



Low Cost Development Tools Guide

For use with Analog and Interface Products, 8- and 16-bit PIC® Microcontrollers, dsPIC® Digital Signal Controllers, Memory and KEELOQ® Products.

Microchip offers a broad spectrum of development tools – all designed to help you achieve faster time to market. For a complete listing of Microchip products and their corresponding users guides, data sheets and technical information, visit our web site – www.microchip.com.

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Getting Started Products

PICDEM™ HPC Explorer Board

Part Number: DM183022



This low-cost demo board is used to evaluate the performance of high-end 8-bit PIC18F series. The board features a PIC18F8722 microcontroller, which is the superset of the entire 64- and 80-pin PIC18FXXX general purpose family. A daughter board (mezzanine) is also part of the kit and allows different processors sharing the same pin out to be mounted and tested on the explorer board.

Explorer 16 Development Board

Part Number: DM240001



The Explorer 16 is a low-cost, efficient development board to evaluate the features and performance of Microchip's new 16-bit PIC24 Microcontroller and dsPIC33 Digital Signal Controller (DSC) families. Coupled with the MPLAB® ICD 2 In-Circuit Debugger, real-time emulation and debug facilities speed evaluation and prototyping of application circuitry. The board features two interchangeable Plug-In Modules (PIMs), one each for the PIC24FJ128GA010 and the dsPIC33F128GP710 DSC.

PICKit™ 1 Flash Starter Kit

Part Number: DV164101



A low-cost starter development kit with an easy-to-use interface for programming Microchip's 8-/14-pin Flash PIC® microcontrollers. The kit includes everything needed to program, evaluate and develop applications. Seven tutorials with all source code files are furnished.

PICKit™ 2 Starter Kit

Part Number: DV164120



PICKit 2 is small, easy to use programmer/ starter kit that enables users to start writing code and programming with PIC® microcontrollers. Features full speed USB support and firmware upgradeability in a low-cost tool.

PICkit™ 2 Low Pin Count Demonstration Board



Part Number: DM164120-1

A small demo board with a PIC16F690 on board and a small prototype area. Use with the PICkit 2 to program code via a 6-pin ICSP™ header on the board. The kit also includes two bare PCB boards for those interested in customizing their development.

Signal Analysis PICtail™ Daughter Board



Part Number: AC164120

This board works as an extension to the PICkit™ 1 Flash Starter Kit. When combined with PICkit 1 firmware version 2.0.0 or later and the signal-analysis PC program, the board performs signal-analysis capabilities such as: real-time strip chart, oscilloscope,

Fast Fourier Transformation (FFT), histogram and programming. The board comes populated with a PIC16F684 and two 25LC640 SPI-compatible serial EEPROM memory devices.

PIC10F 6L SOT-23 to 8P DIP Adapter Kit



Part Number: AC163021

This is a kit consisting of (5) PIC10F206 SOT-23 devices, (5) pin scramble boards and DIP pins. Once assembled, this makes the SOT-23 look like a standard 8-pin DIP and can be used directly in standard development tool sockets. This kit should be used only for early evaluation.

SEEVAL® 32 Serial EEPROM Evaluation Kit

Part Number: DV243002

An evaluation and programming system supporting all Microchip Serial EEPROMS including future devices. Using a ZIF socket, standard DIP sockets are directly supported. The SEEVAL 32 gives the designer the ability to read, write, or erase any byte, page or entire array, and to display, save or load this data as a file. SEEVAL 32 provides support for Windows® XP, Windows ME, Windows 2000, Windows NT 4.0 and Windows 95/98.



KEELOQ® Evaluation Kit II

Part Number: DM303006

This kit demonstrates the capabilities of the code-hopping technology used in security systems such as garage door openers, auto keyless entry, etc. for secure access and/or authentication. It includes a main board and 2 transmitters to demonstrate encoders and decoders. The fully functional kit allows a short learning cycle into the technology.

Linear Products

MCP6S22 PGA PICtail™ Demonstration Board



Part Number: MCP6S22DM-PICTL

This board evaluates/demonstrates Microchip's MCP6S21/2/6/8 Programmable Gain Amplifier (PGA) family. Interface this board with the PICkit™ 1 Flash Starter Kit to demonstrate firmware integration between the PIC® microcontroller and PGA devices, while allowing modification and development of firmware for specific requirements.

MCP6S2X PGA Evaluation Board



Part Number: MCP6S2XEV

Provides a versatile selection of input channels and gains to evaluate device performance. Board supports multiple input signal sources. Two devices can be cascaded to produce gain to 1024 V/V.

MCP6SX2 PGA Photodiode PICtail™ Demonstration Board



Part Number: MCP6SX2DM-PCTLPD

Opens possibilities to process other sensor signals. Increases the number of PIC® microcontroller I/O pins available for other purposes. Features a PNZ334 photo-diode, MCP6001U op amp, and MCP6S22 and MCP6S92 Programmable Gain Amplifiers (PGA).

MCP6SX2 PGA Thermistor PICtail™ Demonstration Board



Part Number: MCP6SX2DM-PCTLTH

Features MCP6S22 and MCP6S92 PGAs. Helps overcome non-linear response of the on-board NTC thermistor. Opens possibilities of temperature-correcting another sensor, and increasing the number of PIC® microcontroller I/O pins available for other purposes.

Interface Products

PICDEM™ CAN-LIN 1, 2 and 3 Demonstration Boards



Part Number: DM163007, DM163011, DM163015

Microchip offers three similar PICDEM CAN-LIN Demo Boards to support different PIC® microcontrollers. All demonstrate the main features of the devices, especially those features of the integrated CAN module. The board also employs a LIN sub-network using the PIC16C43X and PIC18F320 device families.

