XLA-100 Series

Lightwave Component Analyzer

At a Glance

The XLA-100 Series measures high-speed electro-optical (E/O), opto-electrical (O/E) and optical-optical (O/O) devices. It characterizes bandwidth, amplitude-frequency response, phase-frequency response and group delay for components used in high-speed optical transmission systems.



Product Overview

The XLA-100 Series characterizes **electro-optical, opto-electrical and optical-optical devices** used in high-speed optical transmission systems, including modulators, lasers, PIN/APD detectors and fiber filters.

One-click broadband sweeps measure bandwidth, amplitude-frequency response, phase-frequency response and group delay. Frequency interval and IF bandwidth are adjustable, with frequency resolution down to 1 Hz.

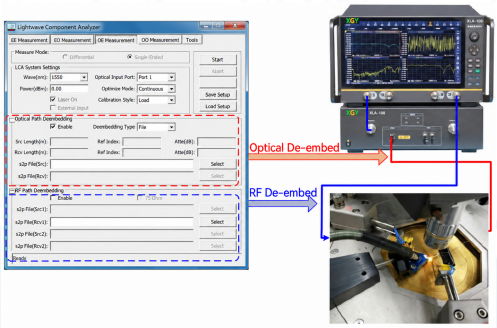
Configurations cover 10 MHz to 26.5 GHz (XLA-100-26G5), 43.5 GHz (XLA-100-43G5), 50 GHz (XLA-100-50G) and 67 GHz (XLA-100-67G).

Main Features

Fixture de-embedding

Connection illustration.

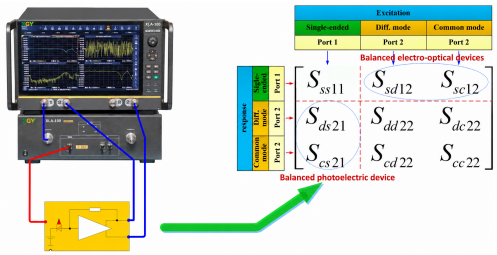
User-defined data and fixture de-embedding help remove probe error in chip testing.



Single-ended and balanced measurement

Connection illustration.

Selectable single-ended/balanced tests measure differential gain and common-mode rejection.



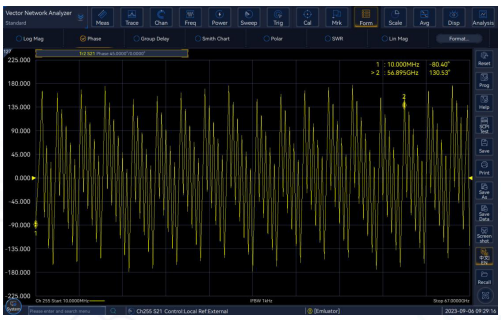
Dynamic range and noise

Adjusting IF bandwidth provides a larger dynamic measurement range and smaller trajectory noise.



Phase-frequency response

Analyze phase-frequency response and group delay in optoelectronic devices.



Measurement Details

Guided calibration

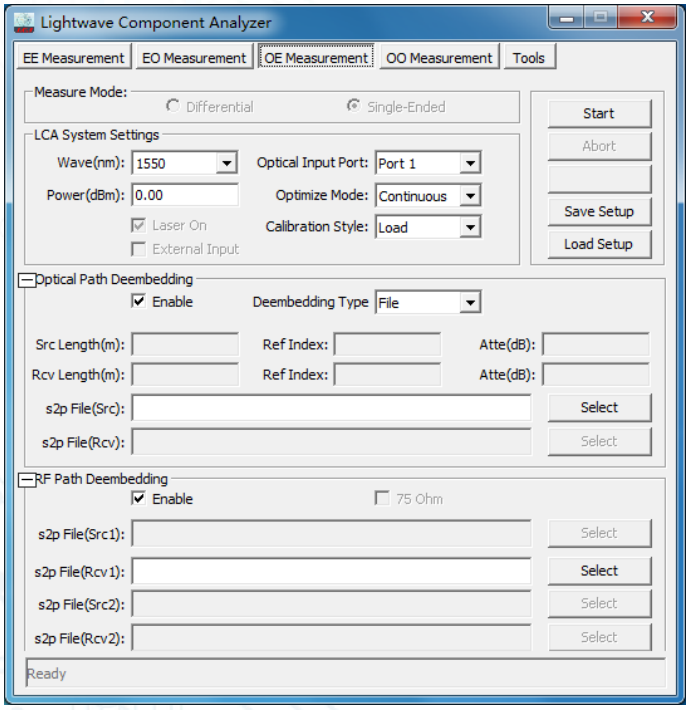
The calibration procedure of the XLA-100 series Lightwave Component Analyzer is clear-cut, consisting mainly of electrical calibration and optical path parameter calibration. By employing guide-style operational prompts, it provides users with rapid high precision calibrations.

