A0040A
Optical Noise Analyzer

Keysight Technologies and SYCATUS

Optical frequency noise captured as power spectrum density
1/f noise, white noise and lorenzian linewidth analysis
Investigation on ITLA for digital coherent transmission systems
Optional integration with RIN / linewidth measurement functions

SYCATUS provides a new solution of A0040A Optical noise analyzer for optical frequency noise measurement. A0040A enables to investigate the optical frequency noise as power spectrum density.

The spectral purity of laser sources became the most critical concern along with the evolution of digital coherent transmission method. On the other hand, highly functional laser sources such as ITLA are facing the issue of optical frequency fluctuations arising from EMI by integration with electronics or complicated control scheme.

Laser linewidth measurement is the traditional method for the evaluation of the spectral purity of laser sources. However, the laser linewidth is insufficient for the analysis of the constituent of optical frequency noise. The spectrum analysis is mandatory instead of laser linewidth measurement as DSP in digital coherent transmission systems has limited bandwidth for frequency offset compensation.

A0040A Optical Noise Analyzer enables to capture optical frequency noise characteristics as power spectrum density by the combination of SYCATUS's unique method and Keysight X-series signal analyzer.

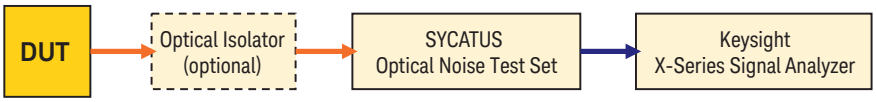
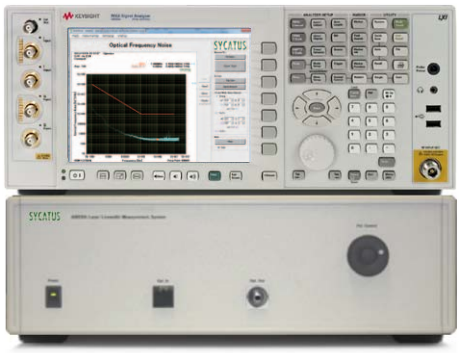


Fig. 1 A0040A System Configuration

SYCATUS A0040A
Optical Noise Analyzer

A0040A Optical Noise Analyzer is a powerful tool for investigating the cause of optical frequency fluctuation with the ability of precise analysis of optical frequency noise characteristics of laser sources. A0040A extracts 1/f noise portion and white noise portion, which enables to derive lorenzian linewidth composed of only white noise.

A0040A Optical Noise Analyzer optionally includes RIN measurement function and conventional laser linewidth measurement function. A0040A improves measurement convenience and investment efficiency as a totally integrated noise analysis solution for laser sources.



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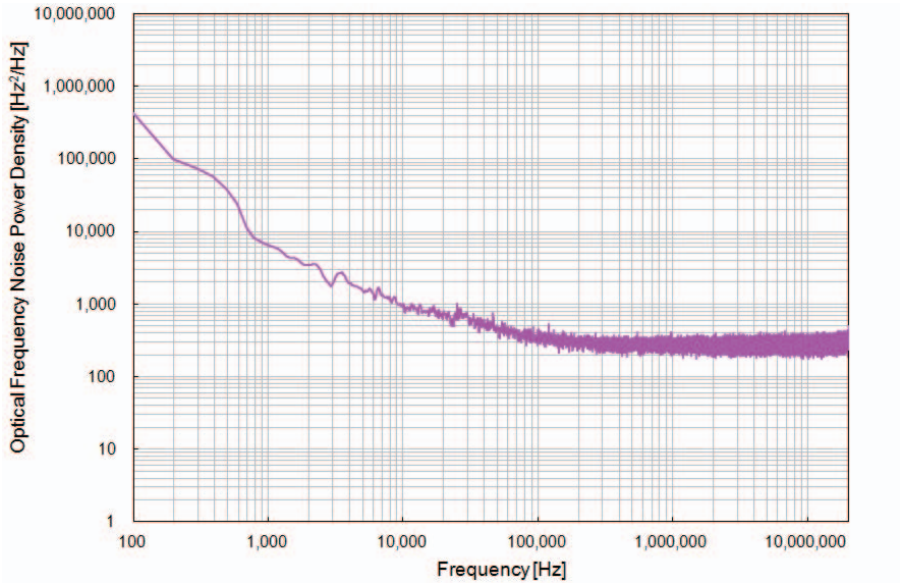

Fig. 2 Optical Frequency Noise Measurement Example

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Table 1 Optical Noise Analyzer Specifications

Items	Specification
Optical Wavelength Range	1520 nm to 1620 nm
Optical Frequency Noise Measurement Bandwidth	100 Hz to 80 MHz (depending on signal analyzer's specification)
Optical Frequency Noise Minimum Measurable Value	100 Hz^2/Hz (@10 MHz)

Ordering Information

Keysight Technologies	
X-Series ·Signal Analyzer	N9010A EXA
	N9020A MXA
	N9030A PXA
VXA Vector Signal Analysis Measurement Application	N9064A

SYCATUS	
Optical Noise Test Set	A0040A
System Software	Install in the Signal Analyzer

RIN Measurement option is 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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