PICDEM CAN-LIN 1 supports: 68-pin PLCC PIC18C658, 84-pin PLCC PIC18C858 devices and 20-pin PDIP PIC16C432 with integrated LIN Bus transceiver

PICDEM CAN-LIN 2 supports: 28-pin SDIP PIC18F258 and PIC18F2680 devices, 40-pin PDIP PIC18F458 and PIC18F4680 devices and 20-pin PDIP PIC16C432 with integrated LIN Bus transceiver

PICDEM CAN-LIN 3 supports: 64-pin TQFP PIC18F6680, 80-pin TQFP PIC18F8680 devices, 20-pin SSOP PIC18F1320 and MCP201 LIN Bus transceiver

PICDEM™ LCD Demonstration Board

Part Number: DM163028



Demonstrates the main features of the LCD Flash 28-, 40-, 64- and 80-pin PIC® microcontrollers with power management features. The board is populated with the PIC18F8490 and other devices are supported via a transition socket. A sample LCD glass display is included for custom prototyping. The PICDEM LCD kit provides tutorial firmware, which is included in the preprogrammed devices.

PICDEM™ LCD Daughter Boards

Part Number: MA160011

For use with the PICDEM LCD Demonstration Board listed above.

PICDEM™ FS USB Demonstration/ Evaluation Board

Part Number: DM163025



Demonstrates and evaluates the PIC18F4550 family of Flash microcontrollers with full speed USB 2.0 interface. The board contains a PIC18F4550 microcontroller in a 44-pin TQFP package, representing the superset of the entire family of devices.

PICDEM™ USB Demonstration Board

Part Number: DM163010



Demonstrates the PIC16C745 and PIC16C765 USB microcontrollers communicating to a PC using the USB port.

PICDEM™ MSC1 Infrared (IR) Driver Daughter Board

Part Number: AC163002

This board, in combination with the PICDEM MSC1 Demo Board, serves as a demonstration and evaluation kit for designing a high power IR remote control transmitter using the PIC16C782. The daughter board, in combination with the included IR receiver, implements both receive and transmit sections of a Pulse Width Modulation (PWM) IR remote control system.

PICDEM™ Z Demonstration Kit

Part Number: DM163027-2



An easy-to-use ZigBee™ Technology wireless communication protocol development and demonstration platform. The kit includes the ZigBee protocol stack and two PICDEM Z boards, each with an RF daughter card. The demonstration board is also equipped with a 6-pin modular connector to interface directly with MPLAB® ICD 2.

rfPICkit Development Kit 1

Part Number: DV164102



Provides design engineers with an easy way to evaluate unidirectional remote sense and control wireless links based on the rfPIC12F675 and rRXD0420/0920 devices. The kit is based on the PICkit™ 1 Flash Starter Kit and consists of modular building blocks for different transmitters and receivers that can be utilized for prototype systems or to evaluate different options.

rfPICkit Development Kit 1 Accessories

rfPIC® Transmitter Module (433.92 MHz)

Part Number: AC164101

rfPIC® Transmitter Module (315 MHz)

Part Number: AC164102

rfPIC® Receiver Module (433.92 MHz)

Part Number: AC164103

rfPIC® Receiver Module (315 MHz)

Part Number: AC164104

rfPIC® Receiver Module 5 pack (433.92 MHz)

Part Number: AC164105

rfPIC® Receiver Module 5 pack (315 MHz)

Part Number: AC164106

MCP2140 IrDA® Wireless Temp Demonstration Board

Part Number: MCP2140DM-TMPSNS



Demonstrates the MCP2140 device in a real-world application. This design is an example of how to integrate an IrDA standard port into a system.

MCP212X Developer's Daughter Board

Part Number: MCP212XEV-DB



Evaluates and demonstrates the MCP2122 or MCP2120 IrDA® Standard Encoder/Decoder devices. A header allows the MCP212X Daughter Board to be easily jumpered into systems for development purposes. This board also interfaces with these new low-cost PIC®

microcontroller demo boards: PICDEM™ HPC Explorer, PICDEM FS USB and PICDEM LCD Demo Board.

MCP2120/2150 Infrared Developer's Kit

Part Number: DM163008



Includes everything needed to create a system that communicates using infrared. The kit contains two MCP2120 developer's boards enabling a complete system (transmitter and receiver) to be implemented, and a MCP2150 developer's board that can be used to set up a system to communicate with other IrDA enabled devices.

MCP215X Data Logger Demonstration Board



Part Number: MCP215XDM

Demonstrates the MCP2150 (or MCP2155) IrDA Standard Protocol Stack Controller device in a real world application. Shows how to integrate an IrDA standard port into an embedded system.

MCP215X/40 Developer's Daughter Board

Part Number: MCP215X/40EV-DB

Used to evaluate and demonstrate the MCP2150, MCP2155 or the MCP2140 IrDA® Standard Protocol Handler with Encoder/Decoder devices. Headers allow the MCP215X/40 Developer's Daughter Board to be easily jumpered into systems for development purposes. This board also interfaces with these new low-cost PIC® microcontroller demo boards: PICDEM™ HPC Explorer, PICDEM FS USB and PICDEM LCD Demo Board.

MCP23X08 8-bit GPIO Expander Evaluation Board



Part Number: MCP23X08EV

Demonstrates simple input/output functionality of the MCP23008 (I²C™ interface) and the MCP23S08 (SPI interface). The system demonstrates the simplicity of monitoring four inputs and applying the level to associated outputs.

MCP250XX CAN I/O Expander Developer's Kit



Part Number: DV250501

Supporting CAN V2.0B active with bus rates up to 1 Mb/s, this kit includes everything needed to demonstrate, design, develop and configure a CAN node using the MCP250XX CAN I/O Expander family of products.

MCP2510/2515 CAN Developer's Kit



Part Number: DV251001

To speed up software development and enable introduction of CAN to those who are unfamiliar with the protocol, Microchip offers a unique combination of a software development tool and a CAN message/communication tool called the MCP2515/2510 CAN Developer's Kit.

MCP2515 CAN Controller PICtail™ Demonstration Board

Part Number: MCP2515DM-PCTL

This demo board implements a simple CAN bus using two nodes. One using the MCP2515 Stand Alone CAN controller and the other using the MCP25020 CAN I/O Expander. Each node utilizes one input (push button) and one output (LED). The boards demonstrate a simple, inexpensive implementation of a CAN bus.

