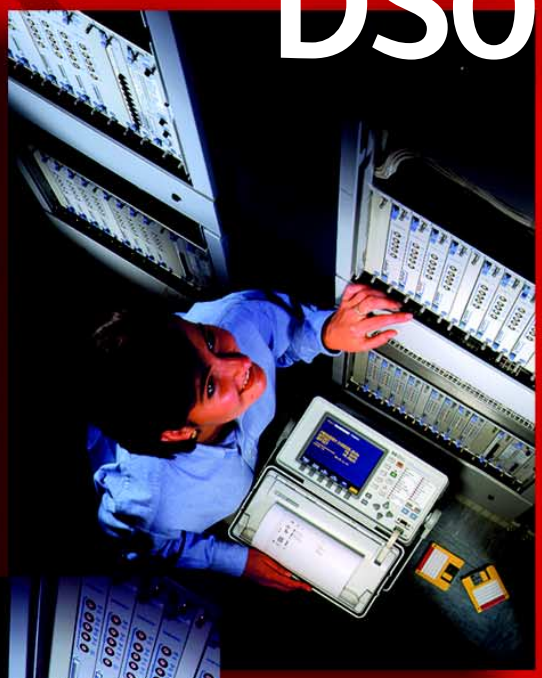
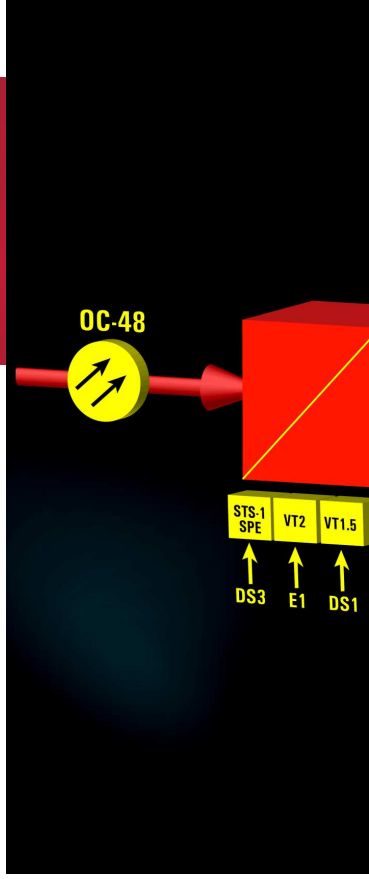
HEWLETT PACKARD
Expanding Possibilities

Effortless testing from DS0 to OC-48c



HP 37719A Communications Performance Analyzer

The test solution that sets the pace in network installation and manufacturing applications



- Multi-rate transmission testing from DS0 to OC-48
- Full OC-48c bandwidth bit error rate (BER)
- Direct measurement of protection switching times
- Powerful thru-mode testing for SONET ring turn-up
- Comprehensive SONET overhead testing
- LAN, HP-IB and RS-232-C remote control
- Universal instrument drivers for automated test applications . . .

. . . complemented by a host of easy-access, automated test features, plus graphical results presentation via the analyzer's large, multi-window color display

Carry just one instrument to track down faults in multi-rate, hybrid networks . . .

With the portable HP 37719A analyzer you can travel light and move fast. That's because the analyzer has the capability to trace and solve faults network-wide.

Take advantage of OC-48c testing

To verify the error performance of OC-48 tributaries on WDM systems, OC-192 multiplexers, SONET regenerators and optical amplifiers, you need the HP 37719A analyzer. With full bandwidth OC-48c BER capability, the analyzer accurately measures low bit error rates 16 times faster than an OC-48 test set configured with STS-3c payload channels.

