



Z86C8401ZEM

ICEBOX FAMILY

IN-CIRCUIT EMULATOR-C84

FEATURES

■ Supported Products

| Packages | Emulation | OTP Programming |
|-------------|-------------------------|---------------------|
| 28-Pin PDIP | Z86C83/C84 | Z86E83 ² |
| 28-Pin PLCC | Z86C83/C84 | Z86E83 ³ |
| 28-Pin SOIC | Z86C83/C84 ¹ | Z86E83 ⁴ |

Notes:

1. With optional, separately purchased adapter, available from: Emulation Technology, Part# AS-DIP.6-028-S003-1
2344 Walsh Ave. Bldg. F
Santa Clara, CA 95051
Tel: (408) 982-0660
Fax: (408) 982-0664
2. Using the supplied Zilog adapter: Z86E8300ZDP
3. Using the supplied Zilog adapter: Z86E8300ZDV
4. Using the supplied Zilog adapter: Z86E8300ZDS

■ In-Circuit Program Debug Emulation

- Real-Time Emulation
- Window-Based User Interface
- Symbolic Disassembly in the Debug Window
- On-Line Help
- One-Time Programmable (OTP) Support
- Selectable Baud Rates – 9600 to 57.6 Kbps
- HP Logic Analysis System Interface Connector
- Zilog Macro Cross Assembler (ZMASM)
 - Structured Assembly and Data Code
 - Source-Level Debug Support
 - Built-In Register Equates
 - Linker

GENERAL DESCRIPTION

Zilog's ICEBOX™ in-circuit emulators are interactive, Windows-oriented development tools providing a real-time environment for developing and debugging software. The ICEBOX provides a hardware platform that is a significant improvement compared to software simulators, which are slower in operation, making them less practical than emulators for code development.

The Z86C84 ICEBOX Emulator, which supports the above listed devices, provides essential timing and I/O circuitry to simplify user emulation of the prototype hardware and software product.

The Z86C84 Emulator can be connected to a serial port (COM1, COM2, COM3, and COM4) of the host computer, and it uses Graphical User Interface (GUI) software.

SPECIFICATIONS

Operating Conditions

| | |
|--------------------------------|--|
| Operating Temperature: | 20°C ±10°C |
| Supply Voltage: | +5 VDC ±5% |
| Operating Humidity: | 10-90% RH (non-condensing) |
| Minimum Emulation Speed: | 1 MHz internal SCLK |
| Maximum Emulation Speed: | 8 MHz internal SCLK 16 MHz external Crystal (shipped with 8 MHz crystal) |
| Maximum Emulation Memory: | 32K |
| Maximum Hardware Breakpoints : | 32K |

| | |
|----------------------|---|
| Emulation Processor: | Z86C5020GSE |
| Programming Socket: | 28-pin PDIP Zero Insertion Force (ZIF) socket. |

Power Requirements

+5 VDC @ 1.5A (maximum)

Dimensions

| | |
|---------|--------------------|
| Width: | 6.25 in. (15.8 cm) |
| Length: | 9.5 in. (24.1 cm) |
| Height: | 2.5 in. (6.35 cm) |

Serial Interface

RS-232C @ 9600, 19200 (default), 28800, or 57600 Baud

HOST COMPUTER

Minimum Requirements

- IBM PC (or 100-percent compatible) 486-based machine
 - 33 MHz
 - 4 MB RAM
 - VGA Video Adapter
 - Hard Disk Drive (3 MB free space)
 - 3.5-inch, High-Density (HD) Floppy Disk Drive
 - RS-232C COM Port
 - Mouse or Pointing Device
- Microsoft Windows 3.1
- The following changes to the Minimum Requirements are recommended for increased performance:
 - 486 or Pentium-based machine
 - 66 MHz (or faster)
 - 8 MB of RAM (or more)
 - SVGA Video Adapter
 - Color Monitor
 - Printer
 - Windows 95

- 28-pin PLCC Emulation Cable/Pod
- 28-pin DIP/28-pin DIP OTP Adapter
- 28-pin DIP/28-pin PLCC OTP Adapter
- 28-pin DIP/28-pin SOIC OTP Adapter

- Host Software:
 - Z8 GUI Emulator Software Diskette
 - Zilog Macro Cross Assembler Diskette (ZMASM)

Note: C Compilers and Cross-Assemblers are also sold separately from Production Languages Corp. and other third-party development tool companies:

Production Languages Corp. (817) 599-8363
E-mail: info@plcorp.com
Internet: www.plcorp.com

Refer to the Zilog Internet site (www.zilog.com) for more information on third-party support.

Documentation

- Emulator User's Manual
- Three OTP Adapter User's Guide
- Zilog Macro Cross Assembler User's Manual
- Software License and Limited Warranty Agreement
- Registration Card (2)
- Product Information

Kit Contents

- Z86C84 Emulator
- Cables/Pods:
 - Power Cable with Banana Plugs
 - DB25 RS-232C Cable (M-F)
 - 28-pin DIP Emulation Cable/Pod

Additional Items Required (Not Supplied)

A source of power (+4.75 VDC to 5.25 VDC Max[+5.0 VDC typical]) for the emulator. This can be a laboratory power supply with supply current of 1.5A. A compact 5VDC power supply can be purchased from Zilog using PN: ZPS05V00ZAC.

Your Target Design: Typically, this is a wire-wrapped or printed-circuit prototype that includes a socket for the

target device, into which you can plug the emulation cable from the emulator.

Additional Optional Items (Not Supplied)

25-pin to 9-pin RS-232C Adapter

HP Logic Analyzer Kit (Z89C0000ZHP or ZINVASM0ZHP)

Software Tools (C Compiler)

Limitations

Permanent WDT Option Bit:

Due to the new Clock Free Reset feature, the Permanent WDT Enable option bit, when programmed, results in invalid READs when an EXAMINE or READ code is executed. This option should be treated similarly to an EPROM Protect bit. In essence, do not program the option bit until all else is verified.

Precautions

1. Capacitor C1, at 220 μ F, must be removed from the emulator to conduct OTP programming. Please see OTPPROG for instructions.
2. To set up the jumper pins to emulate the Z86C83 device (see Table 2-2 of the Z86C83 Emulator User's Manual), the Port 05 and 06 pod pins must be changed as follows:
 - Shunt J4-1 to J5-2, instead of shunting to J4-1 and J4-2
 - Shunt J4-2 to J5-1, instead of shunting to J5-1 and J5-2

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