

TELECOMMUNICATIONS TEST EQUIPMENT

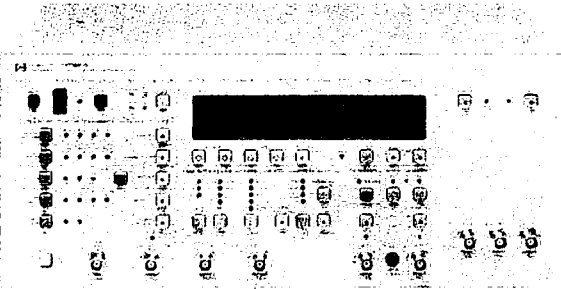
Digital Transmission Analyzers

HP 3764A, 37721A

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HP 3764A

- Error & jitter measurements at 140 Mbit/s or error measurements at 704 kbit/s, 2, 8, 34 & 140 Mbit/s
- Internal synthesizer for measurements from 1 kbit/s to 170 Mbit/s at binary interfaces
- Powerful data logging to internal or external printer
- Fast, easy measurement setup using stored presets



HP 3764A
Option 007



HP 3764A Digital Transmission Analyzer

The HP 3764A digital transmission analyzer is available in a number of different versions to cover a wide range of telecom and general-purpose test applications. Each one offers pattern generation and error detection at coded and binary interfaces, and an HP-IB port for remote control operation.

A version of the HP 3764A with combined error and jitter performance measurements at 140 Mbit/s is ideal for production test of telecom equipment. It can be further enhanced with a through-data mode to allow jitter to be added to any 140 Mbit/s signal passing through the instrument.

Versions of the instrument with CEPT rates from 704 kbit/s to 140 Mbit/s offer a test solution for manufacturing and installation of digital network equipment. Other versions, including a clock synthesizer, offer data generation and error detection at binary interfaces at rates up to 170 Mbit/s.

Applications

- Production testing of digital transmission equipment
- Installation and maintenance of digital networks
- Demultiplexer testing using through-data mode to add jitter to a structured signal
- Long-term unattended monitoring with error performance analysis based on CCITT Recommendation G.821

Measurement Summary

Error analysis: Error count, error ratio, error seconds, error-free seconds, % unavailability, % errored seconds, % severely-errored seconds, % degraded minutes. All measurements are made simultaneously and in accordance with CCITT Recommendation G.821.

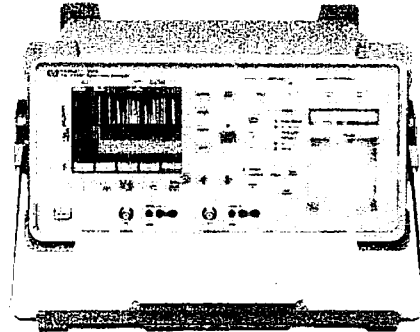
Jitter analysis: Peak-to-peak amplitude, jitter hit count, jitter hit seconds, jitter hit-free seconds. Internal filters to CCITT Recommendation O.171 are available for performing selective jitter measurements. Where a greater degree of selectivity is required, a demodulated jitter output allows connection of external equipment such as a spectrum analyzer.

Ordering Information

	Price
HP 3764A digital transmission analyzer	\$11,610
Opt 002 Jitter generation and measurement at 140 Mbit/s	+\$3,115
Opt 007 Jitter generation and measurement at 140 Mbit/s with through-data mode plus clock synthesizer	+\$7,070
Opt 006 Error performance at 704 kbit/s, 2, 8, 34 & 140 Mbit/s plus clock synthesizer	+\$2,730

HP 37721A

- Bit & code error testing at 704 kbit/s, 2, 8, 34 & 140 Mbit/s
- Portable, lightweight & rugged
- Text & graphic results on large display
- Stored setups & autoselection for ease of use
- Remote control, frequency offset & measurement, multiple outputs



HP 37721A



HP 37721A Digital Transmission Analyzer

The HP 37721A digital transmission analyzer is a portable, lightweight, rugged test set providing bit and code error testing at the European CEPT rates of 704 kbit/s, 2, 8, 34 and 140 Mbit/s. It measures error performance to CCITT Recommendation G.821, with interfaces to G.703.