Performance test limit	Test time (based on 100 errors)	
	STS-48c SPE payload	STS-3c SPE payload
10^{-14}	48 day	> 2 years
10^{-13}	4.8 days	77 days
10^{-12}	11.6 hours	7.7 days
10^{-11}	1.2 hours	18.5 hours
10^{-10}	7 minutes	1.9 hours

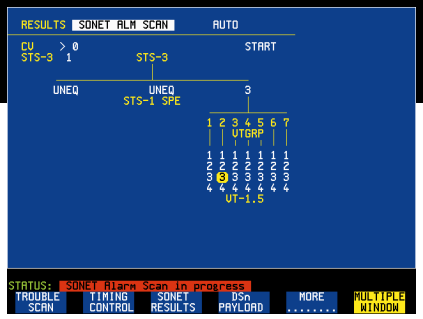
Accurately measure your network protection switching time

How long does your SONET network take to restore transmission after a major fault? For all network protection architectures, the HP 37719A analyzer's protection switching time measurement(*) will provide you with an accurate answer.

Identify unknown mixed payload signal structures

HP Smart Test provides fast access to frequently performed key tasks. Use it to automatically display the contents of unknown mixed-signal structures, test and scan errors and alarms, and highlight problem areas.

** Patent pending*



Helpful automatic scans
AlarmScan points you to problem tributaries, and delivers the results you need quickly using a graphical representation of the signal structure. TroubleScan takes you straight to the important performance measurements fast, and makes results interpretation easy.

HP Smart Test—your gateway to fast, easy testing

Whatever your application, the HP 37719A analyzer can significantly reduce test times—thanks to HP Smart Test. This invaluable feature lets you quickly access the analyzers many powerful automated test functions to speed up network and factory testing. Use it to:

- Find the signal structure and display all 48 STS-1s in an OC-48
- Display the J1 trace message and C2 signal label for the selected channel
- Auto-display mixed payload structures and scan for alarms or BIP errors
- Scroll through displayed channels to select a tributary for further analysis.

. . . and use just one instrument to develop and verify high-capacity network elements

The HP 37719A analyzer delivers all the test capability you'll need to fully stress and qualify the performance of both SONET and T-carrier devices and components.

Ideal for manufacturing and production test

The analyzer offers comprehensive threshold testing to check that device alarms and errors are reported correctly to the network management system.

It provides complete control of all SONET overhead functions to help you evaluate network equipment under stress conditions.

And you can generate the full range of controlled pointer movement sequences to ANSI T1.105.03, including automatic initialization and cool down sequences, to check device performance during asynchronous operation.

In addition, the analyzer provides:

- HP-IB, RS-232-C and LAN remote control
- Universal instrument drivers
- 19- and 23-inch rack mount kits.

Speeding up test development

One optical interface supports all SONET line rates to OC-48, so there's no need to re-cable during testing.

Universal instrument drivers simplify the generation of automatic test programs.

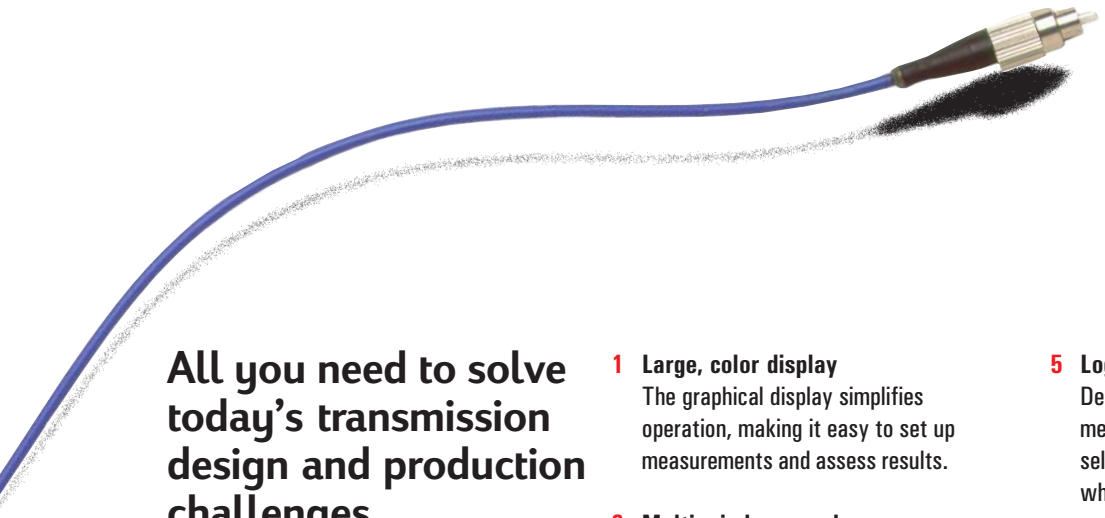
And of course, there's HP Smart Test.

