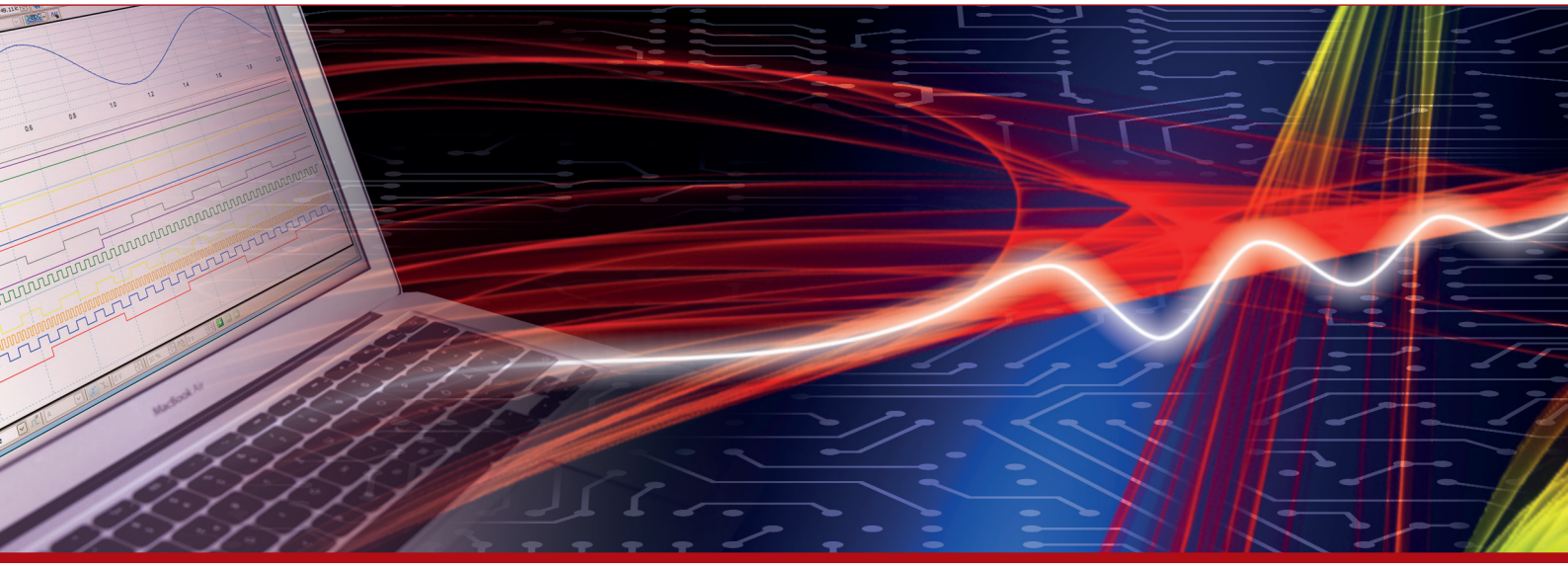
Product Datasheet - Technical Specifications



More information in our Web-Shop at ▸ **www.meilhaus.com** and in our download section.

Your contact

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

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

FAX: **+49 - 81 41 - 52 71-129**

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

Downloads:
www.meilhaus.com/en/infos/download.htm

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany

Tel. **+49 - 81 41 - 52 71-0**
Fax **+49 - 81 41 - 52 71-129**
E-Mail **sales@meilhaus.com**

