



3671 Series Vector Network Analyzer

3671C/D/E/G/L

(100 kHz to 14GHz/20GHz/26.5GHz, 10MHz~43.5/67GHz)



Ceyear Technologies Co., Ltd.

Product Overview

3671 series vector network analyzers include 3671C (100 kHz~14GHz), 3671D (100 kHz~20GHz), 3671E (100 kHz~26.5GHz), 3671G (10MHz~43.5GHz) and 3671L (10MHz~67GHz), 2 ports or 4 ports. 3671 series network analyzer provides frequency response, Single-port, response isolation, enhanced response, full-dual port, electronic calibration etc. Offer various display formats, such as logarithmic amplitude, linear amplitude, phase, group delay, Smith chart and polar coordinates. It designed with several standard interfaces, such as: USB, LAN, GPIB, VGA, and HDMI interface.

It can accurately measure the amplitude frequency characteristics and phase frequency characteristics and group delay characteristics of microwave network. 3671 series vector network analyzers retain the features of high-end vector network analyzers, including performance indicators, instrument appearance, display effect, software interface, etc., while controlling the volume, weight, wind noise and other aspects of the instrument to create a good experience for users. The product can be widely used in radar, communication, navigation and other fields, which are indispensable test equipment in national defense military industry and university scientific research.

Main Characteristics

- Wider frequency coverage, starting frequency as low as 100 kHz
- More optional intermediate frequency bandwidth, the maximum intermediate frequency bandwidth is up to 30MHz
- Advanced calibration technology, vivid wizard calibration, flexible calibration type, compatible with multiple calibration kits
- Offer various display formats, such as logarithmic amplitude, linear amplitude, SWR, group delay, Smith chart and polar coordinates
- User friendly operation interface, 12.1-inch 1280*800 high-resolution multi-touch screen
- Recording/replay, one-button operation simplifies the measurement
- Easy to operation by advanced time domain options with added TDR impedance measurement, eye diagram analysis functions

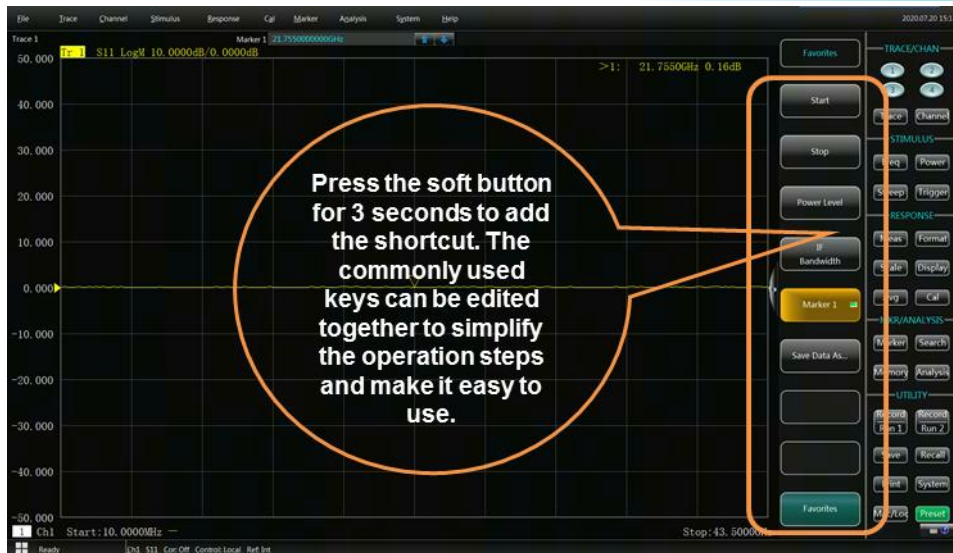


Intuitive user interface for easy operation, which can improve test efficiency

The soft panel can be set to the left or right side of screen, or be hidden.

