MEILHAUS ELECTRONIC

Product Datasheet - Technical Specifications

More information in our Web-Shop at ▶ **www.meilhaus.com**

Your contact

Technical and commercial sales, price information, quotations, demo/test equipment, consulting:

Tel.:   **+49 - (0)81 41 - 52 71-0**

FAX: **+49 - (0)81 41 - 52 71-129**

E-Mail: **sales@meilhaus.com**

www.meilhaus.com

Ceyear

3671C/D/E
Vector Network Analyzer
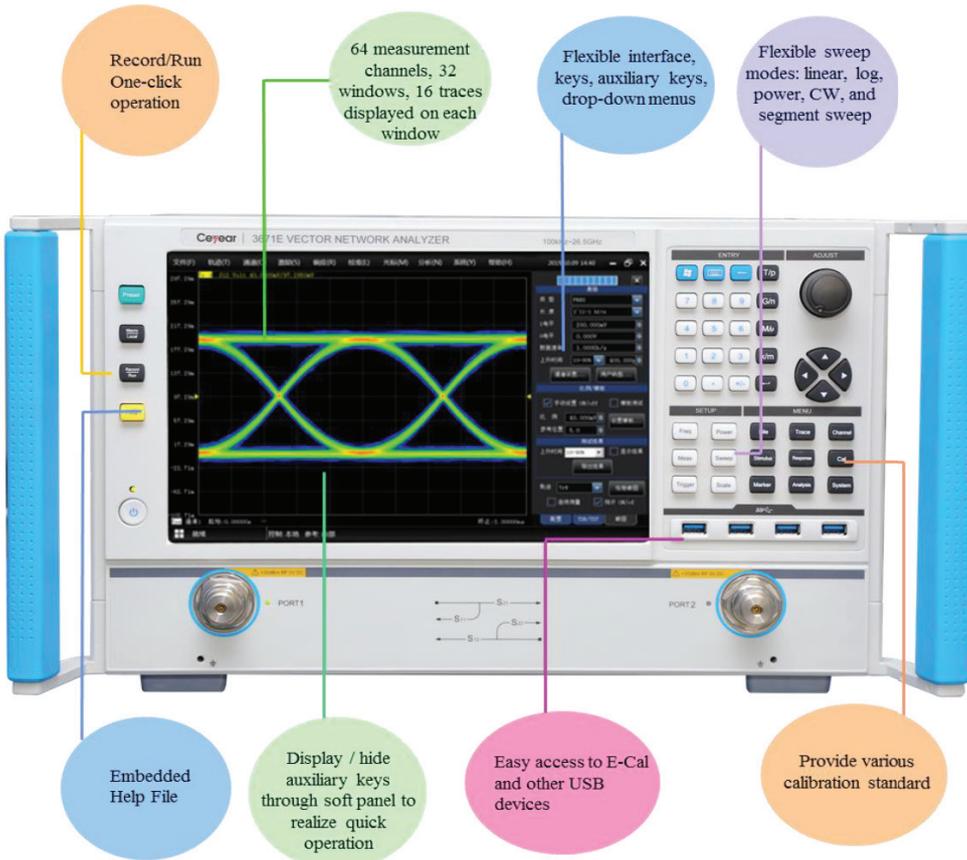## (100kHz/10 MHz ~ 14GHz/20GHz/26.5GHz)

The 3671 Series Vector Network Analyzers include 3671C (100kHz/10MHz...14GHz), 3671D (100kHz/10MHz...20GHz), 3671E (100kHz/10MHz...26.5GHz). The 3671 series vector network analyzers provide multiple calibration types including frequency response, single port, response isolation, enhanced response and full dual-port, electronic calibration etc. They can offer various display formats such as logarithmic amplitude, linear amplitude, standing-wave, phase, group delay, Smith chart and polar coordinates, etc. They are equipped with several standard interfaces: USB, LAN, GPIB, VGA and HDMI etc. Besides all measurement functions same as traditional vector network analyzer, through configuration of functional options, 3671analyzers are also capable of multifunctional & comprehensive parameter test of amplitude-frequency characteristics, phase-frequency characteristics and group delay characteristics. The 3671 series vector network analyzer retains the characteristics of high-end vector network analyzers, including performance indicators, instrument appearance, display effects, software interface, etc., while controlling the volume, weight, wind noise, etc. of the instrument to create a good experience for customers. The product can be widely used in radar, communication, navigation and other fields, and is an indispensable test equipment in the scientific research and production process of national defense industry and universities.