Internal and external light sources

Testing isn't restricted solely around either 1310nm nor even 1550nm yet instead accommodates inputs stemming off any external light resources spanning from 1260nm~1630nm which effectively expands its operational bandwidth and meets the measurement requirements of the core components of CWDM and DWDM systems.

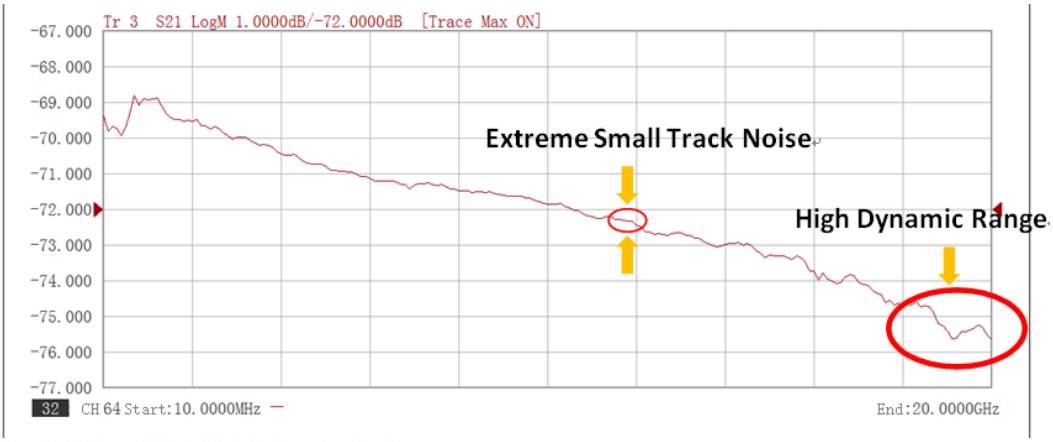
Integrated multi-functional operation interface

The XLA-100 series Lightwave Component Analyzer has four measurement modes: electro-electro, electro - optical, optical - electro, and optical - optical. The function modes can be switched at will, which meets the parameter measurement requirements of S parameters, impedance, and time domain of the most common devices.



Large dynamic range, low noise of measurement path

Using high-precision and flat-response internal core components, combined with setting different intermediate frequency (IF) bandwidth values to obtain a larger dynamic measurement range and smaller trajectory noise. This enables users to capture more details from their measurement results.