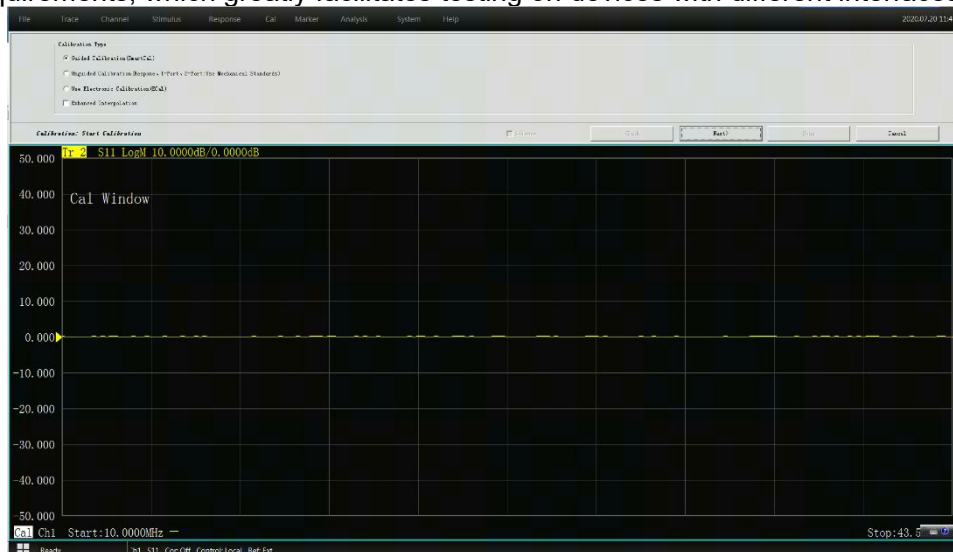


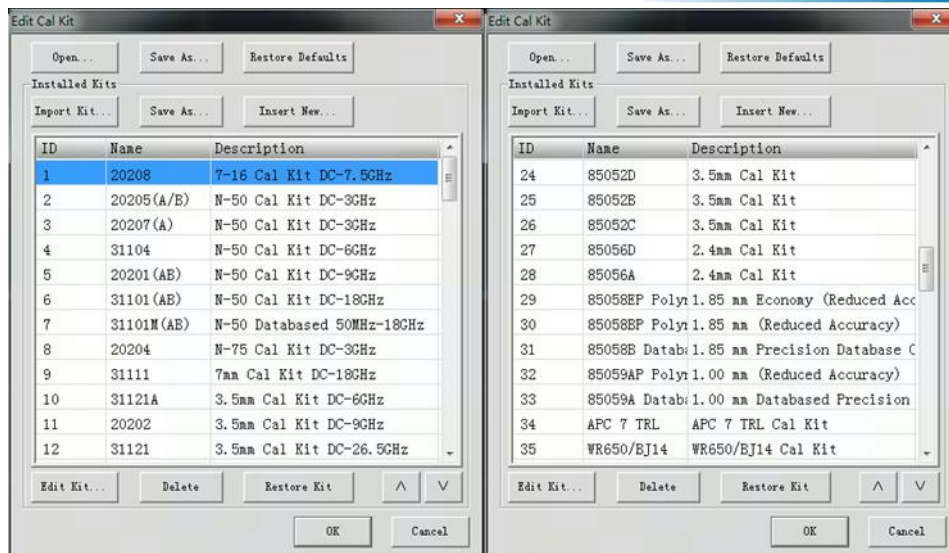
Parameters can be entered quickly by using the activated input toolbar. Set limit line and segment scan value for production line to improve test efficiency.



Flexible calibration type, compatible with multiple calibration kits

3671 series vector network analyzer provides different types of calibration such as automated calibration, guided calibration (through response calibration, through response and isolation, single port calibration, enhanced response calibration, full two-port SOLT calibration, TRL calibration can be achieved by mechanical calibration kits), electrical calibration (ECal) etc. Users can choose calibration types based on the test requirements, which greatly facilitates testing on devices with different interfaces.





Multiple windows to display all measuring channels

The analyzer features functions of multi-channel and multi-window display, support up to 64 channels, maximum 32 measuring windows can be simultaneously displayed, and each window can simultaneously display up to 16 test traces, which makes the observation result more visible and the operation more convenient.



Recording function achieved single key by automated testing

Record all the operation steps in the process of using the instrument. At the same time, the dialog box for editing can be inserted at any time, and the dialog box will pop up on time to wait for confirmation, so as to realize the interactive function and achieve the single key automation function of the intelligent instrument.



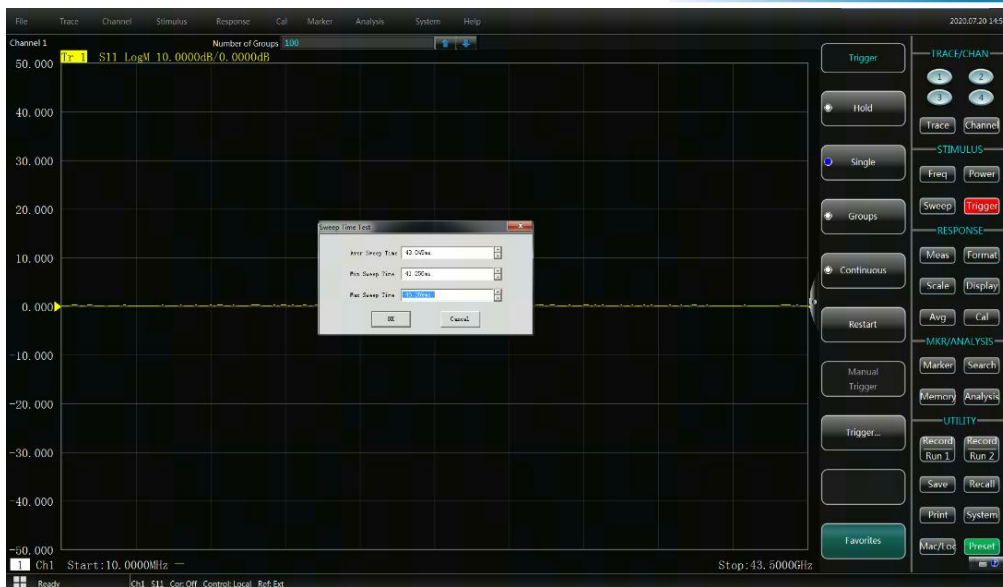
Large dynamic range

The 3671 series vector network analyzer are designed with concept of fundamental wave mixing receiver, which effectively expands the test dynamic range of the complete machine and the test demand for large dynamic range.



Improve the scanning speed tremendously

The 3671 series vector network analyzer has a scanning speed of up to 43ms under the condition of all-frequency with 201 point scanning and 600 kHz medium frequency bandwidth, and provides single key scanning time test function for easy evaluation.



