

Product Datasheet - Technical Specifications



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With frequency range of 18GHz/26.5GHz/40GHz, 4957D/E/F microwave analyzers integrate multiple functions such as dual-port vector network analysis, cable and antenna feeder test, vector voltage measurement, spectrum analysis (channel power, adjacent channel power, occupied bandwidth, interference analysis and frequency counting), field strength measurement and power measurement, providing you with powerful comprehensive test capabilities!

Dual-port vector network analysis can make comprehensive RF network parameters measurement quickly and accurately, providing logarithmic, linear, phase, group delay, impedance chart, polar coordinate, SWR and other display formats, and providing time domain measurement options.

Cable and antenna feeder test can measure the SWR, return loss, impedance, cable loss and other parameters of microwave networks such as antenna feeders, transmission lines and cables, and can conveniently measure impedance discontinuity points in feeders and cables, with DTF function.

The vector voltage measurement function adopts an integrated solution instead of the traditional vector voltmeter to accurately test the electrical length of cables and some other devices under test.

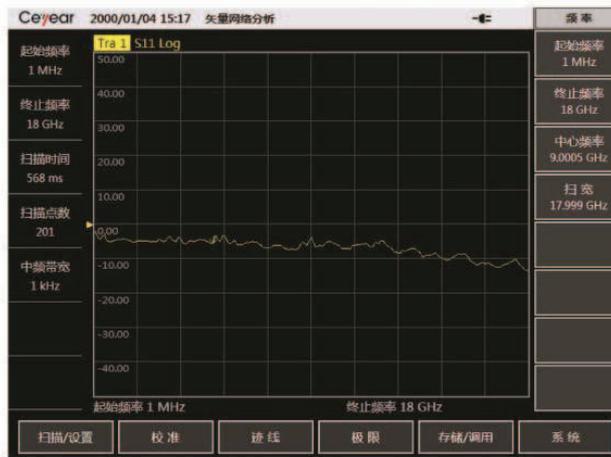
Spectrum analysis is a spectrum analyzer with standard functions, which can measure the spectrum characteristics comprehensively in an electromagnetic environment.

The field strength measurement function has a friendly user interface and high test sensitivity. With the corresponding test antenna, it can effectively monitor the electromagnetic spectrum and is widely used in space electromagnetic environment monitoring and radio management.

The USB power sensor is configured to achieve large dynamic range and high-precision power measurement, and can also carry out power monitoring through the spectrum input port.

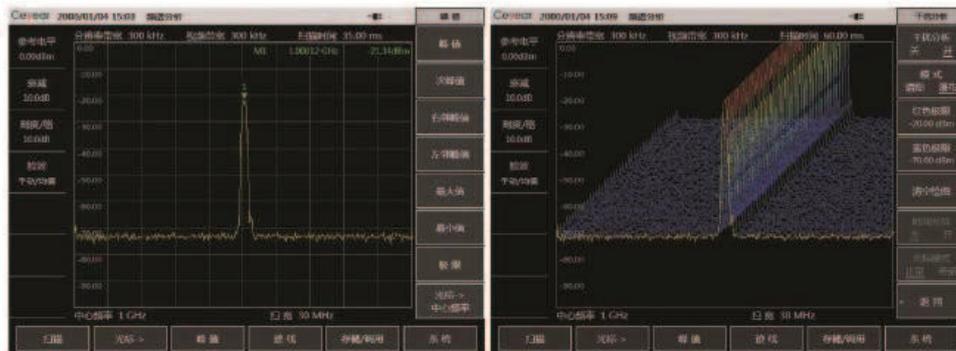
Network test

With the frequency range of network analysis of 30kHz~18GHz/26.5GHz and 50MHz~40GHz, 4957D/E/F microwave analyzers can realize standard vector network analysis and measurement of full 4S parameters, and can test full S parameters of amplifier; filter; attenuator; duplexer and other devices, providing logarithmic, linear, phase, group delay, impedance, polar coordinate, SWR and other display formats.



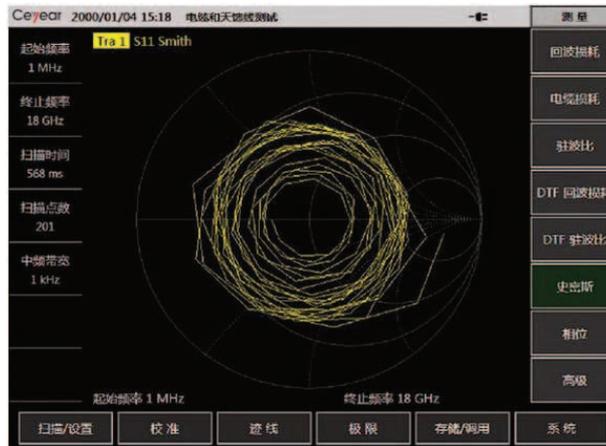
Spectrum analysis

With the frequency range of the spectrum analysis function (spectrum analysis, field strength, channel power, occupied bandwidth, adjacent channel power ratio, interference analysis, frequency counting) of 100kHz~18GHz/26.5GHz/40GHz, 4957D/E/F microwave analyzers have such features as wide frequency band, high sensitivity, wide dynamic range and good phase noise, can realize fast and efficient signal detection and measurement, can display three traces at the same time, have different optional detector modes such as standard, sample, positive peak, negative peak and mean, and have interference analysis, spectrogram, waterfall plot, data recording and playback functions.



Cable and antenna feeder test (option)

As cable and antenna feeder testers, 4957D/E/F microwave analyzers can be used to measure the return loss, VSWR, impedance, cable loss and distance to fault of cables, feeders and other devices under test. The measurement of return loss and distance to fault will help you determine the specific cause of performance degradation of the overall system in the cable and antenna feeder system. In addition, some common cable and feeder parameters are built in for convenient use.



