6433D/F/H/L

Lightwave Component Analyzer

(10MHz – 26.5GHz/ 43.5GHz/ 50GHz/ 67GHz)

Ceyear Technologies Co., Ltd

Product Overview

Ceyear 6433 series Lightwave Component Analyzers include 6433D (10MHz~20GHz), 6433F (10MHz~43.5GHz), 6433H (10MHz~50GHz), 6433L (10MHz~67GHz). The 6433 series are 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. They support different frequency range, frequency interval and IF bandwidth setting. The minimum frequency resolution reaches down to 1 Hz.

Ceyear 6433 series LCA adopt 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. They are 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 with a guided operation process
- Integrated multi-functional operation interface
- Large dynamic range, low noise of measurement path
- Automatic removal of user data that provides extended usage for on-chip testing
- Single -ended - balanced photoelectric device measurement
- Multi-functional toolbox
- Internal & external wavelength setting of light source and wider test range of communication wavelength

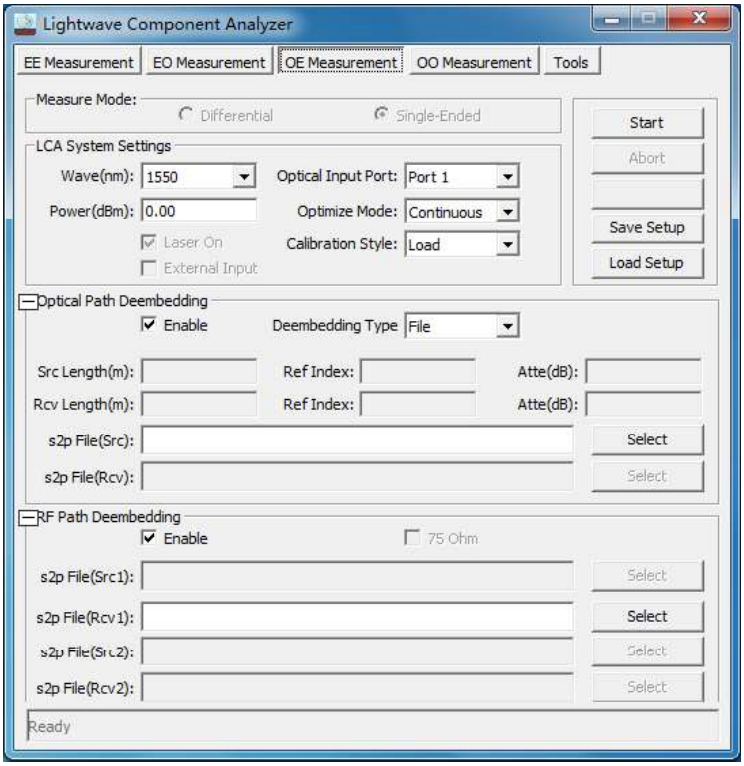
Convenient & quick calibration with a guided operation process

The calibration procedure of the 6433 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.

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.



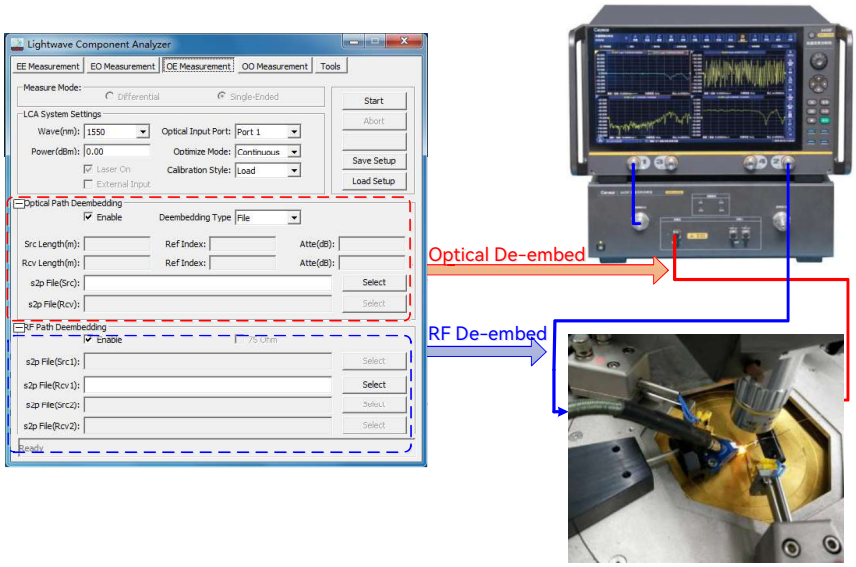
Large dynamic range, low noise of measurement path

Using high-precision and flat-response internal core components, combined with setting different 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.