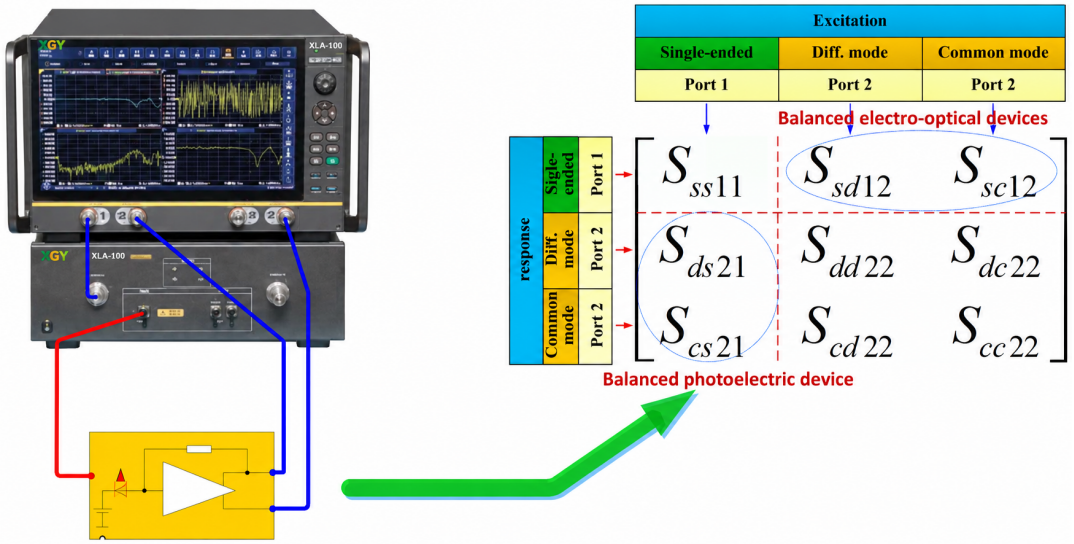
Fixture de-embedding

The measurement accuracy is improved by user-defined data or fixture de-embedding data, especially when the probe error required for chip testing is removed, making the measurement more flexible and meeting the measurement needs of users in different occasions.



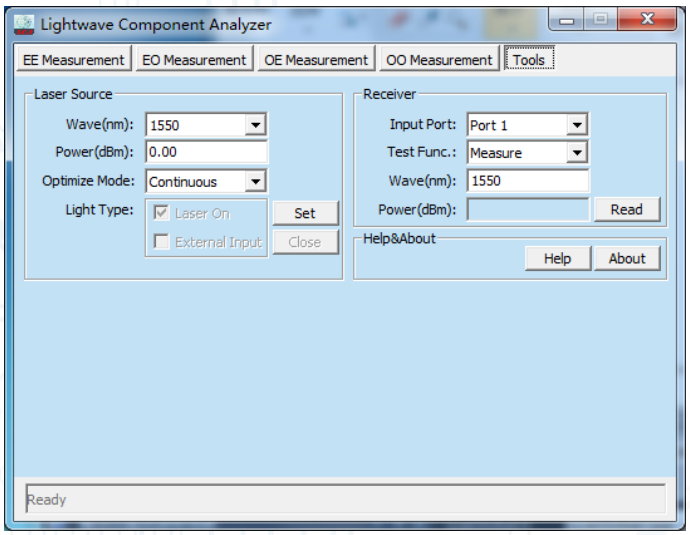
Single-ended - balanced photoelectric device measurement

Different configurations can be selected to meet the test requirements of single-ended - single-ended and single-ended-balanced optical transmitting or optical receiving devices or components for differential gain and common mode rejection parameters. This is more suitable for multi-port parameter measurement occasions in the existing and future high-speed optical fiber communications field.



Optical toolbox

It has built-in large dynamic range of optical power meters to monitor real-time input optical power value. The light emitting module may be set to polarization-maintaining laser source output mode (the CW mode) through advanced setting. The extinction ratio is greater than 20dB. It supplies needed polarization-maintaining laser source for the M-Z type LiNiO3 modulator.



