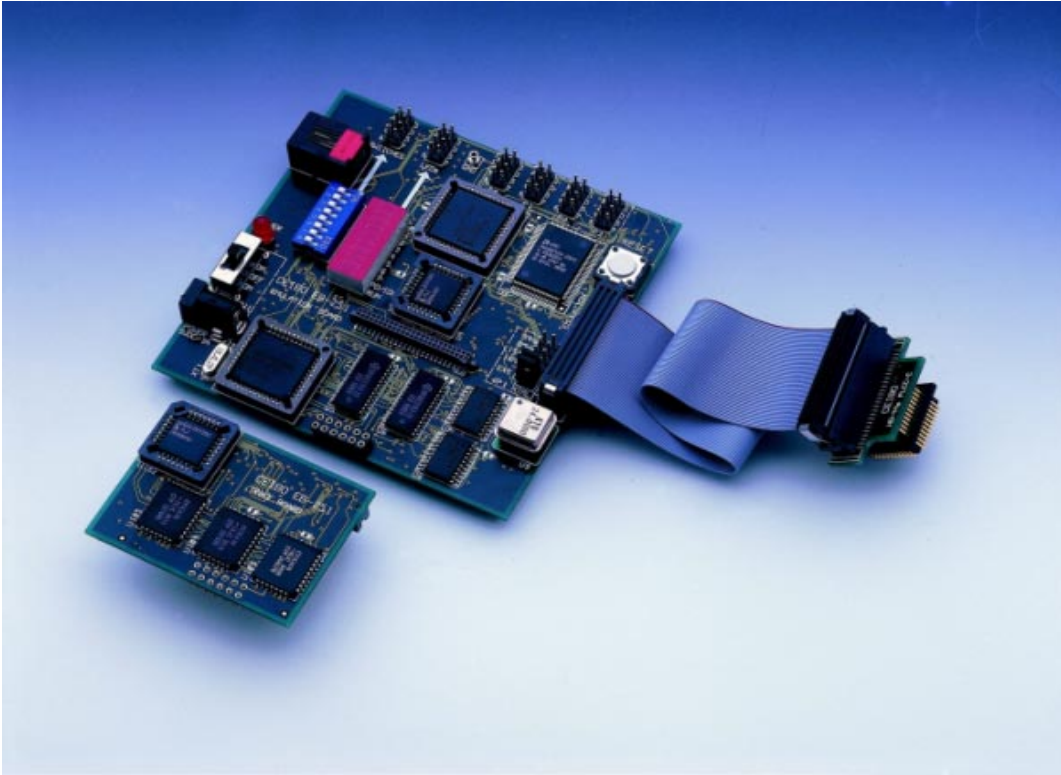


EB-251

Emulation Board



Emulation Board for MCS251

FEATURES

- ***Real-Time and Transparent MCS251 Emulator***
- ***Uses Intel Bond-Out Technology***
- ***Maximum Frequency Support***
- ***Source-Level Debugger for C, PLM and Assembler***
- ***MS-Windows Software***
- ***Support for ROMless and ROMed Microcontrollers***
- ***64K Internal Code Memory***
- ***Memory Mapping Capabilities***
- ***Real-Time Trace "on the Fly"***
- ***64K Software Breakpoints***
- ***Performance Analyzer***
- ***Serially Linked to IBM PC at 115K Baud***

