S3265 Series Vector Network Analyzer

Datasheet

Saluki Technology Inc.

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

- S3265A Vector network analyzer (10MHz - 14GHz, 2 or 4 ports)
- S3265B Vector network analyzer (10MHz – 20GHz, 2 or 4 ports)
- S3265C Vector network analyzer (10MHz - 26.5GHz, 2 or 4 ports)

Standard Accessories of S3265 Series Vector network analyzer

Item	Name	Qty
1	Main Machine(Includes test software and license software)	1 Set
2	Power Cord	1 pcs
3	User Manual	1 pcs
4	CD or U disk	1 pcs

Options of the S3265 Series Vector network analyzer

Part No.	Name	Description
S3265A-400	Four-port Measurement	Four port option for S3265A VNA
S3265B-400	Four-port Measurement	Four port option for S3265B VNA
S3265C-400	Four-port Measurement	Four port option for S3265C VNA
S3265-H01	N Type Calibration Kit	DC - 9GHz, Male
S3265-H02	N Type Calibration Kit	DC - 9GHz, Female
S3265-H03	N Type Calibration Kit	DC - 9GHz, Kit
S3265-H04	3.5mm Calibration Kit	DC- 9GHz, Male
S3265-H05	3.5mm Calibration Kit	DC - 9GHz, Female
S3265-H06	3.5mm Calibration Kit	DC - 9GHz, Kit
S3265-H07	3.5mm Adapter	3.5mm, Male
S3265-H08	3.5mm Adapter	3.5mm, Female
S3265-H09	N Type Adapter	N Type, Male
S3265-H10	N Type Adapter	N Type, Female
S3265-H11	Phase stable test cable	18GHz, 80cm, N Type (M to M)
S3265-H12	Phase stable test cable	18GHz, 80cm, SAM (M to M)
S3265-H13	Phase stable test cable	18GHz, 80cm, SAM - N (M to M)

Part No.	Name	Description
S3265-H14	Phase stable test cable	18GHz, 60cm, N Type(M to M)
S3265-H15	Phase stable test cable	18GHz, 60cm, SAM(M to M)
S3265-H16	Phase stable test cable	18GHz, 60cm, SAM-N(M to M)
S3265-H17	Torque Wrench	8mm-0.9Nm (3.5mm)
S3265-H18	Torque Wrench	19mm-1.35Nm (N Type)
S3265-S01	RTL - 2*2 Port	VNA Lic-2*2 Port Test and analyze licensed software V1.0
S3265-S02	VNA -TDR	VNA -TDR Test and analyze licensed software V1.0
S3265-S03	VNA -OTA	VNA -OTA Test and analyze licensed software V1.0

Preface

Thanks for choosing S3265 series vector network analyzer produced by Saluki Technology Inc.

Document No.

S3265

Version

Rev01 2022.11

Saluki Technology

Document 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 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.

Contacts

Service Tel:	886. 909 602 109
Website:	www.salukitec.com
Email:	sales@salukitec.com
Address:	No. 367 Fuxing N Road, Taipei 105, Taiwan (R.O.C.)

Content

1 Overview

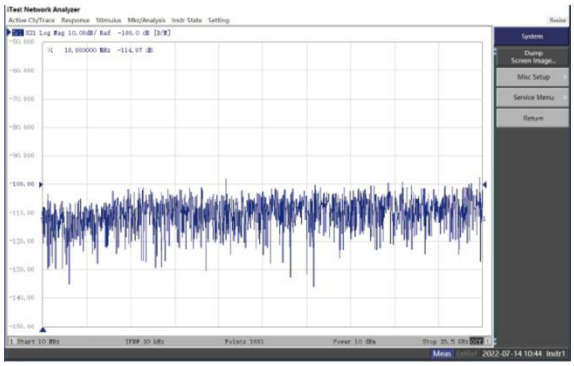
S3265 Series Vector Network Analyzer with a frequency range of 10MHz~26.5GHz, which can cover customers' testing requirements for C/X/Ku/K band microwave products. It can be widely used in research and development, production testing in microwave communication, satellite communication, aerospace and military industry and other fields. With a 12.1-inch touch screen and physical function buttons, it is convenient for customers to perform various debugging operations.

