HEWLETT PACKARD

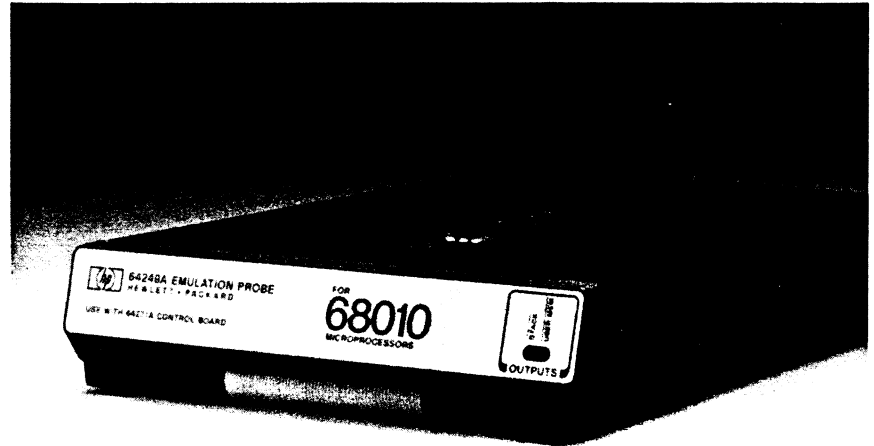# Real-Time Emulator Motorola® MC68010

MODEL 64249S

Description

Model 64249S Emulator offers real-time, transparent emulation of Motorola MC68010 microprocessors. The emulator brings the power of emulation to all phases of microprocessor-based product design, development, and maintenance. With the 68010 emulator and the versatile HP 64000 System, you can speed your 68010-based systems to market.

Model 64249S emulator is part of an integrated set of design and development aids for the MC68010 processor. Compilers and assembler/linkers are available to accommodate programming at the most efficient level. Directed syntax softkeys offer a friendly interface, easy to learn for the beginner and highly productive for the expert. A simple but efficient editor streamlines software generation and documentation. Emulation and analysis combine to provide added flexibility in integrating, optimizing, and troubleshooting your 68010-based design. Software Performance Analysis, Logic State/Software Analysis, and Logic Timing/Hardware Analysis subsystems provide interactive measurements to quickly isolate complex software and hardware problems. Convenience, ease of use, and the measurment power of the HP 64000 System help you produce a better 68010 product in less time, to gain a competitive edge.

Emulator Features

■ Real-time execution to 10 MHz from target system memory

■ Emulation support of MMU and virtual memory 68010-based systems

■ Funtionally transparent emulation of all 68010-based systems

■ Optional emulation modes provide full resource transparency to target systems

■ Support processor bus request/grant activities
    - DMA transfers
    - Multiple, slave, or coprocessor

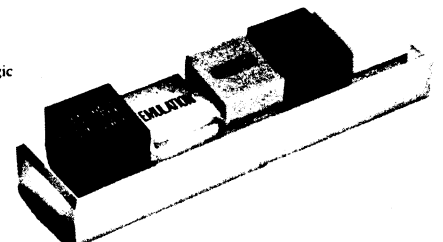■ Fully interactive multiprocessor emulation

■ Command file execution of all emulation functions

■ Flexible, powerful emulator monitor can be used directly or modified for special applications

Analysis Features

■ HP 64302A Emulator Bus Analyzer integrates real-time, nonintrusive software analysis for all emulation bus activity and is fully interactive with other logic analysis and emulation subsystems

■ HP 64620S Logic State/Software Analyzer* for optimizing and symbolically debugging software in both high-level statements and assembly-level mnemonics

■ HP 64310A Software Performance Analyzer* for software characterization, testing, debugging, and optimizing

■ HP 64600S Logic Timing/Hardware Analyzer* integrates high-resolution asynchronous timing analysis with extensive postprocessing capabilities

* Refer to separate data sheet. Your HP Field Engineer can demonstrate the many advantages of interactive emulation and logic analysis.

