

DATACOMMUNICATIONS TEST EQUIPMENT

Protocol Analyzer

Model 4951B

With compliments

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HP 4951B

HP 4951B Protocol Analyzer

The HP 4951B is a portable datacommunications protocol analyzer used for the installation and maintenance of data terminal and data communication equipment. With it you can monitor and decode data transmissions, simulate network components, perform bit error tests and remotely transfer data and programs through a separate RS-232C/V.24 port. External viewing is supported via a standard RS-170 video port. Its small size, weight, and price combined with its ease of use, power, and versatility, make it ideal for field service testing needs. Integral mass storage allows you to capture large amounts of data for future analysis. With the push of a key, Auto Configure automatically determines line parameters and begins monitoring data. For testing at remote installations, the HP 4951B is compatible with the HP 4953A and the HP 4955A. Additional capabilities are provided through software accessories. Please refer to page 132 for details.

General Operating Characteristics

Protocols: X.25, SNA, X.21, DDCMP, HDLC, SDLC (NRZI), BSC, IPARS, and character asynchronous or synchronous protocols. **Data Transfer Rates (bps):** 50, 75, 110, 134.5, 150, 200, 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. Exceptions: asynchronous at 12000 bps; synchronous NRZI at 12000, 14400, and 16000 bps. BERT at Teletext 1200/75, 16000, 14400, and 150 bps.

The HP 4951B can capture a complete buffer full of data at line speeds up to 64 kbps (bit-oriented protocols only, no triggering).

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

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

Optional Tape Drive: 512 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: Separate rear panel RS-232 C/V.24 port or use the interface pod.

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 backed-up RAM for all setups, data, and menus. Select bit order as LSB or MSB first and select the bit sense as inverted or normal. Video output is RS-170.

Interface Accessories

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

Each interface is supplied with the appropriate 1.5-meter 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 tri-state 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. Balanced RS-422A drivers.

18179A

RS-232C/V.24 Interface: with a complete breakout box and tri-state LEDs. The 25 pin breakout box allows any interface lead to be broken out.

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

General Specifications

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

Size: 11.2 H x 25.9 W x 28.6 cm D (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).

Power Requirements: 100, 120, 220 or 240 Vac, -10% to +10%; 48 to 66 Hz, single phase; typical less than 15 VA, maximum less than 30 VA.

Ordering Information

HP 4951B Protocol Analyzer (does not include interface pod)

Option 001: Integral Tape Drive

Option 003: Katakana JIS-7, and EBCDIK Data Code

Option 100: Adds accessory HP 18173A

Option 101: Adds accessory HP 18174A

Option 102: Adds accessory HP 18180A

Option 103: Adds accessory HP 18179A

Option 104: Adds accessory HP 18178A

Option 106: Adds accessory HP 18197A

Option 910: Service Manual and Extra Operating Manual

Option 915: Service Manual

Option 916: Extra Operating Manual

Accessories

HP 18173A: RS-232C/V.24 Interface Pod

HP 18174A: RS-449/422A/423A Interface Pod

HP 18179A: RS-232C/V.24 Interface with complete breakout box

HP 18180A: Combination RS-232C/V.24 and RS-449/422A/423A Interface Pod

HP 18190A: Soft Vinyl Carrying Case

HP 98200A: Certified blank tape cartridges

(set of five)

Software Accessories

HP 18178A: X.21 Interface Kit

HP 18186A: SNA Analysis

HP 18187A: DDCMP Decode/Simulate

HP 18193A: X.25 Package

HP 18197A: Combination X.21/RS-232C/V.24 Pod

HP 18201A: Async Terminal Emulator