Mixed Signal Products

MCP3XXX Single/Dual ADC MXDEV® Daughter Board



Part Number: DV3201A

Supports MCP3001, MCP3002, MCP3201 and MCP3202 stand-alone A/D converters. Used with the MXDEV Driver Board (available separately).

MCP3204/08 MXDEV® Daughter Board



Part Number: DV3204A

Supports MCP3004, MCP3008, MCP3204 and MCP3208 stand-alone A/D converters. Used with the MXDEV Driver Board (available separately).

MCP3221 12-bit A/D PICtail™ Demonstration Board



Part Number: MCP3221DM-PCTL

Designed to demonstrate the MCP3221 device using DataView™ Windows software for a graphical real time data analysis from the board through USB. This demo board can also be used for firmware development to the MCP3221 device using the PICkit™ 1 Flash Starter Kit.

MCP3551 Delta-Sigma ADC Demonstration Board



Part Number: MCP3551DM-PCTL

Designed to demonstrate the MCP3551 device's 22-bit Delta-Sigma Analog-to-Digital (ADC) Converter performance using DataView™ software installed on a PC. This demo board can be used with MPLAB® ICD 2, PICkit™ 1 Flash Starter Kit, or PICkit™ 2 for developing demonstration/evaluation firmware.

MCP3905 Energy Meter Evaluation Board

Part Number: MCP3905EV

This evaluation board is designed to test out a variety of energy meter designs. On the input side high voltage line and load AC-plug headers are included, along with mounting holes for shunts, current transformers and screw-type connections for wiring. On the output side a large prototype area is included along with optical isolation and a standard PICtail™ header for experiments with a variety of PIC® microcontroller based energy meter designs.

MCP3905 Energy Meter Reference Design

Part Number: MCP3905RD-PM1

A stand-alone low-cost energy meter that can act as either a stand alone energy meter, or as the analog front end design for LCD microcontroller based meters. This design is specified with an energy measurement error of 0.1% typical across 1:500 dynamic range for high accurate energy meter designs and is compliant with EMC requirements per energy metering standards IEC62053 and legacy IEC61036, IEC1046 and IEC687.

MCP402X Non-Volatile Digital Potentiometer Evaluation Board



Part Number: MCP402XEV

This low-cost board enables user's to exercise all of the features of the MCP401X and MCP402X devices. Kit includes one populated and one unpopulated PCB. The populated board has an MCP4021-103E/SN digital pot configured as a "windowed" potentiometer using a 2.5 kΩ pull-up and a 2.5 kΩ pull-down resistor. The PCB supports the 8-pin SOIC, SOT-23-6 and SOT-23-5 package variations. The unpopulated PCB allows user's to build the exact combination of components their application requires.

MCP42XXX Digital Pot Evaluation Board



Part Number: DV42XXX

Includes an evaluation board, prototype board, RS-232 cable, 9V DC power supply, MXLAB® software, digital potentiometers and PIC® microcontroller. Used with the MXDEV® Driver Board (available separately).

Mixed-Signal PICtail™ Demonstration Board

Part Number: MXSIGDM

Quickly and accurately evaluates performance of Microchip DACs, A/D converters, LDOs, VREFs and operational amplifiers. Interfaces to the PICKIT™ 1 Flash Starter Kit. Can use with a PIC16F767 for stand-alone operation. Supports many Microchip mixed-signal devices (surface mount footprint).

MXDEV® Analog Evaluation System

Part Number: DVMCPA



Versatile, easy-to-use system helps evaluate mixed-signal products. Includes the DVMCPA MCP Driver Board, which provides data acquisition and analysis/display in a Windows environment.

PICDEM™ MSC1 Delta-Sigma ADC Daughter Board

Part Number: AC163003

In combination with the PICDEM MSC1 Demo Board, this board serves as a demonstration and evaluation kit for designing high resolution Delta Sigma Analog-to-Digital Converters using the PIC16C781/782.

PICDEM™ MSC1 Flow Rate Sensor Daughter Board

Part Number: AC163004

This board, in combination with the PICDEM MSC1 Demo Board, is a complete demonstration kit for a high sensitivity hot-wire anemometer-styled flow rate sensor using the PIC16C782.

PICDEM™ MSC1 Mixed Signal Controller Demonstration Board

Part Number: DM163012



The PICDEM MSC1 with its PC-based Graphical User Interface (GUI) software serves as a stand-alone development and evaluation tool for the PIC16C781/782 microcontrollers, or as a user interface to the peripherals.

Power Management Products

MCP1252 Charge Pump Backlight Demonstration Board



Part Number: MCP1252DM-BKLT

Demonstrates the use of a charge pump device in an LED application and acts as a platform to evaluate the MCP1252 device in general. Light intensity is controlled uniformly through the use of ballast resistors. A PIC10F206 MCU provides an enable signal to the MCP1252 and accepts a push-button input that allows the white LEDs to be adjusted to five different light intensities.

MCP1601 Buck Regulator Evaluation Board



Part Number: MCP1601EV

For both battery-powered and distributed-power applications. Operates over a 2.7V to 5.5V input range while delivering 500 mA of output current.

MCP1612 Synchronous Buck Regulator Evaluation Board



Part Number: MCP1612EV

Features a 1A 1.4 MHz synchronous buck regulator in two buck converter applications. The applications use the 8-lead MSOP and 8-lead DFN packages respectively. Selectable output voltages and a shutdown terminal are available on each converter.

MCP1630 +12V in Dual Output Buck Converter Reference Design



Part Number: MCP1630RD-DDBK1

This demo board is a dual output programmable power supply capable of 20A per output. Both outputs switch at 500 kHz 180° out of phase while powered from a +12V-input source. Features include programmable output voltage, power good output indication, sequencing, over current and over temperature.

