28-Pin Programmable Mixed Signal Controller — PIC14000

General Description: The **PIC14000** is a low-cost, high-performance, CMOS, fully-static, mixed signal, factory calibrated, 8-bit microcontroller. Its features include medium to high resolution A/D conversion (10 to 16 bits), temperature sensing, closed loop charge control, serial communication, and low power operation.

(Use Programmer PICSTART Plus.) The **PIC14000** is based on the high-performance PIC16C74 core. It uses a RISC-like Harvard architecture CPU with separate 14-bit instruction and 8-bit data buses. A two-stage instruction pipeline allows all instructions to execute in a single cycle, except for program branches, which require two cycles. A total of 35 instructions are available. Additionally, a large register set is included.

High-Performance RISC CPU: • Based on PIC16C74 microcontroller • Only 35 single word instructions to learn • All single cycle instructions except for program branches which are two-cycle • Operating speed: DC - 20MHz clock input • 4096 x 14 on-chip EPROM program memory • 192 x 8 general purpose registers (SRAM) • 6 internal and 5 external interrupt sources • 38 special function hardware registers • Eight level deep hardware stack

Analog Peripherals Features: • Slope Analog-to-Digital (A/D) converter: Eight external input channels (two channels with selectable input ranges of -0.3V to VDD -2.0V or 0V to VDD -1.5V), Seven internal input channels, Programmable A/D resolution, up to 16 bits, 16 ms maximum conversion time at maximum (16-bit) resolution and 4 MHz clock, 4-bit current DAC, Internal bandgap voltage reference, Factory calibrated with calibration constants stored in EPROM, Provisions for measuring energy in high frequency pulses (e.g., GSM cellular telephone) • On-chip temperature sensor • Voltage regulator control output for 5V operation • Two multi-range DACs for programmable level/window detect or constant current/voltage charge control • On-chip low voltage detector

Special Microcontroller Features: • Power-on Reset (POR), Power-up Timer (PWRT) and Oscillator Start-up Timer (OST) • Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation • Multi-segment programmable code-protection • Selectable oscillator options: Internal 4 MHz oscillator, External crystal oscillator • Two pin serial in-system EPROM programming

Digital Peripherals Features: • 20 I/O pins with individual direction control • High current sink/source for direct LED drive • ADTMR: A/D counter, 16-bit counter with pre-load and capture • TMR0: 8-bit timer/counter with 8-bit programmable prescaler • I²C™ serial port compatible with: ACCESS.bus™, SMBus (System Management Bus)

Memory Size EPROM	Memory Size RAM	Config-uration	I/O LInes	Oscillator Type External	Frequency Range Min./Max.	Operating Temperature Range	Pkg.	Digi-Key Part No.	Price Each 1	25	100
4K x 14	192 x 8	EPROM	20	Xtal	DC-4MHz	32° – 158°F (0° - 70°C)	28-CDip .3"	PIC14000/JW-ND	17.80	—	14.99
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	32° – 158°F (0° - 70°C)	28-Dip .3"	PIC14000-04/SP-ND★	10.25	8.19	6.83
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	32° – 158°F (0° - 70°C)	28-SOIC	PIC14000-04/SO-ND★	10.45	8.36	6.96
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	32° – 158°F (0° - 70°C)	28-SSOP	PIC14000-04/SS-ND	11.50	9.19	7.66
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	-40° – 185°F (-40° - 85°C)	28-Dip .3"	PIC14000-04I/SP-ND★	11.28	9.01	7.51
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	-40° – 185°F (-40° - 85°C)	28-SOIC	PIC14000-04I/SO-ND★	11.50	9.19	7.66
4K x 14	192 x 8	OTP	20	Xtal	DC-4MHz	-40° – 185°F (-40° - 85°C)	28-SSOP	PIC14000-04I/SS-ND	12.65	10.11	8.43

★ *This part can be programmed by Digi-Key. For further information please call 1-800-344-4539, and request programming center.*

PRO MATE-II™ Universal Programmer

Programs all PIC16C5X, PIC16CXX and PIC17CXX Microcontrollers:
PRO MATE-II™ is a universal programmer/development tool that provides product developers with the ability to program user software into PIC16C5X, PIC16CXX and PIC17CXX 8-bit microcontrollers. It comes with Microchip's PIC16CXX simulator/assembler software and PIC17CXX assembler software. The PRO MATE-II™ programmer operates either as a stand-alone unit or in conjunction with a PC host system. PC host software provides file display and editing and transfer to and from the programming unit. The PRO MATE-II™ is compatible with and is replacing the existing PRO MATE™ programmer. The PRO MATE-II™ was designed primarily to comply with the new European "CE" requirements for radiated emissions and ESD. The PRO MATE-II™ provides improved socket module alignment and improved LCD display and buttons.