A key feature of the HP 37721A is its ease of use: the autoselection facility automatically configures the test set to the incoming data; nine stored setups ensure that required test parameters are instantly available; graphic display of results shows error counts, error seconds and alarms at a glance; and a range of logging options to an internal or external printer provides customized hard-copy proof of results.

Option 001 provides remote control via RS-232-C and HP-IB interfaces and adds the ability to log results to an HP ThinkJet. Multiple outputs in Option 002 enable simultaneous loading of four channels of a multiplexer or digital radio with only one test set. With Option 003, up to 100 ppm of frequency offset is provided at all rates to evaluate clock-recovery circuits.

Applications

- Maintenance of digital networks (PTTs, other network operators)
- Installation of digital networks (PTTs, network operators, manufacturers)
- Long-term unattended monitoring with error performance analysis based on CCITT Recommendation G.821

Measurement Summary

Error analysis: As CCITT Recommendation G.821.

Results displayed: Elapsed time in test period; errored seconds, % errored seconds, error-free seconds, % error-free seconds, severely-errored seconds, % severely-errored seconds; unavailability, % unavailability; degraded minutes, % degraded minutes; code-error seconds; bit error count, bit error ratio; code error count, code error ratio; frequency, frequency offset; and alarms.

Ordering Information

	Price
HP 37721A digital transmission analyzer	\$7,670
Opt 001 Remote control	+\$645
Opt 002 Multiple outputs	+\$1,720
Opt 003 Frequency offset	+\$1,075

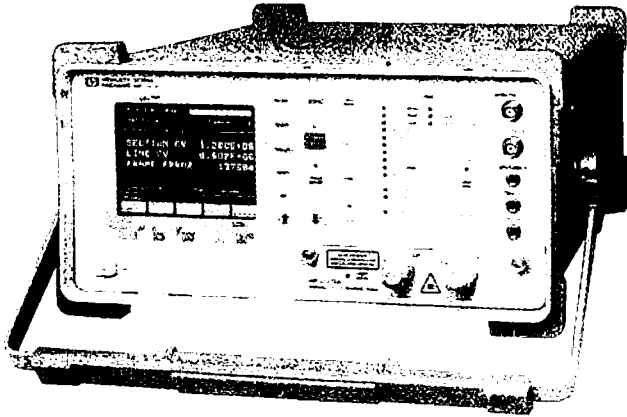
TELECOMMUNICATIONS & DATA COMMUNICATIONS TEST

SONET/SDH Test Sets
HP 37704A, 37744A, 37724A

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- Combined SONET/DS3 and DS1 test solution
- Field-portable and robust unit
- Easy to use
- Overhead and mapped payload testing

- SDH testing at 155 Mb/s (STM-1) and 622 Mb/s (STM-4)
- PDH testing at 2 Mb/s and 140 Mb/s
- Comprehensive, single-unit test solution
- Field-portable and robust unit



HP 37704A



HP 37704A SONET Test Set

The HP 37704A is a comprehensive, field-portable, SONET, DS3, and DS1 test set for applications up to 622 Mb/s (STS-12). It provides generation and analysis of VT (DS1) and DS3-mapped SONET signals, with full control of section, line, and path overhead bytes. Plug-in modules provide connection to a range of optical and electrical interfaces. Errors, alarms, and TIX1 pointer movement sequences are generated to stress equipment up to and beyond ANSI standards.

Applications

The HP 37704A is a rugged, portable test set well suited to installation, acceptance testing or commissioning, and maintenance of SONET, DS3, and DS1 network equipment. In addition, its comprehensive test suite covers many applications in R&D and production.

Specifications

Frame Formats: DS1, DS3, STS-1, STS-3, and STS-12
Mappings: DS1 (all VT1.5 modes) and DS3 to ANSI T1.105 and Bellcore TA-TSY-000253
Test Interfaces
Optical: 51.84, 155.52, and 622.08 Mb/s (1310 nm)
Coded electrical: 1.544 (B8ZS), 44.736 (B3ZS), 51.84 (B3ZS), and 155.52 (CMI) Mb/s
Size: 340 mm W × 190 mm H × 420 mm D (13.9 in × 7.8 in × 17.2 in)
Weight: 10 kg (22 lb)