MCP1630 1A Bias Supply Demonstration Board



Part Number: MCP1630DM-DDBK1

This demo board is used to evaluate Microchip's MCP1630 used in a SEPIC power converter application. The demo board is capable of providing a regulated output from an input voltage of 9V. The regulated output voltage is selectable at 3.3V or 5V and remains constant for an output load range of 0A to 1A. An LED indicates the presence of output voltage.

MCP1630 Li-Ion Multi Bay Battery Charger Reference Design



Part Number: MCP1630RD-LIC1

Used to evaluate the MCP1630 used in a SEPIC power converter application. This charger is capable of charging two single-cell, Li-Ion battery packs in parallel utilizing an input voltage of 10V to 30V (battery packs are not included).

MCP1630 Low Cost Li-Ion Battery Charger Reference Design



Part Number: MCP1630RD-LIC2

This board is used to evaluate the MCP1630 device used in a SEPIC power converter applications. The charger is capable of charging a single-cell, Li-Ion battery pack utilizing an input voltage of 6V to 18V (battery packs are not included).

MCP1630 NiMH Battery Charger Demonstration Board



Part Number: MCP1630DM-NMC1

High-speed PWM interfaces to PIC16LF818, providing a complete NiMH battery charger with fuel gauge capability. Minimizes external inductor, capacitor cost; performs complex NiMH battery charger timing functions. Protects battery circuit if a fault occurs.

MCP1650 3W White LED Demonstration Board



Part Number: MCP1650DM-LED1

Demonstrates the MCP165X Boost Controller product family in a battery-powered white LED application with an input voltage range of 2.0V to 4.5V.

MCP1650 Multiple White LED Demonstration Board

Part Number: MCP1650DM-LED2

The MCP1650 Multiple White LED Demo Board uses the MCP1650 IC to power the nine white LEDs which are connected in series. A PIC10F202 microcontroller in a SOT-23 6 pin package is used to provide the PWM signal to the MCP1650. It also accepts a push button input that allows the user to adjust the white LEDs to three different intensities of 100%, 50% and 25%.

MCP1650 Boost Controller Evaluation Board



Part Number: MCP1650EV

Demonstrates the MCP165X Boost Controller product family in two high-power, boost-converter applications.

MCP1650 SEPIC Power Supply Demonstration Board



Part Number: MCP1650DM-DDSC1

Used to evaluate Microchip's MCP1650 boost controller in a low power application that requires a regulated output voltage from an input source that can be greater than, less than or equal to the output voltage. As provided, this board generates a 5.0V output from a 3.0V to 7.0V source.

MCP1726 1A LDO Evaluation Board



Part Number: MCP1726EV

This board features 1A, Low Quiescent Current LDO Regulator in two circuits. The circuits feature adjustable versions of the MCP1726 in the 8-pin 3X3 DFN and 8-pin SOIC packages respectively. Both circuits have potentiometers to adjust the output voltage of the LDO. Fixed voltage versions of the device can also be evaluated with this board.

MCP7382X Li-Ion Battery Charger Evaluation Board



Part Number: MCP7382XEV

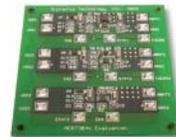
Three circuits utilizing the MCP73826, MCP73827 and MCP73828 devices to demonstrate simple, stand-alone, linear charging of single cell Lithium-Ion/Lithium-Polymer battery packs (the battery packs are not included).

MCP73831 Evaluation Kit

Part Number: MCP73831EV

The two evaluation boards provided are set up to evaluate simple, stand-alone, linear charging of single cell Li-Ion/Li-Polymer battery packs (the battery packs are not included). Each board design provides constant current charging followed by constant voltage charging with automatic charge termination. In addition, the MCP73831-2AC board provides preconditioning of deeply depleted cells. Each board design provides evaluation in two package options: a SOT23-5 and a 2 mm x 3 mm, 8-lead DFN for higher power handling capability.

MCP7384X Li-Ion Battery Charger Evaluation Board



Part Number: MCP7384XEV

Three circuits use MCP73841, MCP73842 and MCP73843 devices to demonstrate simple, stand-alone, linear charging of single- or dual-cell, Lithium-Ion/Lithium-Polymer battery packs (battery packs are not included).

MCP73855 Li-Ion Battery Charger Evaluation Board



Part Number: MCP73855EV

Use to evaluate simple, stand-alone, linear charging of single cell Li-Ion/Li-Polymer battery packs (the battery packs are not included). The board design provides constant current charging followed by constant voltage charging with automatic charge termination.

MCP7386X Li-Ion Battery Charger Evaluation Board



Part Number: MCP7386XEV

Use to evaluate simple, stand-alone, linear charging of single/dual cell Lithium-Ion/Lithium-Polymer battery packs (the battery packs are not included). The board design provides constant current charging followed by constant voltage charging with automatic charge termination.

TC115 PFM/PWM Boost Converter Evaluation Board



Part Number: TC115EV

A complete, step-up, switch-mode, dc-dc power converter. This board generates a regulated 3.0V output at load currents up to 110 mA. Different output voltages are obtainable by replacing the fixed 3.0V output TC115 with a fixed 3.3V or 5.0V device.

Requires the use of an external input voltage source (0.9V – V_{out}). The board is provided with an aluminum electrolytic output capacitor with additional surface-mount pads to evaluate tantalum or ceramic capacitors.

TC1016/17 LDO Linear Regulator Evaluation Board

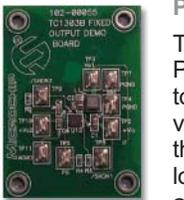


Part Number: TC1016/17EV

This evaluation board contains two independent LDO circuits that allow the user to evaluate the TC1016 (80 mA) and TC1017 (50 mA) devices in 5-pin SC-70 and 5-pin SOT-23 packages. The evaluation board is populated with 1.8V and 3.0V TC1017

devices. Any of the available output voltage values of the devices (1.2V to 5.0V) can be used on this board.

TC1303B Demonstration Board



Part Number: TC1303BDM-DDBK1

The TC1303B Dual-Output Regulator with Power-Good Output Demo Board can be used to evaluate the TC1303B device over the input voltage range and output current range for both the synchronous buck regulator output and the low-dropout linear regulator output. Test points are provided for input power, output loads, shutdown control and power-good monitoring.