Description of Contents:
• PRO MATE-II™ Universal Programmer Unit • PRO MATE-II™ Universal Power Supply • PRO MATE-II™, PIC16CXX Assembler/Simulator and PIC17CXX Assembler Software • PRO MATE-II™ Documentation • RS-232 Interface Cable

Description	Digi-Key Part No.	Price Each
Programmer		
PRO MATE-II™ Universal Programmer	DV007003-ND	695.00
Sockets for PRO MATE-II™ / PRO MATE™		
RFPIC12C509, PIC16C52,54, HV540,55,56,57, 58A, HCS5XX, 18-SOIC, 20-SSOP	AC124002-ND	159.00
Dip Socket Module for PRO MATE-II™ PIC14000	AC144001-ND	159.00
PIC16C52, 54, HV540, 55, 56, 57, 58A, HCS5XX PDIP PRO MATE-II 18 and 28 LD	AC164001-ND	159.00
PIC16C52, 54, HV540, 55, 56, 57, 58A, HCS5XX SOIC PRO MATE-II 18 and 28 LD	AC164002-ND	159.00
PIC16C54, HV540, 55, 56, 57, 58 SSOP PRO MATE-II™ 20 and 28 LD	AC164015-ND	209.00
PIC16C554, 558, 61, 620, 621, 622, 71, 710, 711, 715, 83, 84 PDIP/SOIC PRO MATE-II™ 18 LD	AC164010-ND	189.00
PIC16C620, 621, 622, 710, 711, 554, 558 SSOP PRO MATE-II™ 20 LD	AC164018-ND	159.00
PIC16C62, 63, 64, 65, 66, 67, 642, 662, 72, 73, 74, 76, 77, 773, 774, 87X, 18CXX2 PDip PRO MATE-II 28 and 40 LD (and "A" & "B" Versions)	AC164012-ND	159.00
PIC16C64/65, 44-MQFP	AC162046-ND	45.00
PIC16C64, 65, 662, 67, 74, 77, 774, 874, 877, 18C4X2 PLCC PRO MATE-II™ 44 LD	AC164013-ND	159.00
PIC16C64, 65, 662, 67, 74, 77, 774, 874, 877, PQFP PRO MATE-II™ 44 LD	AC164014-ND	159.00
PIC16C62, 63, 66, 642, 72, 73, 76, 773, 873, 876, 18C2X2 SOIC PRO MATE-II™ 28 LD	AC164017-ND	159.00
PIC17C42A, 43, 44 PDip PRO MATE-II™ 40 LD	AC174001-ND	159.00
PIC17C42A, 43, 44 PLCC PRO MATE-II™ 44 LD	AC174002-ND	159.00

Description	Digi-Key Part No.	Price Each
PIC17C75X, PLCC PRO MATE-II™ 68 LD	AC174007-ND	159.00
PIC12C50X, 50XA, 51X, 67X, CE67X, 16C505(Dip) Dip/SOIC (208 mil) PRO MATE-II™	AC124001-ND	129.00
PIC16C923, 924, PLCC PRO MATE-II™ 68 LD	AC164022-ND	159.00
PIC16C923, 924, TQFP PRO MATE-II™ 64 LD	AC164023-ND	159.00
PIC16C64, 65, 662, 67, 74, 77, 774, 874, 877, 18C4X2 TQFP PRO MATE-II™ 44LD	AC164020-ND	159.00
PIC16C62, 63A, 72, 73B, 773 SSOP PRO MATE-II™ 28 LD	AC164021-ND	189.00
PIC16C923, 924 SDIP PRO MATE-II™ 64 LD	AC164025-ND	159.00
PIC16C505, 12CE51X, 12C50XA SOIC/TSSOP (150 mil) PRO MATE-II™ 8 and 14 LD	AC164026-ND	159.00
PIC16C432, 20-Dip, 20-SSOP	AC164029-ND	159.00
PIC16C433, 18-Dip, 18-SOIC	AC164030-ND	159.00
PIC16CXX, 28 Pin MLF	AC164031-ND	159.00
PIC16C770, 771 PDIP/SOIC PRO MATE-II™ 20 LD	AC164028-ND	159.00
PIC17C42A, 43, 44 TQFP PRO MATE-II™ 44 LD	AC174005-ND	159.00
PIC17C75X TQFP PRO MATE-II™ 64 LD	AC174008-ND	159.00
PIC17C75X SDIP PRO MATE-II™ 64 LD	AC174009-ND	159.00
PIC17C76X TQFP PRO MATE-II™ 80 LD	AC174011-ND	159.00
PIC17C76X PLCC PRO MATE-II™ 84 LD	AC174012-ND	159.00
PIC17C76X PLCC Socket Adapter for PICSTART Plus - 84 LD	AC164027-ND	159.00
Serial E² 24, 93 Series and HCS200, 201, 300, 301, 320, 36X, 410, 412 DIP for PRO MATE-II™ 16 LD	AC004001-ND	159.00
Serial E² 24, 93 Series and HCS200, 201, 300, 301, 320, 36X, 410, 412 SOIC/SOIC for PRO MATE-II™ 16 LD	AC004002-ND	199.00
ICSP Programming Socket for PRO MATE-II™	AC004004-ND	349.00
Power Supply for ICSP AC004004	AC002012-ND	33.00
Header for ICD2 for PIC12F629 and PIC12F675	AC162050-ND	25.00