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

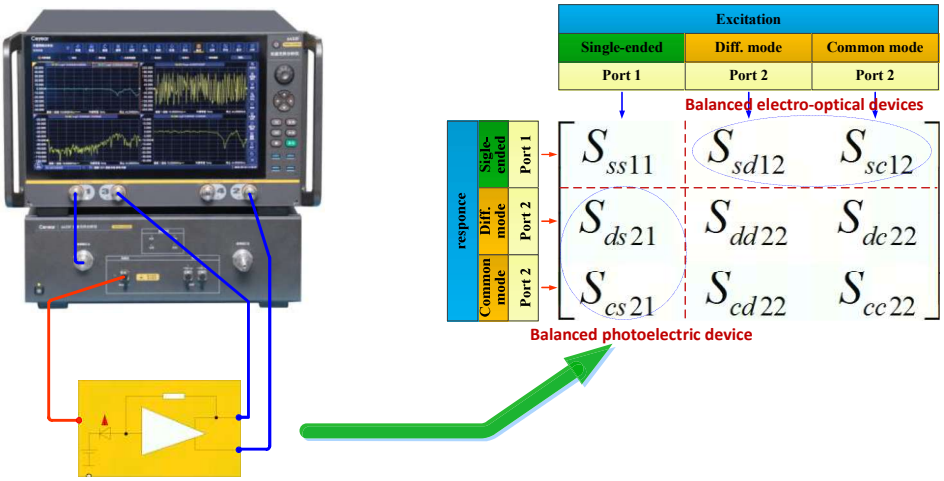
The measurement accuracy is improved by user-defined data or fixture de-embedding data, especially when the probe error required for chip testing is

removed, making the measurement more flexible and meeting the measurement needs of users in different occasions.



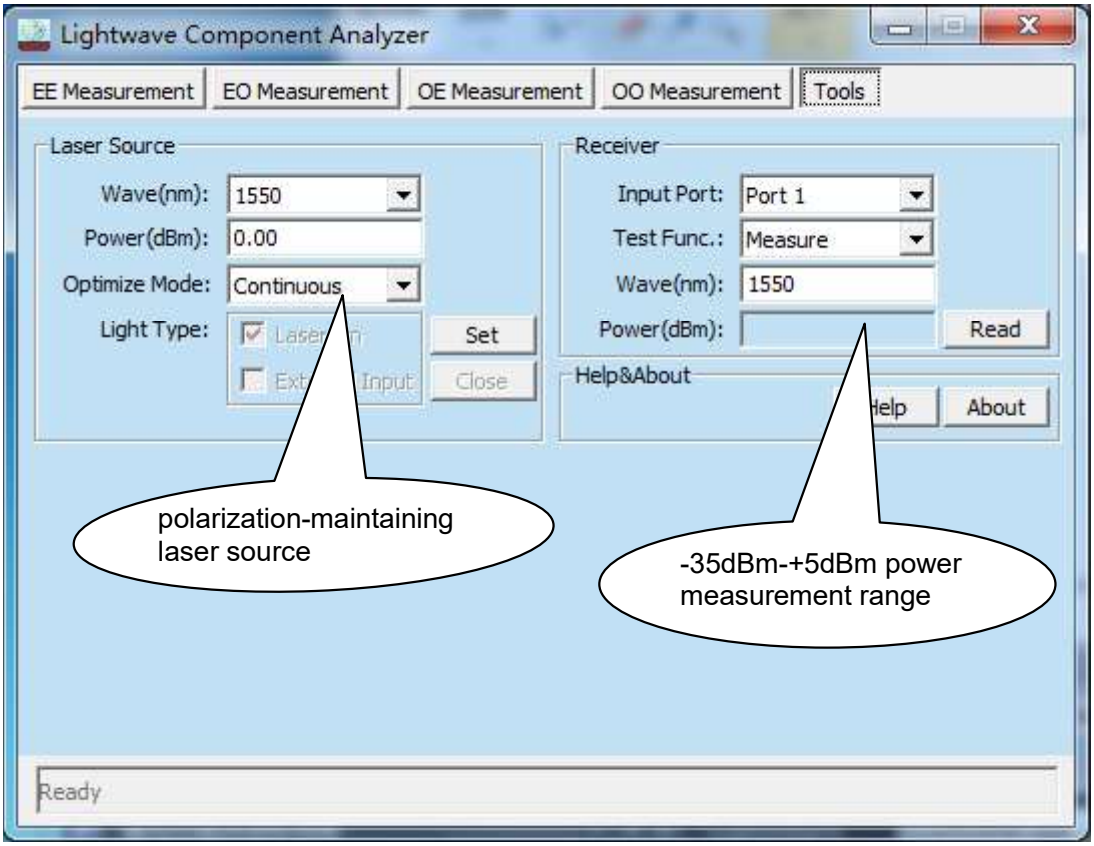
Single-ended - balanced photoelectric device measurement

