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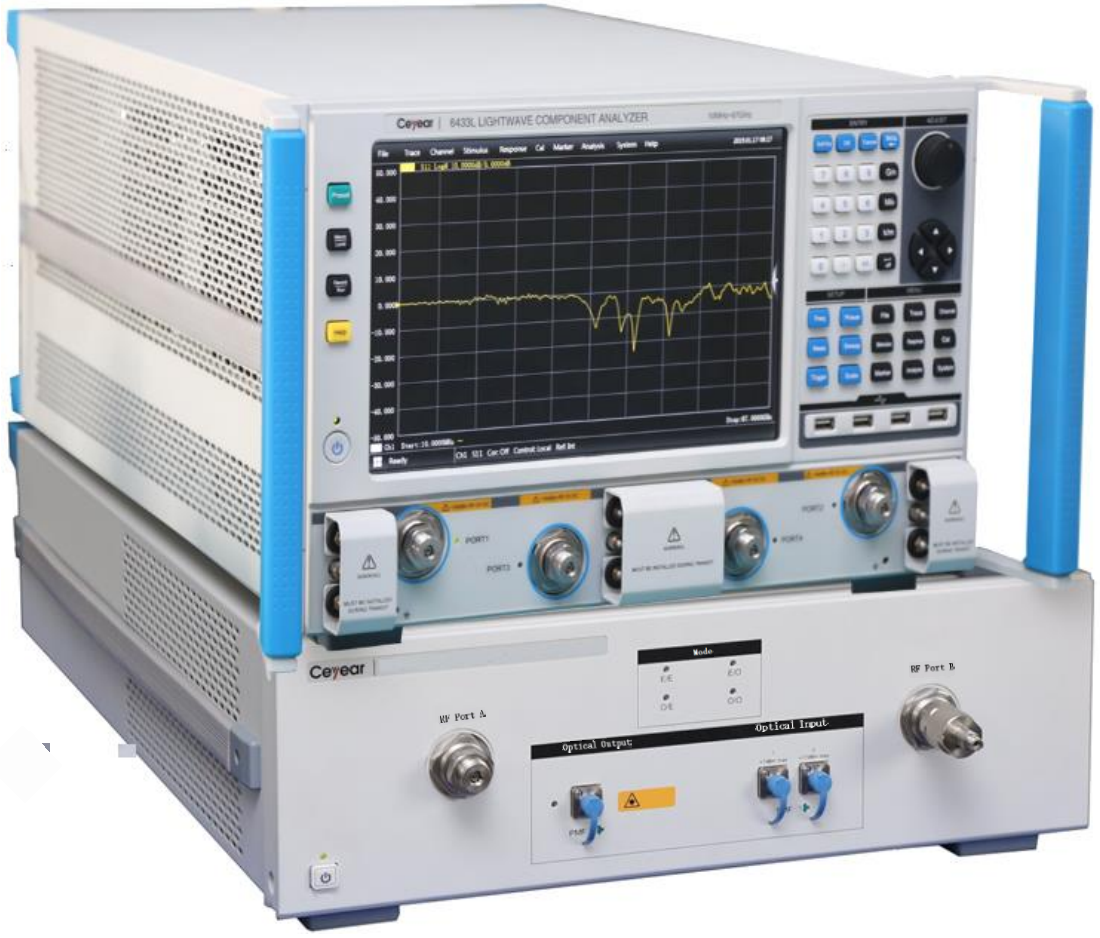
6433D/F/H/L

Lightwave Component Analyzer

(10MHz - 20GHz/43.5GHz/50GHz/67GHz)



Ceyear Technologies Co., Ltd

Product Overview

Ceyear 6433 series Lightwave Component Analyzers includes 6433D (10MHz ~ 20GHz), 6433F (10MHz ~ 43.5GHz), 6433H (10MHz ~ 50GHz), 6433L (10MHz ~ 67GHz). The 6433 series is the latest solution to characteristic test of high-speed electro - optical (E/O) devices, optical – electro (O/E) devices, and optical - optical (O/O) devices. The modulation frequency range covers 10MHz~67GHz. It supports different frequency range, frequency interval, IF bandwidth setting. The minimum frequency resolution is up to 1Hz.

