



S5700 Series Field Comm Analyzer

Datasheet



Saluki Technology Inc.

The document applies to the instruments of the following models:

- S5700A Field Comm Analyzer (CA: 2MHz - 4.4GHz, SA: 9kHz - 4.4GHz).
- S5700B Field Comm Analyzer (CA: 2MHz - 6.0GHz, SA: 9kHz - 6.0GHz).

Standard Accessories of S5700 series field comm analyzer:

No.	Name	Qty.
1	Main Machine	1 pcs
2	AC/DC Adapter	1 pcs
3	Rechargeable Li-ion Battery	1pcs
4	“Y” OSL Calibration Device	1 pcs
5	1.5m Test Port Extension Cable	1 pcs
6	Touch pen	1 pcs
7	Soft Carrying Case	1 pcs
8	CD (Site Workbench Software and Manual)	1 pcs

Options of the S5700 series field comm analyzer:

Option No.	Item	Description
S5700-01	RF Power Meter (Software)	Providing true RMS measurements with accurate measurements for both CW and complex digitally modulated signals.
S5700-03	Terminal RF Power Sensor	1MHz to 6GHz, -30dBm to +20dBm, N(m), 50Ω
S5700-04	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)
S5700-05	Signal Coverage Mapping	Allowing users to map RSSI and ACPR measurements. (Need option S5700-06)
S5700-06	GPS Module (USB)	/
S5700-07	Signal Analysis	LTE,WCDMA,TDSCDMA,GSM,CDMA
S5700-08	GPS Module (Internal Built-in)	/
S5700-09	Optical Power Meter and VFL	Using for all optical power measurements, such as optical fiber loss measurement and optical device performance evaluation.

Option No.	Item	Description
S5700-11	2-Port Transmission Measurement	Providing the capability to perform 2-port measurements.
S5700-12	Channel Scanner	/
S5700-13	Directional Active Log Periodic Antenna	Frequency range: 9 kHz to 20MHz
S5700-14	Directional Active Log Periodic Antenna	Frequency range: 20MHz to 200MHz
S5700-15	Directional Active Log Periodic Antenna	Frequency range: 200MHz to 500MHz
S5700-16	Directional Active Log Periodic Antenna	Frequency range: 500MHz to 3GHz
S5700-17	Directional Active Log Periodic Antenna	Frequency range: 500MHz to 8GHz
S5700-18	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

S5700 Series Field Comm Analyzer combines the highest performance operating specifications and multi-functional measurements such as cable and antenna system analysis, fiber inspection, spectrum analysis, cellular signal demodulation, interference analysis, signal coverage mapping and RF/optical power measurements in a single instrument.

As a multi-functional instrument, the S5700 series can be configured to meet your specific test needs at the time of purchasing or can be upgraded in the future need. Additional option measurement functionality can be added on the fly in the field in a matter of seconds.

Designed specifically for wireless communication field engineers and technicians who is performing installation, maintaining and troubleshooting of the wireless communication sites, the S5700 series was developed to get the job done right with multiple cutting edge features that deliver accurate measurement, improve productivity and reduce OPEX and CAPEX.

Key Features

- Cable and Antenna Analyzer: 2MHz - 4.4GHz/ 6.0GHz
- Spectrum Analyzer: 9kHz - 4.4GHz/ 6.0GHz
- Return Loss, Cable Loss, VSWR, Distance-To-Fault, Smith Chart, 1-Port Phase
- RF, fiber and wireless signal quality testing in a single instrument
- Perform traditional RF feedline tests, inspect fiber connectors with auto pass/fail results and measure RF/Optical power
- Perform comprehensive spectrum and signal analysis for complete site profile and monitoring of signal environment
- Test MIMO 4x4 antenna performance
- Detect signal degradation and system performance over time with trace overlay
- Handheld, lightweight, field-proven design withstands harsh environments and lighting conditions