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 wavelength setting with wider spectral range

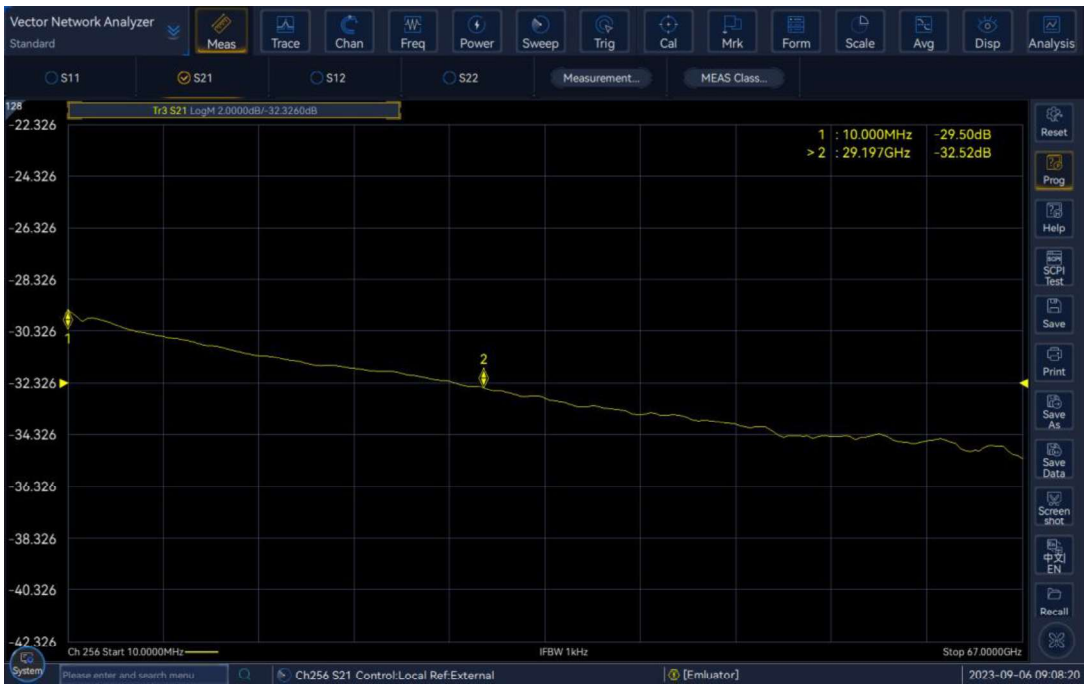
Testing isn't restricted solely around either 1310nm nor even 1550nm yet instead accommodates inputs stemming off any external light resources spanning from 1260nm~1630nm which effectively expands its operational bandwidth and meets the measurement requirements of the core components of CWDM and DWDM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

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

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.