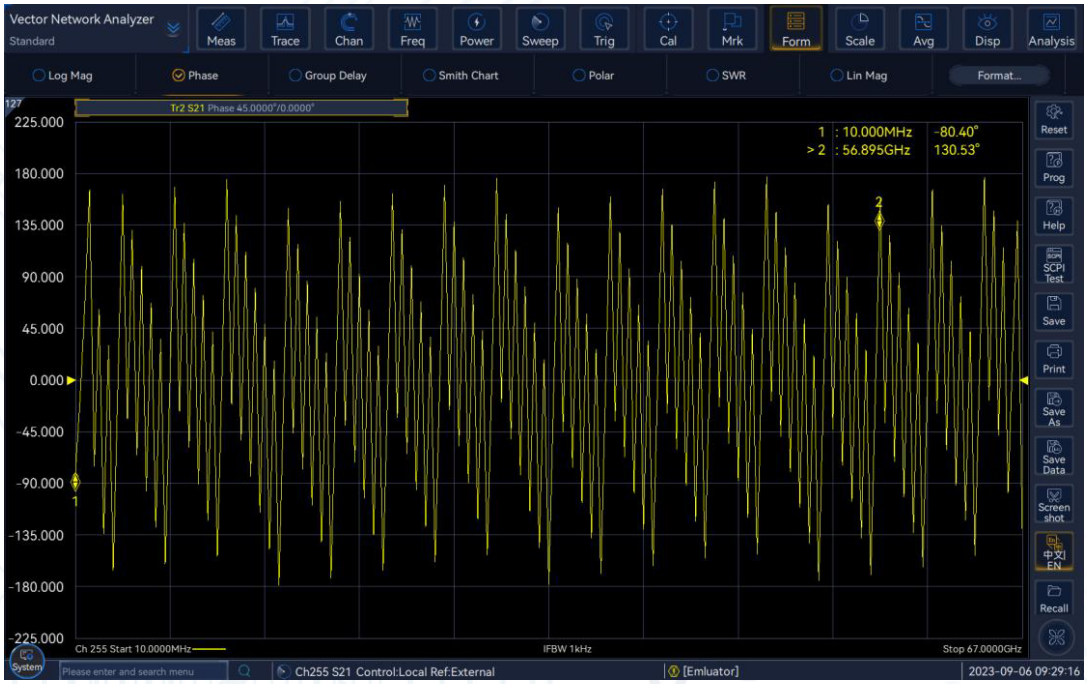
Optoelectronic device frequency response characteristic testing

Realizing the 10MHz~67GHz frequency response test of optoelectronic devices such as optoelectronic detector, rapid analysis of 3dB bandwidth and accurate frequency response test can meet the test requirements of R&D, product line and so on.



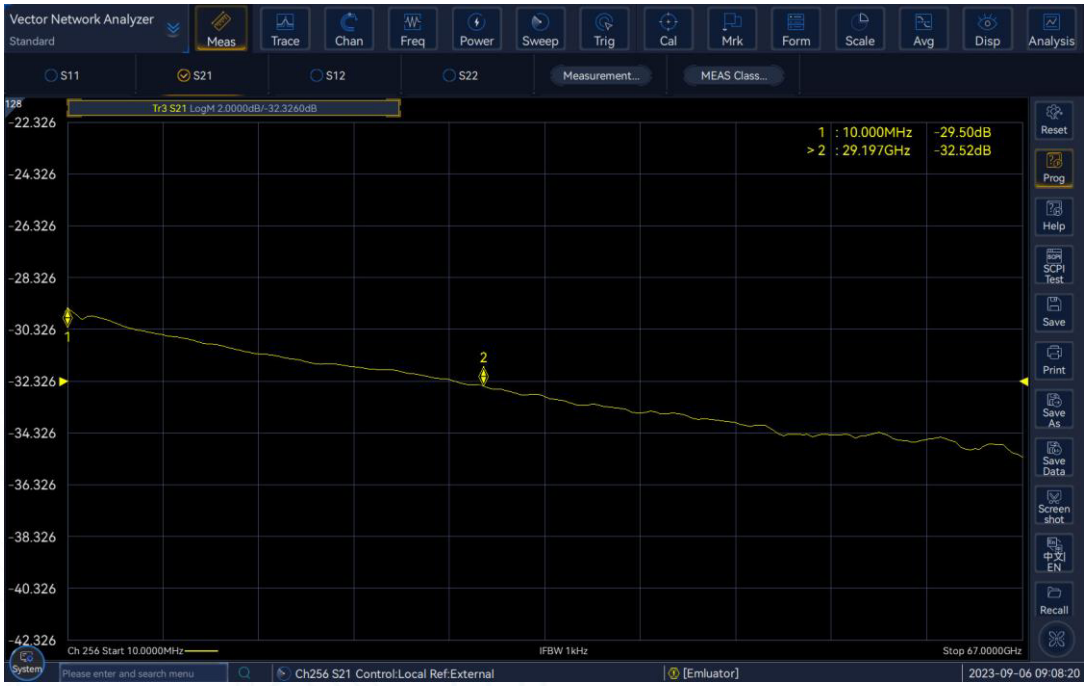
Phase frequency response characteristic analysis

