

Technical Data Sheet

Bode 100 Revision 1

Vector Network Analyzer



V 2.21
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Contact support@omicron-lab.com for technical support.

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1. Signal Source (OUTPUT)

Waveform	Sinusoidal
Frequency range	1 Hz to 40 MHz
Signal level range	-30 dBm to 13 dBm 14 mVrms to 2 Vrms (no load) 7 mVrms to 1 Vrms (50 Ω load)
Source level accuracy	± 0.3 dB (1 Hz to 1 MHz) ± 0.6 dB (1 MHz to 40 MHz)
Source level frequency response (flatness)	± 0.3 dB (typical, referring to 10 MHz)
Frequency stability	± 15 ppm (< 1 year after adjustment) ± 25 ppm (< 3 years after adjustment) $\pm 0.5 \cdot$ step size
Frequency step size / resolution	34.92 mHz
Source impedance	50 Ω
Return loss	> 28 dB
Maximum reverse signal / power	0.5 W = 5 Vrms (≤ 3.3 Vdc recommended)
Connector type	BNC

2. Inputs (CH1, CH2)

Frequency range	1 Hz to 40 MHz
Input impedance (software switchable)	High: 1 M Ω (ac-coupled) Low: 50 Ω (dc-coupled)
1 M Ω input impedance	1 M Ω \pm 2 % (ac-coupled)
Input capacitance	40...55 pF
50 Ω input impedance return loss	> 25 dB (dc to 40 MHz)
Receiver bandwidth (RBW) software selectable	1 Hz, 3 Hz, 10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz
Input attenuators (software selectable)	0 dB, 10 dB, 20 dB, 30 dB, 40 dB
Full-scale ac input signal	100 mVrms @ 0 dB input attenuator 316 mVrms @ 10 dB input attenuator 1 Vrms @ 20 dB input attenuator 3.16 Vrms @ 30 dB input attenuator 10 Vrms @ 40 dB input attenuator
Maximum dc voltage (1 M Ω input impedance)	50 V
Maximum dc voltage (50 Ω input impedance)	7 V
Input channel dynamic range (typical)	> 100 dB (@ 10 Hz RBW)
Connector type	BNC

3. General

Noise floor (S21 measurement) RBW = 10 Hz, P _{SOURCE} = 13 dBm Attenuator CH2: 0 dB	1 Hz to 5 kHz: - 100 dB (typical) 5 kHz to 50 kHz: - 110 dB (typical) 50 kHz to 20 MHz - 115 dB (typical) 20 MHz to 40 MHz: - 110 dB (typical)
Gain error (User-Range calibrated)	< 0.1 dB
Phase error (User-Range calibrated)	< 0.5°
Warm-up time (3τ)	62 min*
USB connector	Type B

*...specifications are valid after device has warmed up and reached a stable temperature

Dimensions (width × height × depth)	26 x 5 x 26.5 cm 10.25 x 2 x 10.5 inch
Weight	< 2 kg / < 4.4 lb

4. Environmental

Temperature range	Storage	-35...+60 °C / -31...+140 °F
	Operating	+5...+40 °C / +41...+104 °F
	For specification	23 °C ± 5 °C / 73 °F ± 18 °F
Relative humidity	Storage	20...90 %, non-condensing
	Operating	20...80 %, non-condensing

5. PC Requirements for Bode Analyzer Suite

Processor	Intel Core-i Dual-Core (or similar)
Memory (RAM)	2 GB, 4 GB recommended
Graphics resolution	Super VGA (1024 x 768) higher resolution recommended
Graphics card	DirectX 11 with Direct2D support
USB interface	USB 1.1 or higher
Operating system	Windows 10, 11

6. Power Requirements

Wide-range mains power adapter

Line input voltage / frequency / current	100...240 V / 47...63 Hz / < 0.5 A
Output voltage / current / power	18 Vdc / 1 A / 18 W

Bode 100

Power demand	< 10 W
Supply voltage range	+ 10 Vdc to +24 Vdc
Coaxial power socket	Inner diameter 2.5 mm Outer diameter 5.5 mm Inner conductor...positive
Low supply voltage shutdown	8.25 Vdc (typical)

7. Absolute Maximum Ratings (device will be destroyed)

Maximum supply voltage	+28 Vdc
Maximum supply reverse voltage	-28 Vdc
Maximum input signal at CH1 or CH2 (low impedance, 50 Ω)	1 W (= 7 Vrms)
Maximum ac input signal at CH1 or CH2 (high impedance, 1 MΩ)	50 Vrms (1 Hz to 1 MHz)
	30 Vrms (1 MHz to 2 MHz)
	15 Vrms (2 MHz to 5 MHz)
	10 Vrms (5 MHz to 10 MHz)
	7 Vrms (10 MHz to 40 MHz)
Maximum dc input signal at CH1 or CH2 (high impedance, 1 MΩ)	- 50 V...+ 50 V
Maximum return power at the OUTPUT connector	0.5 W (= 5 Vrms)

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