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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 71612A – Bit Error Rate Tester

The HP 777D is a 50-ohm dual directional coupler for swept reflectometer and closed-loop leveling work from 1.9 to 4.0 GHz. OEM 777D operating-note Table 1 lists primary-line insertion loss less than or equal to 0.75 dB, minimum directivity 30 dB, nominal coupling 20 dB, coupling accuracy plus or minus 0.5 dB, maximum coupling variation plus or minus 0.4 dB, auxiliary-arm tracking 0.5 dB or less, maximum primary SWR 1.2, maximum secondary SWR 1.3, and 50 W CW or 10 kW peak. Primary connectors are TypeNmale and female; auxiliary arms are TypeNfemale. Dimensions are 225 mm x 64 mm x 29 mm; net weight 700 g. Swept reflectometer measurements, simultaneous forward/reverse power monitoring, and ALC leveling in 1.9 to 4.0 GHz coaxial systems. HP Agilent 777D Dual Directional Coupler 1.9 to 4.0 GHz The HP 777D is a 50-ohm dual directional coupler for swept reflectometer and closed-loop leveling work from 1.9 to 4.0 GHz. OEM 777D operating-note Table 1 lists primary-line insertion loss less than or equal to 0.75 dB, minimum directivity 30 dB, nominal coupling 20 dB, coupling accuracy plus or minus 0.5 dB, maximum coupling variation plus or minus 0.4 dB, auxiliary-arm tracking 0.5 dB or less, maximum primary SWR 1.2, maximum secondary SWR 1.3, and 50 W CW or 10 kW peak. Primary connectors are TypeNmale and female; auxiliary arms are TypeNfemale. Dimensions are 225 mm x 64 mm x 29 mm; ne

**MODEL****Agilent / Keysight
777D****CALIBRATION****Available on
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****777D****LISTING**<https://aumictechlabs.com/products/777d-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 71612A is a high-speed bit error rate tester engineered for characterizing optical and electrical signals from 1 to 12 Gb/s. Operating as an error performance analyzer, it delivers pattern generation, error detection, and measurement capabilities across SONET, SDH, and custom digital communication systems. The instrument supports Pseudo-Random Binary Sequences (PRBS) up to $2^{31}-1$, user-defined patterns to 8 Mbit via disk, and variable mark density configurations for STM-64 and STS-192 testing. An optional clock-source extension enables operation down to 100 Mb/s.

Technical Specifications

Bit Rate: 1 to 12 Gb/s (optional 100 Mb/s to 12 Gb/s)

Pattern Generator & Error Detector: 100 MHz to 12 GHz

Test Patterns: PRBS sequences ($2^{31}-1$, $2^{23}-1$, $2^{15}-1$, $2^{10}-1$, 2^7-1); zero substitution (2^{13} , 2^{11} , 2^{10} , 2^7); variable mark density on 2^{13} , 2^{11} , 2^{10} , 2^7

Output Amplitude: 0.5 V to 2 V p-p in 10 mV steps; range +1.5 V to -3.0 V in 10 mV steps

Output Transition Time (10% to 90%): <30 ps typical

Output Jitter: <20 ps p-p (<15 ps p-p at 10 Gb/s)

Input Sensitivity: <200 mV p-p typical at 10 Gb/s; <50 mV p-p typical for $2^{23}-1$ PRBS at 10 Gb/s with 0 V high level; <100 mV @ 10 Gb/s

Decision Threshold Range: +1 V to -3 V in 1 mV steps

Clock/Data Phase Alignment: ± 1 ns (100 MHz to 500 MHz); 1 clock period (500 MHz to 12 GHz)

Clock/Data Delay Resolution: 1 ps

Error Output: 0 to -0.4 V nominal

Measurement Period: 1 s to 100 days; error thresholds of 10, 100, 1000 errors; bit counts 10^7 to 10^{15}

Key Features

- Error count, ratio, and interval measurements
- G.821 analysis and errored/error-free interval reporting
- Eye width and height characterization
- Error Location Analysis (ELA) for pattern-dependent error diagnosis
- Complementary, DC-coupled 50 ohm outputs (NRZ, normal or inverted)
- Quad sub-rate and quarter-rate data outputs
- Pattern inhibit input on error detector
- Memory sufficient for multiple SONET and SDH frames at OC-192/STM-64

Typical Applications

- R&D and manufacturing validation of lightwave components and sub-assemblies
- Advanced computer technology testing
- High-capacity communication systems characterization
- SONET and SDH frame analysis

Compatibility & Integration

Accepts user-defined patterns via 3.5-inch disk in MS-DOS format. Clock and data inputs available on error detector.

777D Characteristics / Specifications

PARAMETER	VALUE
Model	777D
Instrument Type	Dual directional coupler
Frequency Range	1.9 to 4.0 GHz
Primary Line Insertion Loss	less than or equal to 0.75 dB
Minimum Directivity	30 dB
Nominal Coupling	20 dB each secondary arm
Coupling Accuracy	plus or minus 0.5 dB each secondary arm
Maximum Coupling Variation	plus or minus 0.4 dB
Auxiliary Arm Tracking	equal to or less than 0.5 dB
Maximum Primary Line Swr	1.2
Maximum Secondary Line Swr	1.3
Maximum Power	50 W CW or 10 kW peak
Primary Connectors	Type N, one male and one female
Secondary Connectors	TypeNfemale
System Impedance	50 ohm coaxial
Dimensions	225 mm x 64 mm x 29 mm (8.875 in x 2.5 in x 1.125 in)
Net Weight	1.5 lb (700 g)
Related Shorts	11511A TypeNfemale shorting jack and 11512A TypeNmale shorting plug
Related Couplers	776D 0.94 to 1.9 GHz and 778D 0.1 to 2 GHz dual directional couplers
Manufacturer	HP Agilent Keysight
Use Case	reflectometer and leveling coupler
Literature	Agilent 777D Dual Directional Coupler operating note Table 1
Family	HP 77x dual directional couplers
Documentation Type	OEM 777D specification table
Brand Lineage	Hewlett Packard Agilent Keysight

PARAMETER	VALUE
Form Factor	coaxial coupler body
System Role	dual directional RF sample

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Notes

From Agilent 777D Dual Directional Coupler operating-note Table 1 (1.9-4.0 GHz, 20 dB, 30 dB directivity, 0.75 dB IL, 50 W CW / 10 kW peak, 225 x 64 x 29 mm, 700 g). Typical coupling curves versus frequency are on the 777D operating-note plots.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.