www.meilhaus.de

Product Overview

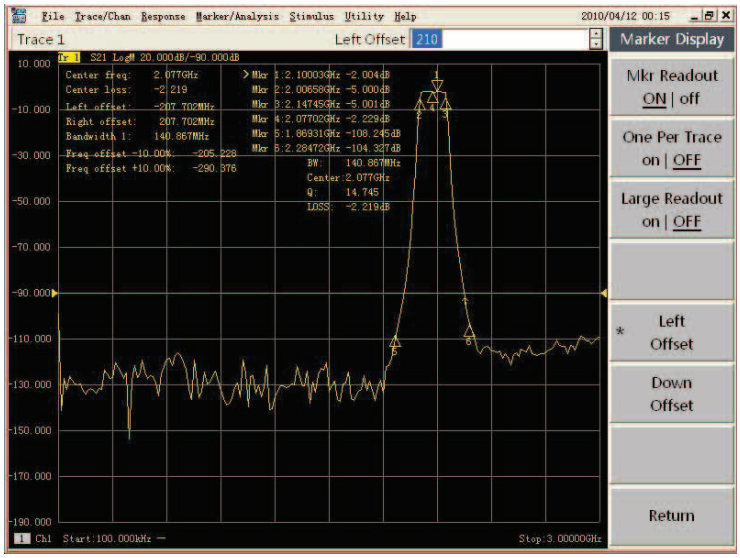
3656A/B/D vector network analyzer is applicable to fields of radio communications, cable TV, teaching and automotive electronics etc. It can be used for performance measurement of RF components such as filter, amplifier, antenna, cable, and cable television sub connectors etc. It adopts Windows operating system, and has functions of error calibration, time domain and fixture simulator; It supports multiple display formats such as logarithmic amplitude, linear amplitude, standing wave, phase, group delay, Smith chart and polar coordinates etc.; It provides multiple calibration types including frequency response, single port, response isolation, enhanced response and full dual-port, rapid SOLT calibration and electrical calibration; It is capable of multi-channel and multi-window display; It is designed with USB interface, LAN interface, GPIB interface and VGA interface. It can rapidly and accurately measure the amplitude, phase and group delay characteristics of the DUT S-parameter, with efficient and powerful error correction capability.

Main Characteristics

- Up to 64 independent measuring channels that can implement complex testing schemes rapidly
- Powerful data analysis functions, such as ripple test, bandwidth test and limit test, convenient for user to judge the conformity and improves the test efficiency
- Time domain analysis function as the standard configuration
- Fixture simulator can simulate various R&D situations to rapidly get the real-time test results
- LAN and GPIB interface, capable of remote control and system interconnection, 4 USB interfaces

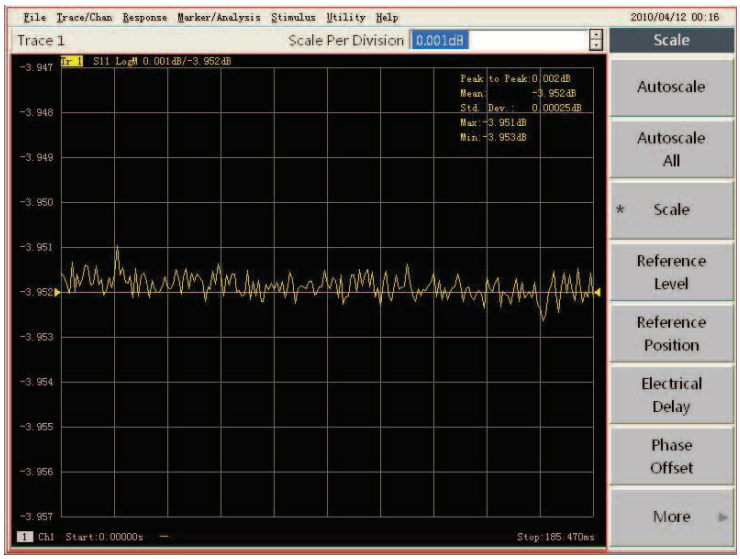
Wide dynamic range

With dynamic range up to 125dB (IFBW=10Hz), 3656A/B/D is capable of accurate measurement on devices with high rejection ratio.