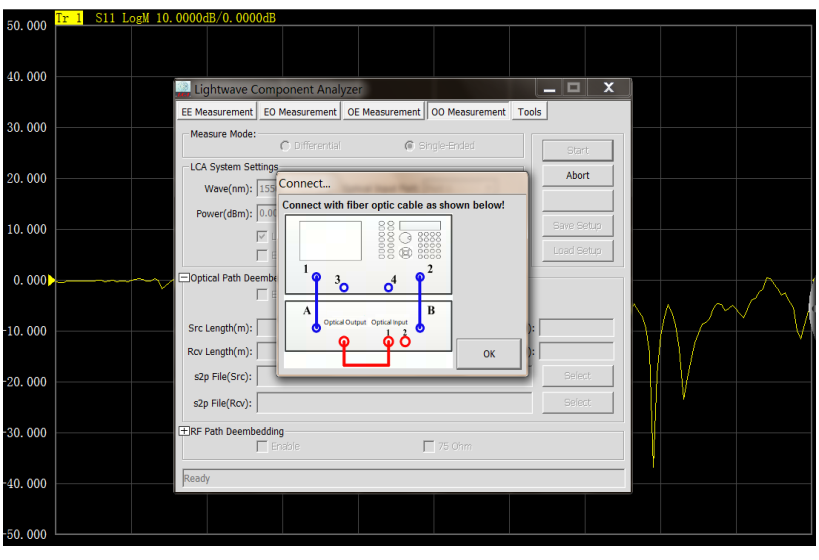
Ceyear 6433 series LCA adopts an integrated design scheme that realizes a one-click fast broadband frequency sweep test based on broadband hardware optimization design, building network error model, and utilization of core calibration algorithm. It is mainly used for the test of bandwidth, amplitude-frequency response, phase-frequency response, group delay and other parameters of core electro - optical devices. (electro-optical modulator, direct modulated laser, light-transmitting components), electro-optical devices (PIN optoelectronic detector, APD optoelectronic detector, light-receiving components), optical - optical devices (passive devices such as fiber filter) in the modern high-speed light transmission system.

Main Features

- Easy & quick calibration, and guided operation process
- Integrated multi-functional operation interface
- Large dynamic range, low noise of measurement path
- Automatic user data removal that provides extended use for on-chip testing
- Single -ended - balanced photoelectric device measurement
- Multi-functional toolbox
- Internal & external wavelength setting of light sources, and wider test range of communication wavelength

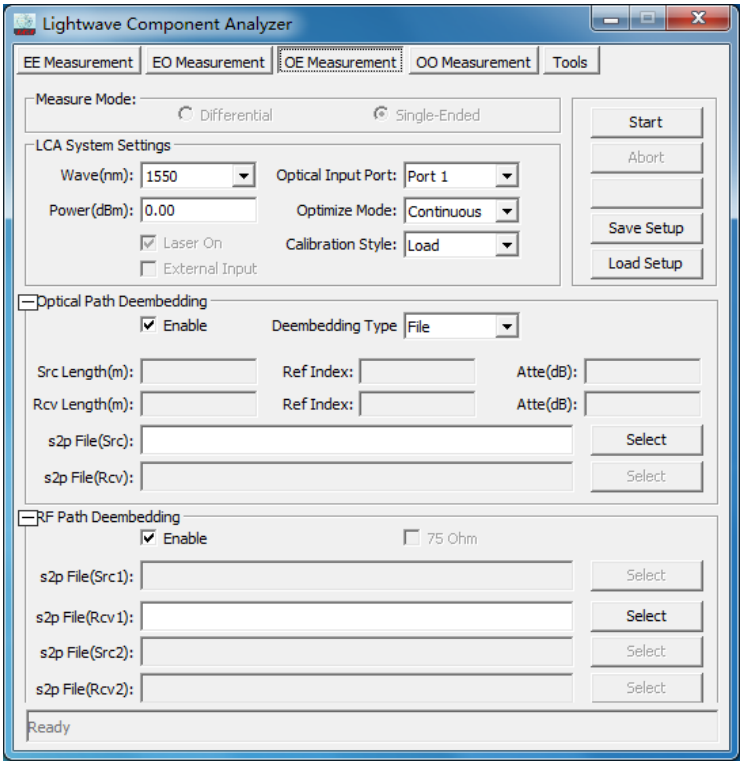
Convenient & quick calibration, and guided operation process