PICDEM™ Low Power Solutions Demonstration Board



Part Number: DM163026

This board explores PICmicro® nanoWatt features within a functional ultrasonic range-finder application. It features the PIC18F4620 power managed device.

PICDEM™ MSC1 Switch Mode Power Supply (SMPS) Daughter Board

Part Number: AC163001

In combination with the PICDEM MSC1 Demo Board, this board is a complete demonstration and evaluation kit for designing switch mode power supplies using the PIC16C781/782. The daughter board can be configured for the following switch mode power supply topologies: Boost: output voltage greater than the supply voltage, Buck: output voltage less than the supply voltage, Buck-Boost: output voltage less than or greater than the supply voltage and Invert: negative output voltages.

Thermal Management Products

MCP9700 Temperature-to-Voltage Converter PICtail™ Demonstration Board



Part Number: MCP9700DM-PCTL

This board demonstrates how to interface the MCP9700 to a microcontroller. This can be used by the system designer as an example of how to integrate an analog temperature sensor into systems.

MCP9800 Temperature Sensor PICtail™ Demonstration Board



Part Number: MCP9800DM-PCTL

Demonstrates how to interface the MCP9800 to a PIC® microcontroller using the PICKit™ 1 Flash Starter Kit as a platform. The demo board can also be used as a stand-alone module to quickly add thermal sensing capability to any existing application.

MCP9800 Temperature Data Logger Demonstration Board

Part Number: MCP9800DM-DL

Allows users to store up to 128000 temperature readings from the MCP9800 sensor to the 24LC1025, Microchip's 1024 Kbit EEPROM. A PIC16F684 microcontroller communicates with the sensor and EEPROM. In addition, the PIC® microcontroller interfaces to a PC using the PICKit™ 1 Flash Starter Kit and transfers the temperature readings from the EEPROM to the PC. Microsoft Excel can be used to view the data.

TC72 Digital Temperature Sensor PICtail™ Demonstration Board



Part Number: TC72DM-PICTL

Connects directly to the PICKit™ 1 Flash Starter Kit. Highly accurate board features a 10-bit digital sensor with 3-wire SPI interface.

TC74 Serial Digital Thermal Sensor Demonstration Board



Part Number: TC74DEMO

Particularly suited for low-cost, small form factor applications. Connects directly to the PICkit™ 1 Flash Starter Kit.

TC77 Thermal Sensor PICtail™ Demonstration Board



Part Number: TC77DM-PICTL

System designers can use this design as an example of how to integrate a digital temperature sensor into their systems. Connects directly to the PICkit™ 1 Flash Starter Kit.

TC64X/64XB Fan Speed Controller Demonstration Board



Part Number: TC642DEMO

Fan control module allows users to quickly prototype fan control circuits based on the TC642 or TC646 PWM Fan Control ICs. It uses through hole components for easy user assembly and evaluation.

TC64X/64XB Fan Speed Controller Evaluation Board

Part Number: TC642EV

This is a complete evaluation board for evaluation and prototyping brushless DC fan control circuits using the TC642, TC646, TC647, TC648 and TC649 BDC fan controllers

TC650 Fan Controller Demonstration Board



Part Number: TC650DEMO

Allows users to quickly prototype fan control circuits based on the TC650 or TC651 PWM Fan Control ICs.

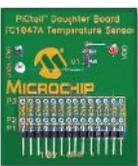
TC652 Fan Controller Demonstration Board



Part Number: TC652DEMO

Allows users to quickly prototype fan control circuits on TC652 or TC653 PWM Fan Control ICs. The board can interface with virtually any brushless DC fan.

TC1047A Temperature-to-Voltage Converter PICtail™ Demonstration Board



Part Number: TC1047ADM-PICTL

Demonstrates how to interface the TC1047A device to a microcontroller. Connects directly to the PICkit™ 1 Flash Starter Kit, providing a platform for code development and evaluation. Provides a good example of how to integrate an analog temperature sensor into a system.

PIC® Microcontroller and dsPIC® Digital Signal Controller Demonstration Boards

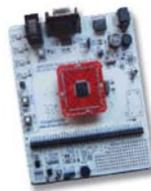
dsPICDEM™ 28-Pin Starter Demonstration Board



Part Number: DM300017

This low-cost board allows users to easily validate a development tool setup using a 28-pin SDIP or SOIC dsPIC30F device. The board has a socketed dsPIC30F2010 digital signal controller, power supply regulator, crystal oscillator, ICD header, serial port, power on indicator, reset push-button, 28L SOIC layout pad and a prototyping area.

dsPICDEM™ 80-Pin Starter Development Board



Part Number: DM300019

This board offers an economical way to evaluate both the dsPIC30F and dsPIC33F general purpose and motor control family of devices. An ideal prototyping tool to help quickly develop and validate key design requirements. dsPIC30F6014A and dsPIC33F Plug-In Modules are included.

dsPICDEM™ 2 Demonstration Board



Part Number: DM300018

A development and evaluation tool to help create embedded applications using dsPIC30F DSCs. Sockets are provided for 28- and 40-pin devices in the motor control family and 18-, 28- and 40-pin devices in the general purpose and sensor family.

PICDEM™ 1 Demonstration Board



Part Number: DM163001

This kit demonstrates the capabilities of the PIC16C5X, PIC16C7XX, PIC16X8X and PIC17C4X families. It can be used stand-alone with a programmed part, or with an emulator system, such as MPLAB® ICE 2000. Sample programs are provided to demonstrate the unique features of the supported devices.

PICDEM™ 2 Plus Demonstration Board



Part Number: DM163022

A simple board that demonstrates the capabilities of the 18-, 28- and 40-pin PIC16XXXX and PIC18XXXX devices. It can be used stand-alone with a programmed part, with MPLAB® ICE or with MPLAB ICD 2.

PICDEM™ 3 Demonstration Board



Part Number: DM163003

This board allows users to quickly become familiar with PIC16C9XX products. The software provided for the LCD Software Demultiplexer runs under Microsoft Windows.

