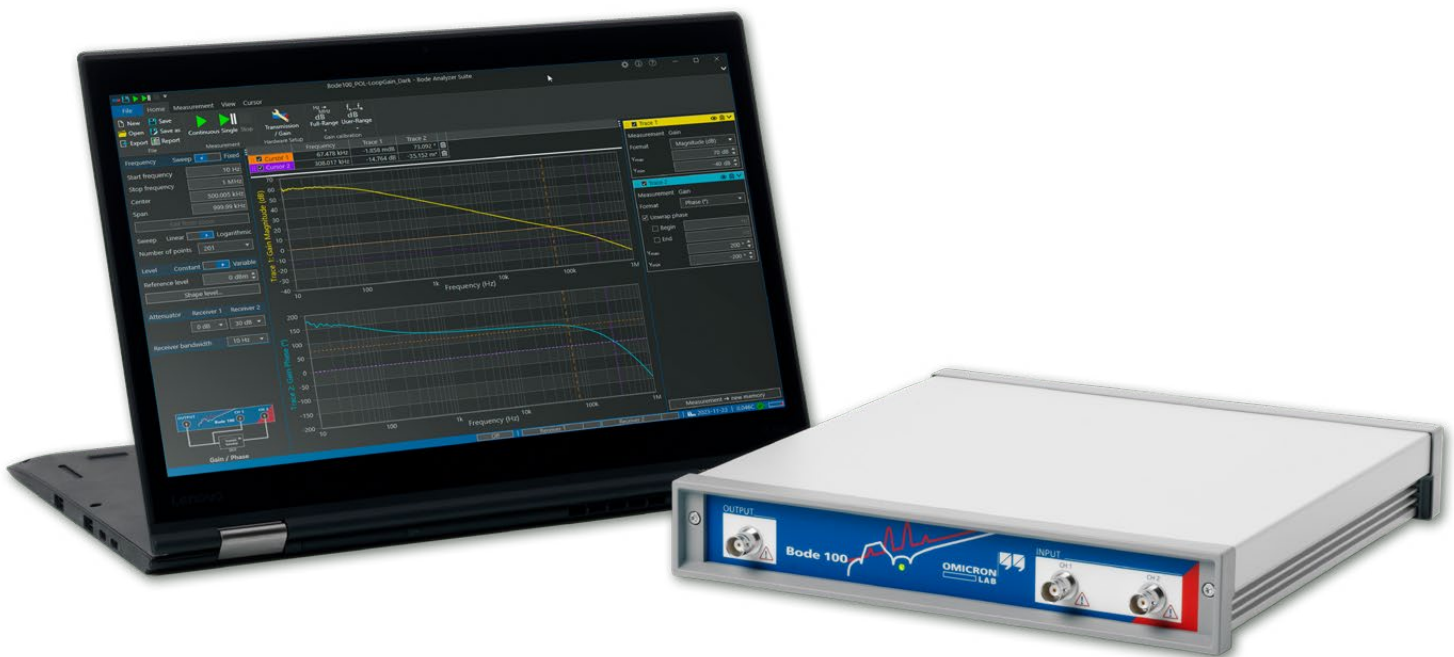


# Technical Data Sheet

## Bode 100 Revision 2

### Vector Network Analyzer



V1.4

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Visit [www.omicron-lab.com](http://www.omicron-lab.com) for more information.

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## 1. Signal Source (OUTPUT)

Waveform	Sinusoidal
Frequency range	1 Hz to 50 MHz
Signal level range	-30 dBm to 13 dBm 14 mV <sub>RMS</sub> to 2 V <sub>RMS</sub> (no load) 7 mV <sub>RMS</sub> to 1 V <sub>RMS</sub> (50 Ω load)
Source level accuracy	± 0.3 dB (1 Hz to 1 MHz) ± 0.6 dB (1 MHz to 50 MHz)
Source level frequency response (flatness)	± 0.3 dB (typical, referring to 10 MHz)
Frequency accuracy after adjustment	± 2 ppm ± quantisation error ( = 0.5 · step size )
Frequency stability	± 2 ppm (< 1 year after adjustment) ± 4 ppm (< 3 years after adjustment)
Frequency step size / resolution	0.00605 Hz (1 Hz to 100 Hz) 0.03632 Hz (100 Hz to 50 MHz)
Source impedance	50 Ω
Return loss (1 Hz to 50 MHz)	> 30 dB, > 35 dB (typical)
Spurious signals & harmonics	< -55 dBc (typical)
Maximum reverse signal / power	0.5 W = 5 V <sub>RMS</sub> (≤ 3.5 Vdc recommended)
Connector type	BNC

