

μSCOPE™ PROBE 8085

Provides interconnection for both 8085 and 8085A Microprocessor-based Systems to the μScope™ Microprocessor System Console

Complete with cable, buffer box, personality ROM, and μScope system console overlay

Has the system interconnect cable with integral groundplane for low noise operation

Increases diagnostic capability via four user positioned external inputs

Operates over a broad range of environmental conditions

Provides complete control over the system under test, yet causes minimal interference with system under test operation

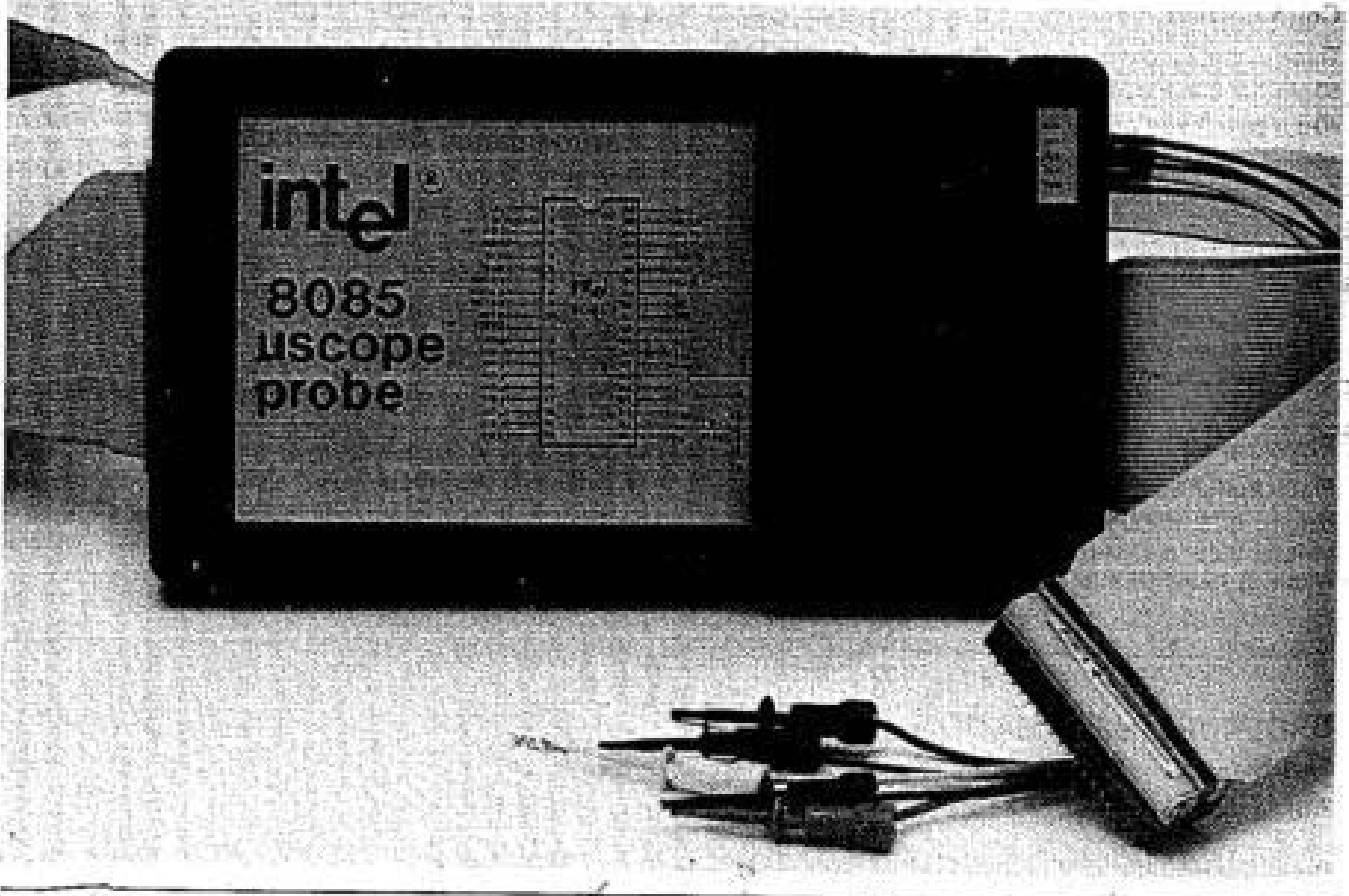
Fits securely in the console carrying case during transit

Provides complete protection for plug pins during transit

The probe 8085 provides the μScope Console with the ability to interact with 8085 and 8085A Microcomputer-based systems. The purpose of the probe is to interface the μScope Console to the CPU of the system under test (SUT). All of the interface signals and the associated circuitry have been designed to be effectively transparent to the SUT. CPU data, address and clock lines are sensed by the probe 8085, with only the CPU control lines being switched. In addition, all SUT loading and timing degradations have been minimized by specially designed buffer circuitry.