Electro-optical device frequency response test

Optoelectronic device frequency response characteristic testing

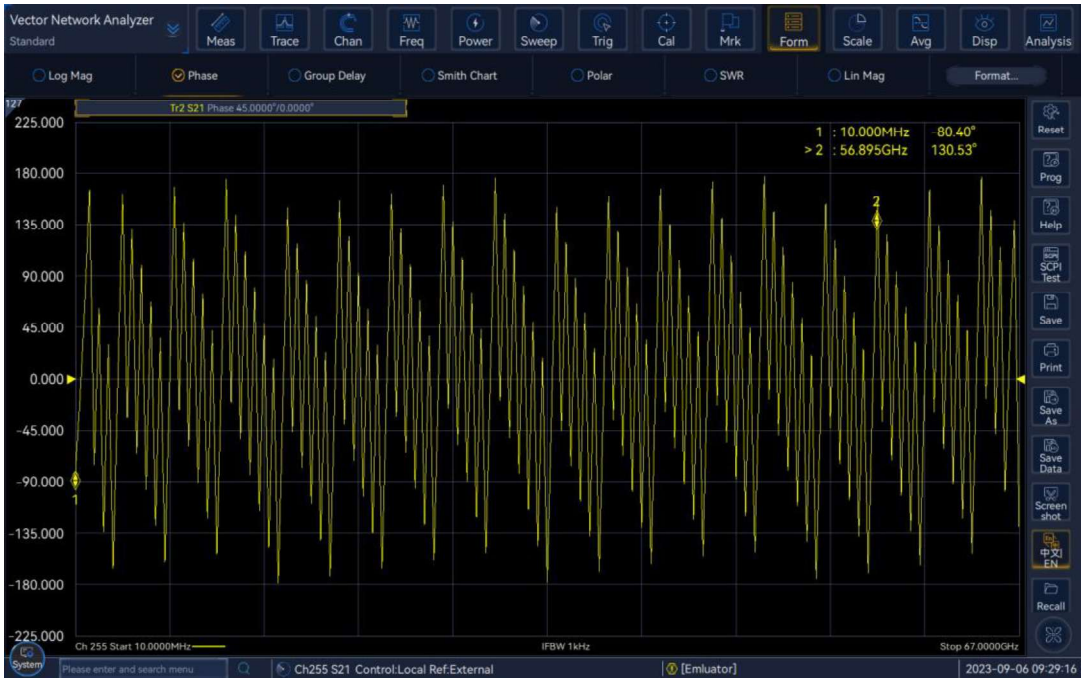
Realizing the 10MHz~67GHz frequency response test of optoelectronic devices such as optoelectronic detector, rapid analysis of 3dB bandwidth and accurate frequency response test can meet the test requirements of R&D, product line and so on.

Optoelectronic device frequency response test

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.



Optoelectronic device phase test

Technical Specifications

Specifications	6433D	6433F	6433H	6433L
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）	-35dBm~+5dBm（optical input 1）	-35dBm~+5dBm（optical input 1）	-35dBm~+5dBm（optical input 1）

	-25dBm~+15dBm（optical input 2)	-25dBm~+15dBm（optical input 2)	-25dBm~+15dBm（optical input 2)	-25dBm~+15dBm（optical input 2)
Minimum Measurable Frequency Response	-	-	-60dB	-55dB
Average Input Optical Power Measurement Accuracy	±0.5dB	±0.5dB	±0.5dB	±0.5dB
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			

Order Information

- Primary Instruments

No.	Model	Description
1	6433D	Lightwave Component Analyzer. Frequency Range:10MHz ~ 26.5GHz
2	6433F	Lightwave Component Analyzer. Frequency Range:10MHz ~ 26.5GHz

3	6433H	Lightwave Component Analyzer. Frequency Range:10MHz ~ 26.5GHz
4	6433L	Lightwave Component Analyzer. Frequency Range:10MHz ~ 26.5GHz

- Lists

No.	Name	Description
1	Power Cord Assembly	Standard three-core power cord
2	User Manual	/
3	Product Certification	Certificate of Conformance
4	Metrology Level Optical Fiber Patch Cord	/
5	USB Cable	/

Optional Accessories of 6433D

No.	Part No.	Name	Description
1	6433D-003	Noise figure measurement	Function of precision measurements towards S parameter, noise figure and noise parameter. For the dual-port configuration, you are required to select : 6433D-201+6433D-204, For the four-port configuration, you are required to select :6433D-401+6433D-404.
2	6433D-008	Pulse Analysis	Designed for measuring S parameter under pulse state.
3	6433D-012	Multi-functional Lightwave Analysis Device	Frequency Range: 10MHz~26.5GHz. Used for verifying the test data of photoelectric/electro-optical modules of light waves.
4	6433D-023	Vector measurement function for Mixers	Used for measuring the parameter of Mixer's vector. For the dual-port configuration, 6433D-204+6433D-S20 is required. For the four-port configuration, 6433D-404+6433D-S20 is required.
5	6433D-201	Dual-port programmable step attenuator	Configuring two 70dB programmable stepping attenuators in the source path, and two 35dB programmable stepping attenuators in the receiver path. Required to select :6433D-204.
6	6433D-203	Dual-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433D-204 is required, but 6433D-205 cannot be selected at the same time.
7	6433D-204	Dual-port configurable testing apparatus	The testing apparatus of the dual-port model is extended by adding panel jumpers to enable independent use of A, B, R1 and R2 receivers.

