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EV80C186EC Evaluation Board

Low Cost Code Evaluation Tool

Intel's EV80C186EC evaluation board provides a hardware environment for code execution and software debugging. The board features the 80C186EC CHMOS*, 16-bit embedded microprocessor and all necessary memory and peripheral logic. The 80C186EC is the highest integration member of the highly successful 80C186/C188 family of embedded microprocessors. The EV80C186EC evaluation board provides 16 MHz, zero wait state, execution of your code. A dip switch configures the EV80C186EC for use with the 80C188EC for applications requiring an 8-bit data bus.

Popular features such as single-step program execution and software breakpoints are standard on the EV80C186EC. Intel provides a complete code development environment including ASM-86, iC-86, FORTRAN-86, Pascal-86 and PL/M-86.

The evaluation board is hosted on an IBM PC** or compatible computer. The source code for the on-board monitor (written in ASM-86) is public domain. The program is about 2 Kbytes in length and can be modified for inclusion in your target hardware. In addition, there are retargetable debuggers available from third party vendors to further enhance your development process.

EV80C186EC Features

- 16 MHz, Zero Wait State Execution Speed
- 64 Kbytes of SRAM (Expandable)
- 512 Kbytes of DRAM
- All-CMOS Board for Low Power
- Supports Intel Flash Memory
- Sixteen Software Breakpoints
- Two Single-Step Modes
- RS-232C Communications Link
- Concurrent Interrogation of Memory and Registers
- Easily Reconfigurable to Support 80C188EC
- High-Level Language Support

Full Speed Execution

The EV80C186EC executes your code from the on-board RAM at 16 MHz with no wait states. By changing oscillators on the evaluation board, any execution speed up to 16 MHz can be evaluated. The boards host interface rate is independent of CPU frequency.

32 Kbytes of SRAM

The EV80C186EC comes with 64 Kbytes of SRAM for your code and data. The SRAM sockets will accept up to 128 Kbyte SRAMs when expansion is necesary.

512 Kbytes of DRAM

The EV80C186EC comes with 512 Kbytes of DRAM; the necessary control logic is already there. The monitor uses the on-chip Refresh Control Unit and sets up the DRAM controller automatically.

Supports Intel Flash Memory

The EPROM sockets optionally accommodate the 28F001BX-T 128 Kbyte Flash Memory. The EV80C186EC provides an on-board V_{PP} switching circuit and built in programming procedures.

Totally CMOS Board

The EV80C186EC is built entirely with CMOS components, including programmable logic devices. Its power consumption is therefore low, requiring 5V at 500 mA. The board also requires ± 12V at 100 mA.

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Concurrent Interrogation of Memory and Registers

The monitor for the EV80C186EA/XL allows you to read and modify external memory and read internal registers while your code is running on the board. You may only modify internal registers while your code is halted.

Sixteen Software Breakpoints

There are sixteen breakpoints available which automatically substitute an INT3 instruction for your code instruction at the breakpoint location. The substitution occurs when execution is started. If the processor is halted or a breakpoint is reached, your code is restored in the RAM.

Two Step Modes

There are two single-step modes available. The first stepping mode uses the Trap Flag feature of the X86 architecture. The second mode also uses the Trap Flag except for subroutine calls which are treated as one indivisible instruction by placing an INT3 after them.

High-Level Language Support

The host software for the EV80C186EA/XL board is able to load absolute object code generated by ASM-96, iC-86, FORTRAN-86, Pascal-86 or PL/M-86, all of which are available from Intel.

RS-232C Communication Link

The EV80C186EA/XL communicates with the host using an Intel 82510 Asynchronous Serial Controller provided on board.

Personal Computer Requirements

The EV80C186EC Evaluation Board is hosted on an IBM, PC, XT, AT** or compatible personal computer. The PC must meet the minimum requirements:

—512 Kbytes of Memory

—A Serial Port (COM1 and COM2) at 9600 Baud

—One 360 Kbyte Floppy Disk Drive

—ASM-86, iC-86, FORTRAN-86, Pascal-86 or PL/M-86

—PC DOS** 3.1 or Later

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