

KEYSIGHT TECHNOLOGIES (AGILENT HP)

37717C

The Keysight Technologies (formerly Agilent / HP) 37717C, also known as the OmniBER 717C, is a modular, field-portable communications performance analyzer designed for installation, maintenance, and commissioning of hybrid PDH/SDH/SONET, ATM, and LAN networks. Offering comprehensive testing capabilities from 704 kb/s up to 622 Mb/s (STM-4/OC-12), the 37717C supports multi-rate electrical and optical interfaces alongside powerful jitter generation and measurement options.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232, Parallel (Centronics), LAN (10Base-T Ethernet) via module options
Display	9.5-inch active matrix color TFT LCD

Physical

Power Supply	100 to 240 V AC ($\pm 10\%$), 47 to 63 Hz, 350 VA max power consumption
Dimensions (W×H×D)	340 mm × 210 mm × 450 mm mm
Weight	14.5 kg

General Platform Architecture

Platform Type	Modular portable mainframe tester
Display Resolution	640 x 480 pixels
Storage Media	Built-in 3.5-inch floppy disk drive (1.44 MB)

Physical Layer Interfaces

Electrical Connector Types	BNC (75 ohm), Siemens 1.6/5.6 (75 ohm), or balanced RJ45/Bantam (option dependent)
BNC Connector Impedance	75 ohms (unbalanced)
Reference Clock Input	2.048 MHz, 1.544 MHz, or 10 MHz reference clock inputs
Reference Clock Output	Loop-recovered clock or internal reference output
DCC Drop and Insert	RSOH or MSOH DCC drop/insert (SDH); TOH DCC drop/insert (SONET)

Supported Protocols & Standards

PDH Standards	ITU-T G.703, G.704, G.706, G.821, G.826, M.2100
SDH Standards	ITU-T G.707, G.783, G.957, G.958
PDH/DSn Timeslot Access	Check 64 kb/s or Nx64 kb/s paths (1 to 31 timeslots contiguous/non-contiguous to G.704)
Out-of-Service Tributary Scan	Automatic verification of VC-n (SDH) or VTn (SONET) paths

Transmitter Capabilities

Pattern Generation Types	PRBS (2 ⁹ -1, 2 ¹¹ -1, 2 ¹⁵ -1, 2 ²⁰ -1, 2 ²³ -1, 2 ³¹ -1) and 16-bit user-defined word patterns
Frequency Offset Generation Range	Up to ±100 ppm (with offset option)
Alarm Generation Types	LOS, LOF, LOP, AIS, RDI/FERF
Error Injection Types	BIP, Bit, Frame, CRC-4, FEBE
SDH Mixed Payloads Generation	Mixed TU-3 and TU-12 structures to carry mixed 2 Mb/s and 34 Mb/s traffic
SONET Mixed Payloads Generation	Mixed STS-1 signal structures within STS-3/OC-3
ATM Cell Bandwidth Control	Variable cell stream bandwidth control for QoS testing

Receiver Analysis and Measurement

Network Clock Recovery Test	Test for network clock recovery capability
Alarm Scan	PDH/DSn hierarchy Alarm Scan, SDH/SONET in-service alarm and BIP scan
Pointer Adjustments Analysis	Positive and negative pointer adjustments followed by analysis with location graph
Optical Power Measurement	Supported (option dependent)
Graphical Event Logging	Alarms and errors displayed graphically with timestamps
Trouble Scan Mode	Automated mode for rapid error and alarm scans
Jitter Measurements	Automatic jitter tolerance, accumulation, sweep/spot frequency, and output jitter (option dependent)
ATM QoS Performance	1-point and 2-point cell delay variation (CDV), nonconforming cell count
ATM Cell Rate Tracking	Graphical tracking of max, mean, and min cell rates on a chosen VC
Overhead Byte Capture	View section (SOH) and path (POH) overhead bytes
Clock Frequency Analysis	Measurement of clock frequency and amount of frequency offset
In-Service Monitoring	Thru mode for SDH/SONET in-service monitoring

Connectivity & Control

Command Compatibility	SCPI (Standard Commands for Programmable Instruments)
Hardcopy Output	Full screen dump to built-in printer or external HP-GL/PCL parallel printer
External Interface Ports	PS/2 keyboard port, VGA external monitor port

Environmental and Compliance

Operating Humidity Range	Up to 95% RH (non-condensing)
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Options & Configurations

Option 105	Adds 2.5 Gb/s (STM-16/OC-48) test capability
Option 120	Adds STM-1/OC-3 (155 Mb/s) optical and electrical testing
Option 121	Adds STM-1/4, OC-3/12 (155/622 Mb/s) optical and electrical testing
Option 130	Adds jitter generation and measurement capability
Option 150	Adds ATM test capability
Option 601	Adds remote control interfaces (GPIB, RS-232, Parallel)
Option 602	Adds LAN remote control interface

Optical Transmitter

Transmitter Optical Wavelengths	1310 nm / 1550 nm (option dependent)
Laser Class	Class 1 (EN 60825-1 / FDA 21 CFR 1040.10)

Optical Receiver

Receiver Input Power Range (155 Mb/s)	-8 to -34 dBm
Receiver Input Power Range (622 Mb/s)	-8 to -28 dBm
Receiver Input Power Range (2.5 Gb/s)	-3 to -20 dBm (Option 106)

Clocking & Synchronization

Internal Reference Frequency Stability	±1 ppm
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Physical & Environmental

Maximum Power Consumption	250 VA
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Connectivity

GPIB Port	IEEE-488.2
Parallel Port	25-pin D-sub Centronics-compatible
VGA Output Port	15-pin D-sub

Options

Option 603	Adds external VGA and keyboard interface
Option 300	Option 103
Option 122	2.488 Gb/s (STM-16/OC-48) SDH/SONET test capability

Power Specifications

AC Input Voltage	90 to 260 V AC
AC Input Frequency	47 to 63 Hz

TECHNOLOGY

SDH/SONET, PDH, ATM, and Jitter Testing

APPLICATIONS

Installation, maintenance, and commissioning of telecom transmission networks