S3265 Series Vector Network Analyzer provides customers with first-class system index performance. Its dynamic range, trace noise, test accuracy, test stability and other key vector network indicators have reached the international leading level, ensuring that customers' test data is reliable and accurate every time.

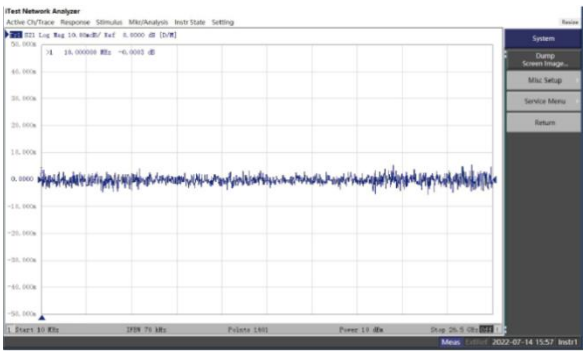
S3265 Series Vector Network Analyzer has complete vector network test analysis functions and calibration algorithms, and supports most of the mechanical and electronic calibration components on the market to meet customers' flexible and diverse test needs and usage methods. It can be matched with equipment such as sorter, probe station, switch matrix, etc., and provides rich software interfaces to meet various automated testing needs of customers.

Key Features

- Provide 14GHz, 20GHz, 26.5GHz and 2 Ports, 4 Ports configuration, convenient for customers to choose flexibly
- Dynamic Range: 135dB @ 26.5GHz(typ.)
- Ultra-low trace noise: 2mdB rms (typ.) @ IFBW=70 kHz
- Output power range: -55 dBm to +10 dBm
- Support TDR Time Domain Impedance Test
- Perfect calibration algorithm (including SOLT, SOLR, TRL, corresponding calibration, etc.)
- Supports major mechanical and electronic calibration kits
- Support automatic port extension, fixture simulation and other functions
- Compatible with the software UI of mainstream products, in line with the user's operating habits
- Compatible with control interfaces such as VISA and SCPI of mainstream products, and compatible with customers' existing test software



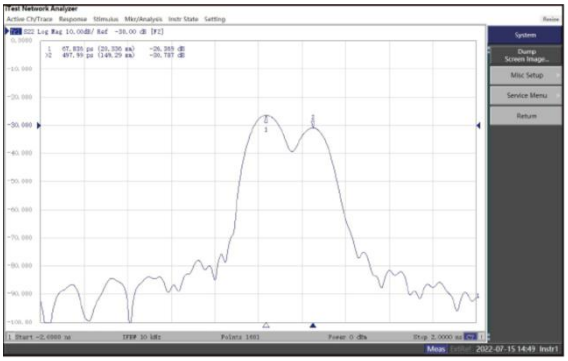
Dynamic Range: 135dB@ 26.5GHz (typ.)

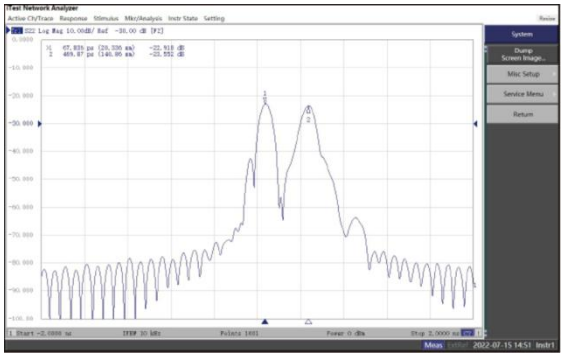


Ultra-low trace noise: 2mdB rms (typ.) @ IFBW=70 kHz

TDR Function

- **Inherit the accurate and efficient time domain function algorithm, and extend the frequency to 26.5GHz, bringing customers higher time (length) test resolution**



