

S3600 Series Vector Network Analyzer

Datasheet



The document applies to the vector network analyzer of the following models:

- S3600-265 Vector network analyzer (300kHz - 6.5GHz, 2 ports)
- S3600-465 Vector network analyzer (300kHz - 6.5GHz, 4 ports)
- S3600-285 Vector network analyzer (300kHz - 8.5GHz, 2 ports)
- S3600-485 Vector network analyzer (300kHz - 8.5GHz, 4 ports)

Standard Accessories of S3600 Series Vector network analyzer

Item	Name	Qty
1	Main Machine	1 Set
2	Power Cord	1 pcs
3	User Manual	1 pcs
4	CD or U disk	1 pcs

Options of the S3600 Series Vector network analyzer

Part No.	Name	Description
S3600-01	SK-CAL-NM_60 calibration kit	High precision, 6.5GHz, Type-N Male calibration kits, Open-Short-Load-Through
S3600-02	SK-CAL-NF_60 calibration kit	High precision, 6.5GHz, Type-N Female calibration kits, Open-Short-Load-Through
S3600-03	SK-CAL-SMAM_60 calibration kit	High precision, 6.5GHz, SMA Male calibration kits, Open-Short-Load-Through
S3600-05	SK-CAL-SMNF_60 calibration kit	High precision, 6.5GHz, SMA Female calibration kits, Open-Short-Load-Through
S3600-06	SK-CAL-NM_90 calibration kit	High precision, 9GHz, Type-N Male calibration kits, Open-Short-Load-Through
S3600-07	SK-CAL-NF_90 calibration kit	High precision, 9GHz, Type-N Female calibration kits, Open-Short-Load-Through
S3600-08	SK-CAL-SMAM_90 calibration kit	High precision, 9GHz, SMA Male calibration kits, Open-Short-Load-Through
S3600-09	SK-CAL-SMAF_90 calibration kit	High precision, 9GHz, SMA Female calibration kits, Open-Short-Load-Through
S3600-10	C9502A electronic calibration kit	2 port, 9.5GHz, 3.5mm Female electronic Calibration Module
S3600-11	C9502A_N electronic calibration kit	2 port, 9.5GHz, Type-N Female electronic Calibration Module
S3600-12	C9504A electronic calibration kit	4 port, 9.5GHz, 3.5mm Female electronic Calibration Module

Part No.	Name	Description
S3600-13	C9504A_N electronic calibration kit	4 port, 9.5GHz, Type-N Female electronic Calibration Module
S3600-14	RF cable	High precision, 6.5GHz, 50Ω, N-N cable
S3600-15	RF cable	High precision, 6.5GHz, 50Ω, N-SMA cable
S3600-16	RF cable	High precision, 9GHz, 50Ω, N-N cable
S3600-17	RF cable	High precision, 9GHz, 50Ω, N-SMA cable
S3600-18	Time domain option	/
S3600-19	Low frequency expansion option	Frequency range 100kHz - 300kHz
S3600-20	High stability clock option	Stability accuracy 0.05ppm
S3600-21	Circuit simulation function option	/
S3600-22	Power range expansion option	Power range -70dBm to +10dBm

Preface

Thanks for choosing S3600 series vector network analyzer produced by Saluki Technology Inc.

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Document Authorization

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Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery.

Product Quality Certificate

The product meets the indicator requirements of the document 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.

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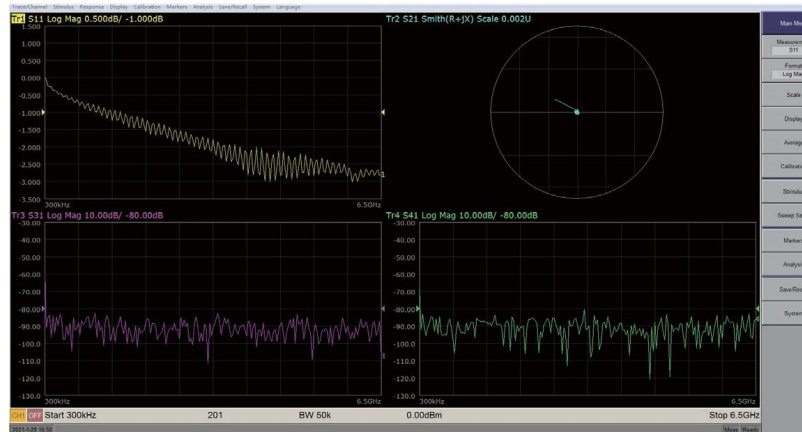
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1 Overview

S3600 series vector network analyzer offers wide dynamic range, low noise level, high resolution scanning with laboratory and research grade performance. It is suitable for laboratory, manufacturing and many other safety testing environment. S3600 series covers frequency range of 300kHz to 8.5GHz, and provides measurement convenience by offering user excellent performance and attractive pricing.

