



S5800L Handheld Spectrum Analyzer

Datasheet



Saluki Technology Inc.

The document applies to the instruments of the following models:

- S5800L Handheld Spectrum Analyzer (9kHz - 3.0GHz).

Standard Accessories of S5800L Handheld Spectrum Analyzer:

Item	Name	Qty.
1	Main Machine	1 pcs
2	AC/DC Adapter	1 pcs
3	Rechargeable Li-ion Battery	1pcs
4	Vehicle Charger 12V/DC (<0.5Ω)	1 pcs
5	Crossover LAN Cable	1 pcs
6	USB Cable	1 pcs
7	RF Connector	1 pcs
8	Soft Carrying Case	1 pcs
9	CD (Site Workbench Software and Manual)	1 pcs

Options of the S5800L Handheld Spectrum Analyzer:

Option No.	Item	Description
S5800-01	RF Power Meter (Software)	Providing true RMS measurements with accurate measurements for both CW and complex digitally modulated signals.
S5800-02	In-line Bi-Directional RF High Power Sensor	300 MHz to 4GHz, 2mW to 150W, N(f) 50Ω
S5800-03	Terminal RF Power Sensor	1MHz to 6GHz, -30dBm to +20dBm, N(m), 50Ω
S5800-04	Interference Location Analysis	Add Spectrogram, RSSI, Signal ID, Signal Strength, Interference Location Mapping, Delta Spectrum and DPS measurement applications to the spectrum analyzer. (Need directional log periodic antenna)
S5800-05	Signal Coverage Mapping	Allowing users to map RSSI and ACPR measurements. (Need option S5800-06)
S5800-06	GPS Module (USB)	/
S5800-08	Tracking Generator	Frequency range: 100kHz - 3GHz
S5800-12	Directional Active Log Periodic Antenna	Frequency range: 9 kHz to 20MHz
S5800-13	Directional Active Log Periodic Antenna	Frequency range: 20MHz to 200MHz

Option No.	Item	Description
S5800-14	Directional Active Log Periodic Antenna	Frequency range: 200MHz to 500MHz
S5800-15	Directional Active Log Periodic Antenna	Frequency range: 500MHz to 3GHz
S5800-16	Directional Active Log Periodic Antenna	Frequency range: 500MHz to 8GHz
S5800-17	Antenna Handle with GPS and Electronics Compass	/

Preface

Thanks for choosing Saluki Technology Inc instrument. We devote ourselves to meeting your demands, providing you high-quality measuring instrument and the best after-sales service. We persist with “superior quality and considerate service”, and are committed to offering satisfactory products and service for our clients.

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Saluki Technology

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Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery. The instrument manufacturer will repair or replace damaged parts according to the actual situation within the warranty period. The user should return the product to the manufacturer and prepay mailing costs. The manufacturer will return the product and such costs to the user after maintenance.

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1. Overview

S5800L Handheld Spectrum Analyzer is designed for field use which provides advance features/ functions of benchtop analyzers. S5800L spectrum analyzer has multiple functions such as spectrum analysis, interference analysis, ACPR, OBW, Channel power, AM/FM, Coverage mapping etc. The S5800L provides all necessary measurement functions and performance to accurately characterize the signal environment in addition to clearing, detecting, identifying and locating signal interference in a lightweight, handheld instrument. It has very competitive price and is a low cost solution for 3GHz field spectrum measurement.

Key Features

- Frequency range: 9kHz - 3.0GHz
- Fast scan mode, scan time can be set from 10 μ s to 1000s, DANL -161dBm/Hz
- One-button power measurement: channel power, occupied bandwidth, adjacent channel power, field strength
- Powerful interference analysis: spectrogram, signal strength, received signal strength indication, channel scan, signal identification, interference location, digital persistence spectrum, differential spectrum
- Indoor and outdoor signal coverage, Net clean test (option)
- Time domain measurement, support video trigger, time trigger and external trigger
- Quickly identifies, locates and maps signal interference
- Optional 100kHz - 3GHz tracking source
- Handheld, lightweight, rugged design that with standards harsh environments and lighting conditions

2. Measurements & Applications

- **Measurements**
 - Spectrum Analysis
 - Channel Power
 - Occupied Bandwidth (OBW)
 - Adjacent Channel Leakage Ratio (ACLR)
 - Field Strength
 - AM/FM
- **Optional Measurement Mode**
 - High Precision Power Meter (Option S5800-01)
 - Interference Analysis (Option S5800-04)
 - Coverage Mapping (Option S5800-05)
 - GPS (Option S5800-06)
 - Tracking Generator (Option S5800-08)