HP 37744A SONET Tester

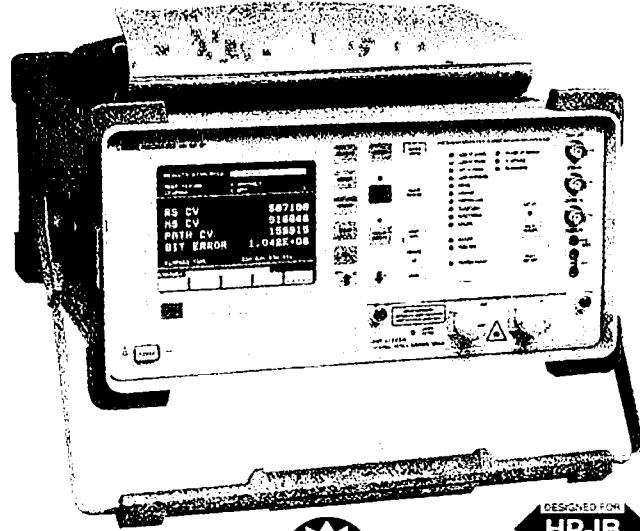
The HP 37744A is a small, rugged, and easy-to-use SONET tester for applications up to 155 Mb/s. It provides a low-cost solution for the generation and analysis of the section line and path overhead on structured 52-Mb/s or 155-Mb/s SONET signals. The tester is intended for applications in SONET circuit installation and maintenance, as well as for circuit monitoring in central offices.

Specifications

Frame Formats: STS-1 and STS-3
Test Interfaces: Optical, 51.84 Mb/s and 155 Mb/s (1310 nm); coded electrical, 51.84 (B3ZS) and 155.52 (CMI) Mb/s
Size: 340 mm W × 190 mm H × 208 mm D (13.4 in × 7.5 in × 8.2 in)
Weight: 4.5 kg (10 lb)

Ordering Information

	Price
HP 37704A SONET Test Set	\$19,900
Opt 001 Frequency Offset	+ \$3,000
Opt 002 VT Capability	+ \$7,200
HP 37744A SONET Tester	\$9,900
Accessories	
HP 37771A STS-3 Electrical Interface	\$3,000
HP 37772A Optical Interface 52/155 Mb/s (STM-1)	\$14,500
HP 37776A Optical Interface 622 Mb/s (STM-1/4)	\$25,500



HP 37724A



HP 37724A SDH/PDH Test Set

The HP 37724A is a comprehensive, field-portable SDH/PDH test set for applications up to 622 Mb/s (STM-4). It provides generation and analysis of TU-12 (2 Mb/s) and 140-Mb/s mapped SDH signals, with full control of regenerator section, multiplexer section, and path overhead bytes. Plug-in modules provide connection to a range of optical interfaces. Errors, alarms, and G.783 pointer movement sequences are generated to stress equipment up to and beyond CCITT standards.

Applications

The HP 37724A is a rugged, portable test set well suited to installation, acceptance testing or commissioning, and maintenance of SDH network equipment. In addition, its comprehensive test suite covers many applications in R&D and production.

It provides a wide range of tests for verifying SDH equipment such as line systems, add-drop multiplexers, digital cross-connects, and line-terminal multiplexers.

Specifications

Frame Formats: STM-1 and STM-4
Mappings: 2 Mb/s (all TU-12 modes) and 140 Mb/s to CCITT G.709
Test Interfaces
Optical: 155.52 and 622.08 Mb/s (1310 nm)
Coded electrical: 2.048 (HDB3), 139.264 (CMI), and 155.52 (CMI) Mb/s
Add/drop: 2 Mb/s, 140 Mb/s, STM-1, and overhead DCC channels
Overhead: Standard and user-programmable section, line, and path overhead bytes
Size: 340 mm W × 190 mm H × 420 mm D (13.9 in × 7.8 in × 17.2 in)
Weight: 10 kg (22 lb)

Ordering Information

	Price
HP 37724A SDH/PDH Test Set	\$25,530
Opt 001 Frequency Offset	+ \$3,000
Opt 002 TU Capability	+ \$4,000
Opt 003 Small Siemens 1.6/5.6 mm replace all BNC	\$0
Accessories	
HP 37772A Optical Interface 52/155 Mb/s (STM-1)	\$14,500
HP 37776A Optical Interface 155/622 Mb/s (STM-1/4)	\$25,500

For the most current prices and product information, contact your local Hewlett-Packard sales office—see page 665.