Time Domain Analysis Option

The 3671 series vector network analyzer can realize the switching of the measurement results between the frequency-domain and the time-domain which can be used to identify the discontinuous points of devices, fixtures or cables to realize accurate fault location.



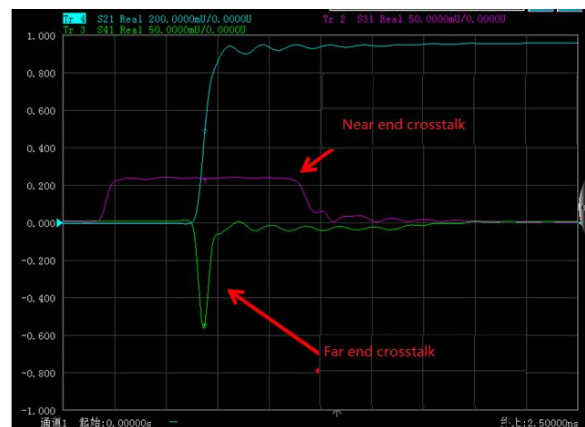
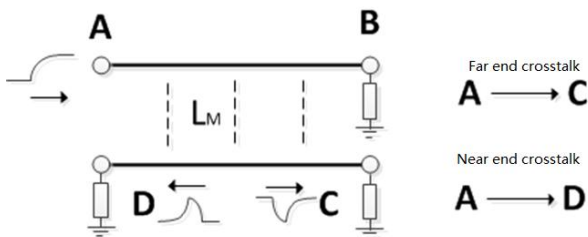
Advanced Time Domain Analysis Option

With the rapid development of the information industry, the requirement for network bandwidth is also higher, which requires information equipment (such as large servers, computers and switches, etc.) to be able to carry faster data rates. Information equipment manufacturers pay more attention on the problem of signal integrity in high-speed interconnection channels. The characteristic changes of transmission links will significantly affect the signal transmission quality. Advanced time domain analysis is an important means to evaluate the signal transmission quality of high-speed links.

TDR time domain impedance test can test the impedance characteristic changes on the transmission line accurately and locate discontinuity.

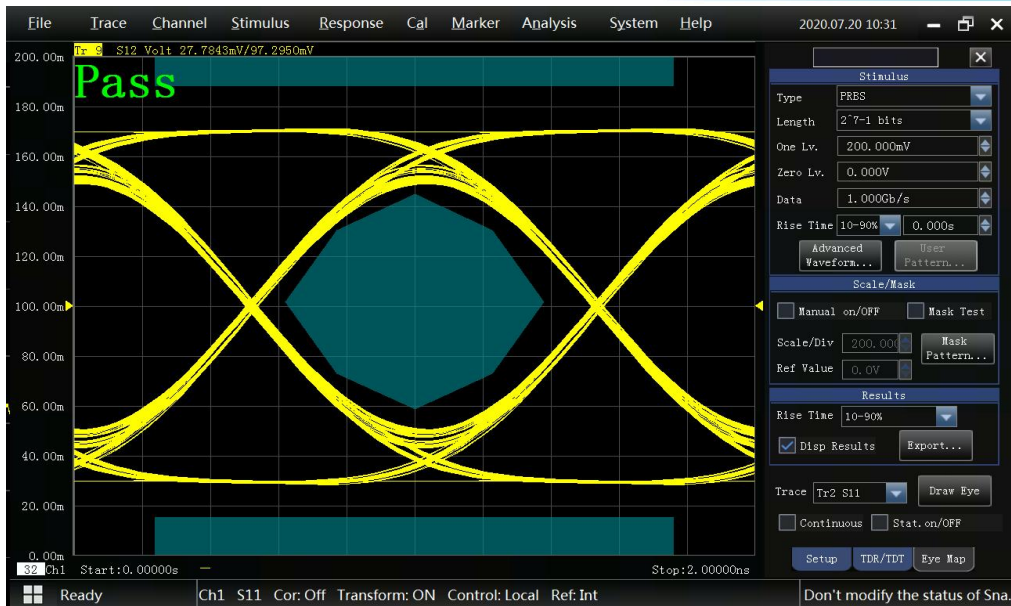


Convenient near-end and far-end crosstalk testing allows simultaneous analysis of time-domain and frequency-domain data to test the degree of interaction between multiple transmission lines.