8	6433D-205	Dual-port T-biasing device	Two T-type bias are configured internally for the port output of DC bias voltage while 6433D-201+6433D-204 is required, but 6433D-203 cannot be selected at the same time.
9	6433D-400	Four-port measurement	Four-port Lightwave Component Analyzer configured with double stimulating source. Frequency Range: 10MHz ~ 26.5GHz.
10	6433D-401	Four-Port Programmable Step Attenuator	Configuring four 70dB programmable stepping attenuators in the source path, and four 35dB programmable stepping attenuators in the receiver path. Required to select :6433D-400+6433D-404.
11	6433D-402	Active Intermodulation for Distortion Measurement	For measurement of active intermodulation distortion signal. Required to select 6433D-400+6433D-404+6433D-S20.
12	6433D-403	Four-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433D-400+6433D-404 is required, but 6433D-405 cannot be selected at the same time.
13	6433D-404	Four-port configurable testing apparatus	The testing apparatus of the four-port model is extended by adding panel jumpers to enable independent use of A、B、C、D、R1、R2、R3 and R4 receivers. Required to select 6433D-400.
14	6433D-405	Four-port T-biasing device	Four T-type bias are configured internally for the port output of DC bias voltage while 6433D-400+6433D-401+6433D-404 is required, but 6433D-403 cannot be selected at the same time.
15	6433D-S05	Function of S-parameter signal integrity analysis	Used to analyzing the signal integrity characteristics of the system such as frequency domain, time domain TDR and crosstalk, and can automatically convert the graph curve into the test report.
16	6433D-S07	Function of automatically removal about fixture	Used for automatic test and removal of single-ended and balanced device measurement fixtures.
17	6433D-S10	Function of time domain measurement	For time domain measurement to identify and analyze discontinuous locations in devices, fixtures or cables.
18	6433D-S11	Advanced capabilities of time domain analysis	For TDR time domain impedance test, eye diagram analysis, purchase S11 free S10.
19	6433D-S16	Function of real difference measurement	Used for real differential mode, common mode stimulus balance parameter measurement. Required to select 6433D-400+6433D-404+6433D-S28.

20	6433D-S18	Rapid continuous wave scanning feature	Using FIFO buffering method, data is read instantly.
21	6433D-S20	Function of frequency offset measurement	Intended for use in frequency offset measurements
22	6433D-S22	Function of Mixer scalar measurement	Used for mixer scalar parameter measurement. 6433D-S20 is required.
23	6433D-S24	Function of embedded local oscillator upconverter measurement	Designed for measurement of integrated local oscillator upconverter. For the dual-port configuration, 6433D-204+6433D-S20 is required. For the four-port configuration, 6433D-404+6433D-S20 or 6433D-S22 or 6433D-023 is required.
24	6433D-S26	Function of gain compression measurement	Used for gain compression measurement of active devices such as amplifiers.
25	6433D-S28	Function of phase scanning measurement	Used for phase scanning measurement. 6433D-400 is required.
26	6433D-S30	Function of frequency spectrum analysis	Used to provide multi-channel frequency spectrum testing function.
27	6433D-EWT1	Extended warranty for 1 year beyond the warranty period.	The warranty is extended for 1 year beyond the warranty period, and the two-year extended warranty is optional for 2 items, and so on. The service does not include calibration and only includes one-way freight.

Optional Accessories of 6433F

No.	Part No.	Name	Description
1	6433F-003	Noise figure measurement	Function of precision measurements towards S parameter, noise figure and noise parameter. For the dual-port configuration, you are required to select : 6433F-201+6433F-204，For the four-port configuration, you are required to select :6433F-401+6433F-404.
2	6433F-008	Pulse Analysis	Designed for measuring S parameter under pulsed stated.
3	6433F-011	OE standard part	Frequency Range:10MHz ~ 44GHz. Used to verify the data of the photoelectric test module.
4	6433F-012	Multi-functional Lightwave Analysis Device	Frequency Range： 10MHz~44GHz. Used for verifying the test data of photoelectric/electro-optical modules of light waves.
5	6433F-023	Vector measurement function for Mixers	Used for measuring the parameter of Mixer's vector. For the dual-port configuration, 6433F-204+6433F-S20 is required. For the four-port configuration, 6433F-404+6433F-S20 is required.

