HEWLETT PACKARD

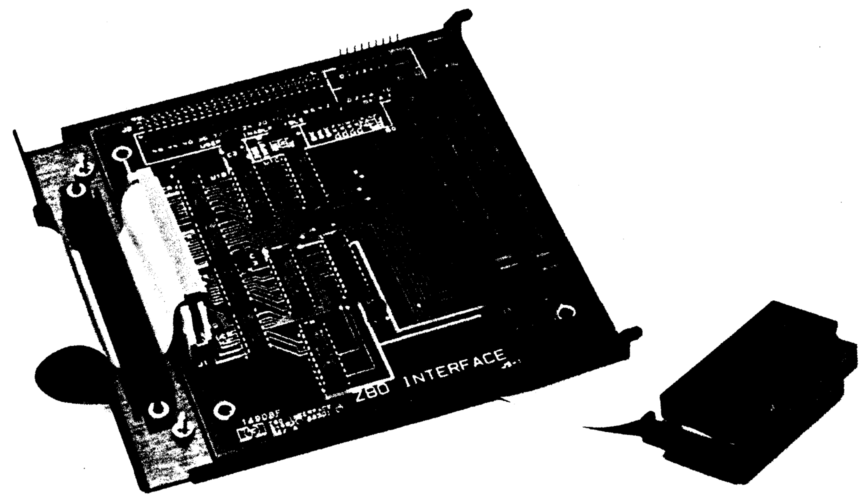
Z80 Preprocessor Interface Module

MODEL 64683A

TECHNICAL DATA 15 MAR 82

Description

Model 64683A Z80 Preprocessor Interface Module is a specialized plug-in probe module that is installed in Model 64650A General Purpose Preprocessor for convenient interface to Model 64620S Logic State/Software Analyzer. The module provides a simple hook-up to Z80 microprocessors via a low mechanical profile, 40-pin dual-in-line probe/chip carrier. Forty state analysis input channels are used to monitor processor bus activities, leaving 20 preprocessor input channels available for additional circuit probing. Interface software, ordered separately, provides inverse assembly of executed code and automatic formatting for analyzer measurements.



Features

Convenient, 40-pin low mechanical-profile carrier

Z80 instruction set disassembly

Programmable stimulus and halt lines for processor control

User-definable functions for input/output lines

Symbolic mapping of address and operand information

Z80 Instruction Set Disassembly

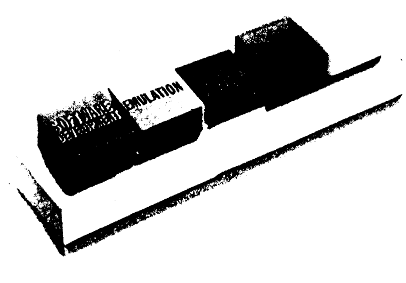
The interface software package (Model 64683ST on tape cartridge or Model 64683SF on flexible disc) translates the full Z80 instruction set for displays in mnemonic form. Trace displays may also incorporate user-defined symbols in the address field and instruction operand field for powerful symbolic tracing (figure 1). Additionally, the software sets the appropriate formats for each analyzer measurement. The software is automatically loaded from mass storage into the Model 64620S software analyzer whenever the interface is used.

```
        Trace List              State 3, 60 channel, Z80 interface
 Label:       ADDRESS      Z80 Mnemonic                      time count   DATA
 Base:          hex            hex                              rel        hex
 Map:        ADDR MAP      ADDR MAP
-004         MAIN+0047    OTIR                                   0          ED
-003         MAIN+0048      B3 opcode fetch                  4.00 usec     B3
-002          abs 008F      1F memory read                   5.48 usec     1F
-001        IO_PORT1        1F i/o write                     4.00 usec     1F
trigger      MAIN+0049    CALL MEM_LOAD+0000                 2.52 usec     CD
+001         MAIN+004A      FB memory read                   4.48 usec     FB
+002         MAIN+004B      00 memory read                   3.00 usec     00
+003        STACK-0000      00 memory write                  4.00 usec     00
+004        STACK-0001      4C memory write                  3.00 usec     4C
+005     MEM_LOAD+0000    LD   HL,[MEM_PTR+0000]             2.52 usec     2A
+006     MEM_LOAD+0001      80 memory read                   4.48 usec     80
+007     MEM_LOAD+0002      FF memory read                   3.00 usec     FF
+008      MEM_PTR+0000      90 memory read                   3.00 usec     90
+009      MEM_PTR+0001      01 memory read                   3.00 usec     01

STATUS: Awaiting state command - userid TESTOR____________________ 10:11

display <LINE #> disasmb ________ ________ show execute ---ETC---
```

Figure 1. Symbolic display of trace data provided by the Z80 processor inverse assembler.



Specifications

Processor compatibility: Zilog® Z80 and all microprocessors made by other manufacturers which comply with Zilog Z80 specifications and operate at clock speeds up to 6 MHz.

GENERAL
Maximum clock speed: 6 MHz
Signal line loading: one LS TTL load for all monitored signal lines and approx 35 pF capacitance
Outputs: STIMULUS and HALT are LS TTL open collector active-low outputs; max sinking current, 6 mA.
Input: ACK, acknowledge for STIMULUS line active low, TTL level.
Power consumption: 0.3 A at +5 Vdc max, supplied by Model 64620S Logic Software Analysis Subsystem.

ENVIRONMENTAL
Temperature: operating, 0° to +55° C (+32° to +131° F); nonoperating, −40° to +75° C (−40° to 167° F).
Altitude: operating, 4600 m (15 000 ft); nonoperating, 15 300 m (50 000 ft).
Humidity: 90% noncondensing. Avoid sudden, extreme temperature changes which could cause condensation within the instrument.

Ordering Information

Model 64683A Z80 Preprocessor Interface Module
for installation in Model 64650A General Purpose Preprocessor
Model 64683ST Z80 Software on tape cartridge
Model 64683SF Z80 Software on floppy disc

NOTE: Model 64683A must be installed in Model 64650A General Purpose Preprocessor.

Model 64650A General Purpose Preprocessor

® Registered, Zilog Corporation

5953-2776

Data subject to change.

PRINTED IN U.S.A.

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, Suginami-ku, Tokyo, 168.