

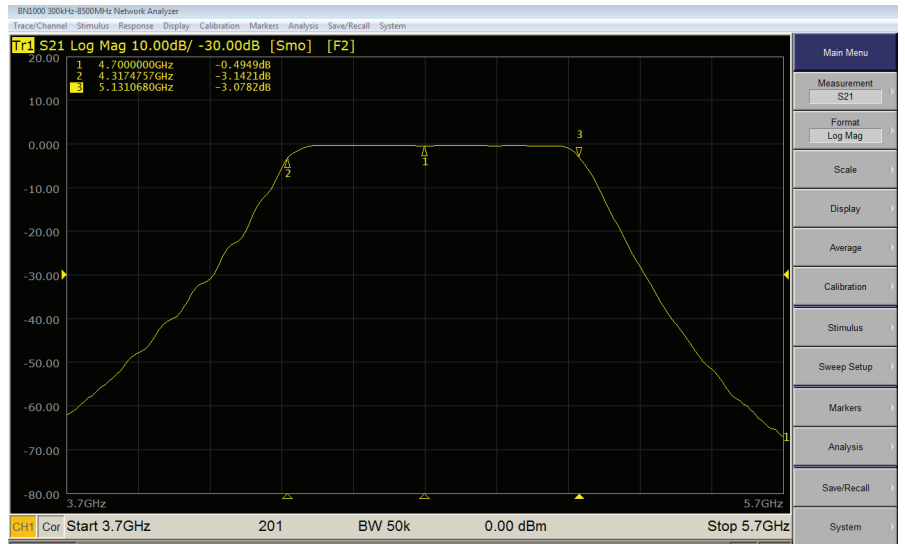
# VECTOR NETWORK ANALYZER

## BN1000



### Overview

The BN1000 vector network analyzer is our benchtop model with high measurement accuracy, stable test performance and fast measurement speed. It is a factory-level test equipment with high value performance capabilities. Covering a frequency range of 300kHz to 8.5GHz, it can be widely used in the R&D and production testing of radio frequency devices and components in fields such as telecommunication, semiconductor, radio, television, scientific researches etc.



Frequency range  
**300kHz~8.5GHz**

Large dynamic range  
**>125 dB @ (IFBW=10 Hz), typ. 130 dB**

Low Trace Noise  
**2m dB rms** (IFBW=3 kHz)