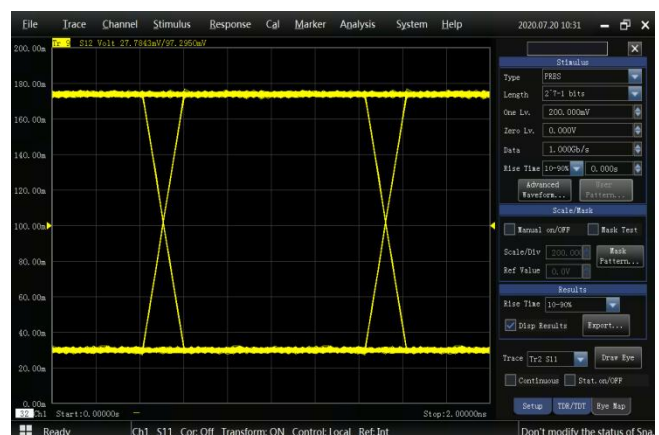
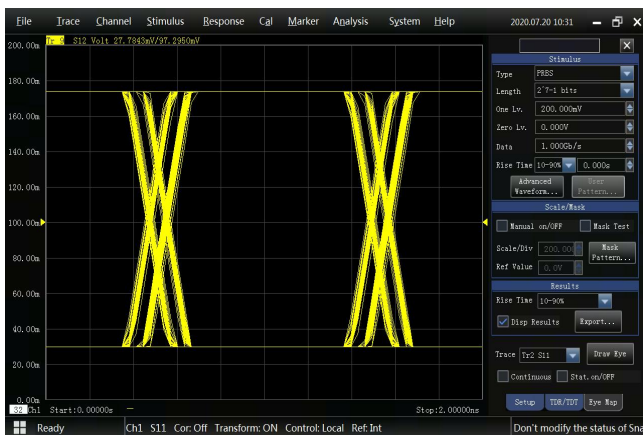
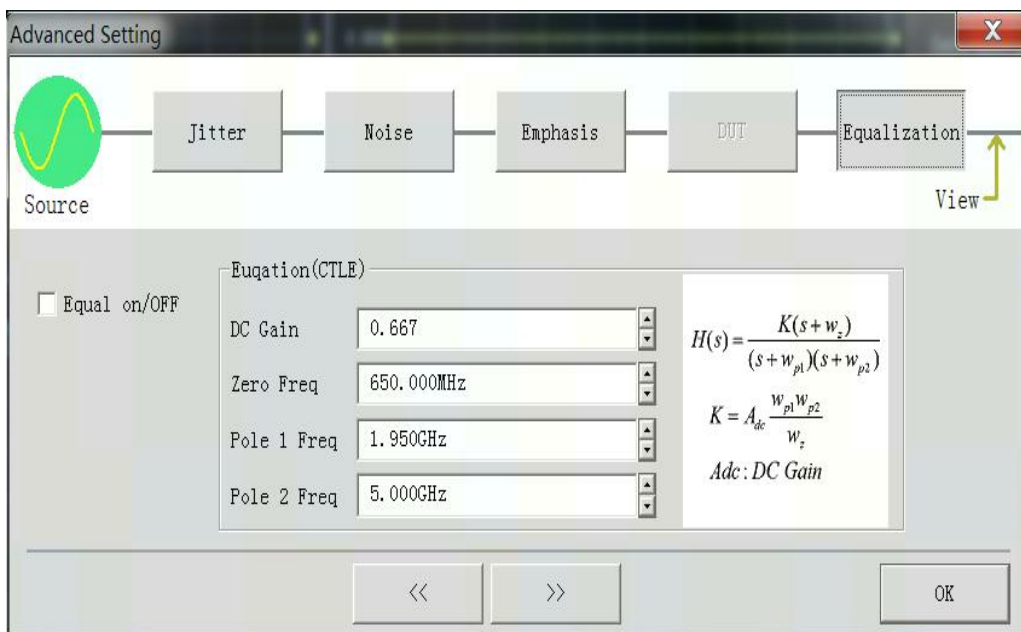


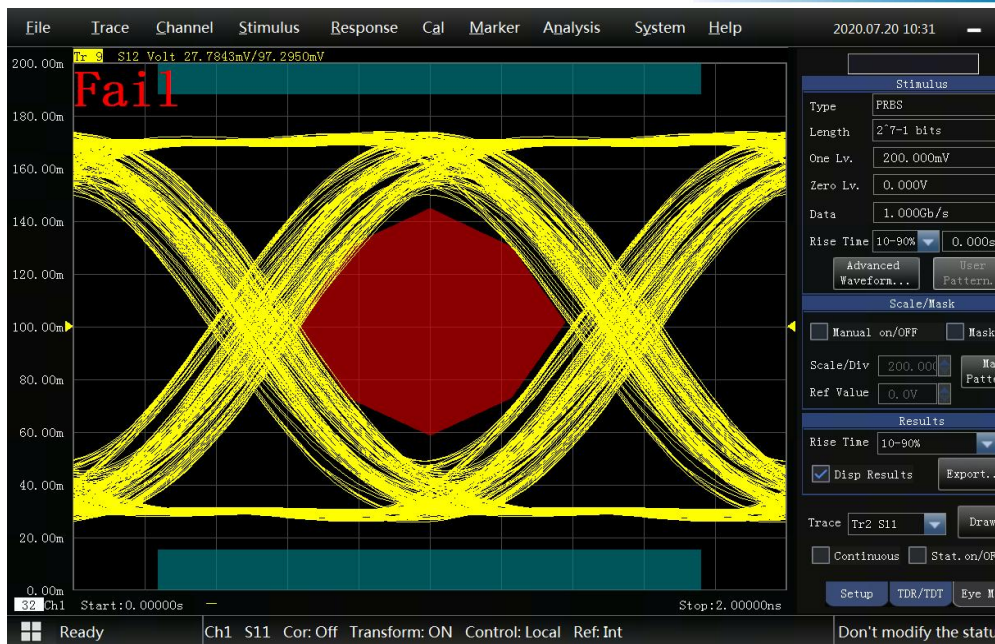
The advanced time domain analysis option of 3671 series vector network provides virtual eye pattern and analysis function based on S parameter. The output unit of the simulation code type is used to generate the data bits of 0 and 1 change, convolve the simulation code type with the time-domain impulse response of the tested part, and obtain the virtual eye map after superposition.