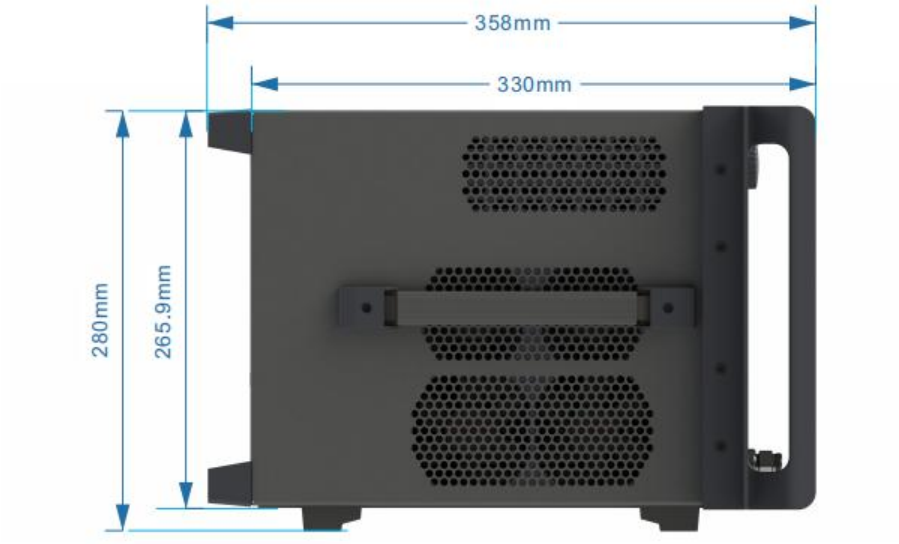


8.5GHz vs 26.5GHz

Panel Description

- **Front panel**

➢ **Side panel**



2 Technical Specifications

2.1 System Measurement Range

Module	S3265A	S3265B	S3265C
Frequency Range	10MHz to 14GHz	10MHz to 20GHz	10MHz to 26.5GHz
Number of Test Port	2 or 4		
Test Port Connector Type	NMD 3.5mm, male		
Output Power Range	-55dBm to +10dBm		
Power Setting Resolution	0.05dB		
Frequency Resolution	1Hz		
Number of Measurement Points	1 to 20,001		
Measurement Bandwidth	10Hz to 1.5MHz		
Dynamic Range (IFBW 10Hz)	10MHz to 6GHz	135dB	
	6GHz to 20GHz	132dB	
	20GHz to 26.5GHz	130dB	
Impedance	50 Ω		

2.2 Measurement Accuracy (Uncertainty)

Trace Noise: Meas. Power=Max Output Power

Parameters	Specifications	
Transmission	10MHz to 6GHz (IFBW=70kHz)	4mdB rms/0.03deg rms
	6GHz to 26.5GHz (IFBW=70kHz)	3mdB rms/0.02deg rms
Reflection	10MHz to 6GHz (IFBW=70kHz)	5mdB rms/0.02deg rms
	6GHz to 26.5GHz (IFBW=70kHz)	3mdB rms/0.02deg rms

2.3 Corrected System Effective Data2

Parameters	Specifications			
Description	10MHz to 2GHz	2GHz to 13.5GHz	13.5GHz to 20GHz	20GHz to 26.5GHz
Directivity	48	44	44	44
Source Match	40	31	31	31
Load Match	48	44	44	44

2.4 Uncorrected System Raw Data3

Parameters	Specifications			
Description	10MHz to 2GHz	2GHz to 13.5GHz	13.5GHz to 20GHz	20GHz to 26.5GHz
Directivity	25 dB	15 dB	12 dB	12 dB
Source Match	25 dB	15 dB	15 dB	13 dB
Load Match	17 dB	10 dB	10 dB	10 dB

2.5 Test Port Output Performance

Parameters	Specifications	
Power Accuracy	±0.5 dB@0dBm	
Power Linearity (Relative to 0dBm)	10MHz to 6GHz	±0.5 dB(-20dBm to +10dBm)
	6GHz to 26.5GHz	±0.75 dB (-20dBm to +10dBm)
Harmonic(2nd or 3nd)	<-20dBc @5dBm	
Non-Harmonic Spurious	<-30dBc @5dBm	
CW Accuracy	±7ppm (23 ℃±3 ℃)	
Source Stability	±7ppm (5 ℃±40 ℃)	