PICDEM ÏNET

The PICDEM.net™ demonstration board is an Internet/Ethernet demonstration board using the PIC16F877 microcontroller and TCP/IP firmware. The board supports any 40-pin DIP device that conforms to the standard pin out used by the PIC16F877 or PIC18C452. Board comes preconfigured with an Ethernet and IP address. Simple set-up instructions are provided. The demo board is equipped with a 6-pin modular connector to interface directly with the Microchip In-Circuit Debugger (ICD). A generous breadboarding area is also available. Several status indicators and user interface devices are provided, including a 16 x 2 LCD indicator and LEDs.

Includes:
• Ethernet interface • RS-232 interface • Demo Board • Textbook • PIC16F877 MCU • Firmware by Losoft Ltd. • MPLAB® IDE Software • PICDEM.net User's Guide • CAT 5 Ethernet Cable • DB9 Serial Cable • Universal Power Supply

DM163004-ND PIC16F877 Demo Board with TCP/IP that Connects to LAN $299.00

PICDEM-6 Demo Board

The PICDEM™ 18R Demonstration Board demonstrates the capabilities of the PIC18C601/801 family of Microchip microcontrollers. It supports both PIC18C601 and PIC18C801 devices and provides a hardware implementation of both 8-bit memory modes, as available on PIC18C601/801 microcontrollers.

The board includes on-board 2 MB external FLASH memory and 128KB SRAM memory, as well as serial EEPROM, allowing the user to access the different memory types the PIC18C601/801can interface to.

DM163006-ND $399.00

PICDEM-17 Evaluation Board

The PICDEM™ 17 is an evaluation board that demonstrates the capabilities of several Microchip microcontrollers, including PIC17C752, PIC17C756, PIC17C762 and PIC17C766 features 68-pin PLCC socket, space for 84-pin socket, RS232 interface with DB9 connector for USART1 and for USART2 with hardware handshaking signals, precision analog voltage source and reference for 10-bit A/D, MCP2510 CAN interface support.

DM173001-ND..... $199.00

PICDEM USB Demonstration Kit

PICDEM™ USB from Microchip demonstrates a PICmicro® (PIC16C765) communicating to a PC using the USB port. Kit includes USB support firmware, example code and reference documentation. Hook up a traditional mouse, keyboard or joystick to the USB port on your computer through the preprogrammed board supplied in the kit. Kit includes board with large prototype area, USB, Serial, PS-2, and Gameport connectors.

DM163010-ND..... $125.00

14-Pin MPLAB ICD 2 Header (AC162052)

The 14-pin MPLAB® ICD 2 Header provides a development environment for the 14-pin PICmicro® devices such as the PIC16F630/676.

AC162052-ND..... $25.00

PICDEM-1

The PICDEM-1 is a simple board which demonstrates the capabilities of several of Microchip's microcontrollers. The microcontrollers supported are: PIC16C5X (PIC16C54 to PIC16C58), PIC16C62X, PIC16C71, PIC16C84, and PIC17C42. **Kit Contents:** PICDEM-1 demonstration board, PIC16/17 product samples, demo/tutorial software, complete documentation.

DM163001-ND $99.00

PICDEM-2 Plus

The PICDEM-2 Plus comes with an active program loaded on the installed PIC18F452 microcontroller that demonstrates many of the devices features and easy peripheral interface. The program sets up the PICmicro as a real time clock and measures the local temperature which are displayed on the 2 x 16 LCD. All of the information displayed on the LCD is also sent out on the active RS 232 port that can be viewed on a monitor. The "on board" memory is actively used and a pulse width modulated (PWM) signal is sent to the piezo sounder. Can use the ICD2 with this kit to debug code. A second popular flashed based microcontroller, the PIC16F877, is included with its own demonstration program.

Features:
• 2 x 16 LCD display • Piezo sounder driven by PWM signal • Active RS 232 port • On board temperature sensor • 4 LED's • 2 push button switches and master reset • ICD connector

DM163022-ND..... $99.00

PICDEM-3

The PICDEM-3 is a simple board which demonstrates the capabilities of Microchip's microcontroller LCD family. All necessary hardware is included to run basic demo programs, which are supplied on a 3.5" disk. A programmed sample is included, and the user may erase it and program it with the other sample programs using the PRO MATE® or PICSTART®Plus programmer. The PICSTART®Plus requires a 68- to 40-pin converter socket (AC164024-ND).

