

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8509B

The Agilent Keysight 8509B is a legacy lightwave polarization analyzer system offering calibrated polarization measurements of optical signals and components. Incorporating a four-diode detection scheme covering 1200 nm to 1600 nm, internal 1300 nm and 1550 nm Fabry-Perot lasers, and an automatic three-state polarization generator, the 8509B enables automated polarization-mode dispersion (PMD) and polarization-dependent loss (PDL) characterization.

SPECIFICATIONS

General

Interfaces	Analog output (± 10 V)
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Receiver Optical Specifications

Receiver Detection Scheme	Four-diode detection
Wavelength Operating Range	1200 to 1600 nm
Input Power Operating Range	+10 to -55 dBm
Input Average Power Damage Level	+16 dBm
Average Power Measurement Uncertainty	$\pm 15\%$
Measurement Rate	>2000 per second
Display Update Rate	>15 per second

SOP & DOP Measurement

DOP Measurement Uncertainty (1200 to 1280 nm)	$\pm 5.0\%$
DOP Measurement Uncertainty (1280 to 1340 nm)	$\pm 2.0\%$
DOP Measurement Uncertainty (1470 to 1580 nm)	$\pm 2.0\%$
DOP Measurement Uncertainty (1580 to 1600 nm)	$\pm 3.0\%$
Poincare Representation Uncertainty (1200 to 1340 nm)	$\pm 1.5^\circ$
Poincare Representation Uncertainty (1470 to 1600 nm)	$\pm 1.5^\circ$

Internal Optical Source

Internal Laser Type	Fabry-Perot
Typical Source Return Loss	17 dB
Typical Average Optical Power Output (1310 nm)	315 μ W
Typical Average Optical Power Output (1550 nm)	220 μ W
Source Wavelength Accuracy	$\pm$ 20 nm
Source Spectral Width (RMS)	5 nm
Polarization Generator	Automatic three-state polarization generator

External Source Input Port

External Source Port Insertion Loss	6 dB
External Source Port Return Loss	35 dB

Polarization Dependence & PDL

Polarization Dependence Operating Range	1280 to 1340 nm, 1470 to 1580 nm
Polarization Dependence Uncertainty	$\pm$ 0.1 dB

Physical & General

Compatible Fiber Type	9/125 micron
Analog Output Range	$\pm$ 10 V

PMD Measurement Performance

JME Max Measurable DGD (1310 nm, 0.01 nm step)	280 ps
JME Max Measurable DGD (1550 nm, 0.01 nm step)	400 ps
JME Max Measurable DGD (1310 nm, 0.10 nm step)	28 ps
JME Max Measurable DGD (1550 nm, 0.10 nm step)	40 ps
JME Max Measurable DGD (1310 nm, 1.0 nm step)	2.8 ps
JME Max Measurable DGD (1550 nm, 1.0 nm step)	4 ps
JME Max Measurable DGD (1310 nm, 10.0 nm step)	0.28 ps
JME Max Measurable DGD (1550 nm, 10.0 nm step)	0.4 ps
Min PMD Wavelength Scanning (Non-mode-coupled)	0.040 ps

Configuration & Options

Internal Laser Source Options	Option 001 (1310 nm), Option 002 (1550 nm), Option 003 (1310 and 1550 nm)
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TECHNOLOGY

Optical Polarization Analysis

APPLICATIONS

Polarization-Mode Dispersion (PMD) & Polarization-Dependent Loss (PDL) Measurement

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