6433 series Lightwave Component Analyzer has a clear operation process in calibration, which mainly includes electrical calibration and parameter calibration of optical path, and provides users with fast and high-precision calibration through utilizing wizard-style operation prompts.



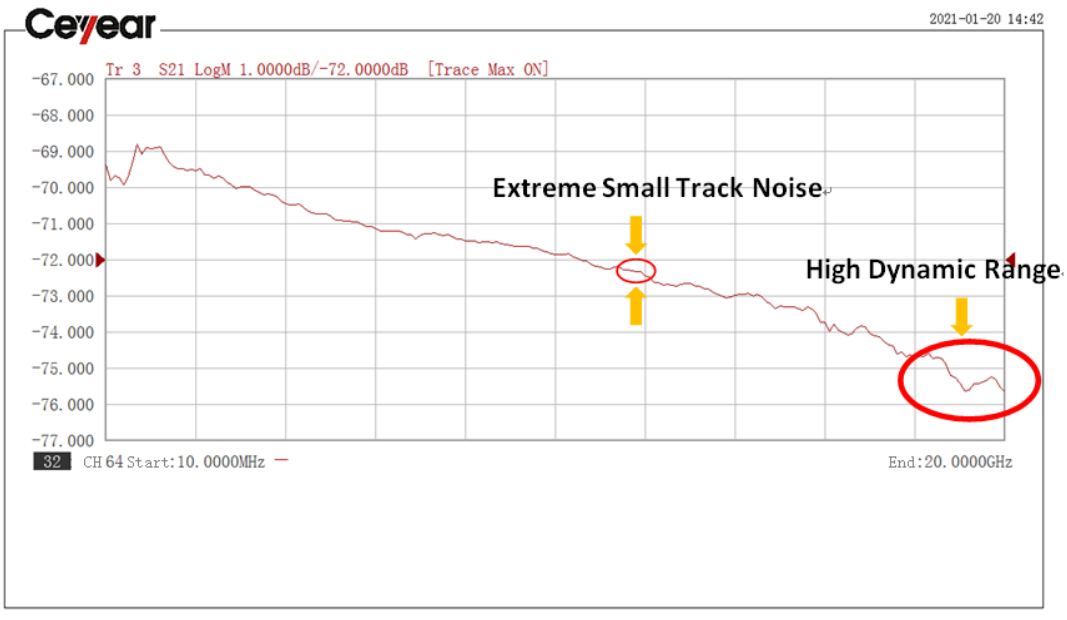
Integrated multi-functional operation interface

The 6433 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.



