

BN500 Bench-top Vector Network Analyzer



Overview

BN500 vector network analyzer, with high measurement accuracy and stable test performance, is a super economical test instrument. Its frequency range is 1MHz ~ 6.5GHz, which can be widely used in the R&D, production and testing of RF devices and components in the fields of mobile communication, semiconductor, radio and television, scientific research and education.



Key Facts

- Frequency range: 1MHz~6.5GHz
- Dynamic range: >113 dB @(IFBW=10 Hz), typ. 115 dB
- Low noise level: <-116 dB @(IFBW=10 Hz)
- Low trace noise: 15 mDb rms @(IFBW=3 kHz)
- Measurement speed: 150 μs/point @(IFBW=50 kHz)
- Remote control: LAN



Innovative Features & Benefits

- Multiple analysis functions (such as time domain analysis, etc.)
- Support standard visa communication protocol
- Simple and fast operation interface

Control Elements



Specifications

Measurement range	
Product model	BN500
Impedance	50Ω
Test port connector	N-type, female
Number of test ports	2
Frequency range	1MHz ~ 6.5GHz
Frequency accuracy	±5ppm
Frequency resolution	1Hz
Measurement points	2~10,001
Measurement bandwidth	10Hz to 50kHz
Dynamic range	1MHz ~ 100MHz: 103 dB 100MHz ~ 5.5GHz: 113 dB 5.5GHz ~ 6.5GHz: 103 dB
Measurement parameters	S11, S21, S12, S22
Effective directivity ①	
Effective directivity 40dB	40dB
Effective source match 38dB	38dB
Effective load match 39dB	39dB
① Applies over the temperature range of 23° C ± 5° C after 40 minutes of warming-up, with the full two-port calibration, at output power of 0 dBm and IF bandwidth 10 Hz	
Accuracy of Transmission Measurements (magnitude / phase)	
+ 5dB to +15dB	0.2dB/2°
- 50dB to +5dB	0.1dB/1°
- 70dB to -50dB	0.5dB/3°
- 90dB to -70dB	2.5dB/8°
Accuracy of Reflection Measurements (magnitude / phase)	
-15dB to 0dB	0.4dB/3°
-25dB to -15dB	1.0dB/6°
-35dB to -25dB	3.0dB/20°
Trace stability	
Trace noise(IFBW=3KHz) 15m dB rms	15m dB rms
Temperature stability 0.03dB/°C	0.03dB/°C
Measurement speed	
Measurement time per point (IFBW50kHz)	150μs
Test port output	
Match (W/O System Calibration) 18dB	18dB
Power range	
1MHz ~ 5.5 GHz	- 30dBm to + 5dBm
5.5 ~ 6.5 GHz	- 30dBm to - 5dBm
Power accuracy	±1.5 dB
Power resolution	0.1dB
Test port input	
Match (W/O System Calibration) 18dB	18dB
Max input level +23dBm	+23dBm
Max input voltage +35V	+35V
Noise level	< - 85dBm @(1MHz~100MHz) < - 105dBm @(100MHz~5.5GHz) < - 90dBm @5.5GHz~6.5GHz)

Other parameters	
Display	12.1 inch TFT color LCD, touch screen
External trigger input port	BNC female, input level range: 0~+5 V
External reference input port	BNC female, 10 MHz; 2 dBm \pm 2 dB
External reference output port	BNC female, 10 MHz; 2 dBm \pm 2 dB
Video output	DVI / HDMI
USB port	8 ports (include 2 USB 3.0 ports)
LAN port	10/100/1000 Base T Ethernet, 8-pin
Working temperature	+5° C ~ +40° C
Storage temperature	-45° C ~ +55° C
Working humidity	90% (25° C)
Working pressure	84 to 106.7 kPa
System calibration interval	3 years
Power supply 2	220V \pm 22V (AC) , 50Hz
Power consumption	120W
Dimension	440 \times 230 \times 360 mm

Ordering List

Ordering list	
Model	Description
Console	
BN500	2-port VNA (1MHz~6.5GHz)
Calibration module	
SK-CAL-NM_60	High precision, 6.5G N-type (M) calibration kit T-shaped 4 pieces set
SK-CAL-NF_60	High precision, 6.5G N-type (F) calibration kit T-shaped 4 pieces set
SK-CAL-SMAM_60	High precision, 6.5G SMA (M) calibration kit 4 pieces set
SK-CAL-SMAF_60	High precision, 6.5G SMA (F) calibration kit 4 pieces set
C9502A	2-port 3.5mm female electronic calibration module 9.5GHz
C9502A_N	2-port N-type female electronic calibration module 9.5GHz
RF cable	
T5_RFCAB-NmNm_60101	6.5G high precision 50 Ω N-N cable
T5_RFCAB-NmSMAM_60102	6.5G high precision 50 Ω N-SMA cable
Other options	
BN500-010	Time domain option
BN500-012	Port extension
BN500-1F5	Fixture circuit simulation function

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