



MICROCHIP

PICDEM™ 2 PLUS USER'S GUIDE

Chapter 1. Introduction

1.1 WELCOME

Thank you for purchasing the PICDEM 2 Plus demonstration board from Microchip Technology Incorporated. The PICDEM 2 Plus is a simple board which demonstrates the capabilities of the 18, 28 and 40-pin PIC16 and PIC18 devices.

The PICDEM 2 Plus can be used stand-alone with a programmed part, with an in-circuit emulator (e.g., MPLAB® ICE) or with an in-circuit debugger (e.g., MPLAB ICD 2). Sample programs are provided to demonstrate the unique features of the supported devices.

The PICDEM 2 Plus Kit comes with the following:

1. PICDEM 2 Plus Demonstration Board (Figure 1-1)
2. Sample devices
3. CD-ROM, which contains:
 - a) Sample programs
 - b) PICDEM 2 Plus Demonstration Board User's Guide
 - c) Application Notes

If you are missing any part of the kit, please contact your nearest Microchip sales office listed in the back of this publication for help.

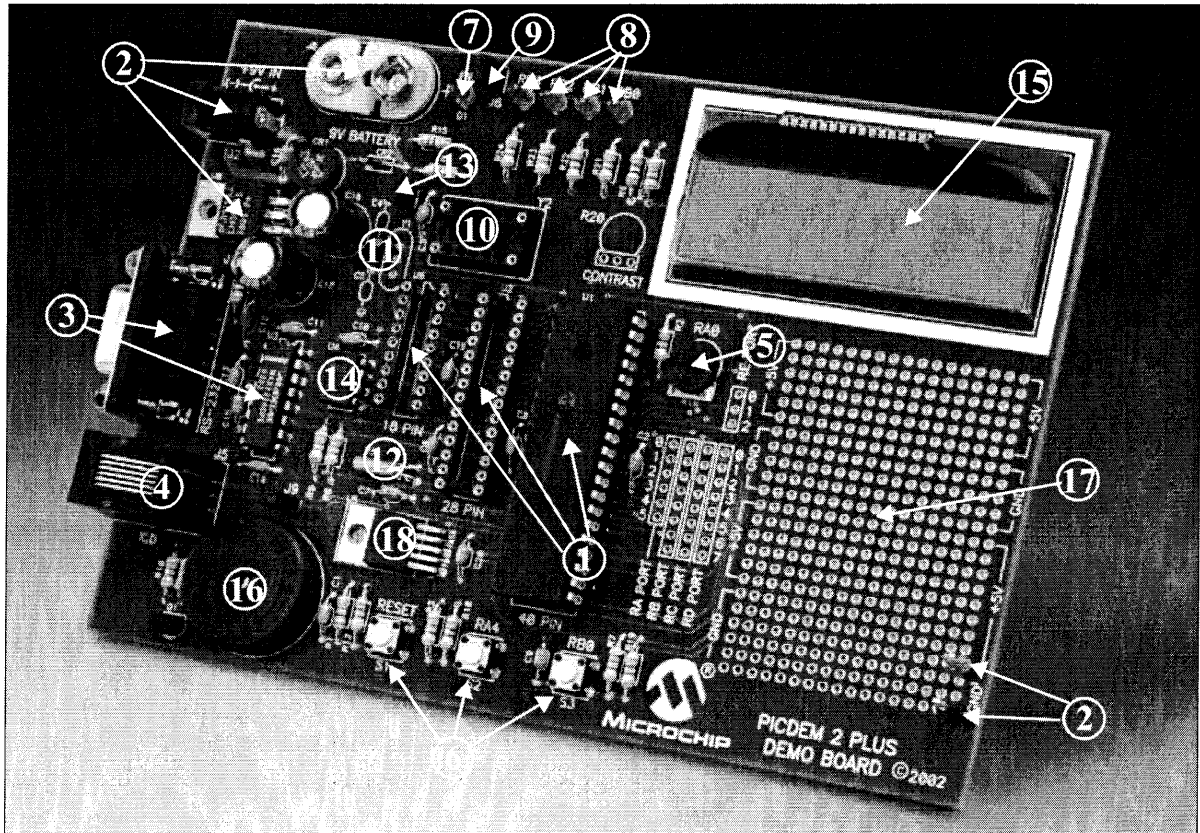
PICDEM™ 2 Plus User's Guide

1.2 PICDEM 2 PLUS DEMONSTRATION BOARD

The PICDEM 2 Plus demonstration board has the following hardware features:

