S5080 RF Comprehensive Tester

Key Features

¥ Frequency Range: 5kHz~8GHz
¥ Noise level: Exceed <-162dBm@1GHz
¥ Resolution bandwidth: 1Hz~5MHz
¥ Maximum real-time bandwidth: 40MHz
¥ SSB Phase Noise: <-110dBc/Hz @1MHz
¥ Up to 80dB Medium Image Rejection
¥ With spectrum analyzer, vector network analyzer, antenna feeder measurement, vector voltmeter measurement, field strength measurement and other measurement functions
¥ Optional GPS/BD navigation, USB power sensor, interference location and other functional modules
¥ 10.1-inch bright display and supports touch operation
¥ Equipped with IF output, reference input, trigger input, USB, LAN, headphone and other interfaces
¥ Removable lithium-ion battery with 4 hours of battery life

Overview

S5080 RF integrated tester is a wideband, high-performance RF integrated tester, the measurement frequency covers 5kHz~8GHz, and can be used in both indoor and outdoor environments.

The product adopts a 10.1-inch LED backlit high-brightness display, supports multi-touch; integrates spectrum analyzer, vector network analyzer, antenna and feeder measurement, vector voltmeter, interference location, field strength measurement function and power measurement and other functions and All-in-one, built-in GPS/Beidou positioning module is suitable for field use.

Products are widely used in various fields such as aerospace, microwave communication, satellite navigation, radar detection, electronic detection and countermeasures, and precision guidance.

Specifications

1. Spectrum Analyzer Function Specifications

Applicable Conditions	The given specifications apply under the following conditions: 30 minutes warm-up while the instrument is in a calibration cycle and has performed a self-calibration	
Module	S5080	
Frequency Range	5kHz~8GHz	
Frequency Reading Accuracy	± (Frequency standard reading×frequency reference accuracy+1%×span+10%×RBW+0.5×[span/(scan point-1)]+1Hz)	
Internal Benchmark (10MHz)	Aging rate	<1ppm/ year
	Temperature stability	Temperature drift: <0.5ppm (15℃ to 35℃)
Resolution bandwidth (RBW)		
Range	1Hz to 5MHz, in 1, 3, 5 steps	
Selectivity (60dB/3dB)	RBW≤1MHz	< 5:1 typical value (digital realization, close to Gaussian shape)
Accuracy		<10% (<5% typical value)
Video bandwidth (VBW)	1Hz to 5MHz	
Display average noise level (1Hz resolution bandwidth, RF attenuator 0dB)		
Preamplifier (off)	5kHz to 1MHz<-118dBm Typical value-128dBm 1MHz to 10MHz<-129dBm Typical value-129dBm 10MHz to 2GHz <-135dBm Typical value-138dBm 2GHz to 5GHz <-133dBm Typical value-137dBm 5GHz to 8GHz <-132dBm Typical value-135dBm	
Preamplifier (on)	1MHz to 10MHz<-139dBm Typical value -144dBm 10MHz to 2GHz <-155dBm Typical value -159dBm	

Preamplifier (on)	2GHz to 5GHz <-153dBm Typical value -157dBm 5GHz to 8GHz <-150dBm Typical value -152dBm	
Phase noise		
fc=1GHz	-98 DBC /Hz when the frequency offset is 10kHz	
	If the frequency offset is 1MHz, the value is -108 DBC /Hz	
Note: Typical fc=1GHz, sampling detection, the average number of trace ≥10		
Scanning time		
Non-zero sweep width	5ms to 3000s	
Zero sweep width	20us to 3000s	
Scanning mode	Consecutive, single time	
Trigger		
Trigger source	Free, video, outside	
External trigger level	5V TTL level, nominal value	
Frequency counter		
Counting resolution	1Hz、10Hz、100Hz、1kHz	
Counter uncertainty	Frequency reading x frequency reference accuracy + counting resolution	
Frequency range	5MHz ~ 8GHz	
Dynamic range	-25dBm ~ +10dBm	
Amplitude accuracy (20℃ to 30℃)		
Comprehensive amplitude accuracy	±1.5dB	
Amplitude		
Measuring range fc≥10MHz	Display average noise level to +20dBm	
Maximum safe input level	Mean continuous power	+27dBm
Maximum DC input voltage	50Vdc	
Input attenuator range	0 to 30dB, the step is 1dB	
Stray and residual responses		
TOI(Third order distortion)	>30MHz	+7dBm
SHI (second order distortion)		+40dBm
Input correlated stray signal	>10MHz	<-60dBc
Residual response		<-90dBm (Typical value <-100dBm)

Input/output		
RF Input	N-negative (50Ω)	
USB	Main control terminal: USB 2.0A connector, dual USB ports	
LAN	10/100 Base-T，RJ-45 connector	
FM/AM audio demodulation	Speaker and headphone jack	
Reference Input	10MHz，SMA Female； Power Input: 0dBm to +10dBm	
Intermediate Frequency Output	145MHz, SMA Female	
External Trigger Input	3.3V TTL level (±5V, Max. 100mA)	
GPS/BD Antenna Input	SMA Female	
Common Parameters		
Monitor	LED backlight，10.1 寸 TFT-LCD，1208×800	
Machine weight (including battery)	About 4.1kg	
Size	334mm×242mm×68mm	
Operating temperature	0℃to 50℃	
Storage temperature	-20℃to +70℃	
Battery	14.8V 6400mAh	
Power adapter	Input	100V~240VAC 50/60Hz 1.4A
	Output	+20V 6A
Overall power consumption	29W	

2.Vector Network Analysis Function Specifications

Vector network analysis measurement model		
Frequency range	1MHz ~ 8GHz	
Test port	N-negative	
Measurement parameters	S11,S21	
Port1 Output Power	0 dBm(nominal value), 30dB adjustable	
Display mode	Echo/insertion loss, phase, standing wave ratio, smith chart	
Measurement number	101 ~ 1000，default value: 201	
Measurement parameters	Near-field probe kit	
Bridge directivity	1MHz ~ 8GHz	≥15dB（Typical value）
Effective directivity	1MHz ~ 8GHz	≥38dB（Typical value）

Transmission dynamic range	1MHz ~ 8GHz	≥70dB(Typical value)
Reflection tracking	Open circuit, 1kHz RBW, Log mag	
	±0.1dB	
Effective source matching	≥30dB(Typical value)	
Calibration mode	All 1 port calibration, enhanced through response calibration	
System impedance	50 Ω	
Velocity factor	0.1 ~ 1	

3.Antenna Feeder Function Specifications

Cable and antenna feeder measurement model		
Frequency range	1MHz ~ 8GHz	
Test port	N-negative	
Effective directivity	1MHz ~ 8GHz	≥38dB(Typical value)
Effective source matching	1MHz ~ 8GHz	≥30dB(Typical value)
Reflection tracking	Open circuit, 1kHz RBW, Log mag	
	±0.1dB	
Calibration mode	All 1 port calibration (OSL)	
Maximum number of points	2048	

4.Field strength measurement

Field strength measurement	
Frequency range	5MHz ~ 8GHz
Dynamic range	23dBuV ~ 127dBuV
Antenna factor	Built-in antenna factor, support antenna factor editing and import
Measuring input port	N-type positive (RF input port)