A compact, portable BER analyzer—ready to perform, easy to use

Do you need powerful, precise test capability at your fingertips?

A tester that's easy-to-use, ready-to-perform and at home even in the most demanding environments?

If so, the HP 37719A communications performance analyzer is the solution you've been looking for.



All you need to solve today's transmission design and production challenges

1 **Large, color display**
The graphical display simplifies operation, making it easy to set up measurements and assess results.

2 **Multi-windows mode**
The simultaneous display of transmit and receive information plus text and graphic results ensures that you are always in complete control of your testing.

3 **Alarm LEDs**
Network alarms are flagged via bright front-panel LEDs, giving immediate information of critical signal conditions.

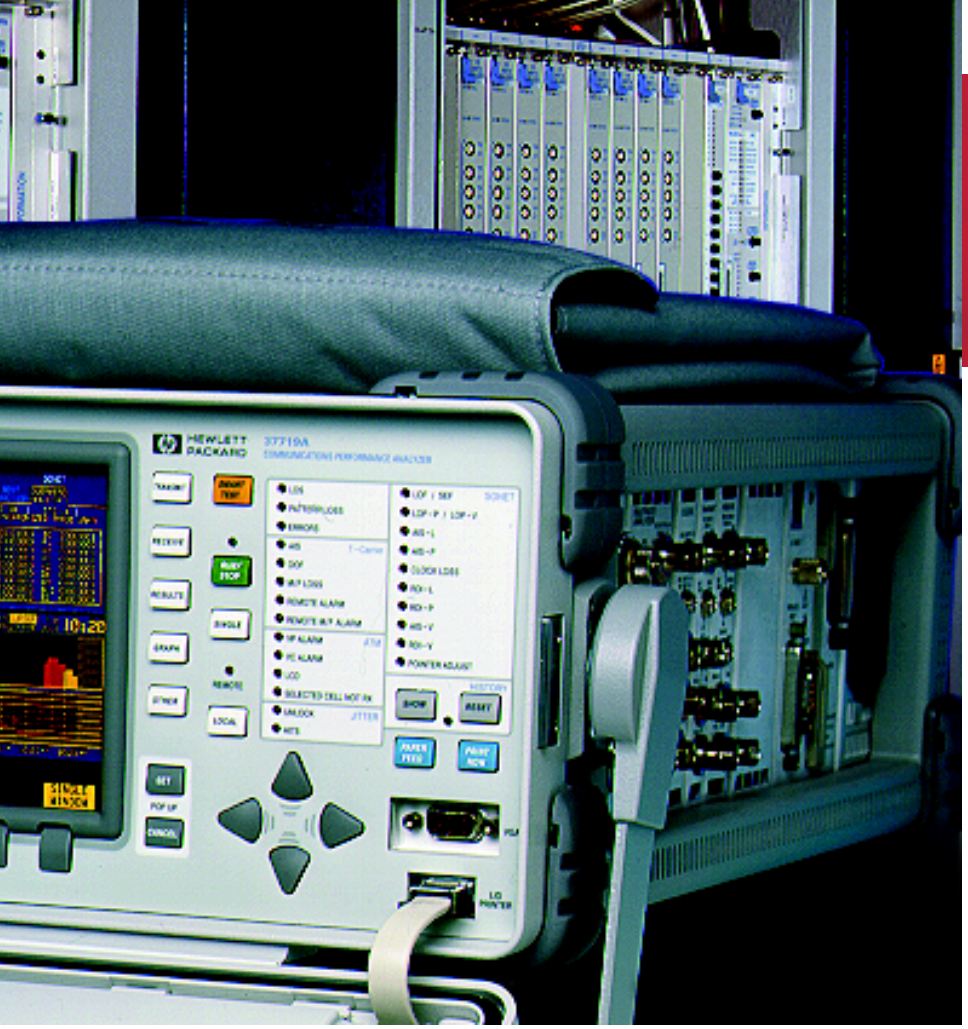
4 **HP Smart Test key**
With the HP Smart Test key you are only one button press away from the analyzer's many powerful automated test functions and key measurements.

