MPLAB® ICE 4 In-Circuit Emulator, Programmer and Debugger

Summary

The MPLAB® ICE 4 In-Circuit Emulator system boosts productivity with feature-rich programming and debugging for PIC®, dsPIC®, AVR® and SAM devices. It offers a flexible development experience combined with the capabilities to develop power-efficient code, while reducing the debug time. It debugs and programs with the powerful and easy-to-use graphical user interface of MPLAB X Integrated Development Environment (IDE).

MPLAB ICE 4 with a generational leap in hardware capabilities and seamless wireless connectivity options, expands the abilities for programming and debugging. The wireless options allow for isolation from environmental conditions. This system also gives the ability to graphically monitor target applications for power consumption. Correlating code to power consumption leads to more efficient code. Reduce debug time with real-time code profiling using powerful trace capabilities.

Advantages

- Flexible development experience
  - Super Speed USB® 3.0 Host PC interface with USB speed of 5 Gbps
  - High speed USB 2.0 host PC interface
  - Ethernet connectivity speeds up to 100 Mbps
    - Wired/DHCP/APIAP IP addressing
    - Static IP addressing
- Wi-Fi® Access Point Connectivity (Wi-Fi-AP)
  - Connect with SSID of the unit
  - Connect to Wi-Fi using Wireless Station Mode (Wi-Fi-STA)
    - Connect to your home/office network
    - Use Network SSID, security type with username and password
- Isolation from environmental conditions
  - Ethernet connectivity allows for remote debugging
    - Suitable for Industrial based application areas to monitor targets and systems over long distance
    - Excellent for automotive based under the hood type applications
    - Convenient for troubleshooting customer's target application in labs
  - Wi-Fi connectivity allows for isolated debugging
    - Isolation for power supplies used in industrial motor control applications
    - Isolate from power mains when debugging consumer appliances
- An effective combination in an CI/CD system
  - MPLAB ICE 4 hardware can be used for continuous integration/continuous delivery over Ethernet using hardware in the loop
  - Use CI/CD wizard to setup for Jenkins or Docker on the latest version of MPLAB X IDE v6.00
- Write power-efficient code
  - Graphically monitor how power consumption correlates to code using power debugging functionality
  - Monitor power of the full system or component using power monitoring functionality
  - Two independent current sensing channels to measure and optimize the target application power consumption
  - Interfaces with MPLAB Data Visualizer
- Reduce debug time
  - Real-time code profiling using SAM ITM/SWO and Instruction Trace methods
  - Choose from many debugging and programming interface options
  - Out-of-the-box connectivity options for legacy target connections using adapter boards
  - A wide target voltage 1.2V to 5.5V
- Professional grade safety features for enhanced productivity
  - Powered by 9V DC wall-mount power supply

- Safely power up to 1A of power to a target application
- Ruggedized with protection circuitries to the probe drivers to guard from voltage transients from the target
- V_{DD} and V_{PP} voltage monitors protect against overvoltage conditions/all lines have over-current protection
- Achieve Productivity with Hassle-Free Upgrades and Maintenance
- Download the latest MPLAB X IDE at www.microchip.com/mplabx
- Filed-upgradeable through an MPLAB X IDE firmware download

Products Supported

The MPLAB ICE 4 In-circuit Emulator, Programmer and Debugger supports most PIC, AVR and SAM MCUs, dsPIC DSCs and SAM MPUs, and firmware is continually being updated 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 3.0/2.0 port
- Microsoft Windows® 7 or later, macOS® and Linux®
- MPLAB X IDE version 6.00 or later

Ordering Information

Part Number	Description	Availability
DV244140	MPLAB ICE 4 In-Circuit Emulator, Programmer and Debugger Kit Kit Includes: • One MPLAB ICE 4 In-Circuit Emulator system • One USB cable • One 9V wall-mount power supply • One accessory kit	Now

Other Development Tools from Microchip

Part Number	Development Tool	Description
AC244140	MPLAB ICE 4 Accessory Kit	The Accessory kit gives MPLAB ICE 4 compatibility to legacy target connections. It supports JTAG, SWD, and ICSP protocols in multiple connector formats.
SW006023-3	MPLAB XC32 C/C++ PRO Compiler Workstation License	C/C++ compiler license for 32-bit PIC and SAM MCUs
SW006022-2	MPLAB XC16 PRO Compiler Workstation License	C Compiler License for 16-bit PIC MCUs and dsPIC DSCs

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