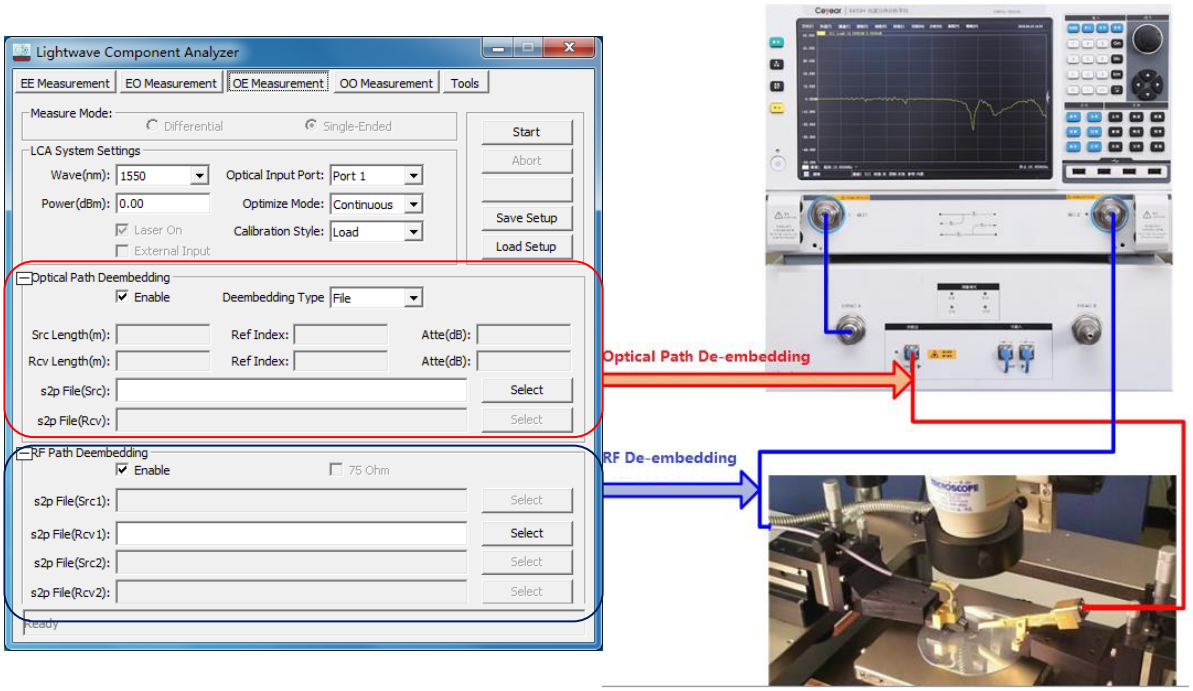
Large dynamic range, low noise of measurement path

Using high-precision and flat-response internal core components, combined with setting different IF bandwidths and averages to obtain a larger dynamic measurement range and smaller trajectory noise, and more details of the measurement results.



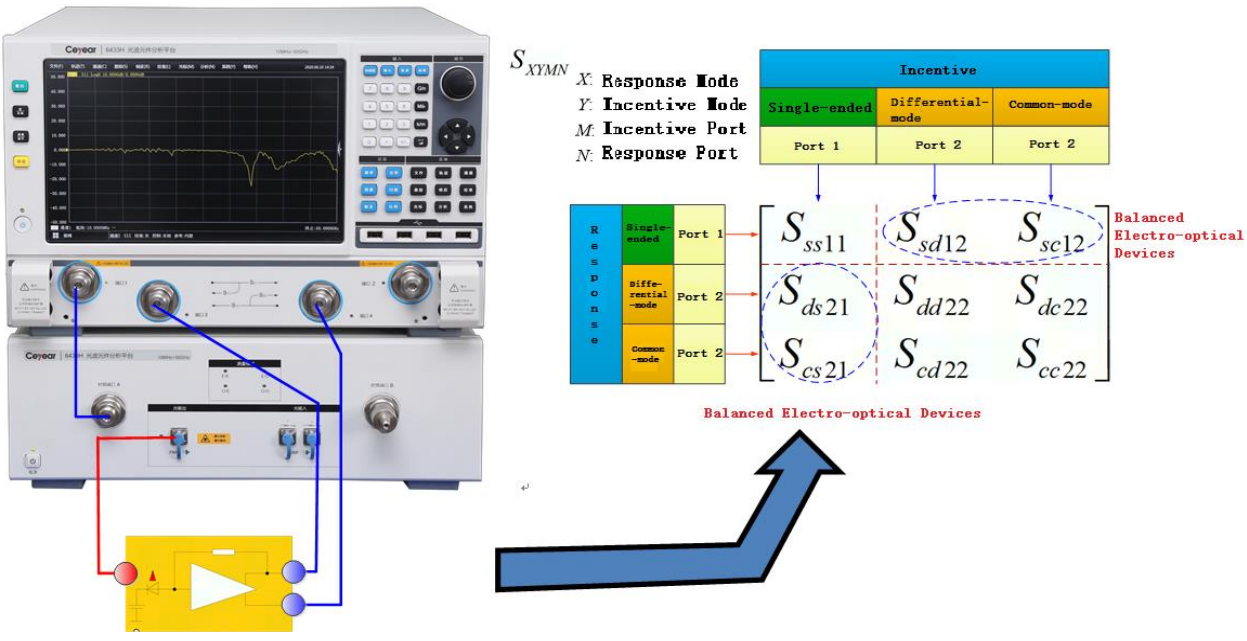
Automatic user data removal that provides extended use for on-chip testing

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.