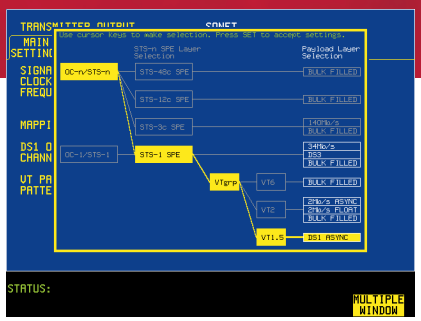
5 **Logical operation**
Dedicated keys, softkeys and pop-up menus reduce setup times and aid the selection of test parameters, important when fast testing is needed.

6 **Graphics printer (optional)**
The high-resolution printer provides a hard copy of text/graphical measurement results—essential for long-term performance monitoring. Screen dumps are also available.

7 **VGA output**
Useful for displaying information on an external monitor or overhead projector.

8 **Convenient accessory storage**
Pouch holds cables, manuals and floppy disks.

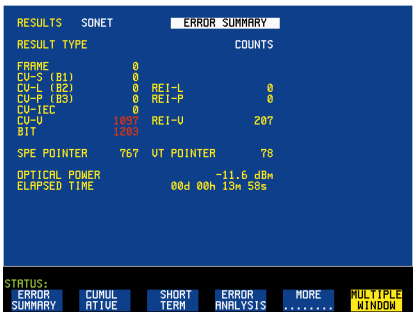




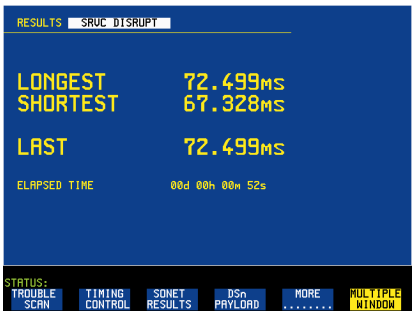
Graphical setup of payload mapping.

TroubleScan quickly informs you of any problems.

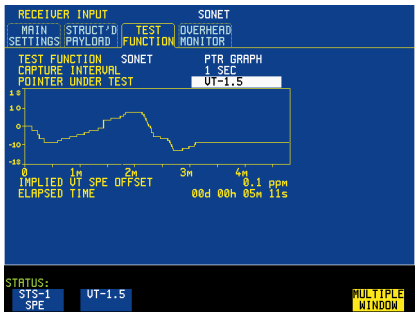
Easy-to-understand text and graphics helps you quickly connect, measure and interpret results



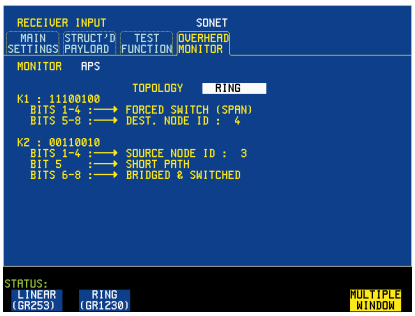
At-a-glance result summary displays for errors and alarms.



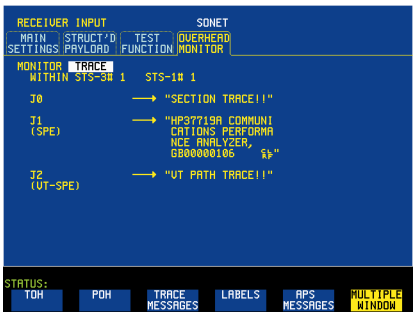
Directly measure how fast your network and network equipment recovers from a critical fault.



Clear presentation of pointer activity over time.