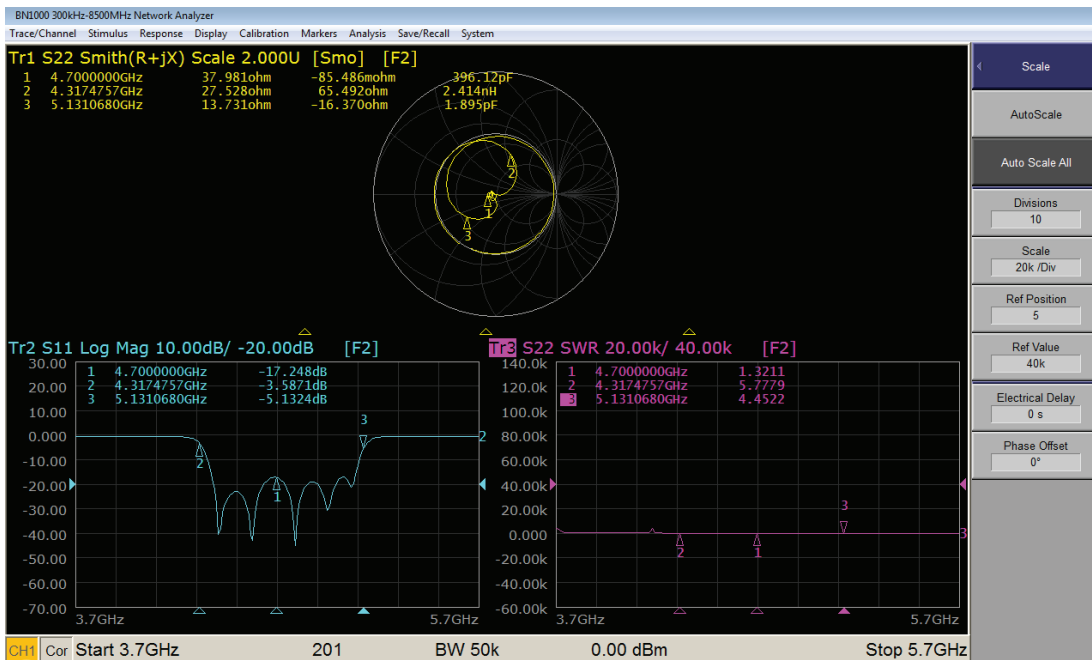
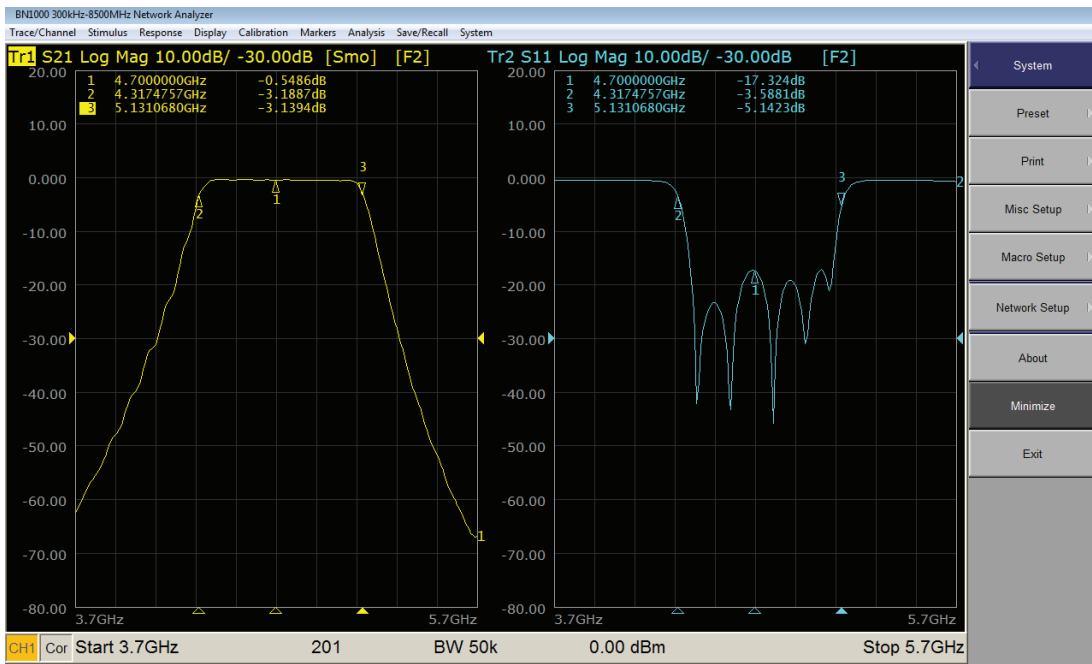
Measurement speed  
**42 μs/point** (IFBW=500 kHz)