Features:
• 68-pin PLCC sockets • 5K pot for analog input to the PIC16C9XX • Thermistor for use with A/D converter

DM163003-ND $129.00

PIC14000 Demo Board

DM143001-ND..... $129.00

MPLAB™-*ICE* In-Circuit Emulator

MPLAB-ICE High-Performance, Real-Time In-Circuit Emulator

MPLAB-ICE is Microchip's new Universal In-Circuit Emulator (ICE) for the 8-bit PICmicro™ microcontrollers (MCU). MPLAB-ICE has been designed with the user requirements in mind. The system is small, portable and lightweight, while at the same time, offers improved performance and value. For quick hook up to portables or desktop PCs, MPLAB-ICE easily connects to the parallel (printer) port. In addition, MPLAB-ICE provides a migration path for existing customers designing with PICMASTER® Probe Kits.

Interchangeable processor modules allow the system to be easily configured to emulate different processors. This modular system require an emulator pod, a processor module, a device adapter, some emulated parts, if SMT or TQFP require translation sockets (All parts purchased separately)
Also included is Microchip's MPLAB IDE featuring MPASM macro assembler, MPLAB programmer's editor, symbolic debugger, and project manager with built-in support for high-level languages that supports the Common Object Description format (i.e., MPASM and MPLAB-C17).

MPLAB-ICE 2000 is a premium quality emulator system providing full-speed emulation, low voltage operation, 32K by 128-bit trace, and 65,535 breakpoints.

MPLAB-ICE 4000 is a premium emulator system providing the features of MPLAB ICE 2000, but with increased emulation memory and high speed performance for dsPIC30F and PIC18XXXX devices. Its advanced emulator features include complex triggering and timing, up to 2Mb of emulation memory, and the ability to view variables in real time.

Features: • High-performance PC-based development system for PICmicro™ MCUs • Includes MPLAB IDE • Assembly and C source level debugging • Real-time in-circuit emulation to maximum speed of PICmicro MCUs • Program memory emulation and memory mapping capability up to 64K words • Real-time trace with up to 32K deep by 128 bit wide buffer • Low voltage emulation (as low as 2.0 volts) • Unlimited software breakpoints • Trigger/break/trace on program address and data; internal register address and data; eight external inputs; and access type • Complex breakpoints with four levels of advance trigger features, including sequential events, AND/OR events, filtered trace, pass counters, delay triggering, and time between two events • External trigger input and output allows logic analyzer/scope interface • Time-stamp function • Software programmable target clock speeds (32kHz to 40MHz) • Parallel port (printer) interface • Supports all PICmicro package types, including all through-hole and SMT packages • Inter-changeable processor modules • The MPLAB ICE 4000 is a powerful, full featured real-time In-Circuit Emulator capable of debugging the most demanding real time systems. Key features include: • Full speed emulation • Low voltage emualtion down to 1.8 volts (or device limit) • 64K deep x 216-bit wide Trace Memory • Up to 2MB of addressable memory • Unlimited breakpoints • Complex, trace and trigger logic • Multi-level trigger up to 4 levels • 48-bit time stamp • Stopwatch • External inputs • External output to sync with other instrumentation • USB port and parallel port connection to PC
Host System Requirements: • PC with 386 or higher processor (Pentium™ recommended) • 8MB Memory (32MB recommended) • 16MB hard disk space (20MB recommended) • VGA or Super VGA Monitor • Microsoft Windows 3.1 or greater • Parallel Port

Features	MPLAB-ICE 2000
Real-Time Emulation	Full Speed
Low-Voltage Emulation	2.0 to 5.5 volts
Trace Memory	32K x 128 bit
Monitoring Internal Registers	Yes
Software Breakpoints	Program Address
Complex Hardware Trigger / Breakpoints	Program Address and Data Internal Register and Data; Address Type;and 8 External Inputs
Logic Analyzer Trigger	1 External Input and Output
Multi-level Trigger	Yes (4 levels)
Pass Counter	Yes
Delay Counter	Yes
Time Stamp	Yes
Programmable Clock	32 kHz to 40 MHz
Logic Probes	Yes
Communications	Parallel (printer) Port
Code Coverage Profiling	Yes