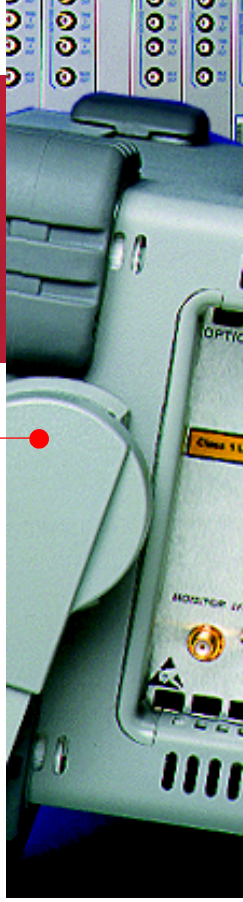


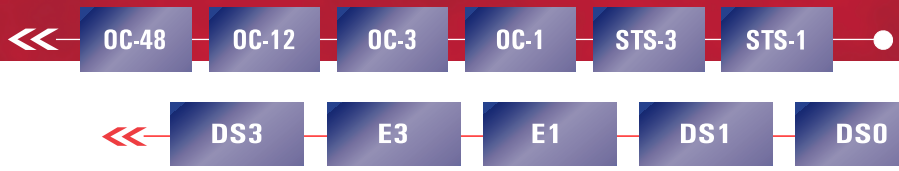
Message-based setup and decodes of defined overhead bytes. These include S1 (sync status), K1K2 (for APS messages), and the C2 and V5 signal labels.

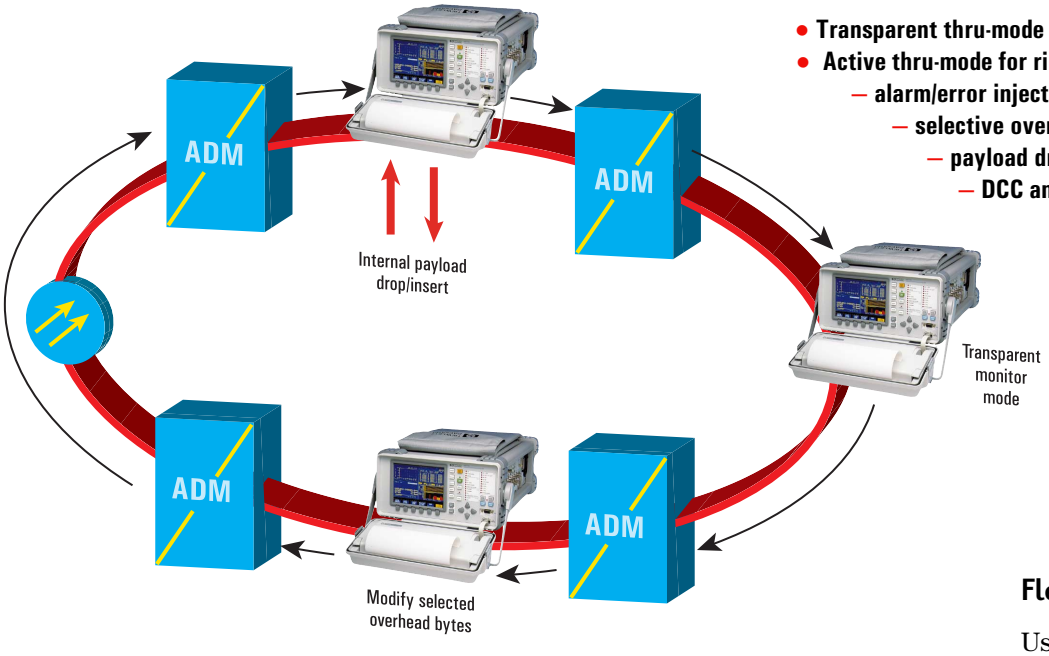


Easy access to text decodes for path trace messages.

