

PICDEM™ Mechatronics Demonstration Kit

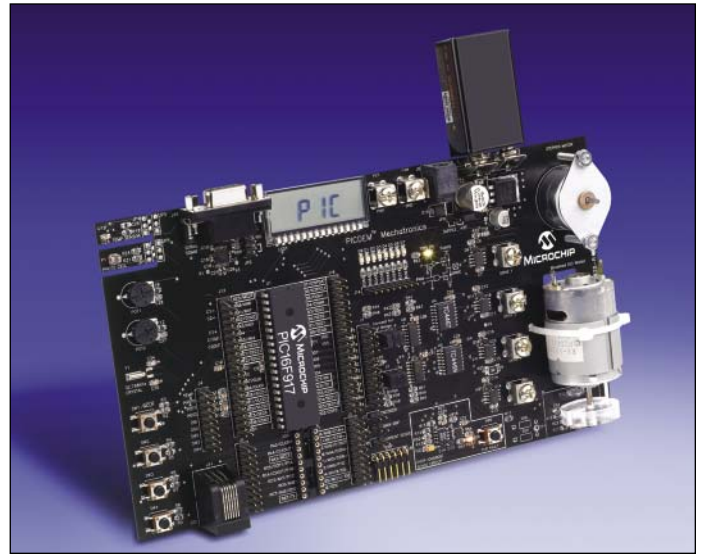
Summary

The PICDEM™ Mechatronics demonstration board is an easy-to-use mechatronics development and demonstration platform. Mechatronics refers to implementing intelligent control in a mechanical system. Learn how to use PIC® microcontrollers to enhance or replace a mechanical design.

The demonstration kit takes a hands-on approach to learning about mechatronics. Jumper wires are provided in the kit which allow the user to experiment with 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 which include firmware, connection diagrams (for the wire jumpers) and schematics.

Features

- PIC16F917 MCU with 8 MHz internal oscillator and on-board LCD module (in addition to other standard PIC MCU peripherals)
- Displays: 8 LEDs and LCD (pre-connected to the LCD module)
- Stepper motor and brushed DC motors
- Analog out temperature sensor (Microchip TC1047A)
- Light sensor
- 32.768 kHz crystal for time generation
- Human inputs: 4 tactile switches, 2 potentiometers
- Over-current protection circuit
- ICSP™ programming capability and MPLAB® ICD 2 interface connector
- RS-232 interface
- 5V regulator
- Optical speed sensor for brushed DC motor
- 20-pin socket (compatible with all 8-, 14- and 20-pin Flash devices)
- Nine example projects including these topics:
 - Switch debouncing and lighting an LED
 - How to use comparators
 - How to read an analog sensor (temperature and light)
 - Brushed DC motor speed control
 - Speed feedback: Back EMF and optical
 - Stepper motor control: single-stepping, half-stepping and micro-stepping
 - How to use the USART for RS-232 communication
 - How to use the Capture, Compare and PWM module



Mechatronics Kit Contents

- PICDEM Mechatronics Board populated with the PIC16F917
- Sample kit including the PIC16F690 and PIC12F509
- Microchip screwdriver
- 10 wire jumpers
- PICDEM Mechatronics CD-ROM
 - User's Guide
 - Project Source Code
 - PIC MCU Communicator GUI (serial interface example)
 - MPLAB IDE software

Required Hardware

- One of the following:
 - MPLAB ICD 2* OR
 - PICkit™ 2 Microcontroller Programmer
- 9-12 VDC power supply**
- Serial Cable

* Microchip part # DV164007 includes the MPLAB ICD 2, 9V power supply and serial cable

** Microchip part # AC162039 recommended



MICROCHIP
Development Systems

Ordering Information

- DM163029: PICDEM™ Mechatronics Demonstration Kit

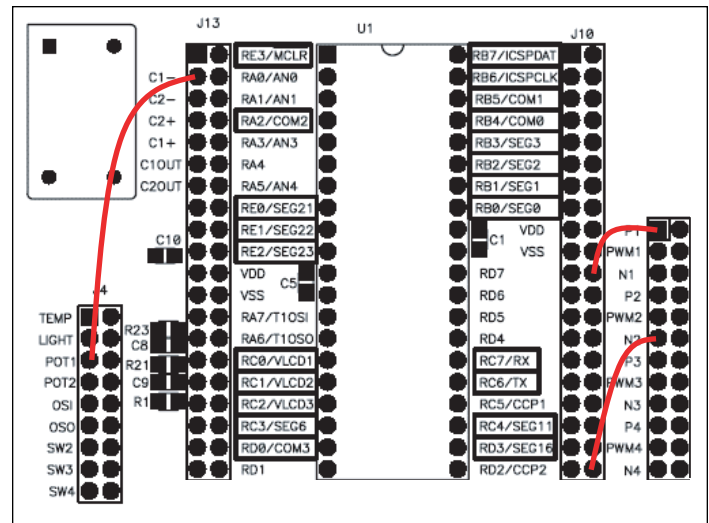
Host System Requirements

- PC-compatible system with an Intel Pentium® class or higher processor, or equivalent
- A minimum of 32 MB RAM, 128 MB recommended
- A minimum of 85 MB available hard disk space
- Microsoft Windows® 98 Second Edition, Windows ME, Windows 2000 or Windows XP
- CD-ROM drive
- One serial port

Customer Support

Microchip maintains a worldwide network of distributors, representatives, local sales offices, Field Application Engineers and Corporate Application Engineers. Visit our web site at www.microchip.com for additional product information and sales office locations.

Example Connection Diagram for Project



Development Tools from Microchip

| | |
|---------------------------------|--|
| MPLAB® IDE | Integrated Development Environment (IDE) |
| MPASM™ Assembler | Universal PICmicro® Macro-Assembler |
| MPLINK™ Linker/MPLIB™ Librarian | Linker/Librarian |
| MPLAB SIM | Simulator Software Simulator |
| MPLAB C18 | C Compiler for PIC18CXX MCUs |
| MPLAB C30 | C Compiler for dsPIC30F MCUs |
| PICKit™ 1/PICKit 2 | PICKit 1 Flash Starter Kit/PICKit 2 Starter Kit |
| MPLAB ICD 2 | In-Circuit Debugger |
| MPLAB ICE 2000 | Full-featured Modular In-Circuit Emulator for PIC12, PIC16 and PIC18 MCUs |
| MPLAB ICE 4000 | Full-featured Modular In-Circuit Emulator for PIC18 and dsPIC MCUs |
| PICSTART® Plus Programmer | Entry-level Development Kit with Programmer |
| MPLAB PM3 Device Programmer | Full-featured, Modular Device Programmer |
| KEELOQ® Evaluation Kit | Encoder/Decoder Evaluator |
| microID® Developer's Kit | 125 kHz and 13.56 MHz RFID Development Tools |
| Analog & Interface Boards | A variety of demonstration and evaluation boards for interface, linear, mixed-signal, power management and thermal management functions. |

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