DESCRIPTION

EB-251 is an emulation board dedicated to Intel MCS251 microcontrollers. It is serially linked to a PC or compatible systems and can emulate the microcontroller using either the built-in clock oscillator or any other clock source connected to the microcontroller. The crystal oscillator is placed on a socket and may be replaced to obtain any frequency. The operating frequency range is from the microcontroller f_{min} to f_{max} . The system emulates transparently the microcontroller in both ROMless and ROMed modes using Intel bond-out chips, which are special emulation devices. All the microcontroller resources are available for user applications. The MS-Windows software includes a Source-Level Debugger for C, PLM and Assembler, On-line Assembler and Disassembler, Real-Time Trace, Conditional Breakpoints and many other features. EB-251 provides 64K of code memory, which permits downloading and modifying of user's programs. Program execution can be recorded in real-time in a 2K x 48-bit trace memory. The trace buffer can be viewed in disassembled instructions or high-level language lines embedded with the related instructions without stopping the emulation ("on the fly"). I/O lines are easily accessed and may be connected to the on-board switches and LEDs when trying out a specific idea. The complete system includes the emulation board with trace and 44-pin PLCC emulation header, user software, Source-Level Debugger, User's Manual, RS-232 interface cable and Power Supply.

SPECIFICATIONS

SYSTEM MEMORY

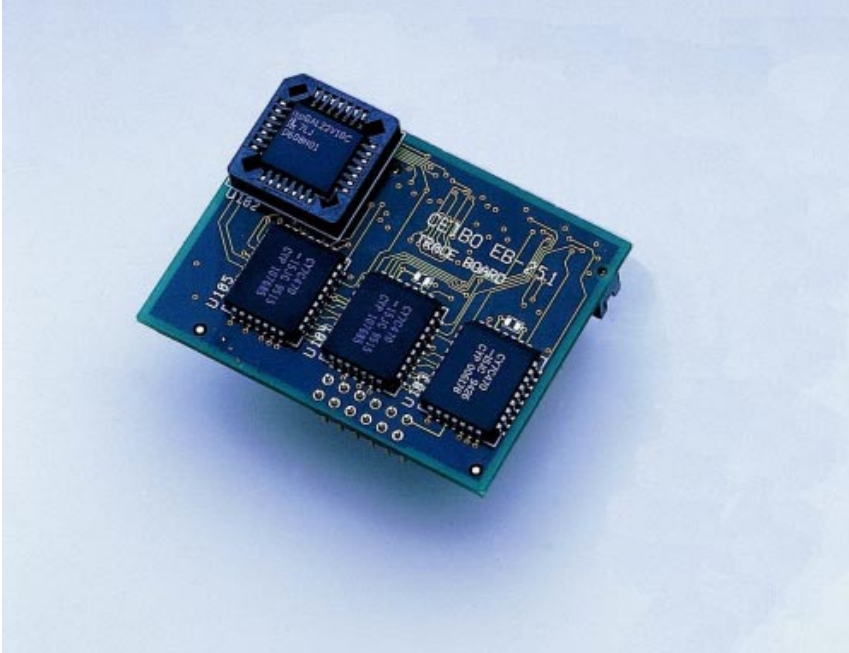
EB-251 provides 64 KByte of internal code memory. This RAM memory permits downloading and modifying of user's programs and variables. Memory from FF0000h may be mapped as belonging to the emulator or a target circuit connected to it in boundaries of 4K, 8K, 16K, 32K and 64K. The remaining code memory of the microcontroller is automatically mapped to the target board.

BREAKPOINTS

Breakpoints allow real-time program execution until an opcode is executed at a specified address. Up to 64K breakpoints are available for addresses of MCS-251 code memory.

REAL-TIME TRACE

Program execution can be recorded in a 2K x 48-bit buffer. The trace is real-time and can be displayed without stopping the emulation (trace "on the fly").



Trace Board

FREQUENCY

The system includes a crystal oscillator able to support clock frequencies of 16MHz, 14.7456MHz, 8MHz and 4MHz.