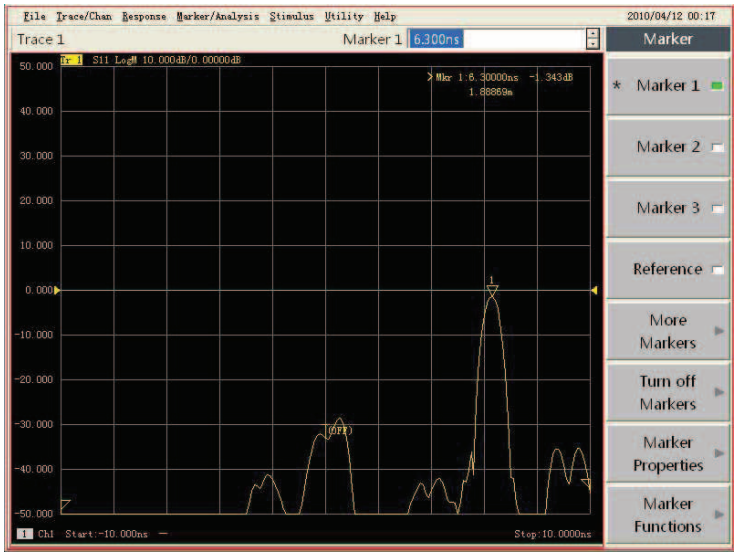
Ultra -low trace noise

Trace noise of 3656A/B/D is ultra-low, which minimizes measurement error.



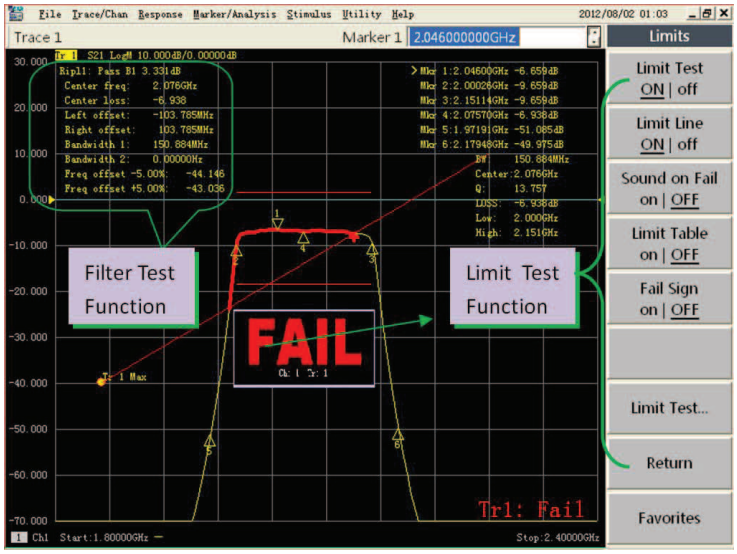
Time-domain analysis function

The analyzer can conduct time-domain measurement on DUT via time-domain software so as to comprehensively test the performance indicators of DUT, such as cable fault location and length measurement.



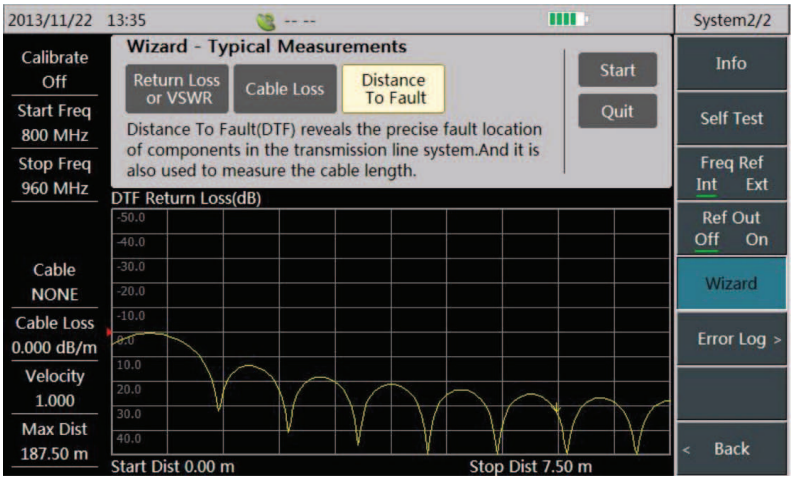
Powerful data analysis function

It has analysis functions such as limit test, ripple test and bandwidth test, filter automatic statistics etc., which can clearly test the loss, ripple and rejection and help for conduct hopping filter debugging.