Depending on the different high speed digital communication standards, TDR options can be used for high efficiency Pass/Fail tests using predefined eye pattern templates.



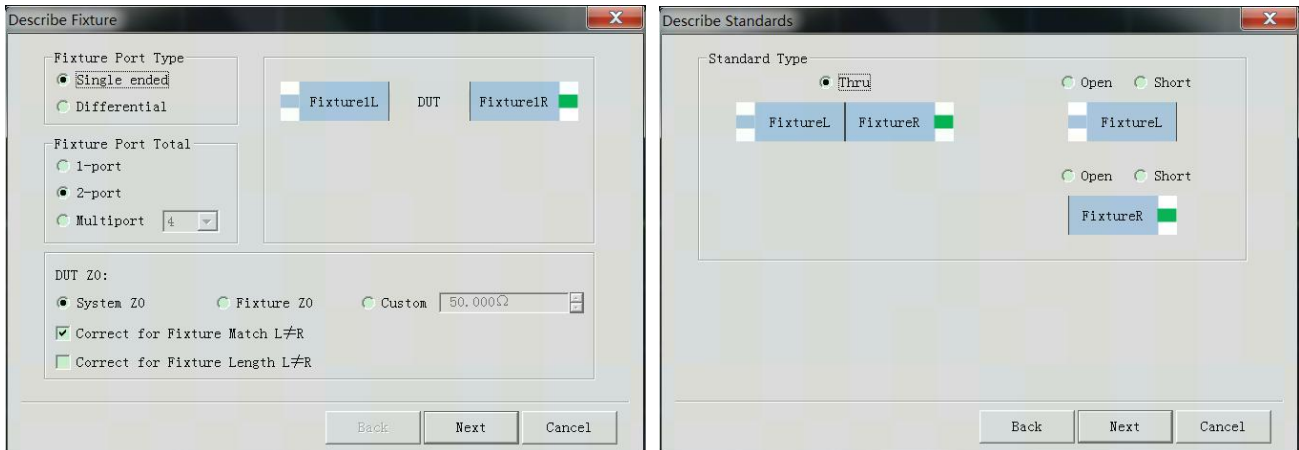
The advanced time domain analysis option can apply Jitter, noise and other interference on the simulation eye pattern, and simulate the simulation eye pattern at different positions of high-speed link in real environment by adding correction algorithms such as pre-weighting and equalization.





Automatic fixture removal option

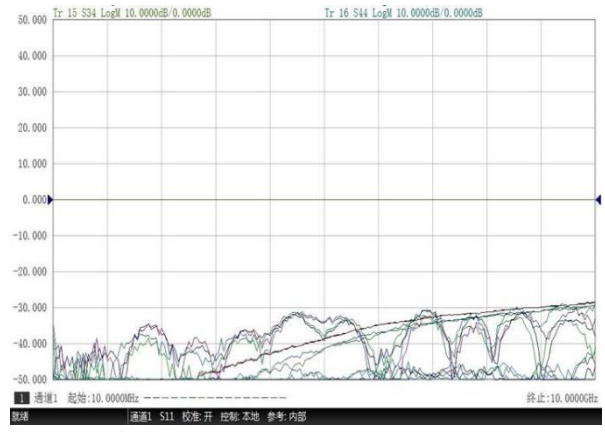
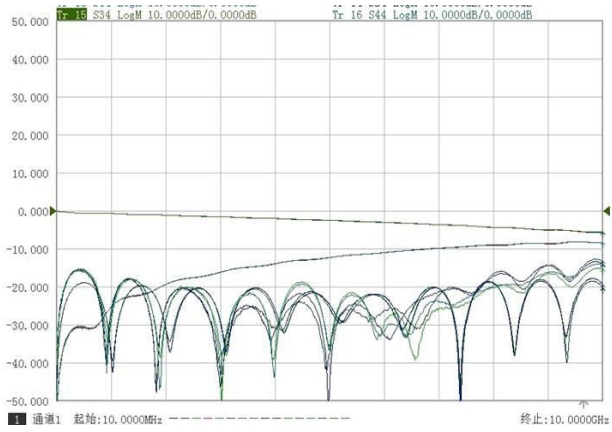
The measurement objects of vector network analyzer involve non-standard connector devices, such as encapsulated microwave devices, on-chip devices, etc. The most remarkable feature of such devices is that they cannot be directly connected to the vector network analyzer. The fixture can be connected to the vector network analyzer, but 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 tested part. It is easy to operate and has high precision.



The single-end fixture and differential fixture can be set, and the port number of the fixture can also be selected during the process of describing fixture. To extract fixture parameters, the fixture standards need to be measured. In the standard description interface, fixture standard includes three types: straight through standard, open standard, and short circuit standard.

The automatic fixture removal function is used to extract the balance parameters of the tested parts and embed the four ports. The test results show that the transfer parameters can be removed; the near-end and far-end crosstalk also can be removed well.