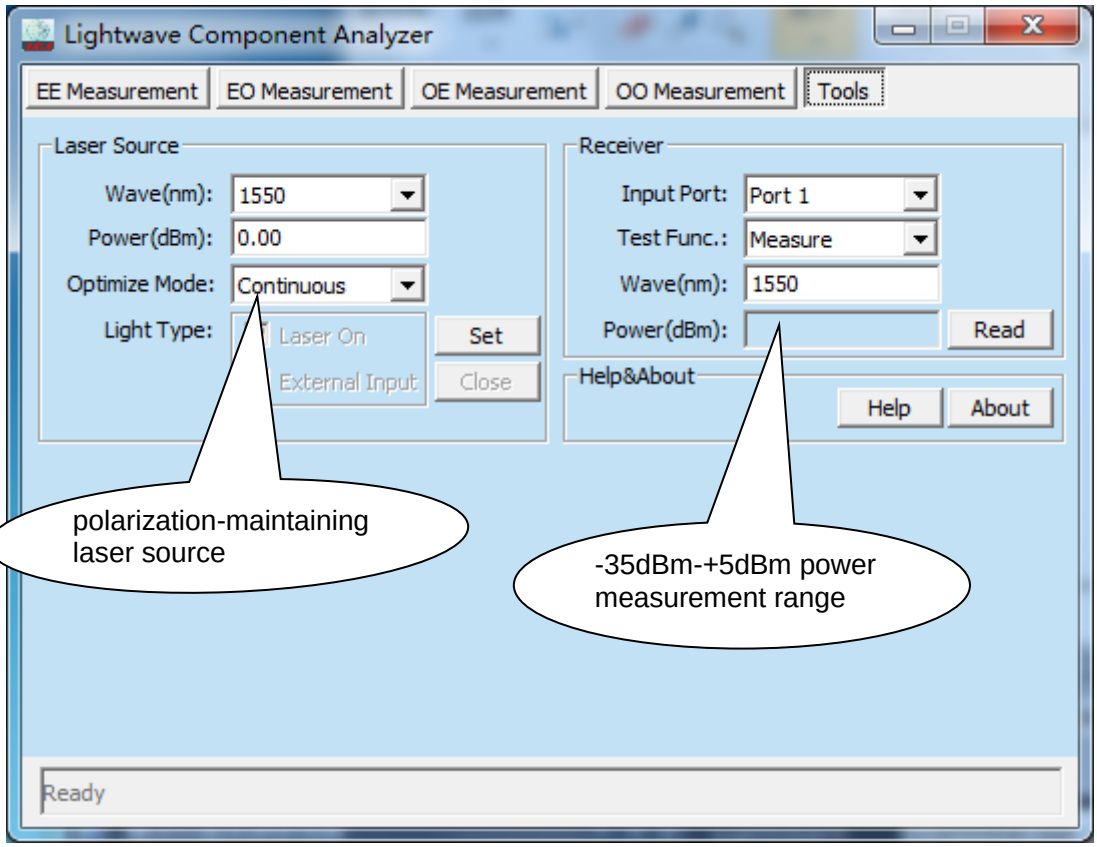
Single-ended - balanced photoelectric device measurement

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.



Multi-functional 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.