- Wider frequency coverage, the starting frequency as low as 100kHz

- Optional IF bandwidth, the maximum IF bandwidth up to 30MHz

- Advanced calibration methods, available calibration guidance, flexible calibration types, compatible with various calibration kits

- Available in multiple display formats such as logarithmic amplitude, linear amplitude, standing-wave, phase, Smith chart

- Chinese/English operation interface,12.1-inch 1280*800 high resolution touch screen

- Record/run, one-click operation greatly simplifies measurement setting steps and improves efficiency

- Advanced time-domain analysis included TDR impedance measurement, eye diagram analysis function

Intuitive user interface for easy operation to improve efficiency

Record/Run One-click operation

64 measurement channels, 32 windows, 16 traces displayed on each window

Flexible interface, keys, auxiliary keys, drop-down menus

Flexible sweep modes: linear, log, power, CW, and segment sweep

Embedded Help File

Display / hide auxiliary keys through soft panel to realize quick operation

Easy access to E-Cal and other USB devices

Provide various calibration standard
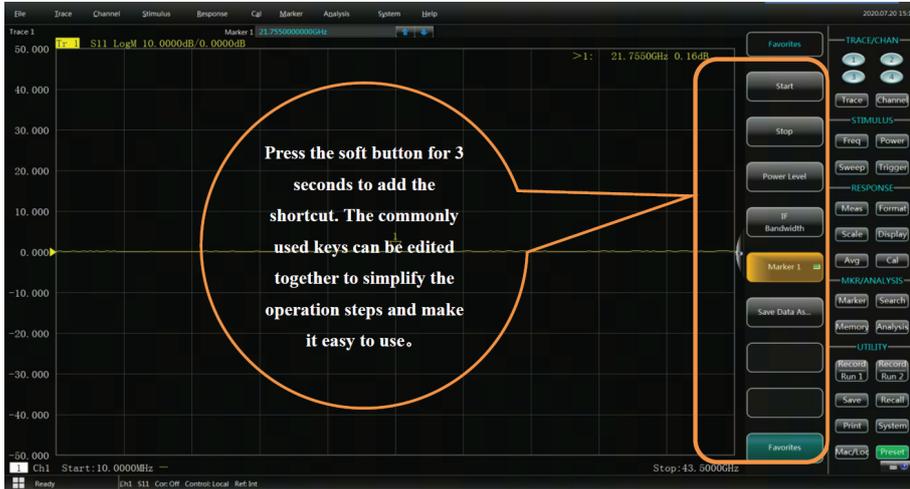
The soft panel can be set to the left or right side of screen, or be hidden.
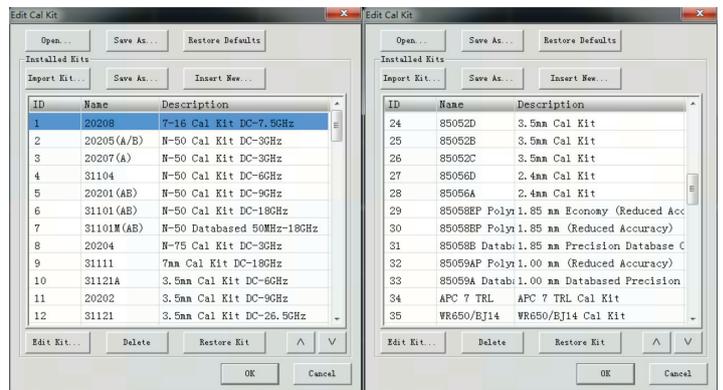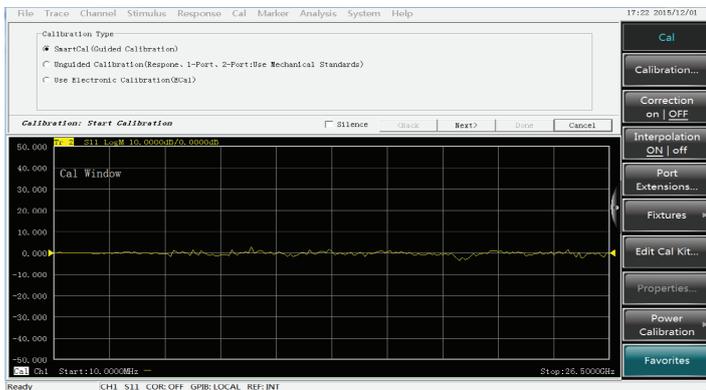
Parameters can be entered quickly by using the activated input toolbar. Set limit line and segment scan value for production line to improve test efficiency.