Technical Specifications

	3671C	3671D	3671E	3671G	3671L
Freq. Range	100kHz~14 GHz	100kHz~20GHz	100kHz~26.5GHz	10MHz ~40/43.5GHz	10MHz~67GHz
Port Number	2/4				
Freq. Resolution	0.1Hz				
Freq. Accuracy	$\pm 1 \times 10^{-7}$ (23°C ± 3 °C)				
Max Output Power	2 ports	4 ports	Standard configuration, 400 option(43.5GHz)	210, 410 options (40GHz)	
	+5dBm(100kHz~10MHz) +15dBm(10MHz~4GHz) +15dBm(4GHz~10GHz) +10dBm(10GHz~14GHz) +9dBm(14GHz~20GHz) +6dBm(20GHz~24GHz) +2dBm(24GHz~26.5GHz)	+3dBm(100kHz~10MHz) +13dBm(10MHz~4GHz) +10dBm(4GHz~10GHz) +4dBm(10GHz~14GHz) +3dBm(14GHz~20GHz) -2dBm(20GHz~24GHz) -4dBm(24GHz~26.5GHz)	+12dBm(10MHz~50MHz) +13dBm(50MHz~250MHz) +13dBm(250MHz~1GHz) +13dBm(1GHz~10GHz) +10dBm(10GHz~20GHz) +8dBm(20GHz~35GHz) +3dBm(35GHz~43.5GHz)	+10dBm(10MHz~50MHz) +13dBm(50MHz~250MHz) +13dBm(250MHz~1GHz) +13dBm(1GHz~10GHz) +10dBm(10GHz~20GHz) +6dBm(20GHz~35GHz) +3dBm(35GHz~40GHz)	+12dBm(10MHz~50MHz) +13dBm(50MHz~250MHz) +13dBm(250MHz~1GHz) +13dBm(1GHz~10GHz) +10dBm(10GHz~40GHz) +10dBm(40GHz~60GHz) +8dBm(60GHz~67GHz)
Min Output Power (Typical)	-60dBm		-60dBm		-50dBm
Power Sweep Range	≥ 60 dB		≥ 63 dB		≥ 55 dB
System Dynamic Range (10Hz IF bandwidth)	2 ports	4 ports	Standard configuration, 400 option(43.5GHz)	210, 410 options (40GHz)	
	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)	90dB(10MHz ~ 50MHz) 98dB(50MHz ~ 250MHz) 115dB(250MHz ~ 1GHz) 1GHz 128dB(1GHz ~ 10GHz) 10GHz 122dB(10GHz ~ 20GHz) 20GHz 118dB(20GHz ~ 35GHz) 35GHz 110dB(35GHz ~ 43.5GHz)	120dB(10MHz ~ 50MHz) 120dB(50MHz ~ 250MHz) 125dB(250MHz ~ 1GHz) 128dB(1GHz ~ 10GHz) 122dB(10GHz ~ 20GHz) 113dB(20GHz ~ 35GHz) 108dB(35GHz ~ 40GHz)	90dB(10MHz ~ 50MHz) 98dB(50MHz ~ 250MHz) 115dB(250MHz ~ 1GHz) 128dB(1GHz ~ 10GHz) 122dB(10GHz ~ 20GHz) 118dB(20GHz ~ 50GHz) 110dB(50GHz ~ 67GHz)
Effective Directivity	48dB(100kHz ~ 2GHz) 44dB(2GHz ~ 20GHz) 44dB(20GHz ~ 26.5GHz)		42dB(10MHz ~ 2GHz) 45dB(2GHz ~ 20GHz) 38dB(20GHz ~ 43.5GHz)		35dB(10MHz ~ 2GHz) 40dB(2GHz ~ 50GHz) 35dB(50GHz ~ 67GHz)
Effective Source Match	40dB(100kHz ~ 2GHz) 30dB(2GHz ~ 20GHz) 30dB(20GHz ~ 26.5GHz)		40dB(10MHz ~ 2GHz) 30dB(2GHz ~ 20GHz) 30dB(20GHz ~ 43.5GHz)		34dB(10MHz ~ 2GHz) 28dB(2GHz ~ 50GHz) 27dB(50GHz ~ 67GHz)
Effective Load Match	48dB(100kHz ~ 2GHz) 44dB(2GHz ~ 20GHz) 44dB(20GHz ~ 26.5GHz)		42dB(10MHz ~ 2GHz) 45dB(2GHz ~ 20GHz) 36dB(20GHz ~ 43.5GHz)		35dB(10MHz ~ 2GHz) 36dB(2GHz ~ 50GHz) 33dB(50GHz ~ 67GHz)
Amplitude Tracking noise (-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)		0.1000dB rms (10MHz ~ 50MHz) 0.0200dB rms (50MHz ~ 100MHz) 0.0200dB rms (100MHz ~ 500MHz) 0.0030dB rms (500MHz ~ 26.5GHz) 0.0030dB rms (26.5GHz ~ 43.5GHz)		0.0500dB rms (10MHz ~ 50MHz) 0.0030dB rms (50MHz ~ 500MHz) 0.0020dB rms (500MHz ~ 26.5GHz) 0.0030dB rms (26.5GHz ~ 50GHz) 0.0090dB rms (50GHz ~ 67GHz)
Phase Tracking noise (-5dBm, 1kHz IF bandwidth, Transmission)	0.100° rms (100kHz ~ 50MHz) 0.040° rms (50MHz ~ 500MHz) 0.030° rms (500MHz ~ 14GHz) 0.040° rms (14GHz ~ 20GHz) 0.040° rms (20GHz ~ 26.5GHz)		1.000° rms (10MHz ~ 50MHz) 1.000° rms (50MHz ~ 100MHz) 0.500° rms (100MHz ~ 500MHz) 0.020° rms (500MHz ~ 26.5GHz) 0.030° rms (26.5GHz ~ 43.5GHz)		0.400° rms (10MHz ~ 50MHz) 0.020° rms (50MHz ~ 500MHz) 0.020° rms (500MHz ~ 26.5GHz) 0.030° rms (26.5GHz ~ 50GHz) 0.040° rms (50GHz ~ 67GHz)
IF bandwidth	1Hz ~ 30MHz, 1, 2, 3, 5, 7 steps				
Max Sweep Points	200001				
Port Connectors	3671C, 3671D: 3.5mm NMD(m) 3671E: 2.4 mm NMD(m) 3671L: 1.85 mm NMD(m)				
System Impedance	50 Ω				
External	USB, GPIB, VGA, LAN, HDMI				