1. 18, 28 and 40-pin DIP sockets. (Although three sockets are provided, only one device may be used at a time.)
2. On-board +5V regulator for direct input from 9V, 100 mA AC/DC wall adapter or 9V battery, or hooks for a +5V, 100 mA regulated DC supply.
3. RS-232 socket and associated hardware for direct connection to an RS-232 interface.
4. In-Circuit Debugger (ICD) connector.
5. 5 K Ω pot for devices with analog inputs.
6. Three push button switches for external stimulus and Reset.
7. Green power-on indicator LED.
8. Four red LEDs connected to PORTB.
9. Jumper J6 to disconnect LEDs from PORTB.
10. 4 MHz canned crystal oscillator.
11. Unpopulated holes provided for crystal connection.
12. 32.768 kHz crystal for Timer1 clock operation.
13. Jumper J7 to disconnect on-board RC oscillator (approximately 2 MHz).
14. 32K x 8 Serial EEPROM.
15. LCD display.
16. Piezo buzzer.
17. Prototype area for user hardware.
18. Microchip TC74 thermal sensor.

FIGURE 1-1: PICDEM 2 PLUS HARDWARE



1.3 SAMPLE DEVICES

Two FLASH devices are included. The device types may change, but will generally include PIC16 and PIC18 40-pin DIP devices.

1.4 SAMPLE PROGRAMS

The PICDEM 2 Plus Kit includes a CD-ROM with sample demonstration programs. These programs may be used with the included sample devices, with an In-Circuit Emulator (ICE) or with an In-Circuit Debugger (ICD). For each type of device (PIC16 or PIC18), demo source code (several ASM files) and compiled code (one Hex file) are provided.

PICDEM™ 2 Plus User's Guide

1.5 PICDEM 2 PLUS USER'S GUIDE

This document describes the PICDEM 2 Plus demonstration board, tutorial and demonstration software. Detailed information on individual microcontrollers may be found in the device's respective data sheet. Detailed information on In-Circuit Emulator (ICE) or In-Circuit Debugger (ICD) systems may be found in the respective tool's user guide.

Chapter 1: Introduction – This chapter introduces the PICDEM 2 Plus and provides a brief description of the hardware.

Chapter 2: Getting Started – This chapter goes through a basic step-by-step process for getting your PICDEM 2 Plus up and running as a stand-alone board or with an ICE or ICD.

Chapter 3: Tutorial – This chapter provides a detailed description of the tutorial program.

Appendix A: Hardware Description: This appendix describes in detail the hardware of the PICDEM 2 Plus board.

1.6 REFERENCE DOCUMENTS

Reference Documents may be obtained by contacting your nearest Microchip sales office (listed in the back of this document) or by downloading via the Microchip web site (www.microchip.com).

- Individual Data Sheets and Reference Manuals:
 - *PIC16F87X Data Sheet* (DS30292)
 - *PIC18FXX2 Data Sheet* (DS39564)
 - *PICmicro® Mid-Range MCU Family Reference Manual* (DS33023)
 - *PICmicro® 18C MCU Family Reference Manual* (DS39500)
 - *TC74 Data Sheet* (DS21462)
- *MPLAB® IDE Simulator, Editor User's Guide* (DS51025)
- *MPASM™ User's Guide with MPLINK™ Linker and MPLIB™ Librarian* (DS33014)
- *PRO MATE® II User's Guide* (DS30082)
- *PICSTART® Plus User's Guide* (DS51028)
- *MPLAB® ICE User's Guide* (DS51159)
- *MPLAB® ICD 2 Quick Start Guide* (DS51268)
- *Microchip Third Party Guide* (DS00104)