Protocol Analyzers

In data communications, protocol can be defined as "rules governing the exchange of information between two pieces of data processing equipment". Different test applications and environments require different protocol analyzers. Hewlett-Packard offers a family of five powerful, general purpose protocol analyzers with software and accessories to meet your special needs. Modern high-speed multivendor, real-time, complex networks make tools for network management a must. A protocol analyzer can make complex testing and network optimization easy with protocol analysis tools for management, installation, maintenance and research and development.

Wide Area Network (WAN) Protocol Analysis

Hewlett-Packard offers a family of three protocol analyzers to meet different wide area networking application requirements. While maintaining family compatibility, each analyzer is tailored for a different environment with different features and characteristics. The **HP 4951C, HP 4952A** and **HP 4954A** have common operating, setup, mass store, remote transfer and display characteristics. An overview of the differences can be seen in the chart below.

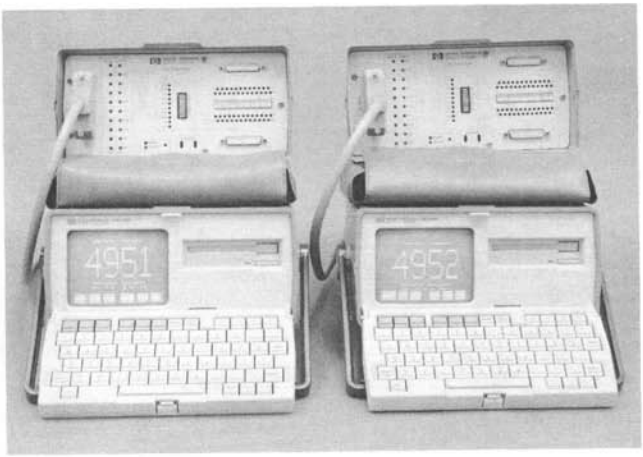
Local Area Network (LAN) Protocol Analysis

In addition to the family of three WAN protocol analyzers, Hewlett-Packard offers two versatile local area network (LAN) protocol analyzers to assist you with IEEE 802.3, Ethernet, TCP/IP, DECnet, StarLAN and MAP networks.

The **HP 4972A** is a high performance protocol analyzer for managing performance and troubleshooting problems on your IEEE 802.3, Ethernet, TCP/IP, DECnet or StarLan networks. The HP 4972A provides full data capture integrity under high network traffic loads, trend analysis with real time network performance statistics, and a complete set of protocol interpreters and performance analysis tools for a number of different protocol stacks. The **HP 4974S** analyzes IEEE 802.4 networks with layer-by-layer decodes of the MAP 3.0 protocols.

Individual product specific information can be found on the following pages.

	HP 4951C	HP 4952A	HP 4954A
Size (HWD-cm) (HWD-inches)	16.0x27.9x34.3 cm 6.3x11.0x13.5 in.	Same As HP 4951C	19.6x42.5x56.5cm 7.7x16.7x22.2 in.
Display Size	5-in. diagonal	Same As HP 4951C	9-in. diagonal
Weight	6.7 kg (14.8 lb)	7 kg (15.4 lb)	21.17 kg (46.7 lb)
Operating Speeds - full functionality - fast capture mode	50 bps-19.2 kbps 64 kbps	50 bps-64 kbps 128 kbps	50 bps-72 kbps 256 kbps
Autoconfigure	Yes	Yes	No
Data Buffer Size	32K byte	32K byte, Opt. 3/4 M byte	256K byte
Mass Storage	3.5-in. floppy	3.5-in. floppy	3.5-in. floppy 20M byte hard disk
BERT	Yes	Yes	No
Protocols	Aysnc, Bisync, SDLC, HDLC X.25, SNA, DDCMP, IPARS	Async, Bisync, SDLC, HDLC, X.25, SNA, DDCMP, IPARS, X.21, ISDN (Q.921 and Q.931)	Async, Bisync, SDLC, HDLC, X.25, SNA, DDCMP, X.21, CCITT #7, ISDN (Q.921, Q.931, Q.932)
SNA Testing	FID 2 data decoded 3270 tester Link Level Statistics	All FID types decoded User-definable data display 3270 tester Link Level Statistics	All FID types decoded SNA development language 3270 device exerciser LU6.2 node exerciser SNA/Bisync network performance analysis (statistics)
X.25 Testing	Complete X.25 decode Link Level Statistics	Complete user-customizable X.25 decode Facilities field decode X.25 test library and link level emulator Link Level Statistics	Complete X.25 decode Facilities field decode X.25 interactive emulation X.25 network performance analysis (statistics)
ISDN Testing		Basic rate access Q.921 and Q.931 monitor and simulate	Basic and PRI rate access Q.921 and Q.931 monitor, simulate and emulation
Programming	Monitor/simulate menus	Enhanced monitor/ simulate menus	Monitor/simulate menus DataCommC (full K & R C programming language) SNA development language X.21 state simulator language
Price (typical)	$4,590	$9,120	$17,450



HP 4951C/HP 4952A

HP 4951C and HP 4952A Protocol Analyzers

The HP 4951C (19.2 kbps) and HP 4952A (64 kbps) are portable protocol analyzers used for troubleshooting during installation, maintenance and design of data communication networks and equipment.