interfaces	
Displaying types	12.1" 16:10 LCD (Capacitive multi-touch LCD)
Displaying windows and channels	Up to 32 windows and 64 channels can be set up, with each window having up to 16 selectable data tables.
Dimension (W*H*D)	3671C/D/E : (516±4) mm× (279±2.5) mm× (493±4) mm; 3671G (2-port): (516±4) mm× (279±2.5) mm× (493±4) mm; 3671G (4-port) : (516±4) mm× (279±2.5) mm× (543±4) mm; 3671L: (474±4) mm× (280±2.5) mm× (533±4) mm;
Weight (kg)	3671C/D/E: 24kg; 3671G: 26kg; 3671L: 30kg
Power Supply	100VAC ~ 240VAC, 50Hz/60Hz (adaptive), maximum power consumption 400W

The test conditions for the main technical specifications listed in the table are as follows:

- ① The system dynamic range is tested with a 10Hz intermediate frequency bandwidth and calculated using the RMS value;
- ② Amplitude trace noise and phase trace noise are tested with a -5dBm input power, 1kHz intermediate frequency bandwidth, and through transmission measurement;
- ③ The minimum output power and power scan range are typical values, with extra consideration needed for the effect of power accuracy on the test results;
- ④ The actual operating frequency range of the whole system depends on the descriptions of the respective options.

Ordering Information

Main Units	Description
3671C	Vector Network Analyzer(100kHz~14GHz)
3671D	Vector Network Analyzer(100kHz~20GHz)
3671E	Vector Network Analyzer(100kHz~26.5GHz)
3671G	Vector Network Analyzer(10MHz~43.5GHz)
3671L	Vector Network Analyzer(10MHz~67GHz)

Standard

No	Model	unit	Note
1	Power Cord	1	
2	USB mouse	1	
3	User Manual	1	
4	Certificate of Conformity	1	
5	Aluminum packing case	1	

3671 General Options

No	Model	Description
3671-006	English Option	English front /rear panels and English operating system
3671-011	31101 N-type 50ΩCalibration Kit	For Calibration of the Analyzer(DC~18GHz)
3671-013	31121 3.5mm Calibration Kit	For Calibration of the Analyzer(DC~26.5GHz)
3671-014	20202 3.5mm Calibration Kit	For Calibration of the Analyzer(DC~9GHz)
3671-016	31123A 2.4mm Calibration Kit	For Calibration of the Analyzer(DC~50GHz)
3671-017	20209FB 2.92mm Calibration Kit	For Calibration of the Analyzer(DC~40GHz)
3671-025	87302AZ N/N-JJ Cable Assembly	For VNA measurement (N-type Male-Male), 60cm length
3671-026	87302BA N/N-KJ Cable Assembly	For VNA measurement (N-type Female-Male), 60cm length
3671-027	87302SR 2.92/2.92-KJ Cable Assembly	For VNA measurement (2.92 Female-Male), flexible economy model, 60cm length
3671-028	87302BA 2.92/2.92-KK Cable Assembly	For VNA measurement (2.92 Female-Female), flexible economy model, 60cm length
3671-029	87308SR NMD2.92/2.92-KJ Test Cable	For VNA measurement (test port 2.92mm Male), amplitude and phase stable, length about 63 cm
3671-030	87308SS NMD2.92/2.92-KK Test Cable	For VNA measurement (test port 2.92mm Female), amplitude and phase stable, length about 63 cm
3671-031	FB0HA0HB025.0 3.5mm Test Cable	For VNA measurement (test port 3.5mm Male), for 3671C/D/E

