AV3644A/45A/43Q/49/49A/49B S-Parameter Test Module

（50GHz～75GHz/75GHz～110GHz/110GHz～170GHz/170GHz～220GHz/220GHz～325GHz/325GHz～500GHz）

Product Overview:

AV3644A/45A/43Q/49/49A/49B S-parameter test module has reached the international level in measurement speed, dynamic range and measurement stability. For hardware, it adopts new design concept and technical solution, which significantly enhance the key performance indexes of the instrument. As for the software, the frequency extending system is based on Windows OS, which greatly improves the interconnectivity and practicability of the instrument.

AV3644A/45A/43Q/49/49A/49B S-parameter test module, AV3640A millimeter-wave frequency extending controller and vector network analyzer together constitute the millimeter-wave vector network analyzing system, which can realize flexible configuration of 5mm, 3mm, 2mm, 1mm frequency range and higher, the highest reaches 500GHz. With advantages of concise system configuration, user-friendly interface, high test precision etc., it can realize the full S-parameter measurement of the millimeter-wave network under test. The system is widely used for the R&D, manufacturing and test in the fields of millimeter wave components, MMIC, antenna, RCS and materials.

Main Characteristics:

- Frequency range: 50GHz～500GHz
- Windows 7 operating system, Chinese menu (English menu is an option)
- Various calibration types: frequency response, single port, response isolation, full dual port, TRL etc.
- Applicable to various models of vector network analyzer
- Working with AV3640A to perform frequency extension measurement of dual-port vector network analyzer

Miniaturization of instruments with different frequency range, inclined panel design
General platform, convenient to operate, can enhance the test efficiency

Technical Specifications:

Model / Index	AV3644A	AV3645A	AV3643Q	AV3649	AV3649A	AV3649B
Frequency range	50GHz～75GHz	75GHz～110GHz	110GHz～170GHz	170GHz～220GHz	220GHz～325GHz	325GHz～500GHz
Output power	+3dBm	+3dBm	-10dBm	-10dBm	-13dBm	-23dBm
Dynamic range (dB)	95	95	100	100	100	80
Reflection tracking (dB)	±0.15	±0.15	±0.15	±0.2	±0.3	±0.3
Transmission tracking (dB)	±0.15	±0.15	±0.15	±0.2	±0.3	±0.3
Effective directivity (dB)	38	36	34	30	25	20
Effective source match (dB)	36	36	34	30	25	25
Effective load match (dB)	38	34	34	30	25	25
Connector type	WR15，system impedance 1Ω	WR10，system impedance 1Ω	WR06，system impedance 1Ω	WR05，system impedance 1Ω	WR03，system impedance 1Ω	WR02，system impedance 1Ω
Working voltage	12VDC@2A	12VDC@2A	12VDC@2A	12VDC@3A	12VDC@3A	12VDC@3A
Dimension W×H×D (mm)	120×90×240	120×90×240	120×90×240	120×90×240	120×90×240	120×90×240

A frequency extension controller and is compatible with AV3672X and PNA-X series vector network analyzers.

Technical Specifications:

Specification / Model	Frequency range	Output power	Controlling interface	Power supply output	Power supply	Dimensions W×H×D(mm)
AV3640A	8GHz ～ 20GHz	10±1dBm	Test set interface	12VDC@2A	Adaptive power supply：AC220/240V：50/60Hz；100/115V ：50/60/400Hz；	426×177×460（ without handle, pad foot, bottom feet）

Ordering Information：

Instrument list:

Model	Name	Specifications	Quantity	Remark
AV3672B/C/D/E	Vector network analyzer	10MHz～26.5GHz /40GHz /50GHz /67GHz	1 unit	S80 option
AV3640A	Millimeter-wave frequency extension controller		1 unit	
AV3644A	S-parameter test module	50GHz～75GHz	2 units	
AV3645A	S-parameter test module	75GHz～110GHz	2 units	
AV3643Q	S-parameter test module	110GHz～170GHz	2 units	
AV3649	S-parameter test module	170GHz～220GHz	2 units	
AV3649A	S-parameter test module	220GHz～325GHz	2 units	
AV3649B	S-parameter test module	325GHz～500GHz	2 units	
AV32156	5mm WG calibration kits	50GHz～75GHz	1 set	
AV32141	3mm WG calibration kits	75GHz～110GHz	1 set	

AV32155	2mm WG calibration kits	110GHz～170GHz	1 set	
AV20301	1mm WG calibration kits	170GHz～220GHz	1 set	
AV20302	1mm WG calibration kits	220GHz～325GHz	1 set	
AV20301T	0.5THz WG calibration kits	325GHz～500GHz	1 set	
	Connection cables		1 set	Details in the table below

Cable list:

No.	Description and usage	Length(in meter)	Connector	Quantity	Remark
Microwave cable					
A1	RF output of the network analyzer to RF input of the controller	0.6/0.8/1	3.5mm/3.5mm-JJ	1 pc	Low-loss cable, length is optional
A2	LO output of the network analyzer to LO input of the controller	0.6/0.8/1	3.5mm/3.5mm-JJ	1 pc	Low-loss cable, length is optional
A3/A4	RF output of the controller to RF input of the S-parameter test module	1.2/1.5/2	3.5mm/3.5mm-JJ	2 pcs	Low-loss cable, length is optional
A5/A6	LO output of the controller to LO input of the S-parameter test module	1.2/1.5/2	3.5mm/3.5mm-JJ	2 pcs	Low-loss cable, length is optional
IF cable					
C1	IF output of the controller to IF input of the network analyzer	0.6/0.8/1	SMA/SMA	4 pcs	IF cable, length is optional
C2	IF output of the S-parameter test module to IF input of the millimeter-wave (THz) （THz）frequency extension controller	1.2/1.5/2	SMA/SMA	4 pcs	IF cable, length is optional
Communication/power cable					
D1	Test device interface of the network analyzer to test device interface of the millimeter-wave （THz）（THz）frequency extension controller	1	PCL-10125	1 pc	Test device cable
D2	Power output of the	1.2/1.5/2	Round connection	2 pcs	Power

	millimeter-wave （THz）（THz）frequency extension controller to capacitance input of the S-parameter test module		cable		cable, length is optional

Foreign models to be substituted:

Model / Frequency range	CETC41	OML	R&S	VDI
50GHz～75GHz	AV3644A	V15VNA2-T/R	ZVA-Z75	WR15
75GHz～110GHz	AV3645A	V10VNA2-T/R	ZVA-Z110	WR10
110GHz～170GHz	AV3643Q	V06VNA2-T/R	ZVA-Z170	WR6.5
170GHz～220GHz	AV3649	V05VNA2-T/R	ZVA-Z220	WR5.1
220GHz～325GHz	AV3649A	V03VNA2-T/R	ZVA-Z325	WR3.4
325GHz～500GHz	AV3649B	V02.2VNA2-T/R	ZVA-Z500	WR2.2