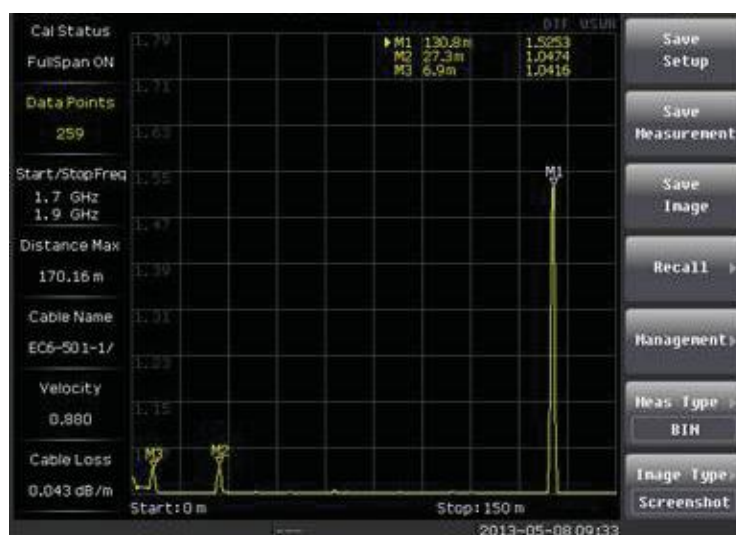
Standard Measurements & Applications

- **Cable & Antenna Analysis**
 - Reflection – Return Loss or VSWR
 - Fault Location – DFT/RL or DTF/VSWR
 - Cable Loss
 - 1-Port Phase
 - Smith Chart
 - FiberScope Fiber Connector Inspection (DML-OPI)
 - Optical Power Meter (DML-OPM)
- **Spectrum Analysis**
 - Spectrum Analysis

- Channel Power
- Occupied Bandwidth (OBW)
- Adjacent Channel Leakage Ratio (ACLR)
- Field Strength
- AM/FM
- **Optional Measurement Mode**
 - High Precision Power Meter (Option S5700-01)
 - Interference Analysis (Option S5700-04)
 - Coverage Mapping (Option S5700-05)
 - Transmission Measurement (Option S5700-11)
 - GPS Receiver (Option S5700-06)

2. Main Functions

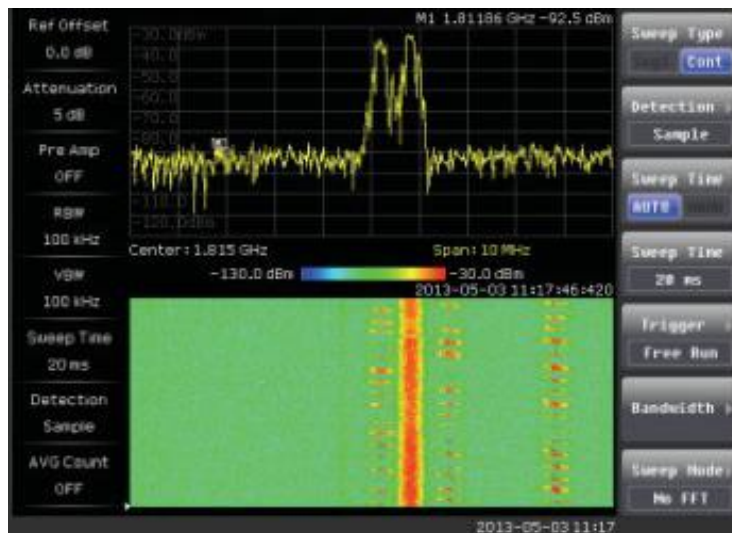
- **Distance-to-Fault (DTF)** identifies the fault location of impairments within the cell-site transmission cable system. Fault location impairments and discontinuities can be detected by either DTF-Return Loss or DTF-VSWR measurements.
 - Identify faults up to 5,000 feet (1,524m).
 - High resolution enables up to 2,065 data points for locating pesky faults.
 - Includes over 100 different cable types with the ability to add more.
 - User definable limit-line automatically indicates pass/fail condition.
 - Up to 6 markers can be set for detailed analysis.