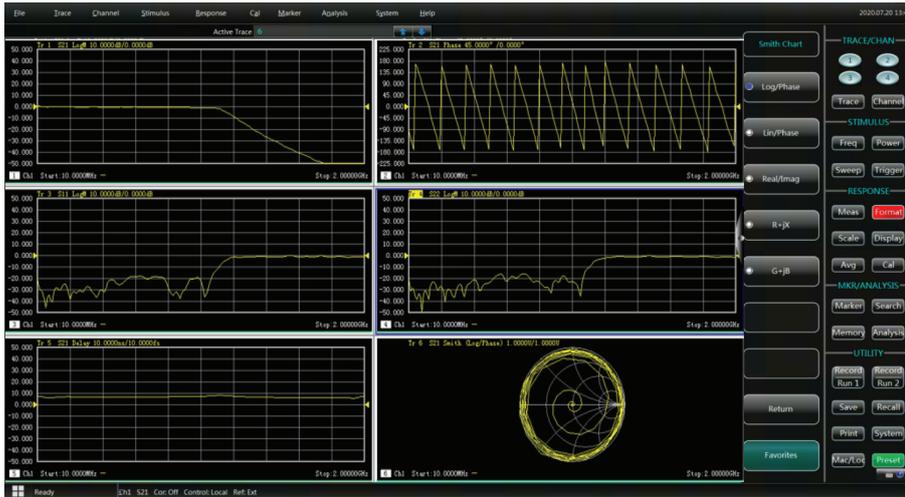## Flexible and optional calibration types, compatible with multiple calibration kits

The 3671 Series Vector Network Analyzers provide multiple calibration types, including guided calibration (automatic calibration), unguided calibration (using a mechanical calibration kit to conduct through response calibration, through response & isolation calibration, single port calibration, enhanced response calibration, full two-port SOLT calibration, TRL calibration) and electronic calibration (E-Cal) etc. Users can select calibration kits, such as coaxial calibration kit and electronic calibration kit based on test requirements, which greatly facilitates testing on devices with different interfaces.

Multiple windows to display all measuring channels

The analyzers possess functions of multi-channel and multi-window display, support up to 64 channels. Maximum 32measuring windows can be simultaneously displayed, and each window can simultaneously display up to16test traces, which makes results more visible and the operation more convenient.

One-click automated test for recording function

Record all the operation steps in the process of using the instrument. At the same time, you can insert the edit prompt dialog box at any time, and pop up the prompt dialog box on time, waiting for confirmation, and realize the interactive function, which truly realizes the one-button automation function of the intelligent instrument.
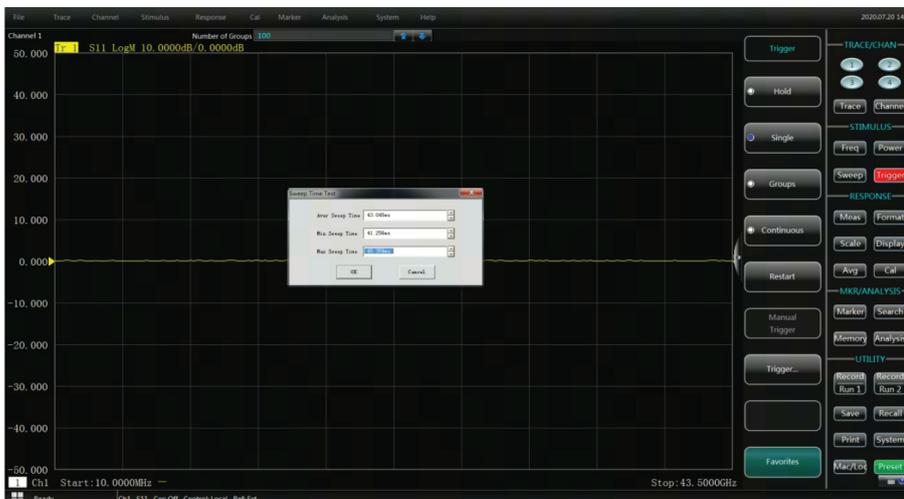
Large dynamic range