Key Features

- Frequency Range: 300kHz to 8.5GHz
- Dynamic Range: >125 dB @ (IFBW=10 Hz), 130dB typical
- Low Trace Noise: 2 mdB rms (IFBW=3 kHz)
- High Measurement Speed: 42 μs/point (IFBW=500 kHz)
- High Effective Directivity: > 42 dB
- Remote Control: LabView
- Capable of replacing bench-top VNA
- Minimum budget requirement
- Suitable for laboratory, manufacturing and research and development purposes
- Compact design, implementation simplicity and various system upgrade



Panel Description

- Front panel



➤ Rear panel



2 Technical Specifications

2.1 Measurement Range

Module	S3600-265	S3600-465	S3600-285	S3600-485
Frequency Range	300kHz - 6.5GHz	300kHz - 6.5GHz	300kHz - 8.5GHz	300kHz - 8.5GHz
Number of Test Port	2	4	2	4
Frequency Accuracy	5ppm			
Frequency Resolution	1Hz			
Number of Measurement Points	2 to 20001			
Measurement Bandwidth	1Hz to 2MHz			
Dynamic Range (IFBW 10Hz)	100kHz-300kHz: 97dB, typ. 115dB 300kHz-10MHz: 112dB, typ. 115dB 10MHz-6GHz: 125dB, typ. 130dB 6GHz-7GHz: 124dB, typ. 129dB			

	7GHz-8.5GHz: 123dB, typ. 128dB
Measurement Parameters	S11, S21, S12, S22
Impedance	50 Ω
Test Port Connector	N-type, female

2.2 Effective System Data

Test condition: applied over them temperature range of 23°C ± 5°C after 40 minutes of warming-up, with full two-port calibration, at output power of 0dBm and IF bandwidth 10Hz.

Parameters	Specifications
Effective Directivity	38dB - 49dB
Effective Source Match	35dB - 41dB
Effective Load Match	37dB - 49dB

2.3 Measurement Accuracy

Parameters	Specifications
Transmission Measurement Accuracy (magnitude/phase)	+5dB to +10dB: 0.2dB/ 2°
	-50dB to +5dB: 0.1dB/ 1°
	-70dB to -50dB: 0.5dB/ 3°
	-90dB to -70dB: 2.5dB/ 8°
Reflection Measurement Accuracy (magnitude/phase)	-15dB to 0dB: 0.4dB/ 3°
	-25dB to -15dB: 1.0dB/ 6°
	-35dB to -25dB: 3.0dB/ 20°

2.4 Trace Stability

Parameters	Specifications
Trace Noise (IFBW= 3kHz)	2m dB rms
Temperature Stability	0.01dB/°C

2.5 Measurement Speed

Parameters	Specifications
Measurement Time Per Point	42us
Source to Receiver Port Switchover Time	< 10ms
Typical Cycle Times Versus Number of Measurement Points (IFBW 30kHz)	51ms, 201ms, 401ms, 601ms
Uncorrected (300kHz to 10MHz)	51 points: 13ms 201 points: 52ms 401 points: 104ms 1601 points: 413ms
Full 2-Port Calibration (10MHz to 6.5GHz)	51 points: 34ms 201 points: 73ms 401 points: 125ms 1601 points: 434ms

2.6 Test Port

Output Port	
Match (W/O System Error Correction)	18dB
Power Range	100kHz - 300kHz: - 50dBm to +5dBm 300kHz - 7GHz: - 50dBm to +10dBm 7GHz - 8.5GHz: - 50dBm to +8dBm
Power Accuracy	±1.5 dB
Power Resolution	0.05dB
Input Port	
Match (W/O System Error Correction)	18 dB
Max Input Level	+26dBm

Max Input Voltage	+35 V
Noise Level	100kHz - 300kHz: -97 dBm 300kHz - 10MHz: -107 dBm 10MHz – 5GHz: -123 dBm 5GHz - 6GHz: -124 dBm 6GHz - 8.5GHz: -120 dBm

2.7 General Information

Parameters	Specifications
External Trigger Connector	BNC female, Input level range: 0 to +5 V
External Reference Input Connector	BNC female, 10 MHz, 2dBm ± 2dB
External Reference Output Connector	BNC female, 10 MHz, 2dBm ± 2dB
LAN Connector	10/100/1000 Base T Ethernet, 8-pin
Operating Temperature	+5°C to +40°C
Storage Temperature	-20°C to +60°C
Humidity	90% (25°C)
Atmospheric Pressure	84 to 106.7 kPa
Calibration Interval	3 year
Power Supply	220± 22V (AC), 50Hz
Power Consumption	65W
Dimension	425 (W) × 400 (H) × 122 (D) mm
Weight	S3600-265/285: 7.5 kg, S3600-465/485: 8.1 kg

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