A0010A
40GHz RIN
Mesurement System

Keysight Technologies and SYCATUS

RIN measurement with the world's widest 40 GHz bandwidth
Best solution for 40G/100G optical TX laser characterization
Unique and accurate calibration for uncertainty reduction
Optional function of optical modulation depth measurement

SYCATUS provides A0010A 40 GHz RIN measurement system. A0010A achieves unprecedented 40 GHz RIN (Relative Intensity Noise) spectrum characterization.

RIN characterization becomes the most critical indicator for laser diodes with the evolution of high-speed, multilevel optical transmission systems. The measurement bandwidth is required to be equal to, or more than, the modulation rate of the systems. The RIN measurement is also needed for laser diodes with high-performance, multi-wavelength and high-integration features.

SYCATUS A0010A RIN measurement system realizes world's widest 40 GHz measurement bandwidth with high-sensitivity, low-noise 40 GHz optical receiver and Keysight high-performance X-series signal analyzer. SYCATUS developed unique calibration method, which achieves high accuracy and repeatability.

SYCATUS A0010A RIN measurement system enables the accurate characterization of laser diodes, which improves the performance and the quality of laser diodes. A0010A also reduces the measurement time and accelerate the development and the manufacturing of customer's products.

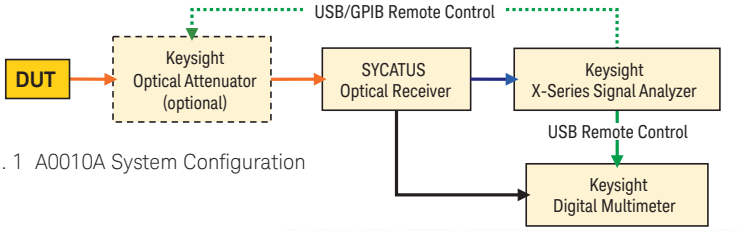

Fig. 1 A0010A System Configuration

SYCATUS A0010A RIN Measurement System

SYCATUS A0010A RIN measurement system consists of SYCATUS optical receiver, Keysight X-series signal analyzer, Keysight digital multimeter and SYCATU RIN measurement software. The optical receiver of A0010A RIN measurement system converts the optical signal from DUT to amplified electrical signal. The noise power density in the signal is measured by the Signal Analyzer. The photo current of the optical signal is monitored by the digital multimeter.

SYCATUS applied a unique technique to calibrate the whole system from the input of the optical receiver to the display of the Signal Analyzer, which enables accurate and repeatable RIN measurement.

The system software is installed in the signal analyzer. External PC is not required. Optionally the optical attenuator is attachable to the system to control the optical power into the RIN optical receiver. This stabilization contributes further repeatability and the protection of the RIN optical receiver from excessive optical power.

KEYSIGHT TECHNOLOGIES

A0010A 40GHz RIN Measurement System

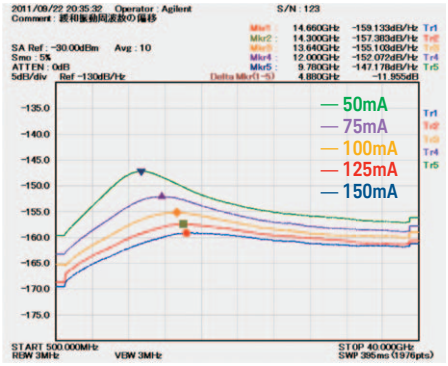

Fig. 2
40GHz RIN Measurement Example

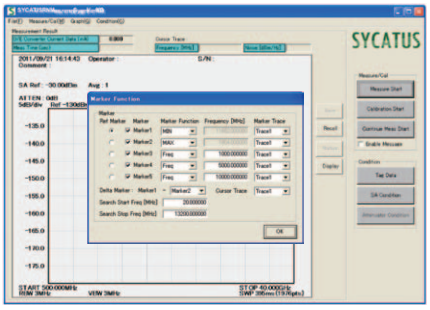

Fig. 3
RIN Measurement Software User Interface

SYCATUS

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Keysight & Solutions Partners
Extending our solutions to meet your needs

Table 1 System Specifications

Item	Model	Unit	Min.	Typ.	Max.
Optical Wavelength		nm	1260		1625
Measurement Frequency	3GHz	GHz	0.0001		3
	20GHz		0.01		20
	40GHz		0.5		40
Optical Input Power	3GHz	mW			10
	20GHz				
	40GHz				5
Minimum RIN Measurable Value (1mW optical input)	3GHz	dB/Hz	−160		
	20GHz				
	40GHz		−157		
Input Optical Modulation Amplitude Range	OMI (Optional)	mWpp			1
Optical Modulation Index Accuracy (Relative Error, -10dBm optical input, 10% OMI)	OMI (Optional)	%		5	15

Ordering Information

Keysight Technologies

X-Series ·Signal Analyzer ..... Product No. and option No. below

Model	3GHz	20GHz	40GHz
PXA Series	N9030A-503	N9030A-526	N9030A-550
MXA Series	N9020A-503	N9020A-526	
EXA Series	N9010A-503	N9010A-526	N9010A-544

Digital Multimeter..... 34410A
Optical Attenuator (Optional)..... 81576A or 81577A, equipped in 8163B

SYCATUS

RIN Measurement System .....A0010A with option below

Model	3GHz	20GHz	40GHz
A0010A	A0010A-003	A0010A-020	A0010A-040

OMI Measurement (Optional) A0010A-OMI

Other option are available ; contact SYCATUS Sales for more details

www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at:

www.keysight.com/find/contactus

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