



**HEWLETT
PACKARD**

Real-Time Emulator Zilog® Z8001/Z8002

**MODEL 64232S
MODEL 64233S**

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Description

Models 64232S and 64233S Emulators offer real-time, full-speed emulation of Zilog Z8001 and Z8002 microprocessors. This capability brings the power of emulation to all phases of the microprocessor-based product design, development, and maintenance. As subsystems of the HP 64000 Logic Development System, Models 64232S and 64233S emulators also provide access to the other sophisticated software and hardware development tools of the 64000 System. With the versatile 64000 System, you can speed your Z8001/Z8002-based systems to market.

Models 64232S and 64233S are part of an integrated set of design and development aids for Z8001/Z8002 processors. Compilers and assembler/linkers are available to accommodate programming at the most efficient level. Directed syntax softkeys and an easy-to-use, responsive editor streamline software development and documentation. Logic State/Software Analysis or Logic Timing/Hardware Analysis subsystems may be combined with either emulator for interactive operating modes. Emulation/analysis measurements provide added flexibility in integrating, optimizing, and troubleshooting. Accelerate your design cycle by selecting the best 64000 system for your Z8001/Z8002 development needs. Convenience, ease of use, and the measurement power of the 64000 System help you produce a better Z8001/Z8002 product in less time, to gain a competitive edge.



Emulator Features

- Real-time execution to 6 MHz independent of emulation/target memory assignment
- No wait states inserted by emulation memory
- An emulation mode that is fully transparent to target system (i.e., processor interrupt and other resources are not disturbed)
- Support processor bus request/grant activities
 - DMA transfers
 - Multiple, slave, or coprocessor
- Fully interactive multiprocessor emulation

Memory Mapping Features

- 20-bit width mapped in 256-byte blocks over 1M-byte address space
- 24-bit width mapped in 4k-byte blocks over 16M-byte address space
- Up to 128k bytes of emulation memory available
- Status (PROG, DATA, STACK) memory mapping supported in Z8002 emulator



Analysis and Debugging Features

- Compatibility with 64600S Logic Timing/Hardware Analysis and 64620S Logic State/Software Analysis subsystems for interactive measurements in a single development station
- Powerful internal logic analyzer for real-time monitoring of processor bus activity
- Single cycling and register displays of processor's internal activity
- User-definable monitor program to tailor debugging resources for specific target system
- 16 software breakpoints
- Simulated I/O for emulator access to 64000 System resources: disc files, printer, and development station keyboard, display, and RS-232 port
- Display and modify capabilities on user I/O ports
- Command file structure combines with emulation for automated testing and debugging
- Full disassembly of processor instructions
- Symbolic debugging

Ordering Information

A complete Z8001/Z8002 emulator consists of Model 6423XS Emulator subsystem, and Model 64155S Emulation Memory system; Model 64302A 48-Channel Internal Logic Analyzer is available to display activity on the emulator bus. Emulator software is available on flexible disc (6423XSF) or tape cartridge (6423XST) for transfer of the emulator operating system to mass storage. Model 64854AF/AT Z8001/Z8002 Assembler/Linker and Model 64816AF/AT Z8001/Z8002 Pascal Compiler are highly recommended; they are also transferred to mass storage. Only one set of software is needed for each 64000 System cluster.

Your HP Field Engineer can help you determine the best configuration to meet your needs.

Characteristics

ELECTRICAL

Maximum Clock Speed: (no wait states inserted) 6 MHz.

Data Input: low-power Schottky TTL loads with capacitance of approx 20 pF.

Clock Input: meets Zilog Z8001/Z8002 specifications plus capacitance of approx 20 pF.

PHYSICAL

Cable Length: development station to emulation pod, approx 1.5 m (5 ft); emulation pod to target system interface, approx 305 mm (1 ft).

ENVIRONMENTAL

Temperature: operating, 0° to +40° C (+32° to +140° F); nonoperating, -40° to +75° C (-40° to +167° F); operating survival, -20° to +50° C (-4° to +122° F).

Altitude: operating, 4600 m (15000 ft); nonoperating, 15300 m (50000 ft).

Relative Humidity: 5% to 80%.

Model 64232S Z8001 Emulation Subsystem	_____	\$4250
Model 64233S Z8002 Emulation Subsystem	_____	\$4250
Model 64232SF Z8001 Emulation Software	on flexible disc _____	\$100
Model 64232ST Z8001 Emulation Software	on tape cartridge _____	\$100
Model 64233SF Z8002 Emulation Software	on flexible disc _____	\$100
Model 64233ST Z8002 Emulation Software	on tape cartridge _____	\$100
Model 64155S 32k Byte Emulation Memory System	_____	\$4500
Option 009 8k Byte Emulation Memory System	_____ less	\$1800
Option 010 16k Byte Emulation Memory System	_____ less	\$1200
Option 011 64k Byte Emulation Memory System	_____ add	\$3000
Option 012 96k Byte Emulation Memory System	_____ add	\$5500
Option 013 128k Byte Emulation Memory System	_____ add	\$8000
Model 64302A 48-channel Internal Logic Analyzer	_____	\$2500
Model 64854AF Z8001/Z8002 Assembler/Linker	on flexible disc _____	\$1050
Model 64854AT Z8001/Z8002 Assembler/Linker	on tape cartridge _____	\$1050
Model 64816AF Z8001/Z8002 Pascal Compiler	on flexible disc _____	\$3000
Model 64816AT Z8001/Z8002 Pascal Compiler	on tape cartridge _____	\$3000

COMPONENTS

Model 64232A Z8001 Emulator Pod	_____	\$3000
Model 64233 Z8002 Emulator Pod	_____	\$3000
Model 64271A General Purpose Emulation Control Board	_____	\$1250
Model 64155A Wide-Address Emulation Memory Control Board	_____	\$1500

Prices apply only to domestic U.S. customers.

5953-2787(D)

Data subject to change.

PRINTED IN USA

For more information, call your local HP Sales Office or nearest Regional Office: Eastern (301) 258-2000; Midwestern (312) 255-9800; Southern (404) 955-1500; Western (213) 877-1282; Canadian (416) 678-9430. Ask the operator for Instrument Sales. Or, write: Hewlett-Packard, 1501 Page Mill Road, Palo Alto, CA 94304. In Europe: Hewlett-Packard S.A., 7, rue du Bois-du-Lan, P.O. Box CH-1217 Meyrin 2, Geneva, Switzerland. In Japan: Yokogawa-Hewlett-Packard Ltd., 29-21, Takaido-Higashi 3-chome, Sugunami-ku, Tokyo, 168.