3671-032	FB0HA0HC025.0 3.5mm Test Cable	For VNA measurement (test port 3.5mm Female), for 3671C/D/E
3671-035	3671N35M 3.5mm Test Cable	For VNA measurement (test port 3.5mm Male), 63cm length, for 3671C/D/E
3671-036	3671N35F 3.5mm Test Cable	For VNA measurement (test port 3.5mm Female), 63cm length, for 3671C/D/E
3671-037	3671N24M 3.5mm Test Cable	For VNA measurement (test port 2.4mm Male), 63cm length, for 3671G
3671-038	3671N24F 3.5mm Test Cable	For VNA measurement (test port 2.4mm Female), 63cm length, for 3671G
3671-041	3671NNF 3.5mm-N Test Cable	For VNA measurement (test port N-type Male), 63cm length, for 3671C/D/E
3671-042	3671NNM 3.5mm-N Test Cable	For VNA measurement (test port N-type Female), 63cm length, for 3671C/D/E
3671-047	FE0BN0BM025.0 2.4mm Gore Test Cable	For VNA measurement (test port 2.4mm Male), for 3671G
3671-048	FE0BN0BL025.0 2.4mm Gore Test Cable	For VNA measurement (test port 2.4mm Female), for 3671G
3671-062	Rack mount kit	For building the system and use on the cabinet
3671-070	High-Performance Computing Option	For big data applications like automated testing systems and advanced time-domain analysis, and can boost data throughput efficiency.
3671-S05	S-parameter Signal Integrity Analysis Function	Used to analyze frequency domain, time domain TDR, and crosstalk signal integrity characteristics of the system, it can automatically convert graphs into test reports
3671-S07	AFR automatic fixture remove option	Used for automatic test and removal of single end and balance device measuring fixture
3671-S10	Time-domain measurements	Used for time domain measurements to determine and analyze discontinuous locations in devices, fixtures or cables
3671-S11	Advanced Time-domain measurements	Used for TDR time domain impedance test, eye chart analysis, etc.
3671-S17	Test data management option	Implement automatic saving and management of test data, and generate data reports
3671-S118	Fast CW sweep	for efficient batch data access scenarios in automated testing
	20402D Electronic calibration kit	For overall calibration (100 kHz~18GHz, Type-N, 2-port), standard Female-Male, can be customized as Female-Female or Male-Male
	20402E Electronic calibration kit	For overall calibration (10MHz~26.5GHz, 3.5mm, 2-port), standard Female-Male, can be customized as Female-Female or Male-Male
	20402F Electronic calibration kit	For overall calibration (10 MHz ~ 40 GHz, 2.92 mm, 2-port), standard Female-Male, can be customized as Female-Female or Male-Male
	20402H Electronic calibration kit	For overall calibration (10 MHz ~ 50 GHz, 2.4 mm, 2-port), standard Female-Male, can be customized as Female-Female or Male-Male
	20402L Electronic calibration kit	For overall calibration (10 MHz ~ 67 GHz, 1.85 mm, 2-port), standard Female-Male, can be customized as Female-Female or Male-Male
	20404D Electronic calibration kit	For overall calibration (100 kHz~18GHz, Type-N, 4-port), standard Female-Female-Female-Female
	20404E Electronic calibration kit	For overall calibration (10MHz~26.5GHz, 3.5mm, 4-port), standard Female-Female-Female-Female
	20404F Electronic calibration kit	For overall calibration (10 MHz ~ 40 GHz, 2.92 mm,

		4-port), standard Female-Female-Female-Female
	20404H Electronic calibration kit	For overall calibration (10 MHz ~ 50 GHz, 2.4 mm, 4-port), standard Female-Female-Female-Female
	20404L Electronic calibration kit	For overall calibration (10 MHz ~ 67 GHz, 1.85 mm, 4-port), standard Female-Female-Female-Female
	FF0CN0CM025.0 1.85mm Gore test cable	For VNA measurement (test port 1.85mm Male), for 3671L
	FF0CN0CL025.0 1.85mm Gore test cable	For VNA measurement (test port 1.85mm Female), for 3671L
	87302NN VNA Test Cable	NMD1.85-1.85(f), economical amplitude and phase stable cable, suitable for 3671L
	87302NM VNA Test Cable	NMD1.85-1.85(m), economical amplitude and phase stable cable, suitable for 3671L
	87302NZ Flexible Test Cable	1.85mm Female-Female flexible test cable, suitable for 3671L
	87302NY Flexible Test Cable	1.85mm Female-Male flexible test cable, suitable for 3671L

3671C/D/E/G/L Options

No	Model	Description
3671C-400	4-port Measurement	Four port VNA (100kHz to 14GHz)
3671D-400	4-port Measurement	Four port VNA (100kHz to 20GHz)
3671E-400	4-port Measurement	Four port VNA (100kHz to 26.5GHz)
3671G-400	4-port Measurement	Four port VNA (10MHz to 43.5GHz)
3671G-210	2-port Measurement to 40GHz	10MHz~40GHz 2-port VNA setup, improving low-frequency dynamic range
3671G-410	4-port Measurement to 40GHz	10MHz~40GHz 4-port VNA setup, improving low-frequency dynamic range
3671L-400	4-port Measurement	Four port VNA (10MHz to 67GHz)
3671C-JL	Calibration service	3671C calibration with English calibration certificate
3671D-JL	Calibration service	3671D calibration with English calibration certificate
3671E-JL	Calibration service	3671E calibration with English calibration certificate
3671G-JL	Calibration service	3671G calibration with English calibration certificate
3671L-JL	Calibration service	3671L calibration with English calibration certificate
3671C-EWT1	Extend 1 year warranty	Warranty extend on the basis of 3 year standard warranty
3671D-EWT1	Extend 1 year warranty	Warranty extend on the basis of 3 year standard warranty
3671E-EWT1	Extend 1 year warranty	Warranty extend on the basis of 3 year standard warranty
3671G-EWT1	Extend 1 year warranty	Warranty extend on the basis of 3 year standard warranty
3671L-EWT1	Extend 1 year warranty	Warranty extend on the basis of 3 year standard warranty



Focus on Measurement
Explore the Future

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