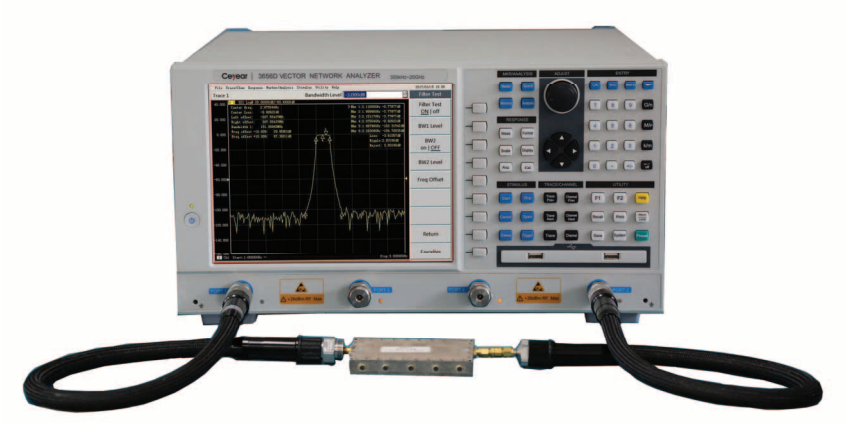
Measurement wizard

The measurement wizard illustrates the operation steps of typical measurements to guide users to finish the measurement and helps them to rapidly get familiar with the instrument operation.



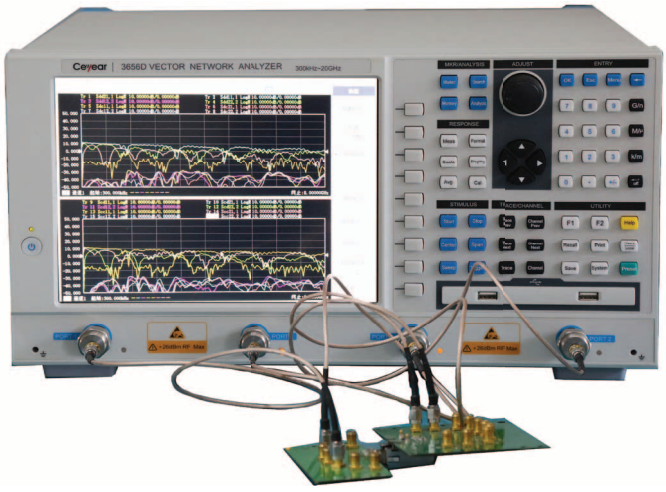
Production test of mobile communication products

The frequency range of 3656A/B/D vector network analyzer can meet the demand of production test on mobile communication products. It has advantages of high sweep speed, wide dynamic range and compact size which is very suitable for the test of mass production in factories. 3656A/B/D can be applied to the test of RF components such as filter, amplifier, antenna and cables. The 75Ω test assembly of 3656A is also available for performance test of CATV devices.



Test of passive multi-port device and balanced device

3656A/B/D VNA provide 4-port test function . It can test the whole 16 S parameters of 4-port network via one single connection, thus is very suitable for the mass production test of multi-port devices in factories. It has balanced parameter test function: after the full 3-port or full 4-port calibration using 3 or 4 test ports, choose the corresponding operation mode (single port-balanced network, single port-single port-balanced network, balanced-balanced network), then you can gain the mixed S-parameters of balanced devices.