PICDEM™ 4 Demonstration Board

Part Number: DM163014



A demonstration and evaluation board for the 8-, 14- and 18-pin general purpose products with power management features. It comes with two pre-programmed Flash-based microcontrollers, the PIC18F1320 and PIC16F627A, which both feature nanoWatt Technology.

PICDEM™ Mechatronics Demonstration Board

Part Number: DM163029



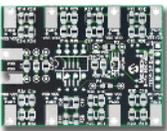
Learn how to use PIC® microcontrollers to enhance or replace a mechanical design. This demo kit takes a hands-on approach to learning about mechatronics. Jumper wires are provided in the kit and allow the user to experiment by connecting the PIC

microcontroller to various components on the board. These components include sensors, LEDs, human input devices and motor drivers. The board comes with nine example projects and includes firmware, connection diagrams and schematics.

Analog Blank Evaluation PCBs

SOIC 8-Lead Evaluation Board

Part Number: SOIC8EV

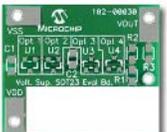


A blank PCB to easily evaluate Microchip's 8-pin devices (in SOIC, DIP, MSOP and TSSOP packages). Each device pin is connected to a pull-up resistor, a pull-down resistor, an in-line resistor and a loading

capacitor. The PCB pads allow through hole or surface mount connectors to be installed to ease connection to the board. Additional passive component footprints are on the board, to allow simple circuits to be implemented.

SOT-23-3 Voltage Supervisor Evaluation Board

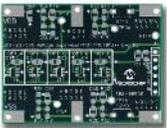
Part Number: VSUPEV



Quickly evaluates operation of Voltage Supervisors and Voltage Detectors in the Microchip SOT-23-3 package. Generic board evaluates SOT-23-3 devices (such as LDOs and Voltage References). Four blank PCBs are included for testing multiple devices.

SOT-23-5/6 Voltage Supervisor Evaluation Board

Part Number: VSUPEV2



This blank PCB allows quick evaluation of Voltage Supervisors and Voltage Detectors in the SOT-23-5 and SOT-23-6 packages. This PCB supports many Microchip devices, including the non-volatile Digital Potentiometer and PIC10F2XX devices.

Programmers

MPLAB® ICD 2 Debugger/Programmer

Part Number: DV164005



A low-cost, all-in-one real-time debugger/programmer solution for selected PIC® microcontrollers. Programs can be downloaded, executed in real time and examined in detail using the proprietary debug functions of MPLAB IDE. Watch variables and breakpoints can be set from symbolic labels in C or assembly source code, and single stepping can be done through C source line, assembly code level, or from a mixed C source and generated assembly level listing. MPLAB ICD 2 can also be used as a development programmer for supported devices.

PIC10F2XX Programmer Adapter

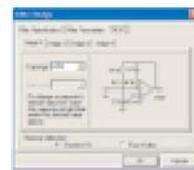
Part Number: AC163020



The PIC10F2XX Universal Programmer Adapter provides PIC10F socket support for both the SOT-23 and DIP-8 packages. It allows interfacing to Microchip's low-cost family of programmers including: PICKIT™ 1, MPLAB® ICD 2 and PICSTART® products.

Analog Software Tools

FilterLab® Active Filter Design Software



The FilterLab Active Filter Software Design tool simplifies active filter design and provides full schematic diagrams of the filter circuit with component values and displays the frequency response. A free download is available at the Microchip web site at: www.microchip.com

SPICE Software Models

Modeling is the heart of any SPICE simulation system and Microchip provides a variety of model libraries. This library and service is an example of Microchip's focus on analog simulation and modeling. For more information, visit the Microchip web site at: www.microchip.com

Microcontroller Software Tools

MPLAB® IDE

Microchip's FREE, integrated toolset for the development of PIC® microcontroller and dsPIC® digital signal controller embedded applications. MPLAB IDE runs as a 32-bit application on MS Windows, is easy to use and includes a host of free software components for fast application development and debugging. MPLAB IDE also serves as a single, unified graphical user interface for Microchip and third party software/hardware development tools.

MPLAB® C18

A full-featured ANSI compliant C compiler for the PIC18F family of 8-bit PIC® microcontrollers. MPLAB C18 is a 32-bit Windows console application as well as a fully integrated component of MPLAB IDE, allowing source level debugging with the MPLAB ICE emulator, the MPLAB ICD 2 debugger and the MPLAB SIM simulator. A full-featured 60-day demo of the MPLAB C18 compiler is available at www.microchip.com.

MPLAB® C30

A fully ANSI-compliant C compiler with standard libraries for the PIC24 microcontroller and dsPIC DSC architectures. Provides efficient software code generation and extensions that allow for excellent support of the hardware, such as interrupts and peripherals. It is fully integrated with the MPLAB IDE for high level, source debugging. MPLAB C30 comes complete with its own assembler, linker and librarian, allowing users to write and link mixed mode C and assembly programs into a single executable file. A full-featured 60-day demo of the MPLAB C30 compiler is available at www.microchip.com.

Application Maestro™ Software

A stand-alone module tool to configure and incorporate a range of pre-written firmware modules into PIC® microcontroller applications. Using a graphic interface, select one or more modules, then configure the parameters listed. The Application Maestro software generates code that can be incorporated into the application project, using MPLAB® IDE or any compatible development environment.