Support Internal & external light source

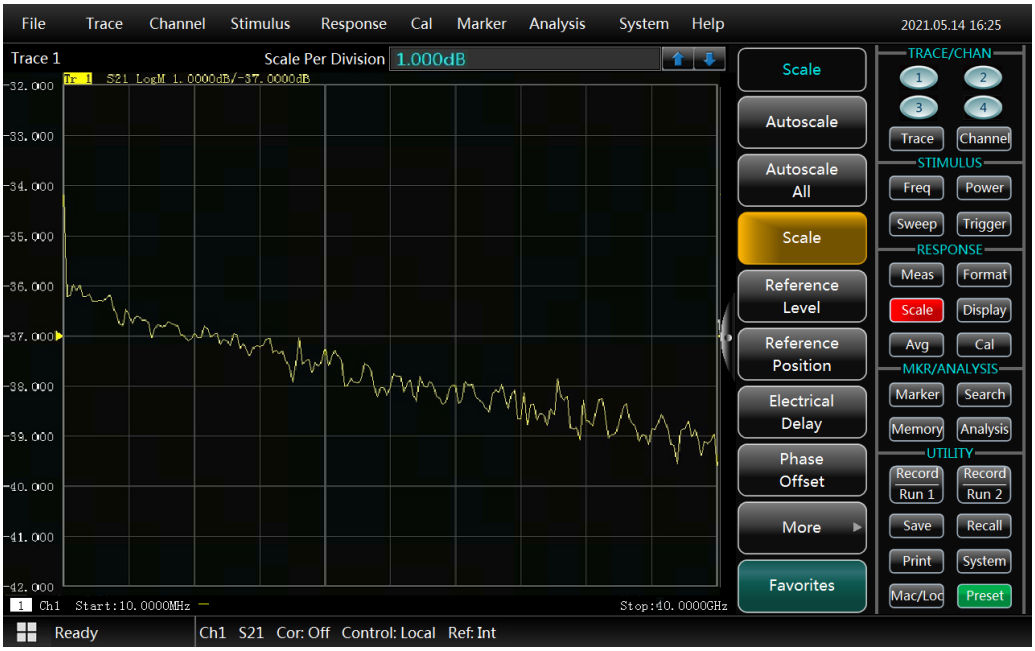
The test is not just limited to 1310nm/1550nm, but also supports input external light source from 1260nm to 1630nm that covers a wider communication wavelength, and meets the measurement requirements of the core components of CWDM and DWDM systems.

Typical Applications

High-speed optoelectronic detector, direct modulated laser devices, electro-optical modulator amplitude frequency, phase frequency response characteristic test.

Characteristic analysis of electro-optical devices

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



Electro-optical device frequency response test

Optoelectronic device frequency response characteristic test

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

Optoelectronic device frequency response test

Phase frequency response characteristic analysis

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

Optoelectronic device phase test

Technical Specifications

6433D Technical Specifications (10MHz – 20GHz)

Modulation Frequency Range	10MH z ～ 20 GHz
Frequency Accuracy	±1×10 $^{-7}$
Frequency Resolution	1 Hz
Working Wavelength	1310±20nm, 1550±20nm
Average Output Optical Power Range	-2 dBm~+4 dBm
Maximum Safe Average Input Power	Input 1: +7dBm / Input 2: +17dBm
Average Output Optical Power Accuracy	±0.5 dB
Average Input Optical Power Measurement Range	-35dBm~+5dBm (optical input 1) / -25dBm~+15dBm (optical input 2)
Average Input Optical Power Measurement Accuracy	±0.5 dB
Relative Frequency Response Accuracy	± 0.7 dB
Absolute Frequency Response Accuracy	± 1.8 dB
Frequency Response Repeatability	± 0.3 dB
Group Delay Measurement Accuracy	± 13 ps
Phase Measurement Accuracy	± 3.5 º
Maximum Weight	56 kg
Dimensions	Width high depth = 421mm × 400mm × 600mm (excluding feet, hands)
Maximum Power Consumption	600 W

6433F Technical Specifications (10MHz – 43.5GHz)