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Memory Features

■ Up to 1M-byte emulation memory available

■ 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

Characteristics

ELECTRICAL
Maximum Clock Speeds: up to 10 MHz with no wait states when operating from target memory only; up to 8 MHz with no wait states when operating from both emulation and target system memories. One wait state is required when accessing emulation memory between 8 MHz and 10 MHz.
Data Input: low-power Schottky TTL loads with capacitance of approx 20 pF.
Clock Input: meets Motorola MC68010 specifications plus capacitance of approx 20 pF.

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

ENVIRONMENTAL
Temperature: operating, 0° to +40° C (+32° to +104° F); nonoperating, –40° to +75° C (–40° to +167° F); operating survival, –20° to +50° C (–4° to +122° F).
Altitude: operating, 4600 m (15 000 ft); nonoperating, 15 300 m (50 000 ft).
Relative Humidity: 5% to 80%.

Ordering Information

Model 64249S consists of Model 64249A MC68010 Emulator Pod, Model 64271A GP Emulation Control Board, and operating software on flexible disc. When the emulator is ordered with a development station, it is configured as a station subsystem and all proper cables are included; otherwise, check with the HP sales representative to determine what additional cables to order.

EMULATION
A complete MC68010 emulator consists of Model 64249S Emulation subsystem and Model 64156S Emulation Memory system. Either Model 64302A 48-channel Emulation Bus Logic Analyzer or Model 64620S Logic State/Software Analysis subsystem with an HP 64304A Emulation Bus Preprocessor is highly recommended. Control software for the emulator is included with the basic emulator, on 5-1/4 in. flexible disc.

SOFTWARE DEVELOPMENT
Model 64845A Assembler/Linker is available for assembly-level programming. For programming in high-level languages, there are two compilers available: Model 64815A Pascal Compiler and Model 64819A C Compiler.

LOGIC ANALYSIS
There are two high-performance logic analyzers for troubleshooting and optimizing target system software and hardware: HP 64600S Logic Timing/Hardware Analysis subsystem and HP 64310A Soft-Performance Analyzer.

SOFTWARE SUBSCRIPTION SERVICE
Software updates are available to keep HP 64000 System software current with the most recent versions of software. Charges are applied only when software products are updated.

Model 64249S MC68010 Emulation Subsystem
Model 64156S 32k Emulation Memory System
  Model 64156S Option 011 64k Emulation Memory System
  Model 64156S Option 012 128k Emulation Memory System
  Model 64156S Option 013 256k Emulation Memory System
  Model 64156S Option 014 512k Emulation Memory System
  Model 64156S Option 015 1024k Emulation Memory System
Model 64845AF 68000/68010 Assembler/Linker on flexible disc
Model 64815AF 68000/68010 Pascal Compiler on flexible disc
Model 64819AF 68000/68010 C Compiler on flexible disc
Model 64302A 48-channel Emulation Bus Analyzer
Model 64620S 20-channel State/Software Analysis Subsystem
  Model 64620S Option 010 expand to 40-channel
  Model 64620S Option 011 expand to 60-channel
  Model 64620S Option 012 expand to 80-channel
  Model 64620S Option 013 expand to 100-channel
  Model 64620S Option 014 expand to 120-channel
Model 64304A Emulation Bus Preprocessor
Model 64310A Software Performance Analyzer
Model 64600S 8-channel Timing/Hardware Analysis Subsystem
  Model 64600S Option 010 expand to 16-channel
Model 64249AU Software Subscription Service for 68010 Emulation subsystem software
  Model 64249AU Option 099 one-time update for 68010 Emulation subsystem software
Model 64249AW Right-to-Copy for HP 64249AU software

COMPONENTS
Model 64249A 68010 Emulator Pod
Model 64271A General Purpose Emulation Control board
Model 64155A Wide-address Memory Control board