Applications

The HP 4951C and HP 4952A allow you to monitor and decode data transmission, test remote facilities from your location, simulate network components, and perform bit error rate tests. They can also be used as asynchronous terminals or to install and maintain 3270 equipment, and to perform link level performance analysis. Protocols that can be tested include Async, BSC, SDLC (NRZI), HDLC, X.25, SNA, DDCMP and user-defined protocols. The HP 4952A also tests X.21 and ISDN.

HP 4951C and HP 4952A Features

- **Autoconfigure** to automatically determine line parameters and to monitor data with the push of a key.
- **3½″ microfloppy disk** to store 613K bytes of data, timing, lead status, programs and configurations.
- **RS-170 video port** to view data externally.
- **Printouts** to all RS-232/V.24 ASCII printers via a separate port.
- **Nonvolatile memory** to store data, programs and configurations.

Additional HP 4952A Features

- **64 kbps testing with full functionality**
- **¾M byte extended volatile capture buffer** (Option 002)
- **128K bytes nonvolatile application storage** (Option 002)
- **Unattended remote testing**
- **Cursor timing** to allow timing measurements to be made on screen
- **Enhanced programming features:** run time user comments, softkey triggering, subroutines
- **Buffer data filtering** to maximize capture buffer
- **Selective store to disk** to capture only events of interest
- **Complete disk copying capability**

Datacomm Testing Solutions

Data Communications Test Library

This library of prewritten tests, is standard with every HP 4951C and HP 4952A at no additional cost. The library contains 58 general purpose monitor and simulate programs on a single 3½″ diskette to help you evaluate your network quickly and easily. Programs are written to diagnose common datacomm problems. The tests can be tailored for special configurations and applications. The library also contains installation and acceptance tests for printers and terminals.

X.25 and SNA Link Level Performance Analysis

Link level statistics packages, the HP 18333D for the HP 4951C and the HP 18264A for the HP 4952A, transform the instruments into statistical performance analyzers for the link level (level 2) of SNA and X.25 networks (SDLC and HDLC).

These solutions provide a new way for network troubleshooters to look at data communication links. Key link events indicate the health of the network and are displayed in columns. Bar charts show line utilization real time. These statistics can be stored to disk and reviewed at a later time.

3270 Installation and Maintenance

If you have IBM 3270 or compatible terminal systems, you know that problems with newly installed or suspect systems can devastate hosts and users. The HP 18332D (HP 4951C) and HP 18263A (HP 4952A) 3270 installation and maintenance software packages provide easy, automatic, offline testing of multiple 3270 clusters by emulating many of the functions of a host computer.

X.25 Troubleshooting

Both analyzers provide X.25 troubleshooting. The HP 4952A also has an enhanced X.25 analysis package (HP 18266A) which allows you to create five custom X.25 decode displays. A display is also provided to decode all components of each packet including facilities, calling/called addresses, cause and diagnostic codes, registration and call user data. The HP 18267A X.25 Test Library and Emulator provides a library of X.25 tests written in a level 2 emulator, and a procedure for using tests to troubleshoot X.25 installations.

ISDN Solutions

The HP 4952A has added ISDN capability to its array of troubleshooting solutions. The HP 18270A ISDN basic rate channel access and analysis package offers capabilities for ISDN troubleshooting in a portable protocol analyzer for those designing or managing ISDN networks. This latest offering provides the ability to monitor and simulate ISDN devices and networks, giving the edge needed to handle the demands of ISDN communication.

Ordering Information

	Price
HP 4951C Protocol Analyzer (interface pod not included)	$3,940
Opt 102 HP 18180A RS-232/V.24 and RS-449/422A/423A interface pod	$900
Opt 103 HP 18179A RS-232/V.24 interface pod with full breakout box	$650
Opt 106 HP 18160A RS-232/V.24 and V.35 interface pod	$1,350
Opt W30 2 Years additional hardware service	$100
HP 18331D SNA, DDCMP, X.25 analysis	$350
HP 18332D 3270 installation and maintenance	$350
HP 18333D X.25 and SNA link level performance analysis	$350
HP 4952A Protocol Analyzer (interface pod not included)	$6,970
Opt 002 Extended memory plus	$1,500
Opt 101 HP 18174A RS-449/422A/423A interface pod	$500
Opt 102 HP 18180A RS-232/V.24 and RS-449/422A/423A interface pod	$900
Opt 103 HP 18179A RS-232/V.24 interface pod with full breakout box	$650
Opt 104 HP 18260A X.21 and RS-232/V.24 interface pod	$1,100
Opt 105 HP 18177A V.35 interface pod	$800
Opt 106 HP 18160A RS-232/V.24 and V.35 interface pod	$1,350
Opt W30 2 Years additional hardware service	$175
HP 18260A X.21 and RS 232/V.24 interface pod	$1,100
HP 18261A SNA analysis	$350
HP 18263A 3270 installation and maintenance	$350
HP 18264A X.25 and SNA link level performance analysis	$500
HP 18265A DDCMP analysis	$350
HP 18266A Enhanced X.25 analysis	$500
HP 18267A X.25 test library and emulator	$500
HP 18269A G.821 BERT	$500
HP 18270A ISDN basic rate interface and analysis	$3,500

HP 4951C and HP 4952A Common Accessories

HP 18340A Video print interface	$500