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Description	Digi-Key Part No.	Price Each
MPLAB-ICE Emulator Pods		
MPLAB-ICE 2000 Universal Emulator Pod Kit	ICE2000-ND	1525.00
MPLAB-ICE 4000 In-Circuit Emulator Pod Kit	ICE4000-ND *NEW!*	2560.00
MPLAB-ICE Processor Modules (Probes)		
PIC12C671, 672, CE673, CE674 Processor Module	PCM12XA0-ND	445.00
PIC16F629, 675 Processor Module	PCM12XB0-ND	445.00
PIC12C50X, CE51X, PIC16C505, 52, 54, 54A, 54B, 55, 55A, 56, 56A, 57, 57C, 58A, 58B Processor Module	PCM16XA0-ND	445.00
PIC16C62A, 63, 64A, 65A, 72, 73A, 74A Processor Module	PCM16XB1-ND	445.00
PIC16C554, 558, 620, 620A, 621, 621A, 622, 622A, CE623, CE624, CE625 Processor Module	PCM16XC0-ND	445.00
PIC16C642, 662 Processor Module	PCM16XD0-ND	445.00
PIC16C63A, 65B, 66, 67, 72A, 73B, 74B, 76, 77, 712, 716 Processor Module	PCM16XE1-ND	445.00
PIC16C71, 710, 711 Processor Module	PCM16XF0-ND	445.00
PIC16C715 Processor Module	PCM16XG0-ND	445.00
PIC16F83, F84, F84A,Processor Module	PCM16XH1-ND	445.00
PIC16C923, 924 Processor Module	PCM16XJ0-ND	445.00
PIC16C773, 774 Processor Module	PCM16XL0-ND	445.00
PIC16C717, 770, 771 Processor Module	PCM16XN0-ND	445.00
PIC16F627, 628 Processor Module	PCM16XP0-ND	445.00
PIC16C745, 765 Processor Module	PCM16XQ1-ND	445.00
PIC16C870, 871 Processor Module	PCM16XR0-ND	445.00
PIC16C925, 926 Processor Module	PCM16XT0-ND	445.00
PIC16F8XXA Processor Module	PCM16XV0-ND	445.00
PIC16F818, 819 Processor Module	PCM16YE0-ND *NEW!*	445.00
PIC16F87X Processor Module	PCM16XK1-ND	445.00
PIC16C717, 770, 771 Processor Module	PCM16XN1-ND	445.00
PIC16F870, 871 Processor Module	PCM16XR1-ND	445.00
PIC16F7X Processor Module	PCM16XS2-ND	445.00
PIC16C432 Processor Module	PCM16YB0-ND	445.00
PIC16C433 Processor Module	PCM16YC0-ND	445.00
PIC17C42A, 43, 44, 752, 756, 756A, 76X Processor Module	PCM17XA0-ND	445.00
PIC18CXX2 Processor Module	PCM18XA0-ND	445.00
PIC18CXX8 Processor Module	PCM18XB0-ND	445.00
PIC18F242, 252, 442, 452 Processor Module	PCM18XC1-ND	445.00
PIC18F248, 258, 448, 458 Processor Module	PCM18XD1-ND	445.00
PIC18F6620, 6720, 8620, 8720 Processor Module	PMF18WA0-ND *NEW!*	595.00
PIC18FXX20 Processor Module	PCM18XE1-ND	445.00
PIC18F2220, 2320, 4220, 4320 Processor Module	PCM18XH0-ND	445.00
PIC18F1220, 1320 Processor Module	PCM18XJ0-ND *NEW!*	445.00
MPLAB-ICE Device Adapters		
PIC12C50X, CE51X PDIP and SOIC 8 LD Device Adapter	DVA12XP080-ND†	125.00
PIC12C67X, CE67X PDIP and SOIC 8 LD Device Adapter	DVA12XP081-ND†	125.00
PIC16C64A, 65A, 65B, 67, 662, 74A, 74B, 765, 77, 774, F871, 874, 877, PIC18CXX2 PQFP and TQFP 44 LD Device Adapter	DVA16PQ441-ND†	225.00
PIC16C923 and 924 TQFP 64 LD Device Adapter	DVA16PQ640-ND†	225.00
PIC16C64A, 65A, 65B, 67, 662, 74A, 74B, 77, 774, 874, 877, PIC18CXX2 PLCC 44 LD Device Adapter	DVA16XL441-ND	165.00
PIC16C923 and 924 PLCC 68 LD Device Adapter	DVA16XL680-ND	225.00
PIC16C505 PDIP and SOIC (150 mil) 14 LD Device Adapter	DVA16XP140-ND†	125.00
PIC16C52, 54, 54A, 54B, 56, 56A, 58A, 58B, 554, 558, 620, 620A, 621, 621A, 622, 622A, CE623, CE624, CE625, 71, 710, 711, 715,F83, F84, F84A PDIP, SOIC, and SSOP 18/20 LD Device Adapter	DVA16XP180-ND†	125.00
PIC16C712, 716, PDIP, SOIC, SSOP, 18 LD Device Adapter	DVA16XP182-ND†	165.00