The 3671 SeriesVector Network Analyzers are designed with the concept of mixer receiving, which effectively extends the dynamic range of the complete machine and meets the test demand for large dynamic range.
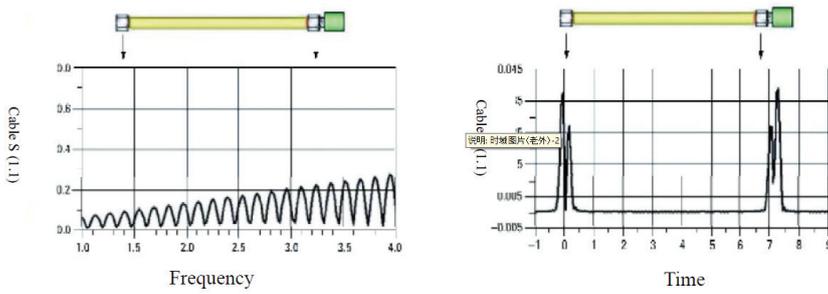

Improved sweep speed

The 3671 Series Vector Network Analyzers can realize one-button sweep time test which can help you to estimate the performance of device. In the settings of 201 points scanning in the whole frequency band and 600 kHz IF bandwidth, the scanning speed can up to 43ms.

Time-domain analysis can comprehensively characterize the design

With time-domain options, 3671SeriesVector Network Analyzers can realize the switching of measurement results between frequency-domain and time-domain, which can be used to identify the discontinuous points of devices, fixtures or cables to realize accurate fault location.
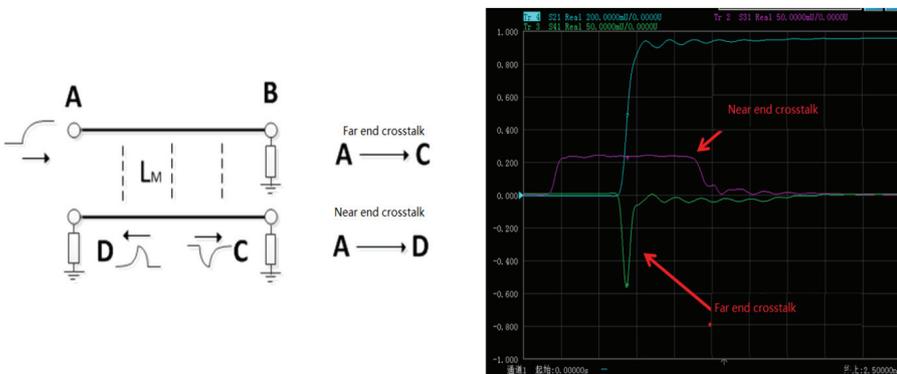

Frequency   Time

Advanced time-domain analysis (TDR option)

With the rapid development of the information industry, the demand for network bandwidth is also getting higher and higher, requiring information equipment (such as large servers, computers and switches, etc.) to carry faster and faster data rates. Information equipment manufacturers are paying more and more attention to the signal integrity problem in high-speed interconnect channels. The characteristic change of transmission link will significantly affect the signal transmission quality. Advanced time domain analysis option is an important method to evaluate the signal transmission quality of high-speed link. TDR time domain impedance test can accurately test the change of impedance characteristics on the transmission line and locate the discontinuity.
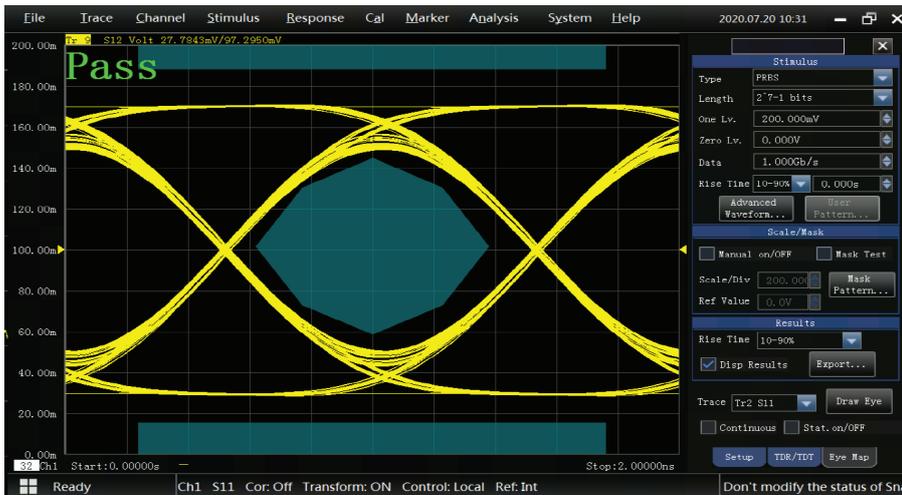