Practical, flexible, robust. With built-in capability you can depend on







- **Transparent thru-mode for in-service testing**
- **Active thru-mode for ring turn-up testing**
  - **alarm/error inject**
  - **selective overhead overwrite**
  - **payload drop and insert**
  - **DCC and K1K2 pass thru.**

Comprehensive BER, functional and parametric test coverage that delivers fast, accurate testing

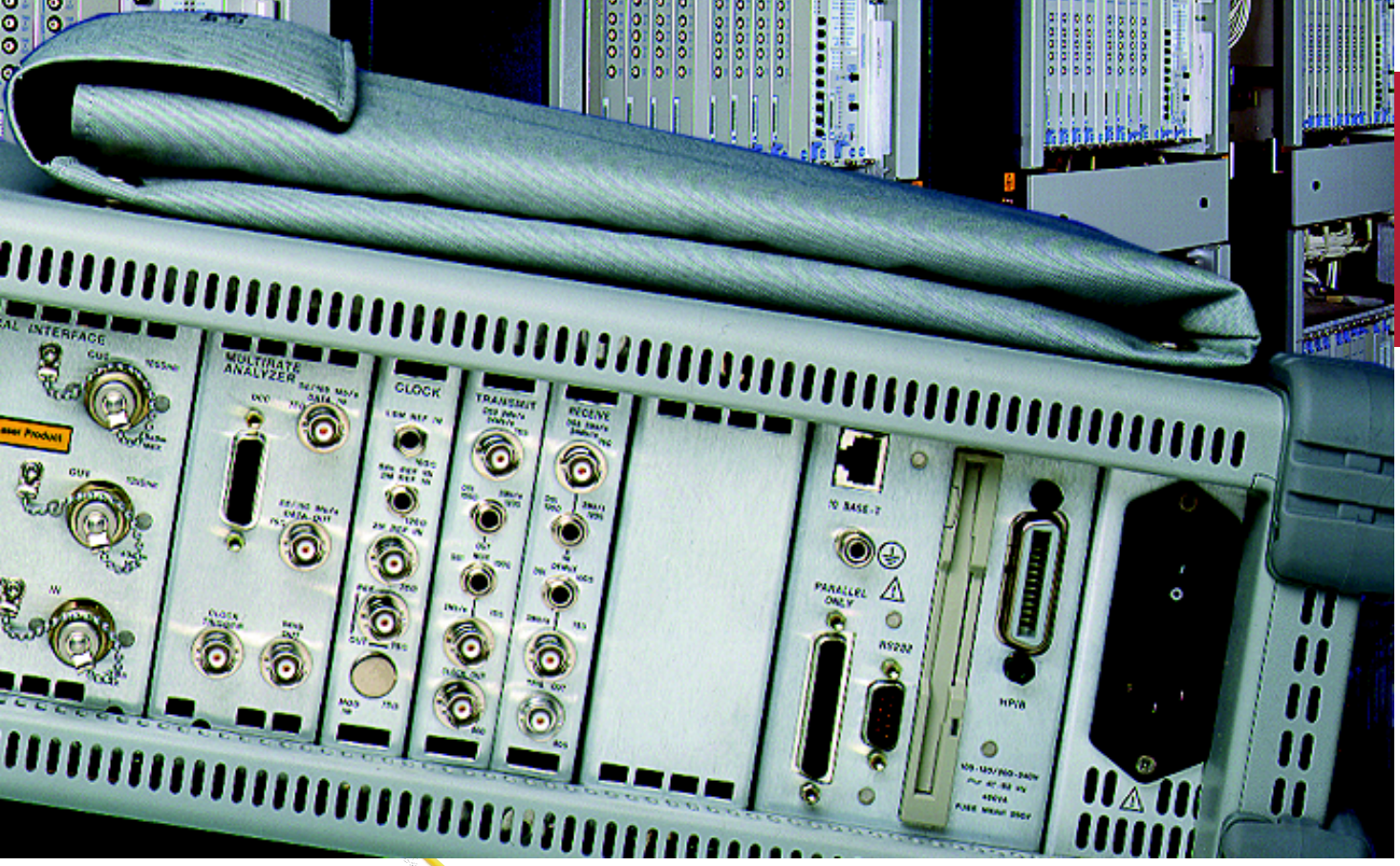
- All rates from DS0 to OC-48c
- Fast multi-channel tests
  - scan all STS/VT channels for alarms or BIP errors
  - scan all DS1 channels in a DS3 for alarms
- Wide range of parametric tests:
  - optical power
  - line frequency and offset
  - protection switching time
- Graphical pointer adjustment measurement
- Full SONET overhead monitoring and control
- Error and alarm generation (SONET and T-carrier)
- Pointer sequence generation to Bellcore GR-253
- Line frequency offset generation (OC-n and T-carrier).

