Vector Network Analyzers

Bode 100 - 1 Hz to 50 MHz

Bode 500 - mHz to 450 MHz

Transmission/Reflection
Measure S-parameters of filters such as EMI filters, cables, amplifiers, antennas and more.

Resonance Frequency
Detect even very narrow, high-Q resonance peaks of piezo elements, RFID and NFC transponders.

Frequency Response
Measure the complex transfer function (Gain/Phase) of active and passive electronic systems.

Bode Analyzer Suite
Easy-to-use PC software with advanced analysis features like circuit fitting, math expressions and more.

Complex Impedance
Analyze passive electronic components and active electronic circuits.

Stability Analysis
Analyze electronic control systems such as power supplies. Generate Bode diagrams and Nyquist plots.

Automated Measurements
Integrate the analyzer into automated systems via its versatile automation capabilities.

OMICRON LAB

Smart Measurement Solutions®

Bode Analyzer

The Bode 100 / Bode 500 system consists of hardware and software. The high quality hardware ensures **accurate** measurement results in a **wide frequency range** up to 450 MHz. The **portable** and **compact** design enables you to test wherever you want. Due to the **versatile** system design, the Bode Analyzers work as **three devices in one**:

1. Vector Network Analyzer

The vector network analyzer function allows you to measure:

- Swept S-parameters in the 50 Ω system
- Reflection coefficient and return loss
- Insertion loss of filters
- Group delay characteristics
- Influence of termination on amplifiers

2. Frequency Response Analyzer

The Bode Analyzers serve as a Gain/Phase meter and are ideally suited to measure:

- Transfer functions of electronic circuits
- Stability of control systems such as DC/DC converters and voltage regulators
- Power Supply Rejection Ratio (PSRR) respectively Audio Susceptibility

3. Impedance Analyzer

Easily measure and analyze the impedance spectrum of:

- Electromagnetic devices such as transformers and inductors
- Capacitors and their parasitics
- Power delivery networks (PDN)
- Ultrasonic and piezo electric components
- Very high Q-circuits such as quartz crystals and oscillators
- Resonance frequency of RFID, NFC and wireless power systems
- DC/DC converter input and output

Your benefits:

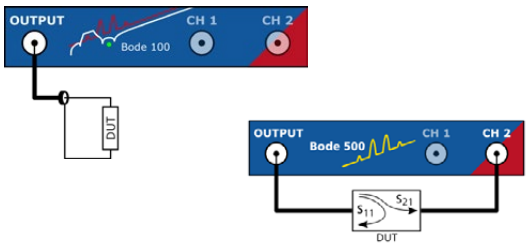
- One device for multiple applications
- Accurate measurement results
- Simple setup - fast results
- Easy data processing
- Automated measurements

Bode Analyzer Suite

You can fully control the Bode Analyzer hardware via the Bode Analyzer Suite (BAS). The BAS is an **easy-to-use**, intuitive software, which is **included** in the Bode 100 / Bode 500 delivery. It allows you to control the analyzer from your Windows PC. The BAS helps you to quickly **measure and analyze** your device under test. It offers great functions to **save**, **document and share** your measurement results.

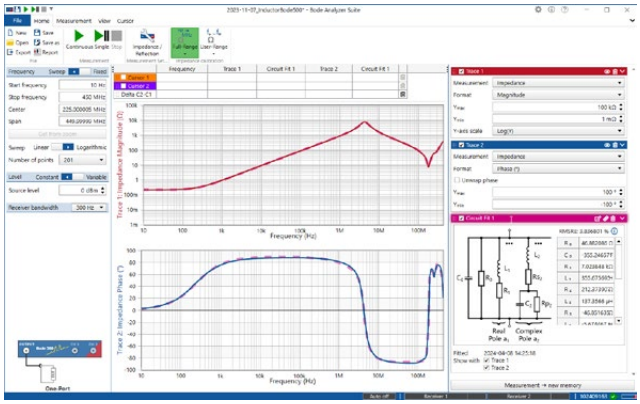
Measurement Modes

Pre-defined measurement modes provide the correct hardware setup of your Bode Analyzer, ensuring accurate measurement results in your desired application.