Convenient near and far end crosstalk test, can simultaneously analyze time domain and frequency domain data, used to test the degree of mutual influence between multiple transmission lines.
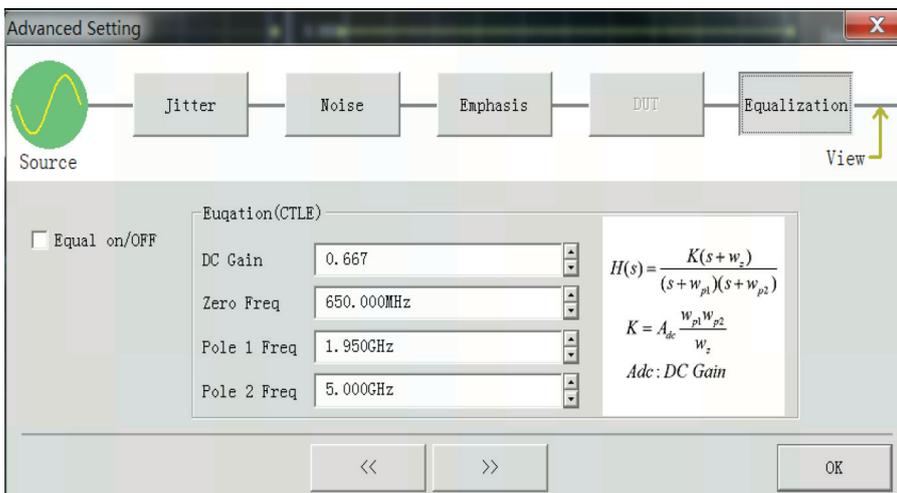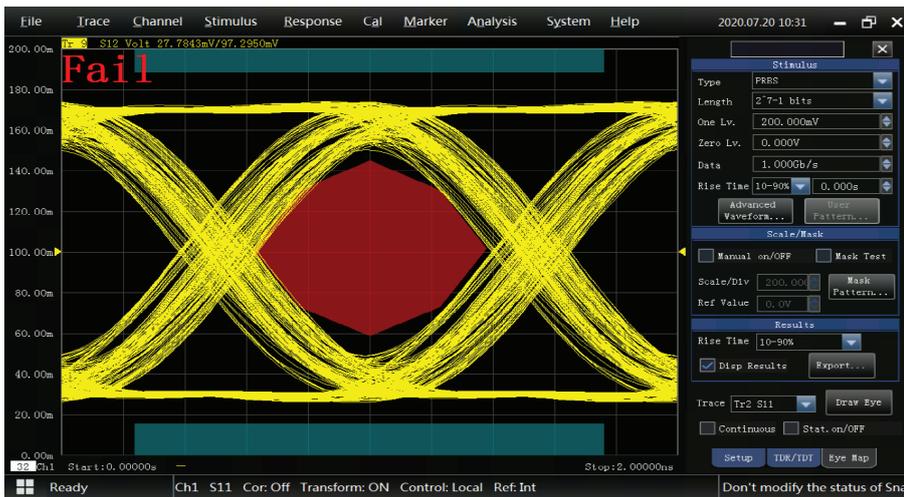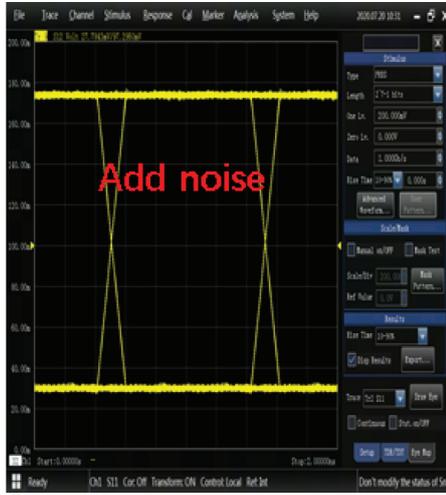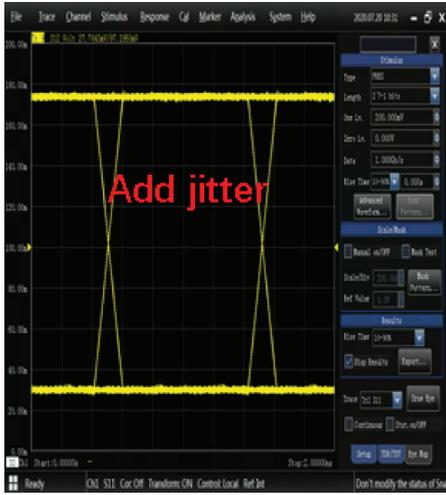
The advanced time domain analysis option of 3671 series vector network analyzer provides the function of generating and analyzing virtual eye map based on S parameter. The simulation code type output unit is used to generate data bits with 0 and 1 changes. The simulation code type and the time-domain impulse response of the measured part are convolved, and the virtual eye map is obtained after superposition. Depending on different high-speed digital communication standards, advanced time domain analysis options can be used for efficient Pass/Fail testing using predefined eye map templates.