## 2. Inputs (CH1, CH2)

Frequency range	1 Hz to 50 MHz
Input impedance (software switchable)	<b>High:</b> 1 M $\Omega$ (ac-coupled) <b>Low:</b> 50 $\Omega$ (dc-coupled)
1 M $\Omega$ input impedance	1 M $\Omega$ $\pm$ 2%    40...55 pF
50 $\Omega$ input impedance return loss	> 28 dB, > 35 dB typical (1 Hz to 50 MHz)
Receiver bandwidth (RBW) software selectable	1 Hz, 3 Hz, 10 Hz, 30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 5 kHz
Input attenuators (software selectable)	0 dB, 10 dB, 20 dB, 30 dB, 40 dB
Full-scale ac input signal	100 mV <sub>RMS</sub> @ 0 dB input attenuator 316 mV <sub>RMS</sub> @ 10 dB input attenuator 1 V <sub>RMS</sub> @ 20 dB input attenuator 3.16 V <sub>RMS</sub> @ 30 dB input attenuator 10 V <sub>RMS</sub> @ 40 dB input attenuator
Input channel sensitivity (typical)	1 $\mu$ V <sub>RMS</sub> (@ 0dB attenuator, 10 Hz RBW)
Maximum dc voltage (1 M $\Omega$ input impedance)	50 V
Maximum dc voltage (50 $\Omega$ input impedance)	7 V
Input channels dynamic range	> 100 dB (@ 10 Hz RBW)
Noise floor (S21 measurement) RBW = 10 Hz, P <sub>SOURCE</sub> = 13 dBm, Attenuator CH1: 20 dB, CH2: 0 dB	1 Hz to 10 kHz: -115 dB (typical) 10 kHz to 10 MHz: -125 dB (typical) 10 MHz to 50 MHz: -105 dB (typical)
Gain error	< 0.1 dB (User-Range calibrated)
Phase error	< 0.5° (User-Range calibrated)
Connector type	BNC

### 3. PC Requirements

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 2.0 or higher
Operating system	Windows 10 & 11

### 4. Power Requirements

#### Wide-range mains power adapter

Input voltage / frequency	100...240 V / 47...63 Hz
Output voltage / current	18 Vdc / 1 A

#### Bode 100 power requirements

Supply voltage range	+9 Vdc to +24 Vdc
Power demand	< 10 W
Supply current	at 12 V: 580 mA (typical) at 18 V: 390 mA (typical) at 24 V: 290 mA (typical)
Low supply voltage shut-down	8.25 V (typical)
Power connector / socket	Coaxial power socket Inner diameter 2.5 mm Outer diameter 5.5 mm
Connector polarity	Inner connector ... positive Outer connector ... ground

## 5. Environmental Requirements

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

## 6. General

USB connector	Type B
Dimensions (width × height × depth)	26 x 5 x 27 cm 10.25 x 2 x 10.65 inch
Weight - Bode 100	1.9 kg/4.2 lb
Weight - Accessories	< 0.5 kg/1.1 lb

## 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 V <sub>RMS</sub> )
Maximum ac input signal at CH1 or CH2 (high impedance, 1 MΩ)	50 V <sub>RMS</sub> 1 Hz to 1 MHz
	30 V <sub>RMS</sub> 1 MHz to 2 MHz
	15 V <sub>RMS</sub> 2 MHz to 5 MHz
	10 V <sub>RMS</sub> 5 MHz to 10 MHz
	7 V <sub>RMS</sub> 10 MHz to 50 MHz
Maximum dc input signal at CH1 or CH2 (high impedance, 1 MΩ)	50 V
Maximum return power at the OUTPUT connector	0.5 W (= 5 V <sub>RMS</sub> )



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