High Effective directivity  
**>45dB**

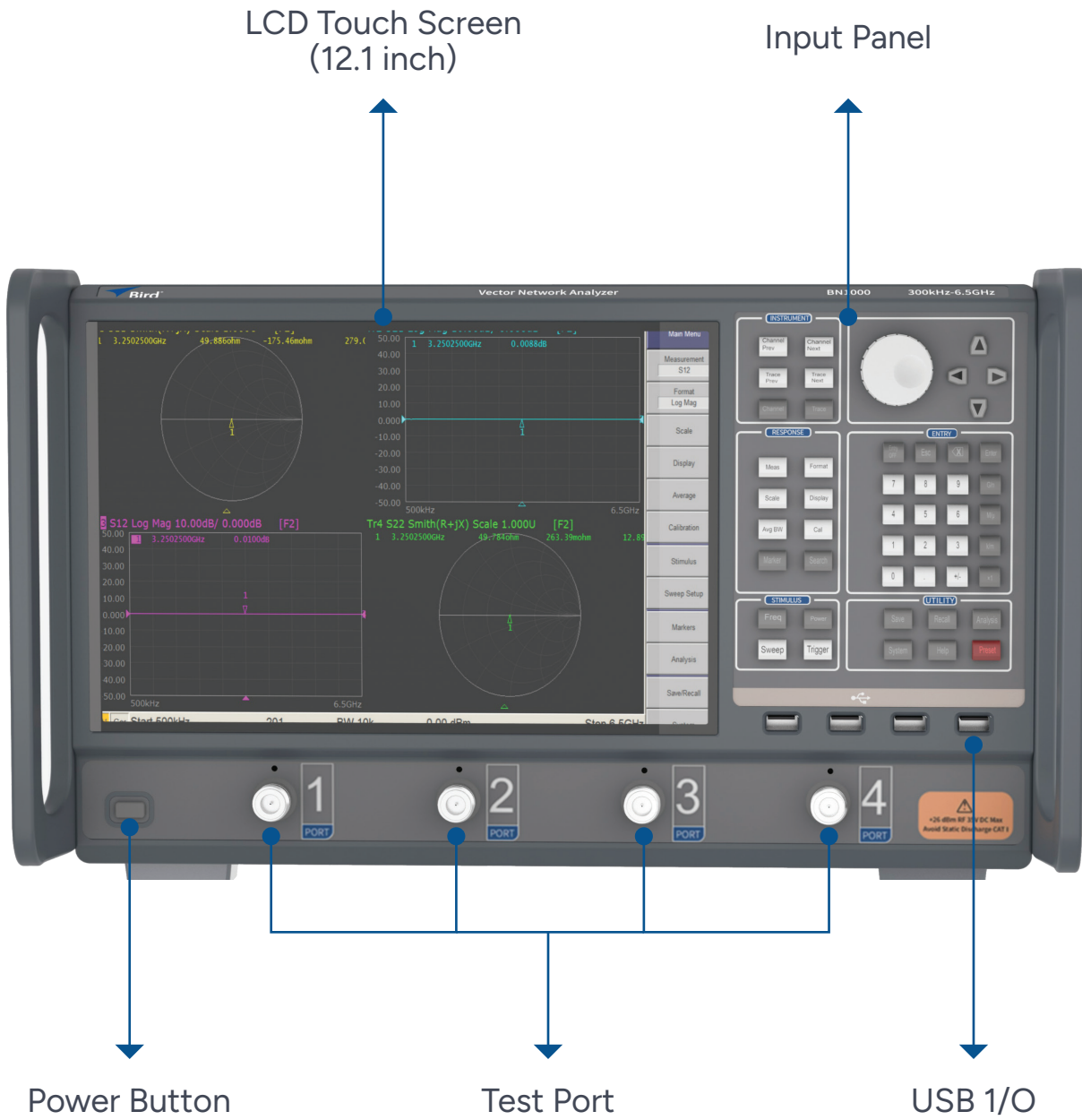
Support Remote Control  
**LAN**

## Innovative Features & Benefits

- Multiple analysis options (such as time domain analysis and circuit simulation function)
- Support standard VISA communication protocol
- Efficient communication interface for multi-types testing instruments
- Support expanding to 4 ports



## Control Element



## Specifications

Testing Range	Description
Model	BN1000
Impedance	50Ω
Test port connector	N-type, female
Number of test port	2/4
Frequency range	300kHz to 6.5GHz (option 265/465)   300kHz to 8.5GHz (option 285/485)
Frequency accuracy	±5ppm(option 0.05ppm)
Frequency resolution	1Hz
Number of measurement points	2 to 20001
Measurement bandwidths	1Hz to 2MHz
Dynamic range	97dB, typ. 115 dB (100kHz to 300kHz)   124dB, typ. 129 dB (6GHz to 7GHz) 112dB, typ. 115 dB (300kHz to 10MHz)   123dB, typ. 128 dB (7GHz to 8.5GHz) 125dB, typ. 130 dB (10MHz to 6GHz)
Measurement parameters	S11   S21   S12   S22

Measurement accuracy	Description
<b>Accuracy of Transmission Measurements (magnitude / phase)</b>	
+5dB to +15dB	0.2dB/2°
-50dB to +5dB	0.1dB/1°
-70dB to -50dB	0.5dB/3°
-90dB to -70dB	2.5dB/8°
<b>Accuracy of Reflection Measurements (magnitude / phase)</b>	
-15dB to 0dB	0.4dB/3°
-25dB to -15dB	1.0dB/6°
-35dB to -25dB	3.0dB/20°

Trace Stability	Description
Trace Noise (IFBW=3kHz)	2mdB rms
Temperature Stability	0.01dB/°C

Effective Directivity <sup>1</sup>	Description
Effective directivity	38 to 49dB
Effective source match	35 to 41dB
Effective load match	37 to 49dB

<sup>1</sup> 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 0dBm and IF bandwidth 10Hz.