Vector voltage measurement (option)

With the frequency range of vector voltage measurement of 30kHz~18GHz/26.5GHz and 50MHz~26.5GHz, 4957D/E/F microwave analyzers can accurately measure the electrical length and phase shift of devices under test, and can perform reflection and transmission test.



USB power measurement (option)

4957D/E/F microwave analyzers can use 872XX series USB Continuous Wave Power Sensors of Ceyear to measure power, and can test RF/microwave power up to 40GHz.



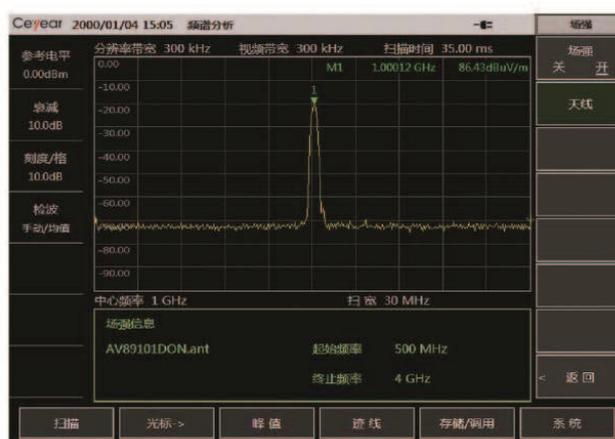
Power monitoring (option)

4957D/E/F microwave analyzers can also carry out power monitoring and measurement through the spectrum input port, with frequency range of 100kHz~18GHz/26.5GHz/40GHz.



Field strength measurement (option)

4957D/E/F microwave analyzers can also be used for field strength measurement together with the corresponding test antennas (e.g., 89101A/B/C/D of Ceyear), and are widely used in space electromagnetic environment monitoring and radio management. The testers support user antennas, allowing users to define their own antennas.



4957D/E/F microwave analyzers are compact and portable. With many test parameters and comprehensive test functions, they are very suitable for multi-parameter test occasions, and can be battery-powered. As a powerful tool for field engineering installation, debugging, daily maintenance and repair of various microwave electronics, the testers can be widely used in various fields such as radar, communication, radio & television and radio management, and are also a good choice for teaching in colleges and universities.

- **Test of main performance parameters of radar**

With full functions, 4957D/E/F analyzers can test the main performance parameters of radar antenna feeder, transmitting/receiving subsystem and other subsystems up to 18GHz/26.5GHz/40GHz, including the SWR, reflectance, insertion loss, return loss and impedance characteristics of antenna feeder subsystem, the transmitting signal frequency and spectrum characteristics of transmitting subsystem, and the center frequency, gain, differential loss, bandwidth and dynamic range of receiving subsystem.

- **Multi-parameter test in such fields as cable TV and wireless communication**

Cable TV, cellular telephone system, digital mobile communication operators and equipment manufacturers use 4957D/E/F testers to perform integrated test on spectrum distribution, antenna feeder contact performance, S parameters of components and parts and feed-through power in the field

Technical Specifications

		4957D	4957E	4957F	
Antenna feeder test	Frequency range	30kHz~18GHz	30kHz~26.5GHz	50MHz~40GHz	
	Frequency accuracy	$\pm 1 \times 10^6$			
	Power level	Large, small			
	Data points	101, 201, 401, 601, 801, 1001, 1601, 4001, 10001			
	Effective directivity	30dB~40dB	30dB~38dB	28dB~35dB	
Vector network analysis	Frequency range	30kHz~18GHz	30kHz~26.5GHz	50MHz~40GHz	
	Frequency accuracy	$\pm 1 \times 10^6$			
	Power range	Large, small, manual			
	Effective directivity	30dB~40dB	30dB~38dB	28dB~35dB	
Power monitoring	Frequency range	100kHz~18GHz	100kHz~26.5GHz	100kHz~40GHz	
	Power range	-60dBm~+20dBm	-60dBm~+20dBm	-50dBm~+20dBm	
Spectrum analysis mode	Frequency range	100kHz~18GHz	100kHz~26.5GHz	100kHz~40GHz	
	Resolution bandwidth	10Hz~5MHz (1, 3, 10 steps)			
	Video bandwidth	1Hz~5MHz (1, 3, 10 steps)			
	Display average noise level	-139dBm~-151dBm (front amplifier-on)	-126dBm~-151dBm (front amplifier-on)	-110dBm~-144dBm (front amplifier-on)	
		-117dBm~-135dBm (front amplifier-off)	-108dBm~-135dBm (front amplifier-off)	-95dBm~-128dBm (front amplifier-off)	
	Noise Sideband (CF=1GHz)	$\leq -99\text{dBc}/\text{Hz}@100\text{kHz}$			
		$\leq -110\text{dBc}/\text{Hz}@1\text{MHz}$			
	Residual response	$\leq -80\text{dBm}$		$\leq -70\text{dBm}$	
Maximum safe input level	+27dBm				
Type of test port	N-type female	3.5mm male	2.4mm male		
Power supply	Rechargeable lithium-ion battery or power adapter				
Power consumption	$\leq 40\text{W}$ (excluding battery charging)				
Operating temperature	$-10^\circ\text{C} \sim +55^\circ\text{C}$				
Storage temperature	$-50^\circ\text{C} \sim +70^\circ\text{C}$				
Maximum weight	4.8kg (excl. battery)		5.3kg (excl. battery)		
Maximum dimensions (WxHxD)	315mmx211mmx97mm (excl. handle and bracket)				