The mechanical design of the probe is compact, rugged, and allows proper operation of the probe and the console over the full ambient range specified. The buffer circuitry and the ground plane design of the interconnect cable provide low noise electrical signals while allowing the SUT to be 4 feet from the system console.

The probe can be reconfigured to test either 8085 or 8085A microprocessor-based systems. The user can operate the microprocessor from either the system under test crystal or one adjacent to the probe 8085 CPU socket. User control of the probe interaction with CPU control signals insures maximum compatibility with the system under test. Test and diagnostic capability is increased by integrating four external inputs into the probe 8085.



GENERAL

μSCOPE CONSOLE INTERCONNECT

The probe interconnection to the μScope Console is accomplished via a 1.2m (4 ft.) flat cable. 50-pin mating connectors plug into a board edge connector in the power cord compartment of the instrument and into a flat cable connector on the buffer box.

SYSTEM UNDER TEST (SUT) INTERCONNECT

Interconnection from the buffer box to the SUT is accomplished with a 200mm (8 in.) flat cable, complete with an integral ground plane, which is terminated with a low profile 40-pin DIP connector. The DIP connector is inserted into the SUT 8085 socket and the 8085 itself is plugged into the 40-pin socket provided on the probe buffer box.

μSCOPE CONSOLE CONFIGURATION

Several features of the μScope Console are directly determined by the probe being used with it. The features that are determined by the 8085 interface probe are:

- Single Registers: A, B, C, D, E, H, L
- Double Registers: BC, DE, HL, PC, SP
- CPU States: Flags, CPU pins, Interrupt Masks, and Interrupt States
- Trace/Breakpoint Word Size: 32 bits with 16 bits of address, 8 bits of data and 8 bits of CPU status
- 4 external inputs included in the 8 bits of CPU status for examining, recording in trace memory, and transferring control

ELECTRICAL SPECIFICATIONS

All DC specifications are in addition to user system parameters. All capacitance values include cables and connectors.

Non-Intercepted Signals

x1, x2, reset out	16pF typical
AD ₀ -AD ₇ , A ₈ -A ₁₅	-0.25 mA max @ 0.45V; 10 μA max @ 5.25V; 26 pF typical
SID	40 μA max @ 2.7V; -0.6 mA max @ 0.4V; 20 pF typical
SOD	20 μA max @ 2.7V; -0.4 mA max @ 0.4V; 20 pF typical

Intercepted Signals

Output to user system:

ALE	19 mA max @ 0.5 volt; -900 μA max @ 2.7 volt
CLK	2 mA max @ 0.64 volt; -400 μA max @ 2.6 volt
SS0, SSI	8 mA max @ 0.5 volt; -400 μA max @ 2.7 volt
RD, WR, IO/M	24 mA max @ 0.5 volt; -2.6 mA max @ 2.4 volt

ORDERING INFORMATION

Part Number	Description
PRB-85	8085 Interface Probe

INTA	21 mA max @ 0.5 volt; -3.6 mA max @ 2.4 volt
HLDA	6 mA max @ 0.5 volt; -350 μA max @ 2.7 volt

All Output Signals have capacitance of 20pF typical.

Inputs from user system:

RESET IN, READY, HOLD, RST 6.5, RST 5.5, INTR, TRAP	-0.8 mA @ 0.4V; 40 μA max @ 2.7V; 20 pF typical
RST 7.5	

External Inputs:

XI0, XI1, XI2, XI3	-0.25 mA max @ 0.45V; 10 μA max @ 5.25V; 2.4V min Input High Voltage; 0.85V max Input Low Voltage
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CONNECTIONS

Three external connections to the probe are provided:

- 50-pin flat cable connector on buffer box
- 40-pin zero insertion force socket for the 8085 SUT CPU
- 40-pin low profile replaceable IC DIP connector for connection to SUT

CHARACTERISTICS

PHYSICAL CHARACTERISTICS

Probe Buffer Box:

Height:	22mm (7/8 in.)
Length:	208mm (8-1/4 in.)
Width:	116mm (4-5/8 in.)

User System Interconnect Cable:

Width:	57mm (2-1/4 in.)
Length:	200mm (8 in.) flat cable

μScope Console Personality ROM PC Card:

Height:	19mm (3/4 in.)
Width:	57mm (2-1/4 in.)
Length:	86mm (3-1/4 in.)

POWER REQUIREMENTS

Power supplied by μScope Microprocessor System Console.

ENVIRONMENTAL CONDITIONS

Operating Temperature:	0° to 50°C (32° to 122°F)
Storage Temperature:	-40° to 75°C (-40° to 167°F)
Humidity:	95% RH, 15° to 40°C (59° to 104°F) noncondensing

ACCESSORIES SUPPLIED

- One Probe 8085 overlay for the μScope System Console
- One Personality ROM
- One Operator's Manual
- Four Test Probes for the External Inputs