MPLAB® ICD 4
In-Circuit Debugger/Programmer

Summary

The MPLAB® ICD 4 In-Circuit Debugger/Programmer system is Microchip's fastest, cost-effective debugging and programming tool for PIC® Microcontrollers (MCUs) and dsPIC® Digital Signal Controllers (DSCs). It debugs and programs with the powerful, yet easy-to-use graphical user interface of MPLAB X Integrated Development Environment (IDE). The MPLAB ICD 4 probe is connected to your PC using a high-speed USB 2.0 interface and comes with a standard Microchip debugging connector.



As escalating microcontroller speeds quickly outpace traditional in-circuit emulating capabilities, the MPLAB ICD 4 provides significant performance enhancements for you. Programming times and debugging operations are up to twice as fast compared to both the MPLAB ICD 3 and the MPLAB REAL ICE™ In-Circuit Emulator. This speed is provided by a 300 MHz 32-bit MCU with 2 MB of RAM and a high-speed FPGA to yield faster communications, downloads and debugging.

Advantages

- Full-speed real-time emulation
  - Designed to support high-speed processors running at maximum speeds
  - Debug applications on your own hardware in real time
- Ruggedized interface
  - Protection circuitries are added to the probe drivers to guard from power surges from the target
  - V_{DD} and V_{PP} voltage monitors protect against over-voltage conditions/all lines have over-current protection
  - Safely power up to 1A with an optional power supply
- Microchip standard connectivity plus JTAG
  - Comes with a standard Microchip debugging connector which is compatible with the MPLAB ICD 3 or MPLAB REAL ICE In-Circuit Emulator systems and has the option to use JTAG
- Compatibility
  - Supports all MPLAB ICD 3 headers
- Portable, USB-powered and RoHS-compliant
  - Housed in a durable, black case with a brushed aluminum top and accented with an LED strip to indicate debugging status
  - Powered by a USB port, no external power required
  - CE- and RoHS-compliant
- Wide voltage emulation
  - Supports target supply voltages from 1.20V to 5.5V
- High-speed programming
  - Two times faster than MPLAB ICD 3
  - Adjustable programming speed
- Test interface module
  - Includes a loopback module to test debugging port and cable
- Ease of maintenance and feature upgrade
  - Add new device support and features by installing the latest version of MPLAB X IDE, which is available as a free download at www.microchip.com/mplabx
  - Field-upgradeable through an MPLAB X IDE firmware download
- Cost effective
  - Features and performance at a fraction of the cost of comparable emulator systems
- Powerful debugging with MPLAB X IDE
  - Supports multiple breakpoints, stopwatch and source code file debugging
  - Selectable pull-up/pull-down option to the target interface

Products Supported

The MPLAB ICD 4 In-Circuit Debugger/Programmer supports most PIC MCUs and dsPIC DSCs, and firmware is continually being upgraded to add support for new devices. For the most current list of supported parts, review the latest release notes located in MPLAB X IDE. As new device firmware is released, it can be downloaded free of charge at www.microchip.com.

Host System Requirements

- Available USB port
- Microsoft Windows® 7 or later, Mac OSX® and Linux® operating systems

Ordering Information

Part Number	Description	Availability
DV164045	**MPLAB® ICD 4 In-Circuit Debugger Kit** This kit includes: • One MPLAB ICD 4 In-Circuit Debugger module • One USB cable • One 6" debugging modular cable • One interface test module 	Now

Other Development Tools from Microchip

Part Number	Development Tool	Description
AC002014	9V Wall Mount Power Supply	9V, 110-220V universal power supply with adjustable plugs suitable for electrical outlets in most countries in North America, Europe and Asia.
SW006021-SUB	MPLAB® XC8 C Compiler PRO Subscription License	30-day C Compiler License for 8-bit PIC® MCUs
SW006022-SUB	MPLAB XC16 C Compiler PRO Subscription License	30-day C Compiler License for 16-bit PIC MCUs and dsPIC® DSCs
SW006023-SUB	MPLAB XC32 C Compiler PRO Subscription License	30-day C/C++ Compiler License for 32-bit PIC MCUs
DM160228	Explorer 8 Development Kit	Full-featured development platform for all 8-bit MCUs
DM164136	Curiosity High Pin Count (HPC) Development Board	8-bit development platform targeted at new users
DM240001-2	Explorer 16/32 Development Board	Full-featured, modular development platform for 16-bit and 32-bit MCUs
DM320103	Curiosity PIC32MX470 Development Board	Full-featured development platform for 32-bit MCUs

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