The product has a powerful phase-frequency response characteristic measurement function, and can quickly analyzes parameters such as the phase and group delay of the optoelectronic device.



Characteristic analysis of electro-optical devices

Users can quickly obtain the reflection and transmission characteristics of the test object at various frequency points through multi-window comparative analysis during the testing of S11 parameter and S21 parameter in electro-optical devices such as electro-optical modulators and direct modulated laser devices.



Technical Specifications

Specifications	XLA-100-26G5	XLA-100-43G5	XLA-100-50G	XLA-100-67G
Modulation Frequency Range	10MHz ~ 26.5GHz	10MHz ~ 43.5GHz	10MHz ~ 50GHz	10MHz ~ 67GHz
Frequency Accuracy	$\pm 1\times10^{-7}$	$\pm 1\times10^{-7}$	$\pm 1\times10^{-7}$	$\pm 1\times10^{-7}$
Frequency Resolution	1Hz	1Hz	1Hz	1Hz
Working Wavelength	1310±20nm , 1550±20nm	1310±20nm , 1550±20nm	1310±20nm , 1550±20nm	1310±20nm , 1550±20nm
Average Output Optical Power Range	-2dBm~+4dBm	-2dBm~+4dBm (1310nm) -2dBm~+5dBm (1550nm)	-2dBm~+4dBm (1310nm) -2dBm~+5dBm (1550nm)	-2dBm~+4dBm (1310nm) -2dBm~+5dBm (1550nm)
Maximum Safe Average Input Power	Input1 : +7dBm/ Input2: +17dBm	Input1 : +7dBm/ Input2: +17dBm	Input1 : +7dBm/ Input2: +17dBm	Input1 : +7dBm/ Input2: +17dBm
Average Output Optical Power Accuracy	±0.5dB	±0.5dB	±0.5dB	±0.5dB
Average Input Optical Power Measurement Range	-35dBm~+5dBm (optical input 1) -25dBm~+15dBm (optical input 2)	-35dBm~+5dBm (optical input 1) -25dBm~+15dBm (optical input 2)	-35dBm~+5dBm (optical input 1) -25dBm~+15dBm (optical input 2)	-35dBm~+5dBm (optical input 1) -25dBm~+15dBm (optical input 2)
Average Input Optical Power Measurement Accuracy	±0.5dB	±0.5dB	±0.5dB	±0.5dB

Technical Specifications

Specifications	XLA-100-26G5	XLA-100-43G5	XLA-100-50G	XLA-100-67G
Minimum Measurable Frequency Response	-	-	-60dB	-55dB
Relative Frequency Response Accuracy	±0.7dB	±1.6dB	±1.6dB	±2.2dB
Absolute Frequency Response Accuracy	±1.8 dB	±2.0 dB	±2.5dB	±2.7 dB
Frequency Response Repeatability	±0.3dB	±1.0dB	±1.7 dB	±1.7dB
Group Delay Measurement Accuracy	±13ps	±18ps	±18ps	±31ps
Phase Measurement Accuracy	±3.5°	±4.2°	±4.2°	±6.0°
Maximum Weight	56kg	60kg	60kg	63kg
Dimensions (excluding feet, hands)	Width high depth = 421mm × 400mm × 600mm			
Maximum Power Consumption	600W			

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