6	6433F-201	Dual-port programmable step attenuator	Configuring two 60dB programmable stepping attenuators in the source path, and two 35dB programmable stepping attenuators in the receiver path. Required to select :6433F-204.
7	6433F-203	Dual-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433F-204 is required，but 6433F-205 cannot be selected at the same time.
8	6433F-204	Dual-port configurable testing apparatus	The testing apparatus of the dual-port model is extended by adding panel jumpers to enable independent use of A, B, R1 and R2 receivers.
9	6433F-205	Dual-port T-biasing device	Two T-type bias are configured internally for the port output of DC bias voltage while 6433F-201+6433F-204 is required, but 6433F-203 cannot be selected at the same time.
10	6433F-400	Four-port measurement	Four-port Lightwave Component Analyzer configured with double stimulating source. Frequency Range: 10MHz ~ 44GHz.
11	6433F-401	Four-Port Programmable Step Attenuator	Configuring four 60dB programmable stepping attenuators in the source path, and four 35dB programmable stepping attenuators in the receiver path. Required to select :6433F-400+6433F-404.
12	6433F-402	Active Intermodulation for Distortion Measurement	For measurement of active intermodulation distortion signal. Required to select 6433F-400+6433F-404+6433F-S20.
13	6433F-403	Four-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433F-400+6433F-404 is required，but 6433F-405 cannot be selected at the same time.
14	6433F-404	Four-port configurable testing apparatus	The testing apparatus of the four-port model is extended by adding panel jumpers to enable independent use of A、B、C、D、R1、R2、R3 and R4 receivers. Required to select 6433F-400.
15	6433F-405	Four-port T-biasing device	Four T-type bias are configured internally for the port output of DC bias voltage while 6433F-400+6433F-401+6433F-404 is required, but 6433F-403 cannot be selected at the same time.
16	6433F-S05	Function of S-parameter signal integrity analysis	Used to analyzing the signal integrity characteristics of the system such as frequency domain, time domain TDR and crosstalk, and can automatically convert the graph curve into the test report.
17	6433F-S07	Function of automatically removal about fixture	Used for automatic test and removal of single-ended and balanced device measurement fixtures.

18	6433F-S10	Function of time domain measurement	For time domain measurement to identify and analyze discontinuous locations in devices, fixtures or cables.
19	6433F-S11	Advanced capabilities of time domain analysis	For TDR time domain impedance test, eye diagram analysis, purchase S11 free S10.
20	6433F-S16	Function of real difference measurement	Used for real differential mode, common mode stimulus balance parameter measurement. Required to select 6433F-400+6433F-404+6433F-S28.
21	6433F-S18	Rapid continuous wave scanning feature	Using FIFO buffering method, data is read instantly.
22	6433F-S20	Function of frequency offset measurement	Intended for use in frequency offset measurements
23	6433F-S22	Function of Mixer scalar measurement	Used for mixer scalar parameter measurement. 6433F-S20 is required.
24	6433F-S24	Function of embedded local oscillator upconverter measurement	Designed for measurement of integrated local oscillator upconverter. For the dual-port configuration, 6433F-204+6433F-S20 is required. For the four-port configuration, 6433F-404+6433F-S20 or 6433F-S22 or 6433F-023 is required.
25	6433F-S26	Function of gain compression measurement	Used for gain compression measurement of active devices such as amplifiers.
26	6433F-S28	Function of phase scanning measurement	Used for phase scanning measurement. 6433F-400 is required.
27	6433F-S30	Function of frequency spectrum analysis	Used to provide multi-channel frequency spectrum testing function.
28	6433F-EWT1	Extended warranty for 1 year beyond the warranty period.	The warranty is extended for 1 year beyond the warranty period, and the two-year extended warranty is optional for 2 items, and so on. The service does not include calibration and only includes one-way freight.

Optional Accessories of 6433H

No.	Part No.	Name	Description
1	6433H-003	Noise figure measurement	Function of precision measurements towards S parameter, noise figure and noise parameter. For the dual-port configuration, you are required to select : 6433H-201+6433H-204，For the four-port configuration, you are required to select :6433H-401+6433H-404.
2	6433H-008	Pulse Analysis	Designed for measuring S parameter under pulsed stated.
3	6433H-011	OE standard part	Frequency Range:10MHz ~ 50GHz. Used to verify the data of the photoelectric test module.

