Using MPLAB® ICD 2

1 Install the Latest Software

NOTE: Do not connect the RS-232 or USB cable until after the MPLAB IDE software is installed.
Install the MPLAB IDE software onto your PC using the MPLAB IDE CD-ROM or download the software from the Development Tools page of the Microchip web site (www.microchip.com). DO NOT run the MPLAB IDE program at this time.

2 Configure PC Communications

For RS-232
1. Connect MPLAB ICD 2 to a PC COM port via an RS-232 cable.
2. Select the COM port to set up for communication, i.e., Control Panel→System→Hardware→Device Manager→Ports
3. Click the COM port Settings tab and select “Flow Control” to “Hardware.”
4. Click the Advanced button. In the Advanced Settings dialog, turn off (uncheck) “Use FIFO buffers.”

For USB
IMPORTANT: Do not allow Windows® OS to pick a USB driver. For proper driver installation, follow the HTML installation instructions found in C:\Program Files\Microchip\MPLAB IDE\10.1\ICD2\Drivers. The HTML file name is “icd2com.htm” for Windows 98, “icd2comme.htm” for Windows ME and “icd2com.htm” for Windows 2000/XP.
1. Connect MPLAB ICD 2 to a PC USB port via a USB cable.
2. Follow the instructions in the HTML file mentioned above to install the drivers.

3 Connect Power and Target Application

Target Powered from MPLAB ICD 2 (<200 mA, 5V only to Target)
RS-232
PC Power Supply
Target App
Target Powered from Power Supply
Target App
Power Supply
USB
Target App
Power Supply
Univ Prog Module
Programming with the Universal Programming Module (AC162049)
RS-232
PC Power Supply
Target App
Power Supply
USB
Target App
Power Supply
Univ Prog Module

Legend:
- PC Interface
- ICD Interface
- Power and Comm. from ICD 2
- from Power Supply

4 Configure MPLAB IDE

Open the MPLAB IDE program and configure the MPLAB IDE software to work properly with MPLAB ICD 2:
1. For debugging, select Debug→Select Tool→MPLAB ICD 2. For programming, select Programmer→Select Programmer→MPLAB ICD 2. MPLAB ICD 2 should not be selected as a programmer and debugger simultaneously.
2. To set the communications port for MPLAB ICD 2, select Debugger/Programmer→Settings→Communication tab and choose a port (USB, COM1, COM2, etc.). Click Apply.
3. Select the Power tab. If you are supplying power directly to the target application, verify the Power target circuit from MPLAB ICD 2 check box is empty. If you want to power the target circuit from the MPLAB ICD 2, select the check box. Click OK.

Additional Information

MPLAB ICD 2 RJ-12 Jack Pinout

Additional Resources

Guidelines
- Oscillator – must be operational for MPLAB ICD 2 debug operations.
- Power – must be connected to target. Internal buffers on PIC24 and PIC32 are connected to MPLAB ICD 2’s Vcc when MPLAB ICD 2 is the target. When the target has its own power supply, the target’s Vcc is connected to these buffers. This also provides level translation (down to 5V) for low voltage operation.
- WD– Disable the Watchdog Timer while debugging.
- Code Protect – Disable all code protection while debugging.
- Table Read Protect – Disable all table read protection while debugging.
- Reserved Resources – Avoid reserved program memory and file registers used by the debugger. See Reserved Resources section below.
- MPU – Do not allow Low Voltage Programming.
- PLL – Switching to PLL oscillation requires power down of target.
- MCLR and Reset – If the PICmicro® MCUs have these Analog power pins, they also must be connected to the proper power and ground.
- Ensure that configuration bits are correctly programmed, especially for the oscillator.

Reserved Resources (See on-line help or readme for specifics)
MPLAB ICD 2 has the following restrictions and reserves certain on-chip resources for debugging. After the target PICmicro MCU is programmed to run without MPLAB ICD 2 in your application, none of these restrictions apply:
- MCLR/Vpp is shared for programming and reset control.
- Low-voltage ICP programming (LVP) must be disabled.
- PIC24 and PIC32 are reserved for programming and in-circuit debugging. Usually these are the RB6 and RB7 pins.
- A few general purpose file registers are reserved.
- One stack level is reserved for the PIC24FXXX and PIC18FXXX MCU families. Two stack levels are reserved for the PIC18FXXX MCU family.
- An area in upper program memory is reserved.
- Shadow registers are used in the PIC18FXXX MCU’s