Z8®
REAL-TIME S SERIES IN-CIRCUIT EMULATOR

MAIN FEATURES

- Interchangeable µP Pods to Emulate Various Z8 Family Members
- Source Level Debug for C
- Real-Time Transparent Emulation up to 25 MHz
- 33 MHz Available for Z86C93 and Z86C95
- 32K Frames (80 Bits Wide) of Execution Trace Buffer with Time Stamp
- 4K Frames (24 Bits Wide) of DSP Execution Trace Buffer (Z86C95)
- In-Line Symbolic Assembler and Disassembler
- Choose from 64K, 128K, or 256K of Emulation Progam RAM
- 64K of Emulation Data RAM
- Real-Time Hardware Breakpoints
- Complex Events to Trigger Breakpoints or Trace Logic
- Two 16-bit Pass Counters
- Eight Level Hardware Break Sequencer
- Eight Channel User Logic State Analyzer
- External Trigger Inputs and Outputs
- Trace Display During Execution
- Program and Data Memory Display/Edit During Execution
- Windowing or Command-Driven User Interface
- RS-232 Serial Interface to IBM® PC/XT/AT/386/486 and PS-2
- Made in U.S.A.

IBM PC SUPPORT

This unit was designed to work with the IBM® PC/XT/AT/386/486 and compatible computers. A special window/menu user interface provides these unique features:

- Pop-up windows for stack, source, trace buffer, registers, set-up, program and data memory.
- Source window for assembler and HLL debugging
- Full screen edit with mouse support
- User defined windows
- Full Macro Support
- Sixteen user defined set-ups to hold Breakpoint, Trace and Event information for easy recall from disk.
- 115 KBaud serial download
- Monochrome, CGA, EGA, VGA and custom display formats support

COMPLEX EVENTS

An Event is a set of conditions that control the operation of complex program breakpoints and trace start/stop logic in realtime.

There are three Events available, each consisting of the combination of the following:

- Up to 256K address breakpoints or ranges
- 8-bit data pattern with less than, greater than, equal, not equal and don't care combinations.
- RD, WR, INT, instruction fetch, operand read as qualifiers.

triggered from a combination of:

- Address or range of address
- Complex Events
- External input
- Pass Counters
- External input with programmable trigger polarity

In addition, Events can be counted/delayed by the use of two 16-bit Pass Counters. An eight level hardware sequencer is available to sequentially trigger to/from any Event or Pass Counter.

BREAKPOINTS

Breakpoints are set to stop program status. Breakpoints can be

- Sequencer
- Trace full condition

TRACE BUFFER

The Trace Buffer is a high speed RAM used to capture, in real time, all activity on the microprocessor's internal bus and pins. A dedicated start/stop logic allows filtering of unwanted information. The Trace Buffer remembers the selected 32K samples (frames) comprised of the following:

- Address Bus
- Data Bus
- Control signals
- I/O pins
- Real-time Clock Stamp
- User logic inputs (8 bits)

The Trace can be started/stopped by the combination of:

- GO command
- Any Event
- Any Pass Counter
- Sequencer
- Trace Full condition

Additionally, the Trace Buffer is equipped with a special internal counter that allows tracing to stop after a specified number of instructions or cycles. This feature allows a trace to catch as much as 32K of small fragments (snapshots) of executed program at full running speed.

The Trace Buffer contents can also be examined during program execution without slowing down the microcontroller.

SPECIFICATIONS

Microcontrollers Emulated:	Pod
Z86C1200ZPD Z86C10, Z86C20, Z86C11,	Z86C00,

			Z86C21, Z86E21, Z86C91, Z86C61
	Pod	Z86C5000ZPD	Z86C09, Z86C19, Z86C30, Z86C40, Z86C90
	Pod	Z86C9300ZPD	Z86C93
	Pod	Z86C9301ZPD	Z86C93 (33 MHz)
	Pod	Z86C9500ZPD	Z86C95
	Pod	Z86C9501ZPD	Z86C95 (33 MHz)

Maximum Emulation Speed	Up to 33 MHz (microcontroller dependent)	
Size	260 mm wide, 260 mm deep, 64 mm high	
Operating Temperature	0°C to +40°C	
Storage Temperature	–10°C to +65°C	
Operating Humidity	0 to 90%	
Maximum Emulation Program Memory (up to 25 MHz)	Base Z86C0000ZUSP064	64 Kbytes
	Base Z86C0000ZUSP128	128 Kbytes
	Base Z86C0000ZUSP256	256 Kbytes
	Base Z86C9500ZUSP064	64 Kbytes
Maximum Emulation Program Memory (up to 33 MHz)	Base Z86C00001ZUSP064	64 Kbytes
	Base Z86C00001ZUSP128	128 Kbytes
	Base Z86C00001ZUSP256	256 Kbytes
	Base Z86C95001ZUSP064	64 Kbytes
Maximum Emulation Data Memory	64 Kbytes	
Program Memory Mapping	1K blocks	
Pass Counters	Two, 16-bit each	
Trace Buffer	32K - 80 bits	
Sequencer	Hardware, 8 levels	
User Probe	Eight channel logic input One trigger input Seven trigger outputs (Events, Pass Counters, Sequencer)	
Host Interface	Asynchronous RS-232C 9600/115 KBaud XON/XOFF support	
File Upload/Download Format	Zilog MUFOM (IEEE 695-1985) Intel® HEX Intel AOMF 2500AD® Software	

MINIMUM HOST REQUIREMENTS

- IBM compatible PC/XT/AT/386/486 or PS-2

- 640 KByte memory
- 20 MByte hard disk
- RS-232 serial port (COM1 or COM2)
- Mouse (serial or bus)
- MDA, CGA, EGA, or VGA video adapter

MINIMUM EMULATION SUPPORT

One base unit and one emulation pod is required.

Part Numbers

Base Systems	Pod Systems
Z86C0000ZUSP064	Z86C9300ZPD
Z86C0000ZUSP128	Z86C1200ZPD
Z86C0000ZUSP256	Z86C5000ZPD
Z86C9500ZUSPO64	Z86C9500ZPD
Z86C0001ZUSP064	Z86C9301ZPD
Z86C0001ZUSP128	Z86C9501ZPD
Z86C0001ZUSP256	
Z86C9501ZUSP064	

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