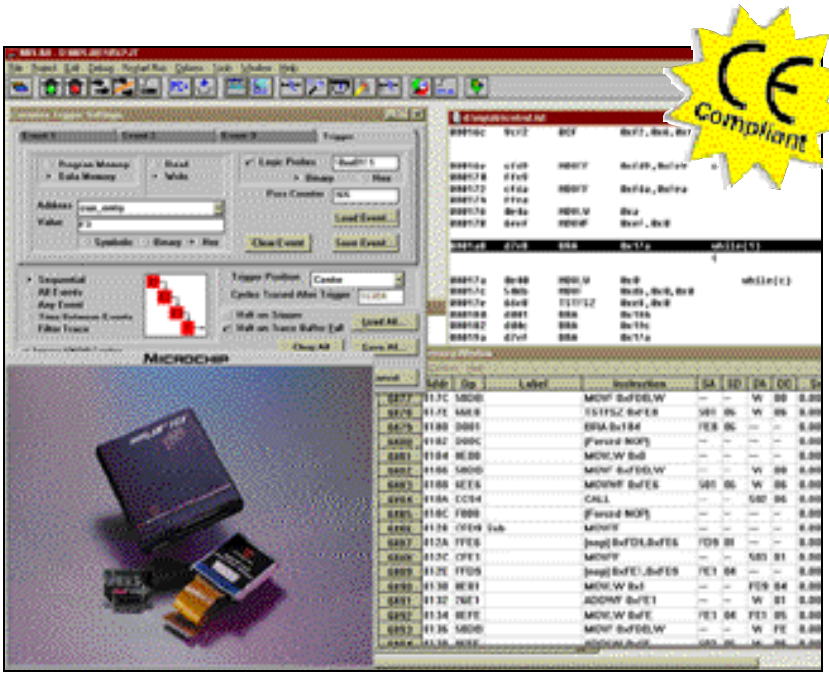
MPLAB®ICE *2000*
In-Circuit Emulator



MPLAB ICE 2000 is a high-performance, real-time In-Circuit Emulator.

MPLAB ICE 2000 is Microchip's Universal In-Circuit Emulator (ICE) for the PICmicro®microcontrollers (MCU). Designed with the user requirements in mind, the MPLAB ICE 2000 system is small, portable and light weight, and offers improved performance and value. For quick hook-up to portable or desktop PCs, MPLAB ICE 2000 easily connects to the parallel (printer) port.

Interchangeable processor modules allow the system to be easily configured to emulate different processors. This modular system consists of an emulator pod, a processor module, a device adapter, and a translation socket. Also included is Microchip's MPLAB Integrated Development Environment (IDE) featuring MPLAB Editor, MPASM™ Universal Assembler, MPLAB SIM Software Simulator, and MPLAB Project Manager with built-in support for high-level languages that supports the Common Object Description format (i.e., MPASM, MPLAB C17, and MPLAB C18).

MPLAB ICE 2000 is a full-featured emulator system providing full-speed emulation, low-voltage operation, 32K by 128-bit trace, and unlimited breakpoints. Complex triggering of the MPLAB ICE 2000 provides sophisticated trace analysis and precision breakpoints. The trace analyzer captures real-time execution addresses, opcodes, and read/writes of external data. It also traces all file register RAM usage showing internal addresses and data values, as well as all accesses to special function registers, including I/O, timers, and peripherals. Triggers and breakpoints can be set on single events, multiple events, and sequences of events. The MPLAB ICE 2000 analyzer is fully transparent and does not require halting the processor to view the trace. In addition, MPLAB ICE 2000 supports code coverage profiling on program memory accesses.

Features:

- High-performance PC-based development system for PICmicro MCUs
- Includes MPLAB IDE
- Assembly and C source level debugging
- Real-time in-circuit emulation to maximum speed of PICmicro MCUs
- Program memory emulation and memory mapping capability up to 64K words
- Real-time trace with up to 32K deep by 128-bit wide buffer
- Low voltage emulation (as low as 2.0 volts)
- Unlimited software breakpoints
- Trigger/break/trace on program address and data; internal register address and data; eight external inputs; bus cycle type
- Complex breakpoints with up to four levels of advanced trigger features, including sequential events, AND/OR events, filtered trace, time between two events, and pass counts
- External trigger input and output allows logic analyzer/scope interface
- Time-stamp trace feature
- Software programmable processor clock (32 kHz to 40 MHz)
- Code coverage
- Parallel port (printer) interface
- Supports all PICmicro package types, including all through-hole and surface-mount packages
- Interchangeable processor modules

