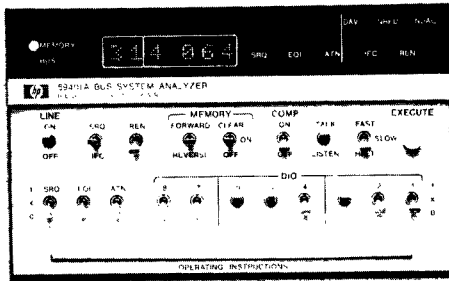




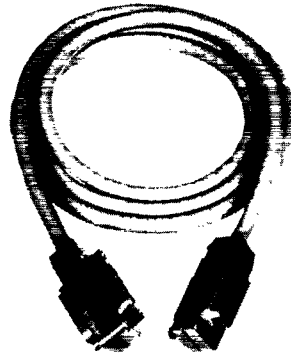
# HEWLETT-PACKARD INTERFACE BUS

## Versatile Interconnect System for Instruments and Controllers

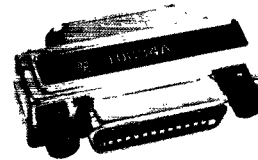
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HP 59401A



HP 10833A/B/C/D



HP 10834A

### HP 59401A Bus System Analyzer

The HP-IB (IEEE 488) concept has greatly simplified many of those things which have in the past made instrument interfacing a burdensome task. Even so, software errors can occur if the system designer does not completely understand the bus system or the capabilities of the instruments and other devices being interfaced. Hardware problems can occur if the instruments/devices are not functioning properly, or if they are not completely compatible with the bus standard.

The HP 59401A Bus System Analyzer is especially useful in design and service work. It simplifies and speeds up the diagnosis of software and hardware problems by allowing the user to see the status of all bus lines, including the actual characters on the bus data lines. Because the HP 59401A can also drive all bus lines, it can completely exercise another Talker, Listener or Controller—which is especially useful in verifying compatibility of new or user-designed products with the HP-IB.

There are several choices of analyzer operating speed. It may be operated at one character at a time (useful for software debugging), at 2 characters per second, or at regular bus speed. It may also be operated at a variable rate as determined by the external clock input.

The analyzer's 32 character memory can be used to store bus characters in the Listen mode, or to output characters to the bus in the Talk mode. When the analyzer is in the Compare mode, a stream of bus traffic may be stopped on a pre-selected character—and at that time a trigger pulse is available, which is very useful when analyzing transient or timing problems related to the bus.

### HP 59401A Specifications

**Display:** monitors all bus lines. Represents data lines, any memory location, or DIO front panel switch settings; in octal code and ASCII character.

**Listen mode:** stores up to 32 characters of bus traffic in memory for real time and repetitive testing. In Compare mode, halts bus traffic when a selected character is present, and user can display any one of the previous 31 characters stored in memory.

**Timing:** accept <750 ns; ready <750 ns.

**Talk mode:** bus lines can be driven directly from front panel switches; memory can be loaded from front panel switches for driving bus with a 32 character sequence.

**Timing:** (1) data changed >500 ns before DAV pulled low; (2) ATN driven low >1 μs before DAV pulled low; (3) DAV driven high <700 ns after NDAC is false; (4) DAV driven low <700 ns after NRFD is false, if conditions 1 and 2 are met.

**Operating speeds:** one character at a time, 2 characters per second, regular bus speed, or variable rate determined by external clock input; in either Listen or Talk mode.

**External clock input:** 1 standard power TTL gate input; ≤10 MHz repetition rate.

**Compare output:** provides 1 standard power TTL gate output (LOW TRUE) sync pulse when bus character is same as front panel switches.

**HP-IB load:** 1 bus load (capable of driving 14 other bus devices).

### General

**Temperature ranges:** operating, 0 to 50°C; storage, -40 to +75°C.

**Humidity:** 95% relative, 0 to 40°C.

**Power requirements:** 100, 120, 220, or 240 V +5%, -10%; 48 to 66 Hz; ≤42 VA.

**Size:** 145.5 H, 205.1 W, 495.3 mm D (5.730" x 8.075" x 19.500").

**Weight:** net, 5.64 kg (12.44 lb).

### Accessories

HP 5061-9689 (metric) front handle kit

HP 10833B 2 m (6.6 ft) bus cable, furnished

### Price

\$55

### HP 59401A Bus System Analyzer

\$4080

### HP-IB Interconnection Cables

Cables for interconnecting HP-IB devices are available in four different lengths. The connector block at both ends of each HP-IB cable (photo above) has a plug on one side and a matching receptacle on the other, so that several cables may be conveniently connected in parallel, thus simplifying system interconnection. Lock screws provide for secure mounting of each connector block to an HP-IB instrument, or to another cable connector block.

**SPECIAL NOTE:** HP-IB cables are not always included with individual HP-IB devices, particularly those that normally connect directly to an HP computing controller. (The HP-IB interface for HP computing controllers contains the necessary cable and connector). Product listings in this catalog should be checked to see if HP-IB cables are furnished.

The HP 10833 series of cables feature an improved shielding design to help improve RFI levels in systems. This series of cables, with the RFI shielding, exhibits significantly lower radiated emissions than previous HP-IB cables.

The HP 10834A adapter is a shielded HP-IB to HP-IB adapter. It provides additional clearance (approximately 2.3 cm) between the HP-IB cable and the rear panel of the instrument. This allows easier access to switches, cables, and other connectors that may be in close proximity to the HP-IB connector.

### Ordering Information

HP 10833A HP-IB Cable, 1m (3.3 ft)

HP 10833B HP-IB Cable, 2m (6.6 ft)

HP 10833C HP-IB Cable, 4m (13.2 ft)

HP 10833D HP-IB Cable, 0.5m (1.6 ft)

HP 10834A Adapter

### Price

\$80

\$90

\$100

\$80

\$30

Fast-Ship product — see page 758.