MPLAB® Visual Device Initializer

MPLAB VDI graphically configures the microprocessor and peripherals, and when complete, generates code usable in assembly language or C programs. MPLAB VDI does extensive error checking on assignments and settings, and generates an error message if there are conflicts on any resources.

dsPIC® Digital Signal Controller Evaluation Software Tools

Digital Filter Design Lite

Part Number: SW300001-LT

This software package provides a subset of the functionality in the full version of Digital Filter Design. The differences between the two versions is the number of supported FIR and IIR taps and the presence of MATLAB support.

dsPIC30F Acoustic Echo Cancellation Library (Eval Copy)

Part Number: SW300060-EVAL

This library provides a function to eliminate echo generated in the acoustic path between a speaker and a microphone. Useful for speech and telephony applications in which a speaker and a microphone are located in close proximity to each other, and susceptible to signals propagating from the speaker to the microphone result in a perceptible and distracting echo effect.

dsPIC30F Line Echo Cancellation Library (Eval Copy)

Part Number: SW300080-EVAL

The dsPIC30F Line Echo Cancellation Library provides a function to eliminate echo generated in telephone or digital network components, such as telephone hybrids. Line echo cancellation is applicable in telephony applications that involve transmitting and receiving signals through a telephone hybrid and is especially suitable for: hands-free cell phone kits, speaker phones, intercoms, teleconferencing systems and voice-over-internet protocol. This library is fully compliant with the ITU-T G.168 standard for Digital Network Echo Cancellers.

dsPIC30F Symmetric Key Embedded Encryption Library (Eval Copy)

Part Number: SW300050-EVAL

A reliable security solution for embedded applications built on the dsPIC30F platform. The Symmetric Key Embedded Encryption library has the following features: Hash Functions, Symmetric-Key Encryption/Decryption Functions and Random Number Generator Functions.

dsPIC30F Asymmetric Key Embedded Encryption Library (Eval Copy)

Part Number: SW300055-EVAL

A reliable security solution for embedded applications built on the dsPIC30F platform. The Asymmetric-Key Embedded Encryption library implements these functions: Public Key Encryption/Decryption Functions, Key Agreement Protocol, Signing and Verification, Hash and Message Digest Functions and Random Number Generator (RNG).

dsPIC30F Speech Recognition Library (Eval Copy)

Part Number: SW300010-EVAL

This library provides voice control of embedded applications that require an alternative user interface. With a vocabulary of up to 100 words, the Speech Recognition Library allows users to control their application vocally. This library is an ideal front end for hands-free products. The library has very modest memory and processing requirements and is targeted for the dsPIC30F5011/5013 and dsPIC30F6012/6014 processors.

dsPIC30F Noise Suppression Library (Eval Copy)

Part Number: SW300040-EVAL

Provides a function to suppress the effect of noise interfering with a speech signal. This function is useful for microphone-based applications that have a potential for incoming speech corruption from ambient noise. It is especially suitable for systems where an acoustically isolated noise reference is not available.

dsPIC30F V.32 (non-trellis) Soft Modem Library (Eval Copy)

Part Number: SW300003-EVAL

The Soft Modem library is composed of ITU-T compliant algorithms for V.21, V.22, V.22bis, V.23, V.32 and V.32bis modem recommendations. Bell standard 103 is also included in this library.

dsPIC30F Speech Encoding/Decoding Library (Eval Copy)

Part Number: SW300070-EVAL

The Speech Encoding/Decoding Library provides toll-quality voice compression and decompression to help generate speech-based embedded applications using the dsPIC30F family of digital signal controllers.

Low Cost Tool and Product Cross Reference Table

Part Number	Description	Products Supported
Getting Started Products		
DM183022	PICDEM™ HPC Explorer Board	PIC18F family
DM240001	Explorer 16 Demo Board	
DV164101	PICkit™ 1 Flash Starter Kit	PIC12F629, 675, PIC16F630, 676
DV164120	PICkit™ 2 Starter Kit	
DM164120-1	PICkit™ 2 Low Pin Count Demo Board	
AC164120	Signal Analysis PICtail™ Daughter Board	
AC163021	PIC10F Hobby Kit	
DV243002	SEEVAL® 32 Serial EEPROM Developer's Kit	All Serial EEPROMS, 24XX, 93XX, 25XX series
DM303006	KEELOQ® Evaluation Kit II	
Linear Products		
MCP6S22DM-PIC18F	MCP6S22 PGA PICtail™ Demo Board	MCP6S22/92
MCP6S2XEV	MCP6S2X PGA Eval Board	MCP6S2X
MCP6SX2DM-PCTLPD	MCP6SX2 PGA Photodiode PICtail™ Demo Board	MCP6S22/92
MCP6SX2DM-PCTLTH	MCP6SX2 PGA Thermistor PICtail™ Demo Board	MCP6S22/92
Interface Products		
DM163007	PICDEM™ CAN-LIN 1 Demo Board	68L/84L PIC18CXX8 family
DM163011	PICDEM™ CAN-LIN 2 Demo Board	28L/40L PIC18FXX8, PIC18FX8X family
DM163015	PICDEM™ CAN-LIN 3 Demo Board	64L/80L PIC18FXX8X family
DM163028	PICDEM™ LCD Demo Board	64L/80L PIC18FXX90, 28L/40L PIC16F91X family
MA160011	PICDEM™ LCD Daughter Board	
DM163025	PICDEM™ FS USB Demo/Eval Board	
DM163010	PICDEM™ USB Demo Board	PIC16C7X5
AC163002	PICDEM™ MSC 1 Infrared (IR) Driver Daughter Board (requires DM163012)	
DM163027-2	PICDEM™ Z Demo Kit	
DV164102	rPICkit Dev Kit 1	
MCP2140DM-TMPSNS	MCP2140 IrDA® Wireless Temp. Demo Board	MCP2140
MCP212XEV-DB	MCP212X Developer's Daughter Board	
DM163008	MCP2120/2150 Infrared Developer's Kit	MCP2120, MCP2150
MCP215XDM	MCP215X Data Logger Demo Board	MCP2150/55
MCP215X/40EV-DB	MCP215X/40 Developer's Daughter Board	MCP2140, MCP2150/55
MCP23X08EV	MCP23X08 8-bit GPIO Expander Eval Board	MCP23008, MCP23S08
DV250501	MCP250XX CAN I/O Expanders Developer's Kit	MCP25020, MCP25025, MCP25050, MCP25055
DV251001	MCP2510/2515 CAN Developer's Kit	MCP2510, MCP2515
MCP2515DM-PCTL	MCP2515 CAN Controller PICtail™ Demo Board	MCP2515
Mixed Signal Products		
DV3201A	MCP3XXX Single-Dual ADC MXDEV® Daughter Board	MCP3001/02, MCP3201/02
DV3204A	MCP3204/08 MXDEV® Daughter Board	MCP3204, MCP3208
MCP3221DM-PCTL	MCP3221 12-bit A/D PICtail Demo Board	MCP3221
MCP3551DM-PCTL	MCP3551 Delta-Sigma ADC Demo Board	MCP3551
MCP3905EV	MCP3905 Energy Meter Eval Board	MCP3905
MCP3905RD-PM1	MCP3905 Energy Meter Ref Design	MCP3905
MCP402XEV	MCP402X Non-Volatile Digital Potentiometer Eval Board	MCP4021, MCP4022, MCP4023, MCP4024
DV42XXX	MCP42XXX Digital Pot Eval Board	MCP42010, MCP42050, MCP42100
MXSIGDM	Mixed-Signal PICtail™ Demo Board	TX132X, MCP330X, MCP320X, MCP494X, MCP3221, MCP3201, MCP1525, MCP1541
DVMCPA	MXDEV Analog Evaluation System	MCP3001/02, MCP3004/08, MCP3201/02, MCP3204/08
AC163003	PICDEM™ MSC1 Delta-Sigma ADC Daughter Board	PIC16C781/782
AC163004	PICDEM™ MSC1 Flow Rate Sensor Daughter Board	PIC16C782
DM163012	PICDEM™ MSC1 Mixed Signal Controller Demo Board	PIC16C781/782

