S3101 Cable & Antenna Analyzer

Datasheet

Saluki Technology Inc.

The datasheet applies to the cable and antenna analyzer of the following models:

- S3101A Cable & Antenna Analyzer (1MHz - 4GHz)
- S3101B Cable & Antenna Analyzer (1MHz - 8GHz)

Standard Accessories of S3101 cable and antenna analyzer

No.	Name	Qty.
1	Handheld Cable & Antenna Analyzer	1 Set
2	AC Adaptor	1 PC
3	Standard Three-phase Power Cord	1 PC
4	Built-in Rechargeable Battery	1 PC
5	USB Cable	1 PC
6	Car-mount Charger	1 PC
7	CD (PC software and User Manual)	1 PC
8	Certificate of Calibration	1 PC

Options of the S3101 cable and antenna analyzer

Option No.	Item
S3101-01	USB Power Measurement Software
S3101-02	Backup Rechargeable Li-ion Battery
S3101-03	GPS Cable
S3101-04	S87230 USB Continuous Wave Power Sensor (9kHz - 6GHz)
S3101-05	S87231 USB Continuous Wave Power Sensor (10MHz - 18GHz)
S3101-06	S87232 USB Continuous Wave Power Sensor (50MHz - 26.5GHz)
S3101-07	S87233 USB Continuous Wave Power Sensor (50MHz - 40GHz)
S3101-10	SAV20201A Type N Male Calibration Kit DC - 9GHz
S3101-11	SAV20201B Type N Female Calibration Kit DC - 9GHz
S3101-12	N-DIN Adaptor L29/N-KJ-T
S3101-13	N-DIN Adaptor L29/N-JJ-T

Option No.	Item
S3101-14	Low Loss Test Cable N-JK (80cm)
S3101-15	Low Loss Test Cable N-JJ (80cm)
S3101-16	Functional Soft Case
S3101-18	Hard Case (Carrying Case)

Preface

Thanks for choosing Saluki Technology Inc products. Please read this quick starter manual carefully for your convenience.

Manual No.

S3101-02-01

Version

Rev02.2018.01 Saluki Technology

Manual Authorization

The information contained in this document is subject to change without notice. The power to interpret the contents of and terms used in this document rests with Saluki.

Product Quality Assurance

The warranty period of the product is 18 months from the date of delivery.

Product Quality Certificate

The product meets the indicator requirements of the manual at the time of delivery. Calibration and measurement are completed by the measuring organization with qualifications specified by the state, and relevant data are provided for reference.

Quality/Environment Management

Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

Contacts

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Content

1 Overview

S3101 series cable and antenna analyzer is designed with latest technologies and can provide an accurate and fast measurement. Operator can measure VSWR, return loss, impedance, phase, DTF etc. with such a compact and low-weight box. S3101 equipped with long-term battery, touch screen, auto-adjust back light for easy site use.

S3101 is perfect for cable and antenna system site test of telecommunication base stations. Tetra, GSM, PCS/DCS, CDMA, GPRS, WCDMA, CDMA200,TD-SCDMA, LTE etc. S3101B reaches 8GHz and brings more abilities to do higher frequency measurements.

S3101 also provides smith chart, phase display and can be easily used as a single port VNA.

Key features

- 1MHz – 4GHz / 8GHz frequency range
- 7 display formats: Return Loss, VSWR, Cable loss, DTF return loss, DTF SWR, Smith chart, phase.
- 7“ touch screen with auto backlight adjustment
- Dual-window display allows user to get a better observation.
- 8 hour long time battery life
- Wise measurement wizard
- Embedded E-cal kit
- Build-in GPS receiver
- SCPI supported
- Small size, low weight, impact, dust, and splash resistant

2 Specifications

2.1 Frequency

	S3101A	S3101B
Frequency Range	1MHz - 4GHz	1MHz - 8GHz
Frequency Uncertainty	±2 x 10^{-6} (23℃)	±2.5 x 10^{-6} (23℃)
Frequency Temperature Stability	±1 x 10^{-6} / 10℃	±1 x 10^{-6} / 10℃
Frequency Resolution	1kHz	1kHz