4	6433H-012	Multi-functional Lightwave Analysis Device	Frequency Range：10MHz~50GHz. Used for verifying the test data of photoelectric/electro-optical modules of light waves.
5	6433H-023	Vector measurement function for Mixers	Used for measuring the parameter of Mixer's vector. For the dual-port configuration, 6433H-204+6433H-S20 is required. For the four-port configuration, 6433H-404+6433H-S20 is required.
6	6433H-201	Dual-port programmable step attenuator	Configuring two 60dB programmable stepping attenuators in the source path, and two 35dB programmable stepping attenuators in the receiver path. Required to select :6433H-204.
7	6433H-203	Dual-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433H-204 is required，but 6433H-205 cannot be selected at the same time.
8	6433H-204	Dual-port configurable testing apparatus	The testing apparatus of the dual-port model is extended by adding panel jumpers to enable independent use of A, B, R1 and R2 receivers.
9	6433H-205	Dual-port T-biasing device	Two T-type bias are configured internally for the port output of DC bias voltage while 6433H-201+6433H-204 is required, but 6433H-203 cannot be selected at the same time.
10	6433H-400	Four-port measurement	Four-port Lightwave Component Analyzer configured with double stimulating source. Frequency Range: 10MHz ~ 50GHz.
11	6433H-401	Four-Port Programmable Step Attenuator	Configuring four 60dB programmable stepping attenuators in the source path, and four 35dB programmable stepping attenuators in the receiver path. Required to select :6433H-400+6433H-404.
12	6433H-402	Active Intermodulation for Distortion Measurement	For measurement of active intermodulation distortion signal. Required to select 6433H-400+6433H-404+6433H-S20.
13	6433H-403	Four-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433H-400+6433H-404 is required，but 6433H-405 cannot be selected at the same time.
14	6433H-404	Four-port configurable testing apparatus	The testing apparatus of the four-port model is extended by adding panel jumpers to enable independent use of A、B、C、D、R1、R2、R3 and R4 receivers. Required to select 6433H-400.

15	6433H-405	Four-port T-biasing device	Four T-type bias are configured internally for the port output of DC bias voltage while 6433H-400+6433H-401+6433H-404 is required, but 6433H-403 cannot be selected at the same time.
16	6433H-S05	Function of S-parameter signal integrity analysis	Used to analyzing the signal integrity characteristics of the system such as frequency domain, time domain TDR and crosstalk, and can automatically convert the graph curve into the test report.
17	6433H-S07	Function of automatically removal about fixture	Used for automatic test and removal of single-ended and balanced device measurement fixtures.
18	6433H-S10	Function of time domain measurement	For time domain measurement to identify and analyze discontinuous locations in devices, fixtures or cables.
19	6433H-S11	Advanced capabilities of time domain analysis	For TDR time domain impedance test, eye diagram analysis, purchase S11 free S10.
20	6433H-S16	Function of real difference measurement	Used for real differential mode, common mode stimulus balance parameter measurement. Required to select 6433H-400+6433H-404+6433H-S28.
21	6433H-S18	Rapid continuous wave scanning feature	Using FIFO buffering method, data is read instantly.
22	6433H-S20	Function of frequency offset measurement	Intended for use in frequency offset measurements
23	6433H-S22	Function of Mixer scalar measurement	Used for mixer scalar parameter measurement. 6433H-S20 is required.
24	6433H-S24	Function of embedded local oscillator upconverter measurement	Designed for measurement of integrated local oscillator upconverter. For the dual-port configuration, 6433H-204+6433H-S20 is required. For the four-port configuration, 6433H-404+6433H-S20 or 6433H-S22 or 6433H-023 is required.
25	6433H-S26	Function of gain compression measurement	Used for gain compression measurement of active devices such as amplifiers.
26	6433H-S28	Function of phase scanning measurement	Used for phase scanning measurement. 6433H-400 is required.
27	6433H-S30	Function of frequency spectrum analysis	Used to provide multi-channel frequency spectrum testing function.
28	6433H-EWT1	Extended warranty for 1 year beyond the warranty period.	The warranty is extended for 1 year beyond the warranty period, and the two-year extended warranty is optional for 2 items, and so on. The service does not include calibration and only includes one-way freight.