3. Technical Specifications

Model	S5800L
Frequency	
Frequency range	9kHz - 3.0GHz
Resolution	1Hz
Frequency Counting Accuracy	(signal to noise ratio is 25 dB, the resolution bandwidth (RBW) / sweep width = 0.01)
Counting Accuracy	$\pm 1 \times 10^{-6} \pm 1$
Aging Speed	$< \pm 1 \times 10^{-6}/\text{year}$
Temperature Stability	$< \pm 0.5 \times 10^{-6}$ (0 - 50°C)
Span	1kHz to 3GHz
Bandwidth	
Resolution Bandwidth (RBW)	1Hz to 3MHz in 1-3 sequence (auto or manually selectable)
Video Bandwidth (VBW)	1Hz to 3MHz in 1-3 sequence (auto or manually selectable)
Bandwidth Accuracy	$< \pm 10\%$
Sensitivity	(60dB/3dB band width) <5:1
Spectral Purity (Phase Noise)	
@1 kHz Offset from carrier	-85 dBc/Hz (typ.)
@10 kHz Offset from carrier	-95 dBc/Hz (typ.)
@100 kHz Offset from carrier	-105 dBc/Hz (typ.)
Amplitude	
Dynamic Range	> 100 dB
Measurement Range	DANL to max. safe input level
Max. Safe Input Level	+30dBm (peak power, input attenuation > 15dB), 50VDC
Amplitude Accuracy	$\leq \pm 1.0$ dB
Attenuator Range	0dB to 55dB in 1dB steps
TOI	> +15dBm (typ.)
DANL (typ.)	
(Input terminated, RBW = 1 Hz, Attn = 0 dBm, Sample Detector)	
Preamp Off	$\leq -151\text{dBm}$ (1MHz–1GHz) $\leq -148\text{dBm}$ (1GHz–3GHz)
Preamp On	$\leq -161\text{dBm}$ (1MHz–1GHz) $\leq -158\text{dBm}$ (1GHz–3GHz)
Spurious Response	

Residual Response	1MHz - 6GHz: $\leq -85\text{dBm}$ (no signal input attenuation, 0dB)
Second Harmonic Distortion	$< -70\text{dBc}$ (input level -20dBm , mixer input, preamp off)
Reference Level (20°C - 30°C)	
Range	-167dBm to $+35\text{dBm}$
Accuracy	$\leq \pm 0.5\text{dB}$
Sweep & Trigger Mode	
Sweep Time	20ms - 250s ($\geq 200\text{ Hz}$) 10 μs - 1000s (= 0 Hz) 1ms - 250s (Fast scan)
Accuracy	$< \pm 0.2\%$
Trigger Mode	Free trigger, Single trigger, Video trigger, Trigger
Display	
Logarithmic Scale	0.1 - 0.9 dB/ lattice, 0.1dB step;
	1 - 40dB/ lattice, 1dB step
Linear Scale	10 scale
Scale Unit	dBm, dBmV, dB μV , mV
Marker Readout Resolution	0.03dB
	0.03% linear reference level
Trace	6
Detector	Sample/ peak/ negative/ normal/ quasi peak/ RMS/ avg
Frequency Standard Function	A peak, peak, frequency standard to the center, the reference frequency standard
Marker Mode	Normal, delta, fixed, frequency counter
Reference Level	-167dBm to $+30\text{dBm}$
Level Accuracy	$\leq \pm 0.5\text{dB}$ (typ., $25\pm 5^\circ\text{C}$)
RBW Switching Accuracy	$< 0.1\text{dB}$ (typ.)
Attenuator Switching Accuracy	$< 0.3\text{dB}$ (typ.)
RF Input	
Input Connector	N type
Input Impedance	50 Ω
VSWR (typ.)	< 1.8 (10MHz-3GHz, attenuator $\geq 10\text{dB}$)
USB Output	1 USB2.0, 1 miniUSB
LAN	Adaptive 10M/100M
Tracking Generator (Optional)	
Output Connector	N type
Output Impedance	50 Ω

VSWR	< 2.0
Frequency Range	100kHz - 3GHz
Frequency Stability	±2ppm
Level Range	-30dBm to 0dBm
Level Resolution	1dB
Level Accuracy	± 1.5dB
Harmonic Distortion	-20dBc
Spurious	-30dBc

4. General Information

Model	S5800LA	S5800LB
Display		
Type / Size	TFT LCD / 6.5" (640 x 480)	
Data Storage		
Internal	1 GB, >2000 saved measurement files	
External	Limited by size of USB flash drive	
Battery		
Type	Rechargeable lithium battery 11.1V / 5.2Ah	
Charging Time	< 4 hours	
Operation Time	> 4 hours (continuous); > 3 hours (with tracking generator)	
Environmental		
Operating Temperature	-10°C to +55 °C	
Storage Temperature	-40 °C to +80 °C	
Shock	Mil-PRF-28800F Class 2	
EMC		
European EMC	IEC/EN 61326-1:2006	
AC Power		
AC Adapter Output	19V / 3.42Ah	
AC Adapter Input	100 – 240 VAC, 50-60 Hz	
Dimension & Weight		
Dimension	257mm x 75mm x 185mm	

Weight	< 2.5 kg
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