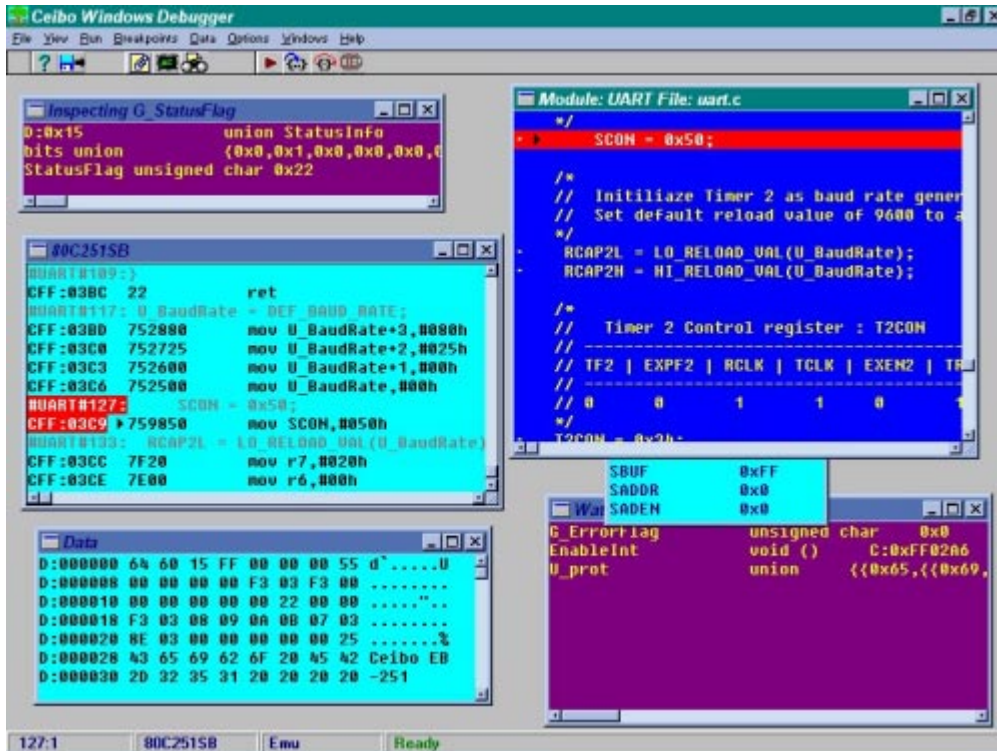
This Crystal oscillator is placed on a socket and may be replaced to obtain any frequency. The operating frequency range is from the microcontroller fmin to 24MHz or higher.

SUPPORTED MICROCONTROLLERS

The supported microcontrollers are MCS25 1 derivatives in both ROMless and ROMed versions, according to the bond-out chip: 8xC251Sx and 8xC251Tx. As the list of supported devices is continuously evolving, call Ceibo to receive the latest update.

SOURCE-LEVEL DEBUGGER

EB-251 software comes with an MS-Windows Debugger. The Debugger includes commands which allow the user to get all the information necessary for testing the programs and hardware in real-time. The commands permit setting breakpoints on high-level language lines, adding a watch window with the symbols and variables of interest, modifying variables, displaying floating point values, showing the trace buffer, executing assembly steps and many more useful functions.



EB-251 Debugger

LANGUAGES AND FILE FORMATS

EB-251 accepts files generated by Software from many vendors (Keil, IAR, Tasking, etc.). Assemblers and high-level languages such as C and PLM are fully supported.

HOST CHARACTERISTICS

IBM PC or compatible systems with 8 MBytes of RAM and one RS-232 port. MS-Windows 3.1x/95/NT or later.

INPUT POWER

110 to 230VAC, 5VDC/1A Power Supply supplied.

MECHANICAL DIMENSIONS

4" x 4".

ITEMS SUPPLIED AS STANDARD

Emulation board with 44-pin PLCC header, user software including Source-Level Debugger, User s Manual, RS-232 interface cable and Power Supply.

OPTIONS

2Kx48-bit Trace Memory.

WARRANTY

Two years limited warranty, parts and labor.

EB-251 - ORDERING INFORMATION

| <i>Item</i> | <i>Description</i> |
|--------------------|---|
| EB-251 | Emulation Board, Software, Power Supply, Emulation Cable and Header |
| TR-EB-251 | Trace Expansion Board |