## Specifications

Measurement Speed	Description	
Measurement time per point	42µs	
Source to receiver port switch over time	<10ms	
Sweep points (IFBW=30kHz)	51 201	401 1601
Without calibration (300kHz to 10MHz)	51points: 13ms 201points: 52ms	401points: 104ms 1601points: 413ms
Full 2-port calibration (10MHz to 6.5GHz)	51points: 34ms 201points: 73ms	401points: 125ms 1601points: 434ms

Test Port Output	Description
Match(W/O system error correction)	18dB
Power range	-50dBm to + 5dBm (100kHz to 300kHz) -50dBm to + 10dBm (300kHz to 7GHz) -50dBm to + 8dBm (7GHz to 8.5GHz)
Power accuracy	±1.5dB
Power resolution	0.05dB

Test Port Input	Description
Match (W/O System Calibration)	18dB
Max input level	+26dBm
Max input voltage	+35V
Noise level	-97dBm/Hz (100kHz to 300kHz) -107dBm/Hz (300kHz to 10MHz) -123dBm/Hz (10MHz to 5GHz)   -124dBm/Hz (5GHz to 6GHz) -120dBm/Hz (6GHz to 8.5GHz)

## Specifications

Other Parameters	Description
Display	12.1 inch TFT color LCD, touch screen
External trigger input port	BNC female, input level range: 0 to +5V
External reference input port	BNC female, 10 MHz;2dBm ± 2dB
External reference output port	BNC female, 10 MHz;2dBm ± 2dB
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 to +40° C
Storage temperature	-20° C to +60°C
Working humidity	90% (25°C)
Working pressure	84 to 106.7kPa
System calibration interval	3 years
Power supply	220 ± 22V (AC), 50Hz
Power consumption	130W
Dimension	440×230×360mm
Warranty	3 years

## Ordering List

Model	Description
BN1000-265	300kHz to 6.5GHz, Dual-port Bench-top VNA
BN1000-465	300kHz to 6.5GHz, 4-Port Bench-top VNA
BN1000-285	300kHz to 8.5GHz, Dual-port Bench-top VNA
BN1000-485	300kHz to 8.5GHz, 4-port Bench-top VNA

Calibration module	Description
E209A	Auto calibration kit, 2 ports, 100k~8.5G, 3.5mm Type, OPT:MM/FF/MF
E409A	Auto calibration kit, 4 ports, 100k~8.5G, 3.5mm Type, OPT:MM/FF/MF
E209C	Auto calibration kit, 2 ports, 100k to 8.5G, N Type
E409C	Auto calibration kit, 4 ports, 100k to 8.5G, N Type
SK-CAL-NSet-60	High Precision, DC to 6.5GHz, 50Ω, N-type Calibration kit
SK-CAL-NM_60	4 Male Calibration Kits, (m)N-Combination, Open-Short-Load-Through included
SK-CAL-NF_60	4 Female Calibration Kits, (f)N-Combination, Open-Short-Load-Through included
SK-CAL-SMASet-60	High Precision, DC to 6.5GHz, 50Ω, SMA-type Calibration kit Set, case included
SK-CAL-SMAM_60	4 Male Calibration Kits, (m)SMA-Combination, Open-Short-Load-Through included
SK-CAL-SMAF_60	4 Female Calibration Kits, (f)SMA-Combination, Open-Short-Load-Through included
SK-CAL-NSet-90	High Precision, DC to 9GHz, 50Ω, N-type Calibration kit
SK-CAL-NM_90	4 Male Calibration Kits, (m)N-Combination, Open-Short-Load-Through included
SK-CAL-NF_90	4 Female Calibration Kits, (f)N-Combination, Open-Short-Load-Through included
SK-CAL-SMASet-90	High Precision, DC to 9GHz, 50Ω, SMA-type Calibration kit Set, case included
SK-CAL-SMAM_90	4 Male Calibration Kits, (m)SMA-Combination, Open-Short-Load-Through included
SK-CAL-SMAF_90	4 Female Calibration Kits, (f)SMA-Combination, Open-Short-Load-Through included

RF Cable	Description
T5_RFCAB-NmNm_18101	Test Cable-DC to 18GHz, 50Ω, N(m)-N(m), 1m length
T5_RFCAB-NmSMAM_18102	Test Cable-DC to 18GHz, 50Ω, N(m)-SMA(m), 1m length
T5_RFCAB-NmNm_60101	Test Cable-DC to 6.5GHz, 50Ω, N(m)-N(m), VSWR<1.1, IL<1.2dB, 1m length
T5_RFCAB-NmSMAM_60101	Test Cable-DC to 6.5GHz, 50Ω, N(m)-SMA(m), VSWR<1.1, IL<1.2dB, 1m length

Other options	Description
BN1000-010	Time domain option
BN1000-1E5	High stability clock option 0.05ppm
BN1000-1F5	Fixture circuit simulation function

## Abbreviation

SOL	Short, Open & Load
N(m)	N-type with male connector
N(f)	N-type with female connector
SMA(m)	SMA with male connector
SMA(f)	SMA with female connector



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