PIC16F627, 628, PDIP, SOIC, SSOP, 18 LD Device Adapter	DVA16XP183-ND	165.00
PIC16C717, 18 LD P Device Adapter	DVA16XP184-ND	165.00
PIC16C433 Device Adapter 18 LD, PDIP, SOIC, CDIP	DVA16XP185-ND	165.00
PIC16C770, 771 P,SO SS 20 LD Device Adapter	DVA16XP200-ND	165.00
PIC16C432, P, SS, JW, 20 LD Device Adapter	DVA16XP201-ND	165.00
PIC16C55, 55A, 57, 57C, PDIP, SOIC, and SSOP 28 LD Device Adapter	DVA16XP280-ND†	125.00
PIC16C62A, 63, 63A, 642, 66, 72, 72A, 73A, 73B, 76, 773, 873, 876, PIC18CXX2 PDIP, SOIC,and SSOP 28 LD Device Adapter	DVA16XP282-ND	165.00
PIC16C64A, 65A, 65B, 67, 662, 74A, 74B, 77, 774, 874, 877, PIC18CXX2 PDIP 40 LD Device Adapter	DVA16XP401-ND	165.00
PIC16C923 and 924 SDIP 64 LD Device Adapter	DVA16XP640-ND	225.00
PIC17C42A, 43, and 44 TQFP and PQFP 44 LD Device Adapter	DVA17PQ441-ND†	225.00
PIC17C752, 756, and 756A TQFP 64 LD Device Adapter	DVA17PQ641-ND†	225.00
PIC17C762 and 766 TQFP 80 LD Device Adapter	DVA17PQ801-ND†	225.00
PIC17C42A, 43, and 44 PLCC 44 LD Device Adapter	DVA17XL441-ND	165.00
PIC17C752, 756, and 756A PLCC 68 LD Device Adapter	DVA17XL681-ND	225.00
PIC17C762 and 766 PLCC 84 LD Device Adapter	DVA17XL841-ND	165.00
PIC17C42A, 43, and 44 PDIP 40 LD Device Adapter	DVA17XP401-ND	125.00
PIC18F4220, 4320 TQFP 44LD Device Adapter	DVA18PQ440-ND	225.00
PIC18C658 TQFP 64 LD Device Adapter	DVA18PQ640-ND	225.00
PIC18C858 TQFP 80 LD Device Adapter	DVA18PQ800-ND	225.00
PIC18C658 PLCC 68 LD Device Adapter	DVA18XL680-ND	225.00
PIC18C858 PLCC 84 LD Device Adapter	DVA18XL840-ND	225.00
PIC18F1220, 1320 18LD Device Adapter	DVA18XP180-ND *NEW!*	165.00
PIC18F2220, 2320 PDIP 28LD Device Adapter	DVA18XP280-ND	165.00
PIC18F4220, 4320 PDIP 40LD Device Adapter	DVA18XP400-ND	165.00
MPLAB-ICE Transition Sockets		
8 LD (150 and 208 mil SOIC) Small Outline Translation Socket	XLT08SO-ND	35.00
14 LD (150 and 208 mil SOIC) Small Outline Translation Socket	XLT14SO-ND	35.00
14LD (TSSOP) Tiny Small Outline Translation Socket	XLT14SS-ND *NEW!*	75.00
18 LD (SOIC 300 mil) Small Outline Translation Socket	XLT18SO-ND	75.00
20 LD (300 mil SO) Small Outline Translation Socket	XLT20SO1-ND	75.00
20 LD (SSOP) Small Outline Translation Socket	XLT20SS1-ND	75.00
28 LD (SOIC 300 mil) Small Outline Translation Socket	XLT28SO-ND	75.00
28 LD (300 mil to 600 mil) PDIP Translation Socket	XLT28XP-ND	75.00
20 LD (SSOP) Shrink Small Outline Translation Socket	XLT20SS-ND	75.00
28 LD (SSOP 300 mil) Small Outline Translation Socket	XLT28SS-ND	75.00
28 LD (SSOP 300 mil) Small Outline Translation Socket PIC16C55, 55A, 57, 57C	XLT28SS2-ND	75.00
44 LD Plastic Quad Flatpack (PQFP) and Plastic Thin Quad Flatpack (TQFP) Translation Socket	XLT44PT-ND	125.00
64 LD Plastic Thin Quad Flatpack (TQFP) Translation Socket for PIC16C92X	XLT64PT1-ND	125.00
64 LD Plastic Thin Quad Flatpack (TQFP) Translation Socket for PIC17C75X	XLT64PT2-ND	125.00
80 LD Plastic Thin Quad Flatpack (TQFP) Translation Socket	XLT80PT-ND	125.00
NEW! ICE4000 Accessories NEW!		
Power Supply for ICE4000	ACICE0401-ND	50.00
Logic Probe for ICE4000	ACICE0402-ND	60.00
Slim Parallel Cable for ICE4000	ACICE0403-ND	40.00
Flex Cable for ICE4000	ACICE0407-ND	55.00