2.6 Test Port Input Performance

Parameters	Specifications	
Maximum Input Level	+10dBm	
Damage Level	+26dBm or ±35VDC	
Cross Talk	10MHz to 6GHz	-120dB
	6GHz to 20GHz	-110dB
	20GHz to 26.5GHz	-100dB
Noise Floor	10MHz to 6GHz	-135dBm/Hz
	6GHz to 20GHz	-132dBm/Hz
	20GHz to 26.5GHz	-130dBm/Hz

2.7 Not-Test Input/output Port Requirements

Parameters	Specifications	
External Reference Signal Input	Connector Type	BNC Female
	Input Frequency	10MHz±10ppm
	Input Level	Low Threshold Votage:0.5V High Threshold Votage:2.1V

		Input Level Range:0 to +5V
	Duty Cycle	40% to 60%
External Reference Signal Output	Connector Type	BNC Female
	Output Frequency	10MHz±7ppm
	Output Level	Low Level Votage:0V High Level Votage:5V
	Duty Cycle	40% to 60%
	Signal Type	TTL
External Trigger Input	Connector Type	BNC Female
	Input Level	Low Threshold Votage:0.5V High Threshold Votage:2.1V Input Level Range:0 to +5V
	Pulse Width	2μs
	Polarity	Positive or Negative
External Trigger Output	Connector Type	BNC Female
	Max Output Current	30mA
	Output Level	Low Level Votage:0V High Level Votage:5V
	Pulse Width	1μs
	Polarity	Positive or Negative

2.8 General And Environment

Parameters	Specifications
Display	12.1 inch multi touch screen LCD(1280 X 800)
Operating Temperature	+5 ℃ to + 40℃
Error-Corrected Temperature Range	23 ℃(±5 ℃) with <1 ℃ deviation from calibration temperature
Operating Humidity	20% to 80% at wet bulb temperature <+29 ℃ (non-condensation)
Storage Temperature	-10 ℃ to +60 ℃
Storage Humidity	20% to 90% at wet bulb temperature <+40 ℃ (non-condensation)
Dimensions	Unit with Handle:482.6mm W x 404mm D x 265.9mm H

Weight	21Kg
Power Requirements	90 to 264VAC, 47 to 63Hz
Power Consumption	<180W(maximum)
EMC	EN 61326-1:2005 EN 55011:2007 Group 1, Class A EN 61000-4-2:1995 +A2:2001 4kV CD/8kV AD EN 61000-4-3:2006 EN 61000-4-4:2004 EN 61000-4-5:2006 EN 61000-4-6:2007 3V, 0.15-80 MHz, 80% AM EN 61000-4-11:2004 0.5-300 cycle, 0%/70%
Safety	EN 61010-1:2001 Measurement Category I Pollution Degree 2 Indoor Use
Recommended Calibration Cycle	12 months
Warranty	36 months hardware 36 months software update

1. If RF Range Fixed Mode=ON, performance may be degrade by 10dB.

2. Using Cal Kit: 85052B(3.5mm 50Ω) for full 2-port calibration. And IF bandwidth=10 Hz, no averaging applied to data, environmental temperature= 23oC(±5ºC) with < 1ºC deviation from calibration temperature, isolation calibration performed.

3. User correction: OFF, system correction: ON

4. All specifications apply at 23 ºC (±5 ºC), unless otherwise stated, and 90 minutes after the instrument has been turned on.

Table 1.	
IFBW Nominal Settings	10,15,20,30,40,50,70,100,150,200,300,400,500,700,1k,1.5k,2k,3k,4k,5k, 7k,10k,15k,20k,30k,40k,50k,70k,100k,150k,200k,300 k,400k,500kHz, 700 kHz,1MHz,1.5MHz

Measurement Speed

-END OF DOCUMENT-