

ANRITSU

MP1590B

The Anritsu MP1590B is a high-performance Network Performance Analyzer designed for the comprehensive testing of SDH/SONET, OTN, PDH/DSn networks, as well as high-precision jitter and wander analysis up to 11.1 Gb/s. Built with a modular architecture, it supports a wide range of plug-in modules to adapt to various transmission and optical testing applications. Its integrated Windows operating system and high-resolution touchscreen provide an intuitive user interface for field and laboratory environments.

SPECIFICATIONS

General

Interfaces	GPIB, LAN (10BASE-T/100BASE-TX), RS-232C, VGA, USB 1.1 (Type A)
Display	10.4-inch SVGA color TFT LCD (800 x 600 pixels)

Physical

Power Supply	100 V AC to 240 V AC, 47 Hz to 63 Hz, <= 600 VA
Operating Temperature	+5 to +40 °C °C
Dimensions (W×H×D)	320 x 177 x 350 mm (excluding projections) mm
Weight	9.5 kg (mainframe without modules) kg

Optical Interface Specifications

Supported Optical Line Rates	155.52 Mb/s (STM-1/OC-3) to 10.709 Gb/s (OTU2), up to 11.1 Gb/s (OTU1e/OTU2e) with options
Supported Wavelengths	1310 nm, 1550 nm (optical module dependent)
Optical Connector Types	FC, SC, or ST (optical adapter dependent)

Electrical Interface Specifications

Supported Electrical Interfaces	DS1, DS3, E1, E2, E3, E4, STM-0, STM-1, STS-1, STS-3 (module dependent)
Interface Impedance	75 ohms (unbalanced), 100/110/120 ohms (balanced)

SDH/SONET Mapping & Testing Capabilities

Supported Mapping Structures	VC-11/VC-12/VC-3/VC-4, VC-4-Xc bulk/concatenated (up to VC-4-64c / STS-192c)
Pointer Generation and Analysis	Conforms to ITU-T G.707 and GR-253-CORE
Pointer Justification Test Sequences	Single, successive, alternate, sequence pointer adjustments
Alarm/Error Generation	LOS, LOF, OOF, LOP, MS-AIS, MS-RDI, AU-AIS, AU-LOP, HP-UNEQ, HP-RDI, TU-AIS, TU-LOP
Alarm/Error Detection	Real-time logging of SDH/SONET alarms and BIP-1/BIP-2/BIP-8/B1/B2/B3 errors
Overhead Byte Generation & Capture	Full SOH/POH byte editing and real-time capture
Tandem Connection Monitoring (TCM) Analysis	Supported (N1/N2 bytes)
Automatic Protection Switching (APS) Measurement Time	0.1 ms resolution
Round Trip Delay (RTD) Measurement Resolution	0.1 us

OTN (Optical Transport Network) Testing

OTN Line Rates	2.66 Gb/s (OTU1), 10.709 Gb/s (OTU2), 11.049 Gb/s (OTU1e), 11.095 Gb/s (OTU2e)
FEC Generation and Analysis	Reed-Solomon RS(255,239) error correction generation and detection
OTN Overhead Programming	Full SM, PM, TCM overhead programming and monitoring
OTN Alarm/Error Generation & Detection	OTU-LOF, OTU-LOM, OTU-AIS, ODU-AIS, ODU-BDI, ODU-OCI, ODU-LCK, BIP-8, BEI
Tandem Connection Monitoring (TCM) Support	TCM1 to TCM6 overhead bytes

PDH/DSn Testing Capabilities

Supported PDH/DSn Bit Rates	1.544 Mb/s (DS1), 2.048 Mb/s (E1), 6.312 Mb/s (DS2), 8.448 Mb/s (E2), 34.368 Mb/s (E3), 44.736 Mb/s (DS3), 139.264 Mb/s (E4)
Line Coding Formats	AMI, B8ZS, HDB3, CMI (interface dependent)
PDH/DSn Pattern Generation Types	PRBS 2 ⁹ -1, 2 ¹¹ -1, 2 ¹⁵ -1, 2 ²⁰ -1, 2 ²³ -1, 2 ³¹ -1

Jitter & Wander Measurement Specifications

Jitter Generation Frequency Range	0.1 Hz to 80 MHz (rate dependent, complies with ITU-T O.172)
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Maximum Jitter Amplitude Generation	Up to 800 UI p-p (rate and frequency dependent, complies with ITU-T O.172)
Jitter Amplitude Resolution	0.001 UI
Jitter Mask Compliance Standards	ITU-T G.825, G.8251, G.823, G.824, O.172, Bellcore GR-253, GR-1377
Wander Sampling Rate	1, 10, 100 samples/s (selectable)
Jitter Transfer Function (JTF) Accuracy	Conforms to ITU-T O.172 recommendations

Pulse Pattern Generator (PPG) & Error Detector (ED)

Internal Clock Frequency Range	Up to 11.1 GHz (option dependent)
Pattern Types	PRBS 2 ⁷ -1, 2 ⁹ -1, 2 ¹¹ -1, 2 ¹⁵ -1, 2 ²⁰ -1, 2 ²³ -1, 2 ³¹ -1, programmable word
Bit Error Insertion Rates	Single, 1E-3 to 1E-9

Measurement & Analysis Functions

BER Analysis Standards	ITU-T G.821, G.826, G.828, G.829, M.2100, M.2101, M.2110, M.2120
Performance Monitoring Parameters	ES, SES, BBER, UAS, DM
Event Logging Capacity	Continuous logging to internal hard disk drive

Connectivity, Ports & External Interfaces

External Trigger Input/Output	BNC, TTL levels
Reference Clock Input/Output	BNC, 1.544 MHz, 2.048 MHz, 10 MHz, 64 kHz, or frame sync
VGA Video Output Port	15-pin D-sub
RS-232C Serial Interface	9-pin D-sub

Operating System, Software & Control

Internal Operating System	Windows XP Professional
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Environmental & Regulatory Compliance

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity Range	35% to 85% RH (non-condensing)
Laser Safety Classification	Class 1 / Class 1M (dependent on installed transmitter module)

Connectivity

GPIB Remote Control Interface	IEEE-488.2 compliant
Ethernet Remote Control Interface	10BASE-T/100BASE-TX (RJ-45)
USB Interfaces	USB 1.1 (for mouse, keyboard, or external storage)

Storage & Expansion

PC Card Slot	Type II x 1 slot (CardBus compliant)
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Power

Power Consumption	≤ 600 VA
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Operation

Warm-up Time	≥ 30 minutes (prior to measurement execution)
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Compliance

Electromagnetic Compatibility (EMC)	EN61326-1, EN61000-3-2
Product Safety Standards	EN61010-1

Clock & Synchronization

Standard Internal Clock Accuracy	±4.6 ppm (ITU-T G.813 Option 1 compliant)
High-Stability Clock Option Accuracy	±1 × 10 ⁻⁷ /year aging, ±5 × 10 ⁻⁸ temperature stability (0°C to 50°C) with Option 01

Inputs & Outputs

Audio Output Port	3.5 mm mini jack (monaural)
Printer Interface Port	Centronics 25-pin D-sub (parallel)

TECHNOLOGY

SDH / SONET / OTN / Jitter Analyzer

APPLICATIONS

Telecom Transmission & Jitter Testing

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