† For SOIC, SSOP, PQFP, and TQFP support, product requires additional Transition Socket which is sold separately. **Microchip's Internet home page can be reached at: *www.microchip.com.***

MICROCHIP

NEW! PICkit™ 1 FLASH Starter Kit

A low-cost development kit with an easy to use interface for programming Microchip's 8/14-pin FLASH family of microcontrollers. This starter kit is designed to help the user get up to speed quickly using PIC® microcontrollers.

The kit provides everything needed to program, evaluate and develop applications using Microchip's powerful 8/14-pin FLASH family of microcontrollers. Instructions are provided in a series of seven tutorials that cover I/O, Interrupts, A/D Converters, Comparators, Data Tables and Timers. All source code files for the tutorials are furnished.

Features:

• Small 3" x 4.5" circuit board with snap-off prototyping board • Easy to use Windows® programming interface for programming Microchip's 8/14-pin FLASH family of microcontrollers • Seven sequential tutorials written in both Assembly and HI-TECH C demonstrate how to use Microchip's 8/14-pin FLASH family of microcontrollers • Microchip's Tips 'n Tricks Booklet provides efficient, low-cost design techniques using Microchip FLASH microcontrollers • PICkit 1 User Guide (included on CD ROM) • FREE! Microchip's MPLAB IDE software for a complete code development environment • FREE! HI-TECH PICC™ LITE C Compiler (contained on the MPLAB CD-ROM)

Kit Includes:

• PICkit 1 Circuit Board with 8-pin PIC12F675 • PICkit 1 FLASH Starter Kit CD-ROM • MPLAB IDE (Integrated Development Environment) CD-ROM • Software and Hardware "Tips 'n Tricks" for 8-pin FLASH PIC Microcontrollers Booklet • USB Interface Cable

DV164101-ND $36.00

ICD2 In-Circuit Debugger for PIC18FXX2/XX8 Flash Microcontrollers

The ICD 2 module is a low cost development tool which connects between the PC and the designers target board allowing direct in circuit debugging of the PICmicro target microcontroller. DEBUGS PIC18F2X2, PIC18F4X2, PIC18F2X8, PIC18F4X8, PIC18FXX20 and PIC18CX01 series of Microchip parts. Programs can be executed in real time or single step, watch variables established, break points set, memory read/writes accomplished and more. It can also be used as a development programmer for the Microcontrollers. USB (Full Speed 2 M bits) and RS 232 interface to HOST PC. Totally enclosed. Supports low voltage to 2.0 volts. (2.0 to 6.0 range).

Full kit includes:

In-circuit debugging module, USB and modular cables, RS232 serial cable and power supply. Simple suite doesn't include RS232 cable and power supply.

DV164005-ND Kit ICD2 Simple Suit without Power Supply* $159.00
DV164006-ND Kit ICD2 Full Kit with PICDEM2 also with Power Supply $229.00
DV164007-ND Kit ICD2 Full Kit with Power Supply $188.00
AC162049-ND Programming Module $39.00

* Optional power supply, AC162039-ND

MCP2510 CAN Developer's Kit

Features:

For an introduction to CAN, this tool can be used to demonstrate basic communication on a CAN bus via message transmission and reception. Messages are created on a host PC for transmission to the target board. As messages are sent or received, LEDs connected to the MCP2510 transmission pins toggle to show message traffic.

Push-button switches on the target board show how digital inputs are handled, while a potentiometer shows how to handle analog inputs via the CAN bus. In this manner, both the transmission and reception of messages can be easily demonstrated and understood.

MCP2510 software development is made easy by offering a variety of features designed to manipulate the functionality of the MCP2510. CAN messages are created and can be saved for later use and modification. Also, received messages are displayed in a separate window on the PC in a destuffed format to easily identify message contents. In addition, this tool provides the ability to read, display and modify all registers of the MCP2510. All of these features are designed to jump-start system designers' understanding of the MCP2510 and speed software development.

DV251001-ND MCP2510CAN Developer's Kit $239.00

Stand-Alone CAN Controller with SPI Interface

MCP2551-I/P-ND *NEW!* High Speed Can Transceiver 8-DIP $1.48
MCP2510-I/P-ND Ind Temperature 18-Dip $4.20
MCP2510-I/SO-ND Ind Temperature 18-SOIC $4.20
MCP2510-E/P-ND Extended Temperature 18-Dip $5.33
MCP2510-E/SO-ND Extended Temperature 18-SOIC $5.33

PICSTART Plus Programmer

PICSTART Plus is an entry level development kit that will *SUPPORT ALL* PIC12C5XX, PIC12C67X, PIC12CE, PIC16C, PIC16F8XX and PIC17C MICROCONTROLLERS *including* the PIC14000, PIC17C4X and PIC17C75X families.