Analysis

To understand and optimize your system under test, the BAS offers all kind of chart formats, like Smith, Polar, Nyquist and Bode plots. You can extract all required results and parameters from your measurements using a great variety of analysis features like circuit fitting and mathematical expressions.



Documentation

The BAS helps you to easily extract the measurement results for your documentation. You can share and archive your results by:

- Exporting CSV, Excel, Touchstone or SPICE netlist files.
- Copying and pasting the results, charts and settings into your documents.
- Generating a PDF report containing all measurement graphs and device settings.
- Saving your entire measurement including the device settings to a *.bode3 file which can be viewed on any Windows PC having the Bode Analyzer Suite 3.X installed.

Integration & Automation

Easily automate your Bode measurements using:

- SCPI commands
- LabVIEW™ 2015 or newer (currently Bode 100 only, Bode 500 coming soon)
- .NET NuGet package (Bode 100 only)
- OLE/COM controllers such as VBA, MATLAB®,C++… (Bode 100 only)

Technical Data

	Bode 100	Bode 500
Signal Source	BNC connector	N connector
Frequency range:	1 Hz to 50 MHz	mHz* to 450 MHz
Output impedance:	50 Ω	50 Ω
Waveform:	Sinusoidal signal	Sinusoidal signal
Signal level:	-30 dBm to 13 dBm	-50 dBm to 16 dBm
Inputs: CH1, CH2	BNC connector	N connector
Input impedance:	50 Ω or 1 MΩ || 50 pF	50 Ω or 1 MΩ || 25 pF
Receiver bandwidth:	1 Hz to 5 kHz	1 Hz to 15 kHz*
Input attenuators:	0, 10, 20, 30 & 40 dB	0 & 20 dB
Input sensitivity:	100 mV_{RMS} full scale @ 0 dB	1 V_{RMS} full scale @ 0 dB
Dynamic range:	> 100 dB	120 dB*
Gain error:	< 0.1 dB (calibrated)	< 0.1 dB (calibrated)*
Phase error:	< 0.5° (calibrated)	< 0.5° (calibrated)*
General		
Weight:	1.9 kg / 4.2 lbs	2.2 kg / 4.9 lbs
Dimensions:	26 x 5 x 27 cm 10.25 x 2 x 10.65 inch	26 x 5 x 27.5 cm 10.25 x 2 x 10.85 inch
DC power requirement:	9 V - 24 V / < 10 W	9 V - 24 V / < 25 W USB-PD, PoE+
Interface:	USB 2.0 (USB-B)	USB 2.0 (USB-C), Ethernet
Operating system:	Windows 10 & 11	Windows 10 & 11

**preliminary information*

Bode 100 - Delivery Includes:

Bode Analyzer Suite
Printed Quick Start Guide (English)
Wide-range AC power supply
USB-A to USB-B cable
4 x BNC cable 50 cm (m - m)
1 x BNC T-adapter (f - f - f)
1 x BNC thru adapter (f - f)
1 x BNC 50 Ω load (m)
1 x BNC short circuit (m)
Test objects: quartz filter and IF filter on PCB

Bode 500 - Delivery Includes:

Bode Analyzer Suite
Printed Quick Start Guide (English)
Wide-range AC power supply
USB-A to USB-C cable
1 x N thru adapter (f - f)
1 x N short adapter (m)
1 x N 50 Ω load (m)
2 x N-N cable 50 cm (m - m)
2 x N-BNC adapter (m - f)
1 x BNC T-adapter (f - f - f)
3 x N-BNC cable 50 cm (m - m)
Test objects: quartz filter and IF filter on PCB