- **Fiber Inspection** eliminates the most common fiber link problems by verifying that fiber optic connectors are not contaminated, letting users quickly inspect and clean fiber connector connections with a clear pass/fail indication.
- **Visual Fault Location** checks that fiber for continuity and detects damaged fibers or splices, including fiber breaks,

excessive bends and brakes. Can also trace the path of fiber through multiple connections and identify the correct fibers for loss test.

- **Cellular Signal Analysis** provides detailed insight to LTE- FDD, LTE-TDD, WCDMA/HSDPA, TD-SCDMA, CDMA/EV-DO, GSM/GPRS/EDGE signals and modulation quality.
- **Interference Analysis** can detect signal as low as -152 dBm and supports spectrogram display, RSSI, signal strength and signal ID capabilities.
 - Spectrogram display features a three-dimensional display of frequency, power and time of spectrum activity enabling identification of intermittent signal interference, tracking these signals over time. The dual display screen allows for easy, simultaneous viewing of both the spectrum and spectrogram analysis.
 - Received Signal Strength Indicator (RSSI) observes and reports the signal strength of a single frequency over time.
 - Signal strength meter helps to locate interfering signals with the use of a directional antenna.



- **RF/ Optical Power Meter** measures true RMS power for both CW and digitally modulated signals with an external power sensor.
 - Users can set minimum and maximum power limits to indicate pass/fail status automatically.



- **Reduces maintenance time** with a complete multifunctional toolset that performs spectrum analysis, interference analysis, coverage mapping, cellular signal demodulation quality, RF/Fiber-Based feedline analysis and RF/Optical Power measurements in a single instrument.
- **Ensure optimal performance of fiber** with fiber connector inspection, visual fault location and optical power measurements.
- **Quickly identify and locate** Cable & Antenna signal reflections and faults and take two-port measurements for insertion gain/loss tests of amplifiers, filters, and antenna isolation measurements.
- **Ensure RF metrics and modulation quality** of any cellular technology including LTE-FDD, LTE-TDD, cdma2000/EV-DO, WCDMA/HSDPA, TD-SCDMA and GSM/GPRS/EDGE with the signal analysis measurement function.
- **Perform channel scanner measurements** to measure channel power up to 20 carriers in a single test.
- **Assess non-intrusive PIM detection** across the complete frequency spectrum in a signal instrument.
- **Quickly identify signal interference** with the interference analysis measurement function to detect and locate the position of interference through automatic triangulation and mapping.
- **Trace Overlay** enables users to easily detect signal and system degradation over time.
- **Multiple Display Modes** enables users to set the display to lighting condition. Modes include standard view, nighttime, high contrast.
- **Measurement Center Software** provides users with all the necessary functionality to manage measurements and increase the instruments, including:

3. Technical Specifications

3.1. Cable & Antenna Analyzer

Model	S5700A	S5700B
Frequency		
Frequency range	2MHz - 4.4GHz	2MHz - 6GHz
Resolution	1kHz	
Measurement Speed		
Reflection	< 0.8 ms/point	
DTF	< 1 ms/point	
Data Points	130, 259, 517, 1033, 2065	
Measurement Accuracy		
Corrected Directivity	42 dB (typical, after standard OSL calibration) 38 dB (typical, after E-cal calibration)	

Output Power	
0dBm (Nominal)	
Interference Immunity	
On-channel	+20 dBm @ >1 MHz of carrier frequency
Off-channel	+10 dBm within ± 10 kHz of carrier frequency
Measurements	
Return Loss	0 to 60dB (resolution 0.01 dB)
VSWR	1:1 to 65:1 (resolution 0.01)
Cable Loss	0 to 30dB (resolution: 0.01 dB)
DTF Range (Distance)	1500 meters (4921 feet)
Connectors	
RF Out	Type N, female, 50 Ω
RF Out Damage Level	25 dBm, ± 50 VDC peak
Impedance	50 Ω