Kit Includes:

• PICSTART Plus programmer system • RS232 cable • Power supply • PIC16F84 EEPROM microcontroller sample • MPLAB software diskette: includes MPLAB, MPASM-Windows, MPLAB-SIM simulator • PICSTART Plus software diskette Windows based user interface software for PICSTART Plus, runs under MPLAB • User's manual for PICSTART Plus • User's manual for MPSIM • User's manual for MPLAB, covers MPLAB, MPLAB-SIM and Editor • *CD-ROM: Includes databook and Embedded Control Handbook*

DV003001-ND PICSTART Plus Programmer $199.00
AC164024-ND PIC16C92X, PIC17C75X 68PLCC Adapter $129.00
AC164027-ND PLCC Socket Adapter for PICSTART Plus 84 LD $159.00
AC162048-ND Power Supply with Serial Cable for Microchip Tool $29.00

Programmer and Evaluation Kit

The KeeLoq Evaluation Kit demonstrates the capabilities of Microchip's code-hopping technology. It includes everything you need to program and test the KeeLoq encoders and decoders.

Kit Includes:

• Software and License disk • Programmer board for programming encoders, decoders, and transponders • Sockets for HCS Series or software based decoder and RF based receiver module • PDip transmitter for use with any HCS Series encoder or transponder (encoding capability only) • Sample Kit • Requires separate 9V Power Supply (AC162039-ND) and 9 pin Serial Cable (AE1020-ND)

DM303006-ND $249.00
AC162039-ND Power Supply $24.00
DS00161-ND CD-ROM Microchip Technical Library $2.25

SEEPROM Designer's Development Kit

Supports all Microchip 2-wire and 3-wire SERIAL EEPROMs

The Serial EEPROM Designer's Kit includes everything necessary to read, write, erase or program special features of any Microchip Serial EEPROM products including *Smart Serials™* and secure serials.

Description of Contents:

• SEEVAL™ Evaluation and Programming System • Total Endurance Software Model • Serial EEPROM Handbook • SEEVAL software • RS-232 Interface Cable • Serial EEPROM Sample Pack • Power Supply

PICSEE™ Introduction Design Kit

- PICSEE™ PDIP and SOIC to PIC16C54 or 24LC01B Programming Adapter Sockets
- Header Interface for PICStart-16B, PICMASTER-16A and PICPROBE-16A
- Serial EEPROM Example Software Disk
- MTA81010 Product Samples
- 8 and 18-Pin Programming Adapter Plugs
- Complete Systems Documentation

Description	Digi-Key Part No.	Price Each
SEEPROM Designer's Development Kit	DV243001-ND	75.00
PICSEE™ Introduction Design Kit	AC812001-ND	330.00
IC TrueGauge™ Battery Fuel Gauge (28-DIP .3")	MTA11200B/SP-ND	7.37

CCS Inc

C-Compiler for PICmicro® MCUs

C-Compiler for 12 Bit, 14 Bit and PIC18 PICmicro MCUs. This Integrated C Development Environment gives developers the capability to quickly produce very efficient code from an easily maintainable high level language. With full standard C compatibility, a full featured, Windows IDE with built-in functions and example programs, you will be able to develop embedded solutions for the full line of PICmicro MCUs.

429-1000-ND C-Compiler (PCWH) 395.00

microEngineering Labs, Inc.

PicBasic Pro Compiler

PicBasic Pro converts your BASIC programs into files that can be programmed directly into a PICmicro MCU. Full support for 14-bit and 16-bit MCUs. Limited support for 12-bit MCUs. The PicBasic Pro Compiler features: BASIC commands, direct and library routine access to pins on PORTA, C, D, E, as well as PORTB, arrays, real IF..THEN..ELSE and interrupt processing in BASIC.

Includes: Code Designer Lite, a Windows integrated development environment (IDE) that is compatible with our PicBasic Pro Compiler. Comes with Software, Manual with instruction set and explanations and directions. Works on any version of Dos or Windows with CodeDesigner Lite . Windows95, 98, 2000, XP, and ME compatible.

The LAB-X1A is a independent hardware platform, similar to the Microchip PICDEM products. It can run programs written in any language, including C, Assembly, and PicBasic. Includes 40 Pin Zif Socket, LCD display, memory, Rs232 port, Pots for ADCs, and many extras.

444-1000-ND PicBasic Pro Compiler $249.95
444-1001-ND LAB-X1 Experimenter Board $199.95