Part Number	Description	Products Supported
Power Management Products		
MCP1252DM-BKLT	MCP1252 Charge Pump Backlight Demo Board	MCP1252
MCP1601EV	MCP1601 Buck Regulator Eval Board	MCP1601
MCP1612EV	MCP1612 Synchronous Buck Regulator Eval Board	MCP1612
MCP1630RD-DDBK1	MCP1630 +12V in Dual Output Buck Converter Ref Design	MCP1630
MCP1630DM-DDBK1	MCP1630 1A Bias Supply Demo Board	MCP1630
MCP1630RD-LIC1	MCP1630 Li-Ion Multi Bay Battery Charger Ref Design	MCP1630
MCP1630RD-LIC2	MCP1630 Low Cost Li-Ion Battery Charger Ref Design	MCP1630
MCP1630DM-NMC1	MCP1630 NiMH Battery Charger Demo Board	MCP1630
MCP1650DM-LED1	MCP1650 3W White LED Demo Board	MCP1650
MCP1650DM-LED2	MCP1650 Multiple White LED Demo Board	MCP1650
MCP1650EV	MCP1650 Boost Controller Eval Board	MCP1650
MCP1650DM-DDSC1	MCP1650 SEPIC Power Supply Demo Board	MCP1650
MCP1726EV	MCP1726 1A LDO Eval Board	MCP1726
MCP7382XEV	MCP7382X Li-Ion Battery Charger Eval Board	MCP7382X
MCP73831EV	MCP73831 Eval Kit	MCP73831
MCP7384XEV	MCP7384X Li-Ion Battery Charger Eval Board	MCP7384X
MCP73855EV	MCP73855 Li-Ion Battery Charger Eval Board	MCP73855
MCP7386XEV	MCP7386X Li-Ion Battery Charger Eval Board	MCP7386X
TC115EV	TC115 PFM/PWM Boost Converter Eval Board	TC115
TC1016/17EV	TC1016/17 LDO Linear Regulator Eval Board	TC1016/17
TC1303BDM-DDBK1	TC1303B Demo Board	TC1303B
DM163026	PICDEM™ Low Power Solutions Demo Board	
AC163001	PICDEM™ MSC1 Switch Mode Power Supply (SMPS) Daughter Board	PIC16C781/782
Thermal Management Products		
MCP9700DM-PCTL	MCP9700 Temperature-to-Voltage Converter PICtail™ Demo Board	MCP9700
MCP9800DM-PCTL	MCP9800 Temperature Sensor PICtail™ Demo Board	MCP9800
MCP9800DM-DL	MCP9800 Temperature Data Logger Demo Board	MCP9800
TC72DM-PIC18F	TC72 Digital Temperature Sensor PICtail™ Demo Board	TC72
TC74DEMO	TC74 Serial Digital Thermal Sensor Demo Board	TC74
TC77DM-PIC18F	TC77 Thermal Sensor PICtail™ Demo Board	TC77
TC642DEMO	TC64X/64XB Fan Speed Controller Demo Board	TC642
TC642EV	TC64X/64XB Fan Speed Controller Eval Board	TC642, 642B, 646, 646B, 647, 647B, 648, 648B, 649, 649B
TC650DEMO	TC650 Fan Controller Demo Board	TC650
TC652DEMO	TC652 Fan Controller Demo Board	TC652
TC1047ADM-PIC18F	TC1047A Temperature-to-Voltage Converter PICtail™ Demo Board	TC1047A
Demonstration Boards		
DM300017	dsPICDEM™ 28-Pin Starter Demo Board	
DM300019	dsPICDEM™ 80-Pin Starter Dev Board	
DM300018	dsPICDEM™ 2 Demo Board	
DM163001	PICDEM™ 1 Demo Board	PIC16C5X, 55X, 62X, CE62X, 71, 710, 711, 715, 770, 771, 83, 84 and PIC17C42, 43, 44
DM163022	PICDEM™ 2 Plus Demo Board	PIC16C62, 63, 64, 65, 66, 67, 72, 73, 74, 76, 77, 87X, 773, 774 and PIC18CXX2, 642, 662 and PIC18FXXX
DM163003	PICDEM™ 3 Demo Board	PIC16C923/24
DM163014	PICDEM™ 4 Demo Board	PIC12F629, 675, PIC16F630, 676, 684, 627A, 628A, 648A, 818, 819, 87, 88, PIC18F1220, 1320
DM163029	PICDEM™ Mechatronics Demo Board	

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