3.2. Spectrum Analyzer

Model	S5700A	S5700B
Frequency		
Frequency range	9kHz - 4.4GHz	9kHz - 6.0GHz
Turning Resolution	1Hz	
Aging	< ± 1.0 ppm/yr	
Frequency Span	1 kHz to 4 GHz in 1-2-5 sequence (automode), and 0 Hz (zero span)	1 kHz to 6 GHz in 1-2-5 sequence (automode), and 0 Hz (zero span)
Bandwidth		
Resolution Bandwidth (RBW)	10Hz to 3MHz in 1-3 sequence (auto or manually selectable)	
Video Bandwidth (VBW)	10Hz to 3MHz in 1-3 sequence (auto or manually selectable)	
Spectral Purity (Phase Noise)		
@1 kHz Offset from carrier	-90 dBc/Hz	
@10 kHz Offset from carrier	-100 dBc/Hz	
@100 kHz Offset from carrier	-105 dBc/Hz	
Amplitude		
Dynamic Range	> 100 dB	

Measurement Range	DANL to maximum safe input level
Max. Safe Input Level	+30dBm (peak power, input attenuation > 15dB), 50VDC
Amplitude Accuracy	≤ ±1.0 dB
Attenuator Range	0dB to 55dB in 5dB steps
DANL	
(Input terminated, RBW = 1 Hz, Attn = 0 dBm, Avg Detector)	
Preamp Off	≤ -144 dBm, typical (1MHz – 1GHz) ≤ -138 dBm, typical (1GHz – 4GHz)
Preamp On	≤ -158 dBm, typical (1MHz – 1GHz) ≤ -154 dBm, typical (1GHz – 4GHz)

3.3. Optical Measurement

Model	S5700A	S5700B
Optical Microscope		
Field of View	680 mm x 510 mm	
Resolution	0.5mm	
Focus Control	Adjustable	
Dimension	175 mm x 435 mm	
Weight	200g	
Optical Power Meter		
Accuracy	±0.25dB	
Probe Type	InGaAs Φ300μm	
Dynamic Range	-50dBm to +27dBm	
Resolution	0.01 dBm, mW, uW, nW	
Wavelength	850/ 980/ 1300/ 1310/ 1490/ 1550/ 1610 nm	
Adapter	FC/SC/ST	
VFL		
Output Power	10mW	
Adapter	FC/PC	

3.4. RF Power Meter

Model	S5700A	S5700B
USB Smart RF Power Sensor		
Frequency Range	1kHz - 6GHz	

Measurement Range	1 μ W - 100mW (-30dBm to +20dBm)
VSWR	1.1
Resolution	1dB, 0.1dB, 0.01dB, 0.001dB
Accuracy	\pm 0.2dB (typ.)
Dimension	124 x 44 x 24 mm
Weight	250g
Inline RF Power Meter	
Frequency Range	300MHz - 4GHz
Measurement Range	0.15W - 150W
Insert Loss	0.1dB
VSWR	1.1
Directivity	30dB
Accuracy	\pm 4% \pm 0.05W(+15 to +35°C), \pm 7% \pm 0.05W(-10 to +50°C)
Connector	Type N(f), 50 Ω

3.5. General Information

Model	S5700A	S5700B
Connectors		
RF In	Type N, female, 50 Ω	
RF In Damage	+30 dBm, +50 VDC	
Connectivity		
USB Host	Type A, 1-Port (connect flash drive for data transfer)	
USB Client	5-pin mini-B (connect to PC for data transfer)	
LAN	10M/100M LAN Port	
Display		
Type / Size	TFT LCD / 8.4" (800 x 600)	
Data Storage		
Internal	1 GB, >2000 saved measurement files	
External	Limited by size of USB flash drive	
Battery		
Type	Li-Ion, 11.1V, 5.2AH	
Operation Time	> 6.0 hours, continuous; 8.0 hrs, idle (CA mode) > 4.0 hours, continuous; 8.0 hrs, idle (SA mode)	
Environmental		

Operating Temperature	-10°C to + 55 °C
Storage Temperature	-40 °C to + 75 °C
Shock	Mil-PRF-28800F Class 2
EMC	
European EMC	IEC/EN 61326-1:2006
AC Power	
AC Adapter Output	15 -19 VDC
AC Adapter Input	100 – 240 VAC, 50-60 Hz
Size & Weight	
Size	258 x 173 x 74 mm (10.2 x 6.8 x 2.9 in)
Weight	3 kg

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