MICROCHIP
The Embedded Control Solutions Company®

MPLAB®ICE *2000*

Ordering Information:

ICE 2000 System requires three components to be ordered (Emulator Pod, Processor Module & Device adapter) based on the specific PICmicro® microcontroller (transition socket is optional based on the package used). See the Microchip *Development Systems Ordering Guide* (DS30177) or www.microchip.com for specific part numbers. To order or obtain more information, please contact the Microchip Sales office, Representative or Distributor nearest you.

Host System Requirements:

PC with Pentium® processor or greater
Microsoft® Windows® operating system;
(1) Parallel Port

Customer Support:

Microchip maintains a worldwide network of distributors, representatives, local sales offices, Field Application Engineers, and Corporate Application Engineers. Microchip's internet home page can be reached at: www.microchip.com

System Description:

Features	MPLAB ICE 2000
Real-Time Emulation	Full Speed
Low-Voltage Emulation	2.0 to 5.5 volts
Trace Memory	32K x 128-bit
Break/Trigger on Internal Registers	Yes
Software Breakpoints	Program Address
Complex Break/Trigger	Program Address and Data; on Logic Internal Register Address and Data; Access Type; and 8 External Inputs
Logic Analyzer Trigger	1 External Input and Output
Multi-level Trigger	Yes (four levels)
Pass Counter	Yes
Delay Counter	Yes
Time Stamp	Yes
Programmable Clock	32 kHz to 40 MHz
Logic Probes	Yes
Communications	Parallel (printer) Port
Code Coverage Profiling	Yes

Development Tools from Microchip	
MPLAB®IDE	Integrated Development Environment
MPASM™ Assembler	Universal PICmicro macro-assembler
MPLINK™ Object Linker	Linker
MPLIB™ Object Librarian	Librarian
MPLAB C17	C compiler for PIC17CXXX MCUs
MPLAB C18	C compiler for PIC18CXXX MCUs
C compilers	Sold by third-party vendors (HI-TECH, IAR, CCS)
MPLAB SIM Simulator	Software Simulator
MPLAB ICD	In-circuit Debugger
ICEPIC™ Emulator	Low-cost in-circuit emulator
MPLAB ICE 2000	Full-featured modular in-circuit emulator
PICSTART® Plus Programmer	Entry-level development kit with programmer
PRO MATE® II Device Programmer	Full-featured, modular device programmer
KEELOQ® Evaluation Kit	Encoder/Decoder evaluator
KEELOQ Transponder Evaluation Kit	Transmitter/Transponder evaluator
microID™ Developer's Kit	125 kHz and 13.56 MHz RFID development tools
MCP2510 CAN Developer's KIt	MCP2510 CAN evaluation/development tool
MXDEV™ 1 Analog Evaluation System	Evaluation kit for MCP devices

Americas		Asia/Pacific		Europe	
Atlanta	(770) 640-0034	Australia	61 2 9868 6733	Denmark	45 4420 9895
Austin-Analog	(512) 345-2030	China – Beijing	86-10-85282100	France	33-1-69-53-63-20
Boston	(978) 692-3848	China – Shanghai	86-21-6275-5700	Germany	49-89-627-144 0
Boston-Analog	(978) 371-6400	Hong Kong	852-2-401-1200	Germany-Analog	49 89 895650 0
Chicago	(630) 285-0071	India	91-80-229-0061	Italy	39-039-65791-1
Dallas	(972) 818-7423	Japan	81-45-471- 6166	United Kingdom	44 118 921 5869
Dayton	(937) 291-1654	Korea	82-2-554-7200		
Detroit	(248) 538-2250	Singapore	65-334-8870		As of 02/01/01
Los Angeles	(949) 263-1888	Taiwan	886-2-2717-7175		
Mountain View-Analog	(650) 968-9241				
New York	(631) 273-5305				
San Jose	(408) 436-7950				
Toronto	(905) 673-0699				

MICROCHIP
The Embedded Control Solutions Company®

Microchip Technology Inc.•2355 W. Chandler Blvd.•Chandler, AZ 85224-6199•(480) 792-7200•Fax (480) 792-9210

DS51153D