50
<b>622-1013-ND</b>	(DB-LQFP48-LPC2103) Board for LPC2103 48-LQFP	\$7.50
<b>622-1014-ND</b>	(DB-TSSOP-SKT) Board for LPC9XX TSSOP	\$49.00
<b>622-1015-ND</b>	(DB-S08-LPC908) Board for LPC908 8-SOIC	\$5.00
<b>622-1016-ND</b>	(DB-PLCC44-LPC952) Board for P89LPC952FA 44-PLCC	\$7.50
<b>622-1017-ND</b>	(DB-PLCC44SKT) Board for 44-ZIF PLCC Socket	\$49.00
<b>622-1019-ND</b>	(DB-LQFP48-LPC2106) Board for LPC2106 48-LQFP	\$10.00
<b>622-1021-ND</b>	(PB-1SPF) Board for B6B203/H1/S06	\$25.00

## LCD Demo Kit

The LCD Demo Kit is a reference design for a low-cost microcontroller and LCD solution. The Demo Board is controlled by a simple two-button user interface (MODE and SELECT). The Demo Board CD includes example code for several sample applications: An FM Radio display during a simulated channel scan, a 15 minute count down timer, a repeating pattern of 4 text lines and a scrolling message window. The user can edit this code and download to the reprogrammable Flash microcontroller via a 10-pin header included on the board using an external ICP style programmer.

**622-1003-ND** (LCD-DEMO-KIT)..... **\$49.00**

## PCA9633 Demo Board

The PCA9633 Demo Board demonstrates the NXP PCA9633 Fast Mode Plus 4-bit I2C LED Driver IC. Four LEDs are connected to the PCA9633 and, through individual pulse width modulation (PWM) of each LED, show different levels of intensity. The board supports six different modes of operation including color wash and random color. The on-board Flash microcontroller is also user reprogrammable for endless variations of functionality. It also includes high-current FET drivers for off board LED circuitry. Power can be supplied by either the on-board 9VDC battery or through the external power connector.

**622-1004-ND** (PCA9633DEMO)..... **\$69.00**

## LPC3180 Development Kit

The LPC3180 Development Kit provides a stable platform for building powerful user applications with the NXP Semiconductors LPC3180 within the ARM9 Linux environment. The kit provides the user with an array of popular mobile technologies making it an ideal development target for consumer communications software. Using existing Linux hardware drivers, developers can focus on building and improving their user interface applications without worrying about low-level hardware functionality.

**622-1018-ND** (LPC3180-DEV-KIT) **RoHS Compliant**..... **\$975.00**

More Product Available Online: [www.digikey.com](http://www.digikey.com)

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