Flexible thru-mode testing

Use the analyzer's flexible thru-mode test capability to get your SONET rings up and running fast, and keep them running.

During ring turn-up, inject errors and alarms or use 'selective' overhead overwrite controls to verify operation under fault conditions. To ensure your SONET ring remains operational, DCC management messages and K1K2 protection switching messages are passed transparently through the analyzer (unless selected for overwriting).

For ring maintenance testing, transparent thru-mode lets you perform in-service monitoring on all levels of the receive signal down to a selected DS0 channel.



Self-contained measurement capability—no need to carry or store fragile plug-ins or swap modules during tests

1 **Optical interfaces (1310, 1550 or 1310/1550 nm)**
Transmit and receive interfaces covering OC-48, OC-12, OC-3, OC-1.

2 **SONET electrical interfaces**
Transmit and receive interfaces supporting STS-1 and STS-3.

3 **T-carrier interfaces**
DS1, DS3, E1 (2 Mb/s) and E3 (34 Mb/s) transmit and receive.

4 **DS0 and fractional T1 testing**
Full mux/demux testing of a DS0 channel (56 or 64 kb/s) in a DSn signal, plus fractional T1 BER testing.

5 **Data communications channel (DCC) port**
Drop/insert of D1–D3 or D4–D12 management channels for external analysis.

6 **Frame pulse, divided clock and trigger outputs**
Synchronize your oscilloscopes for pulse mask or eye diagram testing.

7 **Clock synchronization inputs**
1.5 Mb/s (BITS), 2 MHz, 2 Mb/s, 10 MHz and 64 kb/s reference inputs.

8 **Full remote control**
HP-IB, RS-232-C, LAN programming control. Universal instrument drivers available.

9 **Floppy disk drive**
Install firmware upgrades, store/recall graphic results, log results, store bitmaps of screen shots.

10 **PC software**
Interactive control of a remote HP 37719A analyzer from a central support office for both long-term monitoring and assisting technicians at remote sites. Additionally, create and run your own customized test sequences and transfer results to other Windows®-based applications to provide detailed quality-of-service information for managers and customers.

HEWLETT® PACKARD
Expanding Possibilities

Ordering information

The HP 37719A communications performance analyzer comprises mainframe with large color display; integral floppy disk drive; and optional 80-column graphics printer. Includes power cord and operating manuals.

Full ordering information can be found in the configuration guide, p/n 5968-0975E.

Product literature

You'll find further details of the HP 37719A analyzer's test capability in the product profile, p/n 5968-0006E, specifications, p/n 5968-0976E and configuration guide, p/n 5968-0975E.

Related products

The HP 37717C communications performance analyzer offers a modular, upgradeable one-box solution for installation, commissioning and field maintenance. This rugged, portable tester allows comprehensive functional testing of SDH/SONET, PDH/T-carrier and ATM—including jitter generation and analysis—up to 622 Mb/s.

For further information, refer to publication no. 5964-0106E.

The HP 37718A communications performance analyzer is a rugged, portable one-box solution for installation, maintenance and manufacturing of SDH/SONET networks and network elements. It provides full PDH/T-carrier and SDH/SONET capability up to 2.5 Gb/s, including STM-16c/OC-48c payloads and jitter.

For further information, refer to publication no. 5967-5870E.

Hewlett-Packard manufactures the HP 37719A communications performance analyzer under a quality system approved to the international standard ISO 9001 plus TickIT (BSI Registration Certificate No FM 10987).

For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our web site, http://www.hp.com/go/tmdir. You can also contact one of the following centers and ask for a test and measurement sales representative.

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