Optional Accessories of 6433L

No.	Part No.	Name	Description
1	6433L-008	Pulse Analysis	Designed for measuring S parameter under pulsed stated.
2	6433L-011	OE standard part	Frequency Range:10MHz ~ 67GHz. Used to verify the data of the photoelectric test module.
3	6433L-012	Multi-functional Lightwave Analysis Device	Frequency Range： 10MHz~67GHz. Used for verifying the test data of photoelectric/electro-optical modules of light waves.
4	6433L-023	Vector measurement function for Mixers	Used for measuring the parameter of Mixer's vector. For the dual-port configuration, 6433L-204+6433L-S20 is required. For the four-port configuration, 6433L-404+6433L-S20 is required.
5	6433L-201	Dual-port programmable step attenuator	Configuring two 50dB programmable stepping attenuators in the source path, and two 50dB programmable stepping attenuators in the receiver path. Required to select :6433L-204.
6	6433L-203	Dual-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433L-204 is required， but 6433L-205 cannot be selected at the same time.
7	6433L-204	Dual-port configurable testing apparatus	The testing apparatus of the dual-port model is extended by adding panel jumpers to enable independent use of A, B, R1 and R2 receivers.
8	6433L-205	Dual-port T-biasing device	Two T-type bias are configured internally for the port output of DC bias voltage while 6433L-201+6433L-204 is required, but 6433L-203 cannot be selected at the same time.
9	6433L-400	Four-port measurement	Four-port Lightwave Component Analyzer configured with double stimulating source. Frequency Range: 10MHz ~ 67GHz.
10	6433L-401	Four-Port Programmable Step Attenuator	Configuring four 50dB programmable stepping attenuators in the source path, and four 50dB programmable stepping attenuators in the receiver path. Required to select :6433L-400+6433L-404.
11	6433L-402	Active Intermodulation for Distortion Measurement	For measurement of active intermodulation distortion signal. Required to select 6433L-400+6433L-404+6433L-S20.
12	6433L-403	Four-port low-frequency extension	The lower frequency range can be extended to 500Hz while 6433L-400+6433L-404 is required, but 6433L-405 cannot be selected at the same time.

13	6433L-404	Four-port configurable testing apparatus	The testing apparatus of the four-port model is extended by adding panel jumpers to enable independent use of A、B、C、D、R1、R2、R3 and R4 receivers. Required to select 6433L-400.
14	6433L-405	Four-port T-biasing device	Four T-type bias are configured internally for the port output of DC bias voltage while 6433L-400+6433L-401+6433L-404 is required, but 6433L-403 cannot be selected at the same time.
15	6433L-S05	Function of S-parameter signal integrity analysis	Used to analyzing the signal integrity characteristics of the system such as frequency domain, time domain TDR and crosstalk, and can automatically convert the graph curve into the test report.
16	6433L-S07	Function of automatically removal about fixture	Used for automatic test and removal of single-ended and balanced device measurement fixtures.
17	6433L-S10	Function of time domain measurement	For time domain measurement to identify and analyze discontinuous locations in devices, fixtures or cables.
18	6433L-S11	Advanced capabilities of time domain analysis	For TDR time domain impedance test, eye diagram analysis, purchase S11 free S10.
19	6433L-S16	Function of real difference measurement	Used for real differential mode, common mode stimulus balance parameter measurement. Required to select 6433L-400+6433L-404+6433L-S28.
20	6433L-S18	Rapid continuous wave scanning feature	Using FIFO buffering method, data is read instantly.
21	6433L-S20	Function of frequency offset measurement	Used in frequency offset measurements
22	6433L-S22	Function of Mixer scalar measurement	Used for mixer scalar parameter measurement. 6433L-S20 is required.
23	6433L-S24	Function of embedded local oscillator upconverter measurement	Designed for measurement of integrated local oscillator upconverter. For the dual-port configuration, 6433L-204+6433L-S20 is required. For the four-port configuration, 6433L-404+6433L-S20 or 6433L-S22 or 6433L-023 is required.
24	6433L-S26	Function of gain compression measurement	Used for gain compression measurement of active devices such as amplifiers.
25	6433L-S28	Function of phase scanning measurement	Used for phase scanning measurement. 6433L-400 is required.
26	6433L-S30	Function of frequency spectrum analysis	Used to provide multi-channel frequency spectrum testing function.

27	6433L-EWT1	Extended warranty for 1 year beyond the warranty period.	The warranty is extended for 1 year beyond the warranty period, and the two-year extended warranty is optional for 2 items, and so on. The service does not include calibration and only includes one-way freight.

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