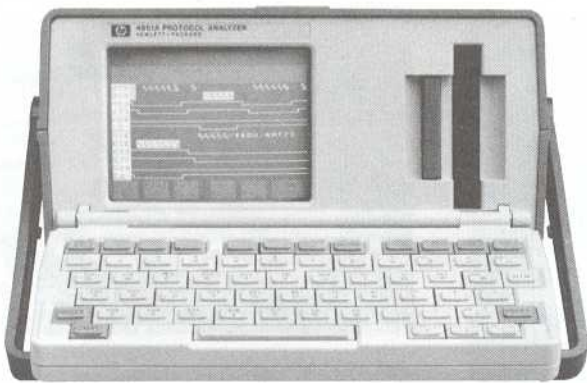


# DATA COMMUNICATIONS TEST EQUIPMENT

## Protocol Analyzer

Model 4951A



HP 4951A

### HP 4951A Protocol Analyzer

The HP 4951A Protocol Analyzer is the field service member of the protocol family. Its very small size, weight, and price combine with ease of use, power, and versatility to make an ideal installation and maintenance tool for any network. To the protocol family features it adds Bit Error Rate Testing (BERT), nonvolatile memory of data and menus, portability, and affordability. In BERT mode the HP 4951A measures bit errors, block errors, errored seconds, and percent error-free seconds, all simultaneously. Non-volatile memory and remote transfer capability provides the field technician access to central site expertise. The low price of the HP 4951A allows you to put high level testing ability in the hands of everyone who needs it. Portability and ease of use ensure that it will be used, and the testing power of the HP 4951A will ensure you of greater system uptime.

### General Operating Characteristics

**Protocols:** X25, HDLC, SDLC (NRZI), BSC, and most character asynchronous or synchronous protocols.

**Data Transfer Rates (bps):** 50, 75, 100, 134.5, 150, 300, 600, 1200, 1800, 2000, 2400, 3200, 3600, 4800, 7200, 9600, 12000, 14400, 16000, 19200, teletext 1200/75, and EXTERNAL up to 19200 full duplex for all monitoring, simulation, triggering, and BERT tests.

The HP 4951A can capture a complete buffer full of data at line speeds up to 64 kbps (bit-oriented protocols only.)

**Clock Accuracy:** 0.005%.

**Data Codes:** ASCII, EBCDIC, Baudot, Six Bit Transcode, IPARS, and EBCD.

**Mass Storage Memory:** 32 Kbytes of RAM stores data characters, timing and lead status information.

Optional tape drive: 256 Kbytes. Store data, timing information, and menu configurations.

**Lead Status:** The status of five control leads are stored for each interface. They are RTS, CTS, DTR, DSR, and CD for RS-232C/V.24 and CS, RS, RR, TR, and DM for the RS-449 interface.

**Character Framing:** 5, 6, 7, or 8 information bits, plus parity. For asynchronous systems, select 1, 1.5, or 2 stop bits per character.

**Error Checking:** CRC-CCITT, CRC-16, CRC-12, CRC-6, LRC, and parity.

**Triggers:** 63 consisting of characters, errors, interface lead transitions or timer values. May be simultaneously active up to 19200 bits per second.

**Timers:** Five. Each timer has a maximum count of 65565 ms. Resolution 1 ms.

**Counters:** Five. Each counter may be incremented up to 9999.

**Keyboard:** Full ASCII keyboard with six softkeys and cursor control.

**Display:** 12.7 cm (5 in.) diagonal with 16 lines and 32 characters per line.

**Display Formats:** DTE data over DCE data, Data and Lead State. DTE data only, DCE data only, and Frame and Packet decode.

**Send Strings:** 255 characters per string maximum; 1750 characters total.

**Remote Capability:** Over the RS-232C/V.24 link, transfer data, setups and programs.

**Bit Error Rate Testing:** Simultaneously measure bit errors, block errors, errored seconds, and percent error free seconds. Block size: 63, 511, 1000, or 2047 bits.

Patterns: 63, 511, or 2047 bit pseudo random sequence.

Character framing: Select 5, 6, 7 or 8 bits per character and parity.

Inject error function: Inject single errors or bursts of errors.

**Additional Characteristics:** Auto-configuration of all setup parameters. Battery maintained RAM for all setups, data, and menus. Select bit order as LSB or MSB first and select the bit sense as inverted or normal.

**Self-Test:** Extensive self-test and functional verification routines will isolate failures to the functional component group. Built-in signature analysis permits fault isolation to the component level.

### Interface Accessories

HP 18173A, HP 18174A, HP 18179A and HP 18180A.

Each interface is supplied with the appropriate 1.5-metre cable.

#### HP 18173A

**RS-232C/V.24 Interface:** Ten switches for line isolation. Twenty-five test points for monitoring, forcing, or cross-patching. One non-dedicated MARK/SPACE tristate monitor for user patching to any line. Nine hard-wired activity indicators: TD, RD, TC, RC, DTR, DSR, RTS, CTS, and CD.

#### HP 18174A

**RS-449 Interface:** Nine dedicated activity indicators: SD, RD, ST, RT, RS, CS, TR, DM, and RR.

#### HP 18179A

**RS-232C/V.24 Interface:** with a complete breakout box and tri-state LEDs. Ten tri-state LEDs monitor primary interface signals at the source. The 25 pin breakout box allows any interface to be interrupted.

**HP 18180A:** Combination RS-232C/V.24 and RS-449.

**HP 18173A:** weight, 0.6 kg (1.3 lb).

**HP 18174A:** weight, 0.6 kg (1.3 lb).

**HP 18180A:** weight, 0.7 kg (1.5 lb).

### General Specifications

**Weight:** net, 5.7 kg (12.6 lb); shipping, 9.5 kg (21 lb).

**Size:** Height 11.2 cm, width 25.9 cm, depth 28.6 cm (4.4 x 10.2 x 11.3 in.)

**Temperature:** operating, 0°C to +55°C (+32 °F to +131 °F); \*\* storage, -40°C to +75°C (-40°F to +167°F).

\*\*Tape drive should only be operated from +5°C to +40°C (+41°F to +104°F).

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

**Power Requirements:** 110, 220 Vac, -15% to +15%; 48 to 66 Hz, single phase; less than 15 VA typical, less than 30 VA maximum.

### Accessories

Accessory	Price
HP 18173A: RS-232C/V.24 Interface Pod	\$400
HP 18174A: RS-449 Interface Pod	\$400
HP 18179A: RS-232C/V.24 interface with complete breakout box.	\$550
HP 18180A: Combination RS-232C/V.24 and RS-449 Interface Pod	\$800
HP 18172A: Soft vinyl carrying case for extra pods	\$ 85
HP 98200A: Certified blank tape cartridges (set of five)	\$ 95

### Ordering Information

Option	Price
HP 4951A Protocol Analyzer (does not include interface pod)	\$3595
Option 001: Integral tape drive	\$ 850
Option 100: Adds accessory HP 18173A	\$ 400
Option 101: Adds accessory HP 18174A	\$ 400
Option 102: Adds accessory HP 18180A	\$ 800
Option 910: Adds extra Operating and Service Manuals	\$ 50
Option 916: Extra Operating Manual	\$ 20