Modulation Frequency Range	10MH z ～ 43.5 GHz
Frequency Accuracy	±1×10 -7
Frequency Resolution	1 Hz
Working Wavelength	1310±20nm, 1550±20nm
Average Output Optical Power Range	-2dBm~+4dBm (1310nm)
	-2dBm~+5dBm (1550nm)
Maximum Safe Average Input Power	Input 1: +7dBm / Input 2: +17dBm
Average Output Optical Power Accuracy	±0.5 dB
Average Input Optical Power Measurement Range	-35dBm~+5dBm (optical input 1) / -25dBm~+15dBm (optical input 2)
Average Input Optical Power Measurement Accuracy	±0.5 dB
Relative Frequency Response Accuracy	± 1.6 dB
Absolute Frequency Response Accuracy	± 2.0 dB
Frequency Response Repeatability	± 1.0 dB
Group Delay Measurement Accuracy	± 18 ps
Phase Measurement Accuracy	± 4.2 º
Maximum Weight	60 kg
Dimensions	Width high depth = 421mm × 400mm × 600mm (excluding feet, hands)
Maximum Power Consumption	600 W

6433H Technical Specifications (10MHz – 50GHz)

Modulation Frequency Range	10MH z ～ 50 GHz
Frequency Accuracy	±1×10 -7
Frequency Resolution	1 Hz
Working Wavelength	1310±20nm, 1550±20nm
Average Output Optical Power range	-2dBm~+4dBm (1310nm)
	-2dBm~+5dBm (1550nm)
Maximum Safe Average Input Power	Input 1: +7dBm / Input 2: +17dBm
Average Output Optical Power Accuracy	±0.5dB
Average Input Optical Power Measurement Range	-35dBm~+5dBm (optical input 1) / -25dBm~+15dBm (optical input 2)
Minimum Measurable Frequency Response	-60 dB

Average Input Optical Power Measurement Accuracy	± 0.5 dB
Relative Frequency Response Accuracy	± 1.6 dB
Absolute Frequency Response Accuracy	± 2.5 dB
Frequency Response Repeatability	± 1.7 dB
Group Delay Measurement Accuracy	± 18 ps
Phase Measurement Accuracy	± 4.2 º
Maximum Weight	60 kg
Dimensions	Width high depth = 421mm × 400mm × 600mm (excluding feet, hands)
Maximum Power Consumption	600 W

6433L Technical Specifications (10MHz – 67GHz)

Modulation Frequency Range	10MH z ～67 GHz
Frequency Accuracy	±1×10 -7
Frequency Resolution	1 Hz
Working Wavelength	1310±20nm, 1550±20nm
Average Output Optical Power Range	-2dBm~+4dBm (1310nm)
	-2dBm~+5dBm (1550nm)
Maximum Safe Average Input Power	Input 1: +7dBm / Input 2: +17dBm
Average Output Optical Power Accuracy	±0.5 dB
Average Input Optical Power Measurement Range	-35dBm~+5dBm (optical input 1) / -25dBm~+15dBm (optical input 2)
Minimum Measurable Frequency Response	-55 dB
Average Input Optical Power Measurement Accuracy	± 0.5 dB
Relative Frequency Response Accuracy	± 2.2 dB
Absolute Frequency Response Accuracy	± 2.7 dB
Frequency Response Repeatability	± 1.7dB
Group delay Measurement Accuracy	± 31 ps
Phase Measurement Accuracy	± 6.0 º
Maximum Weight	63 kg
Dimensions	Width high depth = 421mm × 400mm × 600mm (excluding feet, hands)
Maximum Power Consumption	600 W

Order Information

No.	Model and Name	Description
1	6433D Lightwave Component Analyzer (dual port)	Electric channel is 2 ports
2	6433D Lightwave Component Analyzer (four ports)	Electric channel is 4 ports
3	6433F Lightwave Component Analyzer (dual port)	Electric channel is 2 ports
4	6433F Lightwave Component Analyzer (four ports)	Electric channel is 4 ports
5	6433H Lightwave Component Analyzer (dual port)	Electric channel is 2 ports
6	6433H Lightwave Component Analyzer (four ports)	Electric channel is 4 ports
7	6433L Lightwave Component Analyzer (dual port)	Electric channel is 2 ports
8	6433L Lightwave Component Analyzer (four ports)	Electric channel is 4 ports

- Lists:

No.	Name	Description
1	Power Cord Assembly	Standard three-core power cord
2	User Manual	
3	Product Certification	
4	Metrology Level of Fiber Jumper	
5	RF Cable	2 (corresponding interface: one female and one male)
6	USB Cable	