The advanced time-domain analysis option can impose jitter, noise and other interference on the simulation eye map, and simulate the simulation eye map of different positions of high-speed link in the real environment through the addition of correction algorithms such as pre-weighting and equalization.

Automatic fixture removal function

The measurement objects of the vector network analyzer are related to non-standard connector devices, such as packaged microwave devices, on-chip devices, etc. The most significant feature of such devices is that they cannot be directly connected to vector network analyzers. So we need to add the fixture to connect with the vector network analyzer. However, the fixture error is also introduced. The automatic fixture removal function can extract, store and embed the fixture parameters to obtain the real parameters of the parts under test. It is easy to operate and has high precision.

The advanced time-domain analysis option can impose jitter, noise and other interference on the simulation eye map, and simulate the simulation eye map of different positions of high-speed link in the real environment through the addition of correction algorithms such as pre-weighting and equalization.
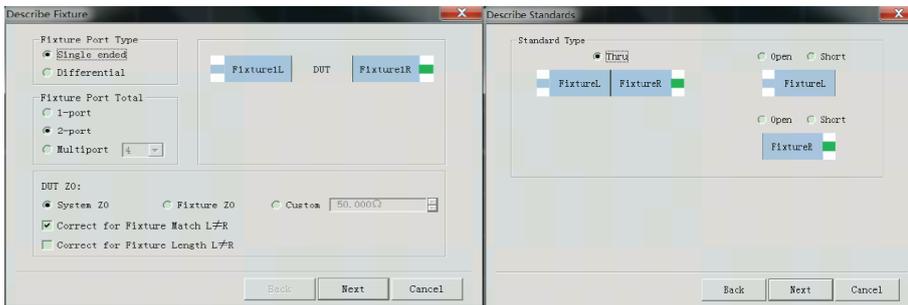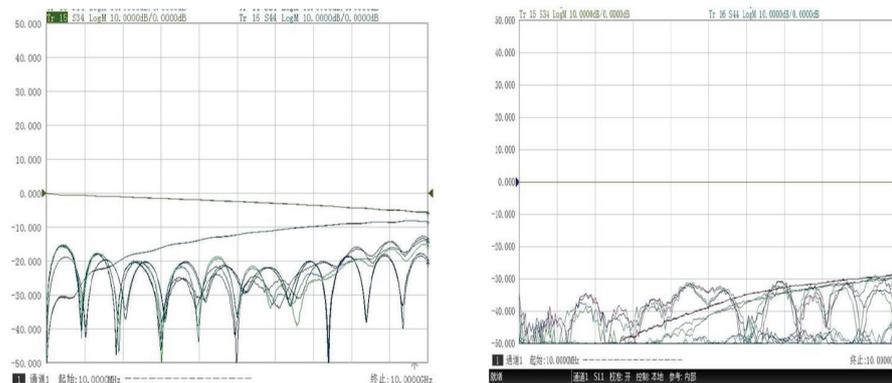
By using the automatic fixture removal function, the measured parts are taken as a whole to extract the balance parameters and to implement 4-port embedded. The test results show that the transmission parameters can be removed well including the near-end and far-end crosstalk.