Parameters	3656A	3656B
Frequency range	100kHz ... 3GHz	100kHz ... 8.5GHz
Frequency resolution	1Hz	1Hz
Frequency accuracy	±5×10^{-6}(23°C±3°C)	±5×10^{-6}(23°C±3°C)
Output power setting range	-45dBm...+10dBm	-55dBm...+10dBm
System dynamic range	(10Hz) (3kHz) 100kHz...1MHz 90dB 60dB 1MHz...10MHz 110dB 80dB 10MHz...3GHz 125dB 95dB	(10Hz) (3kHz) 100kHz...20MHz 110dB 80dB 20MHz...3GHz 125dB 95dB 3GHz...6GHz 123dB 93dB 6GHz...8.5GHz 118dB 88dB
Reflection track	100kHz...10MHz ±0.030dB 100kHz...3GHz ±0.030dB	10MHz...3GHz ±0.020dB 3GHz...6GHz ±0.040dB 6GHz...8.5GHz ±0.050dB
Transmission track	100kHz...10MHz ±0.030dB 100kHz...3GHz ±0.030dB	10MHz...3GHz ±0.020dB 3GHz...6GHz ±0.040dB 6GHz...8.5GHz ±0.050dB
Effective directivity	100kHz...10MHz 49dB 10MHz...3GHz 46dB 100kHz...10MHz 49dB (option H01) 10MHz...3GHz 46dB (option H01)	100kHz...3GHz 46dB 3GHz...6GHz 40dB 6GHz...8.5GHz 38dB
Effective source match	100kHz...10MHz 44dB 10MHz...3GHz 40dB 100kHz...10MHz 43dB (option H01) 10MHz...3GHz 21dB (option H01)	100kHz...3GHz 36dB 3GHz...6GHz 35dB 6GHz...8.5GHz 33dB
Effective load match	100kHz...10MHz 49 dB 10MHz...3GHz 46 dB 100kHz...10MHz 48dB (option H01) 10MHz...3GHz 41dB (option H01)	100kHz...3GHz 44dB 3GHz...6GHz 40dB 6GHz...8.5GHz 36dB
Test points	1 to 16001	
IF bandwidth	Min. 1Hz; Max. 5MHz in 1, 2, 3, 5, 7 steps	
Port connector type	Type-N (female) 50 ohm system impedance Type-N (female) 75 ohm system impedance (3656-H01)	
Number of test ports	2	
Number of test receivers	4	
Reference level amplitude setting	Setting range: ±500dB Setting resolution: 0.001dB	
Reference phase setting	Setting range: ±500° Setting resolution: 0.01°	
Time-base reference output	Output frequency: 10MHz Output level: +10dBm±4dB	
Digital interface	GPIB, USB, Ethernet interface and VGA display interface	
Operation system	Windows XP	

Display	10.4-inch high brightness LCD
Test domain	Frequency domain, Time domain
Dimensions	435×233×348 (W×H×D) (including foot pad, foot, lateral stripping, input and output port)
Power consumption	150W
Power supply	50Hz single phase 220V or 50Hz/60Hz single phase 110V AC
Weight	16kg

Parameters	**3656D**		
Frequency range	300kHz ... 20GHz		
Frequency resolution	1Hz		
Frequency accuracy	±1×10^{-9}(23°C±3°C)		
System dynamic range IF bandwidth: 10Hz	Frequency range	2-port	4-port
	300kHz...100MHz	95dB	90 dB
	100MHz...1GHz	110dB	100 dB
	1GHz...6GHz	120dB	115 dB
	6GHz...8GHz	117dB	110 dB
	8GHz...10GHz	115dB	105 dB
	10GHz...15GHz	110dB	100 dB
	15GHz...20GHz	100dB	90 dB
Reflection track	300kHz...10MHz ±0.030dB 10MHz...3GHz ±0.040dB 3GHz...20GHz ±0.050dB		
Transmission track	300kHz...10MHz ±0.030dB 10MHz...3GHz ±0.040dB 3GHz...6GHz ±0.100dB 6GHz...20GHz ±0.150dB		
Effective directivity	300kHz...10MHz 46dB 10MHz...3GHz 42dB 3GHz...6GHz 38dB 6GHz...20GHz 36dB		
Effective source match	300kHz...10MHz 37dB 10MHz...3GHz 37dB 3GHz...6GHz 31dB 6GHz...20GHz 28dB		
Effective load match	300kHz...10MHz 44dB 10MHz...3GHz 42dB 3GHz...6GHz 38dB 6GHz...20GHz 36dB		
Test points	1 to 16001		
IF bandwidth	Min. 1Hz; Max. 5MHz in 1, 2, 3, 5, 7 steps		

Port connector type	3.5mm (male) 50 ohm system impedance
Number of test ports	2/4
Number of test receivers	2/4
Reference level amplitude setting	Setting range: ±500dB Setting resolution: 0.001dB
Reference phase setting	Setting range: ±500° Setting resolution: 0.01°
Time-base reference output	Output frequency: 10MHz Output level: +10dBm±4dB
Digital interface	GPIB, USB, Ethernet interface and VGA display interface
Operation system	Windows XP
Display	10.4-inch high brightness LCD
Test domain	Frequency domain, Time domain
Dimensions	436×236.5×410 (W×H×D) (including foot pad, foot, lateral stripping, input and output port)
Power consumption	150W
Power supply	50Hz single phase 220V or 50Hz/60Hz single phase 110V AC
Weight	18kg