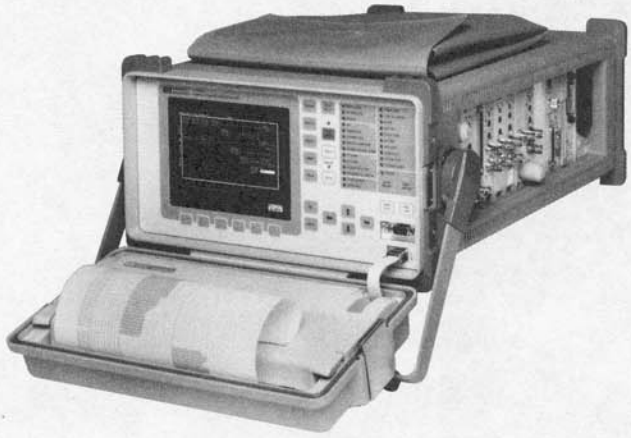
Communications Performance Analyzers, SONET/SDH/PDH/ATM Test Set

HP 37717B
HP 37717C
HP 37724A
HP 75000 Series 90

- Single-unit solution for SDH, SONET/SDH, PDH, PDH/DSn, ATM Test, and jitter generation and measurement up to 2.488 Gb/s
- In-service and out-of-service measurements
- Monitors PDH and SDH overhead framing, parity, and alarm information
- Easy results interpretation with new color interface
- ATM cell generation and analysis, and ATM services layer test
- Pointer sequence generation to ITU-T G.783
- Works with HP E4540A distributed network analysis software
- Comprehensive jitter test capability



HP 37717C

HP 37717B/C Communications Performance Analyzers

These offer modular, upgradeable one-box solutions for installation, field maintenance, commissioning and manufacturing. Rugged and portable, they allow full functional testing of SDH, PDH and ATM equipment, including jitter generation and measurement. The HP 37717C has color display, graphics printer, and dual-standard SONET/SDH capability. The HP 37717B monochrome version provides a budget solution, with a 24-column printer. Both have a 3.5-inch disk drive for results retrieval and storage, firmware upgrades, and results export to PC applications.

The HP 37717B/C family of communications performance analyzers offer one-box, field-portable testers for installation, maintenance and commissioning of today's hybrid PDH/SDH and ATM transport networks and network equipment at SDH rates from STM-4 (622 Mb/s) through STM-1 (155 Mb/s) to STM-0 (52 Mb/s). Optical 1310 nm and 1550 nm interfaces are supported as well as electrical interfaces at all rates. A range of PDH rates from 140 Mb/s to 704 kb/s are also supported. The measurement capability is configured using a modular architecture, allowing fully flexible configurations and full upgradeability—thus protecting your investment in test equipment.

The instrument can be configured to simultaneously include PDH, SDH, ATM and jitter, or it can be can be configured to be PDH only, SDH only or ATM only with or without jitter generation and measurement. The HP 37717B monochrome version (with internal 24-column printer) provides a budget solution. The more powerful HP 37717C has color display and optional graphics printer.

Use the HP 37717C to perform in-service non-intrusive monitoring of live traffic, or test the network's protection switching mechanisms, perform out-of-service BER measurements or fully test ATM physical and cell layers and B-ISDN protocol stack layers. Functionally test PDH/SDH multiplexors, regenerative repeaters, digital cross connects etc., as well as ATM switches, routers and rate converters. Stress network elements by performing frequency offset, auto-jitter tolerance, auto-jitter transfer and output jitter measurements to ITU-T recommendations. Important parametric tests such as protection switch times, frequency, delay and optical power measurement are also supported.

SDH

The SDH modules operate at STM-0, STM-1 and STM-4, with optical interfaces at 1310 and 1550 nm. Combined with the structured PDH module, mux/demux BER tests from 622 Mb/s to n*64 kb/s are possible. In-or out-of-service tests on PDH, SDH transmission lines, or PDH payloads carried in SDH systems, are supported. The operation of SDH network alarms, error monitors, protection switches, pointer processors and de-synchroniser circuits can be verified with this module. Drop/insertion of PDH payloads to/from the SDH signal and an error output are also available. SDH Alarm and Channel Scan, protection switch times, mixed payloads and comprehensive through-mode features make this product the industry standard.

PDH

PDH rates of 704 kb/s and 2, 8, 34 and 140 Mb/s and an error output are provided in the basic PDH module. The structured PDH module gives 2, 8, 34 and 140 Mb/s rates.The structured module provides full-structured PDH capability, including PDH alarm generation, spare bits generation, and full mux/demux BER from 140 Mb/s to n*64 kb/s (n = 1 to 31). An alarm scan capability graphically points to problem areas within the signal structure; a telephone handset connection gives full talk/listen capability.

Jitter and Wander

A range of jitter modules gives full PDH, SDH and ATM jitter generation/measurement. 2, 8, 34, 140 Mb/s, 155 Mb/s (STM-1 electrical and optical) and 622 Mb/s (STM-4 optical) rates are supported. Automatic jitter tolerance verification of SDH (ITU-T G.958/G.825) and PDH (ITU-T G.823) network elements is possible. Automatic jitter transfer testing of SDH (ITU-T G.958) and PDH (ITU-T G.823) network elements is provided using narrowband selective filtering for high accuracy. Tests are made according to ITU-T O.171 and can measure the large jitter transients that accompany pointer movements in SDH networks. Generate pointer sequences (to ITU-T G.783), with the appropriate SDH module, and measure the effect on the tributary outputs using the tributary jitter measurement module. RMS jitter measurements (to ITU-T G.958) with 12 kHz HP filter are supplied. Wander generation is available at 2Mb/s and at STM-1/STM-4 to ITU-T G.825. Wander measurement is available at 2 Mb/s.

ATM Cell and Service Layer Test

The ATM cell module gives transmit and receive capability at the physical and cell layers, and through-mode monitor for convenient access. Transmit features include independently settable channels to simulate live traffic profiles, full access to the header values, test patterns for the payload, and alarm/error generation. Measurements cover parameters such as cell loss, delay, non-conforming cell count, and misinsertion, HEC errors, and OAM alarms.

The ATM services test module allows the test of all B-ISDN protocol stack layers. It monitors adaptation layers AAL-1, -3/4, and -5; VP/VC rate history; Channel View; Benchmark Traffic; and stored cell streams. Tests for native LAN connectivity: 10 Mb/s Ethernet LAN interfaces are optional. This capability is only available in the HP 37717C.

SONET/SDH Dual Standard Test NEW

The HP 37717C optionally provides dual-standard testing for both SONET and SDH standards up to 622 Mb/s. Combined with DS1/DS3 and ITU-T PDH interfaces, the HP 37717C offers a truly worldwide test solution in one box, helping network equipment manufacturers improve the flexibility of their production lines and reduce costs. Testing to ANSI and ITU-T standards is provided in a single instrument.

Deregulation has also increased the need to interface SONET to SDH networks. SDH networks therefore need to support North American DS1/DS3 (DSn) payloads and interfaces, and map them correctly into SDH according to the ITU-T standard G.707. The HP 37717C fully tests all the ITU-T G.707 mapping routes (AU-3 and AU-4) used at international gateways, as well as testing the DSn/PDH circuits themselves.

Additionally, network equipment manufacturers and operators can check Automatic Protection Switch (APS) times on SONET/SDH rings and linear networks to Bellcore and ITU-T standards. With this capability, network operators and equipment manufacturers can ensure customers will suffer minimal service disruption when protection switching takes effect.