3671C/D/E Technical Specifications

Frequency Characteristic			
Frequency Range	100kHz/ 10MHz...14/20/26.5GHz		
Frequency Resolution	0.1Hz		
Frequency Accuracy	±1x10⁻⁷ (23°C±3°C)		
Port Power Characteristic			
	2-Port	2-Port (low frequency option)	4-Port
Max. Output Power	+15dBm (10MHz...100MHz) +16dBm (100MHz...4GHz) +16dBm (4GHz...10GHz) +12dBm (10GHz...14GHz) +10dBm (14GHz...20GHz) +10dBm (20GHz...24GHz) +5dBm (24GHz...26.5GHz)	+5dBm (100kHz...10MHz) +15dBm (10MHz...4GHz) +15dBm (4GHz...10GHz) +10dBm (10GHz...14GHz) +9dBm (14GHz...20GHz) +6dBm (20GHz...24GHz) 0dBm (24GHz...26.5GHz)	+3dBm (100kHz...10MHz) +13dBm (10MHz...4GHz) +10dBm (4GHz...10GHz) +4dBm (10GHz...14GHz) +3dBm (14GHz...20GHz) -2dBm (20GHz...24GHz) -6dBm (24GHz...26.5GHz)
Power Sweep Range	40dB (100kHz...10MHz) 50dB (10MHz...20GHz) 40dB (20...26.5GHz)		
Network Parameter Characteristic			
	2-Port	2-Port (low frequency option)	4-Port
System Dynamic Range	94dB (10MHz...1GHz) 132dB (1GHz...4GHz) 135dB (4GHz...10GHz) 130dB (10GHz...14GHz) 128dB (14GHz...20GHz) 125dB (20GHz...24GHz) 120dB (24GHz...26.5GHz)	102dB (100kHz...10MHz) 132dB (10MHz...4GHz) 133dB (4GHz...10GHz) 125dB (10GHz...14GHz) 124dB (14GHz...20GHz) 120dB (20GHz...24GHz) 115dB (24GHz...26.5GHz)	102dB (100kHz...10MHz) 132dB (10MHz...4GHz) 130dB (4GHz...10GHz) 120dB (10GHz...14GHz) 119dB (14GHz...20GHz) 115dB (20GHz...24GHz) 110dB (24GHz...26.5GHz)
Effective Directivity	48dB (100kHz...2GHz) 44dB (2GHz...20GHz) 44dB (20GHz...26.5GHz)		
Effective Source Match	40dB (100kHz...2GHz) 30dB (2GHz...20GHz) 30dB (20GHz...26.5GHz)		
Effective Load Match	48dB(100kHz...2GHz) 44dB (2GHz...20GHz) 44dB (20GHz...26.5GHz)		
Reflection Tracking	±0.04dB (100kHz...100MHz) ±0.05dB (100MHz...20GHz) ±0.05dB (20GHz...26.5GHz)		
Transmission Tracking	±0.10dB (100kHz...100MHz) ±0.08dB (100MHz...20GHz) ±0.10dB (20GHz...26.5GHz)		

Technical Specifications

Others	
Amplitude Trace Noise dB rms (-5dBm, 1kHz If Bandwidth)	0.010dB rms (100kHz...50MHz)
	0.005dB rms (50MHz...500MHz)
	0.001dB rms (500MHz...14GHz)
	0.001dB rms (14GHz...20GHz)
	0.002dB rms (20GHz...26.5GHz)
Phase Trace Noise deg rms (-5dBm, 1kHz IF Bandwidth)	100degrms (100kHz...50MHz)
	0.040degrms (50MHz...500MHz)
	0.030degrms (500MHz...14GHz)
	0.040degrms (14GHz...20GHz)
	0.040degrms (20GHz...26.5GHz)
IF Bandwidth	1Hz...30MHz
Amplitude Display Resolution	0.001dB/div
Phase Display Resolution	0.01°/div
Setting Requirement of Reference Level Amplitude	-500...+500dB
Setting Requirement of Reference Level Phase	-500...+500°
Sweep time (whole frequency band, 201points, 600kHz IF bandwidth, calibration OFF)	43 ms
Maximum sweep points	200001
General Characteristic	
Port Connectors	3.5mm (Male)
System Impedance	50 Ohm
Number of Measuring Ports	3672A/B Standard configuration: 2 Ports; 3672A/B-400 Option: 4 Ports
Peripheral Interface	USB, GPIB, VGA, LAN, HDMI
Operating System	Windows 7
Display	12.1-Inch High Resolution Touch Screen
Size	WxHxD=426mm×266mm×400mm (excluding support and handle)
	WxHxD=516mm×280mm×490mm (including handle, support and back foot)
Max. Power Consumption	300W
Power Supply	50Hz 220V or 50Hz/60Hz 110VAC
Max. Weight	25kg