2.2 Corrected Performance

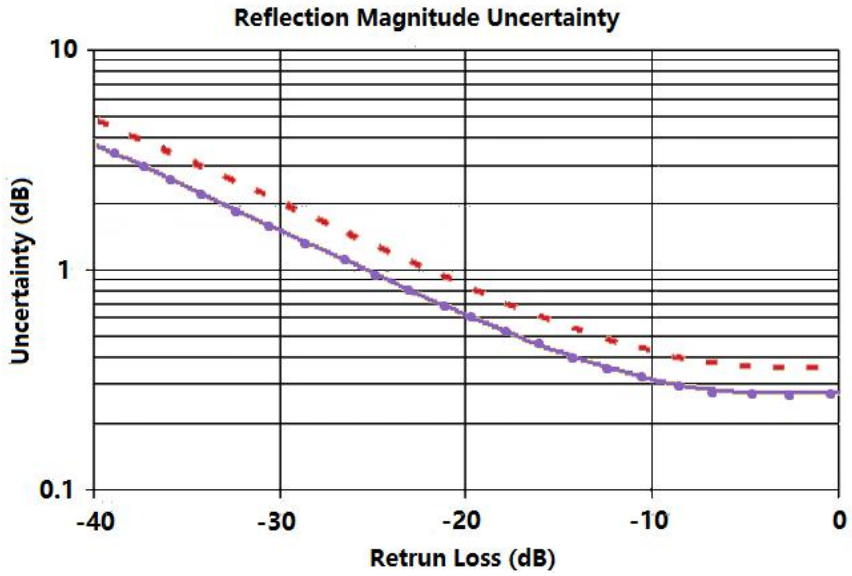
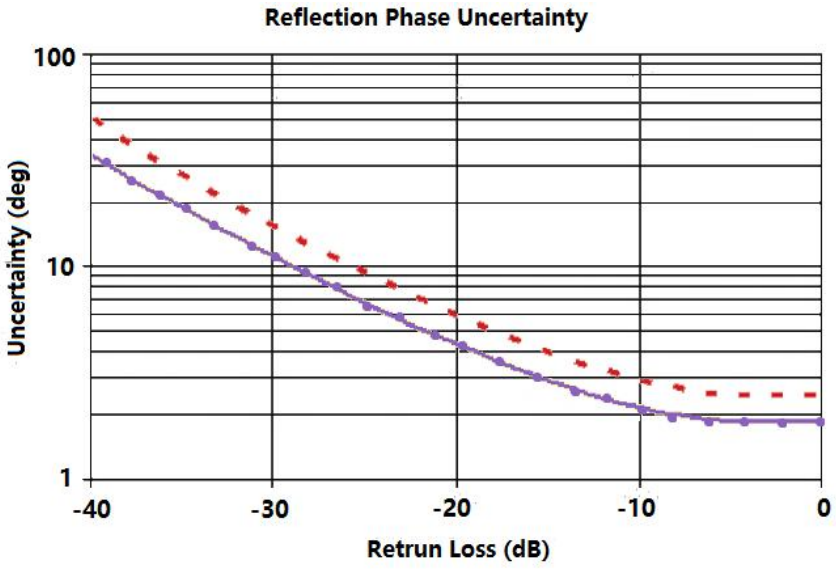
	S3101A	S3101B
Directivity	≥42dB (Mechanical Calibration) ≥35dB (Embedded Electronic Calibration)	≥42dB (1MHz - 6GHz) ≥36dB (6GHz - 8GHz)
Source Match	≥31dB (Mechanical Calibration)	≥31dB
Reflection Track	±0.08dB (Mechanical Calibration)	±0.08dB

2.3 Interfaces

Test Port	N type (F) 50Ω
10 Ref In/Ref Out	BNC
GPS Antenna Port	BNC
Data Storage	USB, Mini USB, Mini SD
Network Port	LAN RJ 45
Audio Out	Headphone port

2.4 Measurement Function Parameter

Output Power Range	0 to -30dBm
Return Loss Range	-100dB to 100dB
Return Loss Resolution	0.01
VSWR Range	1 - 65

VSWR Resolution	0.01
Cable Loss Range	0 - 30dB
Cable Loss Resolution	0.01 dB
Sweep Points	2-1001
Sweep Time (10k IF bandwidth)	1ms/point
Reflection Magnitude Uncertainty <4GHz 4-8GHz	
Reflection Phase Uncertainty <4GHz 4-8GHz	

2.5 Power Meter Function

Measurement Power Range	-50dBm to +20dBm	
Input VSWR	1.15	
Accuracy(0dBm)	±0.16dB	
Power Linearity	-50dBm to -40dBm	±0.79dB
	-40dBm to +10dBm	±0.14dB
	+10dBm to +20dBm	±0.18dB
Offset Range	20dB	
Damage Level	23dBm	

2.6 General

	S3101A	**S3101B**
Storage	4GB SD card	4GB SD card
Battery Life	8h (without embedded E-cal kit) 6h (with embedded E-cal kit)	4h
Input Port Damage Level	27dBm	27dBm
Consumption	≤15W (no battery charging) ≤54W (with battery charging)	≤18W (no battery charging) ≤54W (with battery charging)
Power Adaptor	110V/220V, 50Hz AC	
Dimension (W x H x D)	295mm x 205mm x 70mm	
Weight	Approx. 2.5kg (with battery)	
Operation Temp.	-10℃ to +55℃	
Storage Temp.	-40℃ to +70℃	

3 Compliant

3.1 CE

- EMC

Complies with the requirements of the **EC EMC** directives.

Test Standards:EN 61326

- Safety

Complies with **EC LVD** Directive.

Test Standard:**EN61010-1**

3.2 ISO

- Manufacturing

This instrument is manufactured in an ISO-9001 registered facility

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