

R&S®RTx-K36 frequency response analysis (Bode plot) option

For R&S®RTB2000, R&S®RTM3000 and R&S®RTA4000 oscilloscopes



Key specifications

Frequency range:	10 Hz to 25 MHz
Test modes	Fixed or custom amplitude profile
Points per decade	10 to 500 points
Plots	Logarithmic gain and linear phase
Analysis	Waveform markers and tabular view of test results

Customize your oscilloscope with a frequency response analysis option

- Easily and quickly analyze low frequency response on your oscilloscope with the R&S®RTx-K36 frequency response analysis (Bode plot) option.
- The R&S®RTx-K36 frequency response analysis (Bode plot) option uses the oscilloscope's built-in waveform generator to create stimulus signals ranging in frequency from 10 Hz to 25 MHz. Measuring the ratio of DUT signal input and output at each test frequency, the oscilloscope plots gain and phase logarithmically.
- Easily export and/or save results as an image or in .csv format for documentation or additional analysis.

Common uses

Characterize the frequency response of a variety of electronics such as passive filters and amplifier circuits

Determine the gain and phase margin of switched-mode power supplies or linear regulators to determine the control loop stability

Measure the power supply rejection ratio or power supply ripple rejection (PSRR) to indicate the power supply's output stability

Your benefit

Integrated low frequency response analysis on your scope

Low entry price

Easy documentation

Features

Use your oscilloscope to make low frequency phase and gain measurements. The application supports lowest frequencies from 10 Hz to 25 MHz.

The application plus a two-channel R&S®RTB2000 costs a fraction of the cost of a dedicated network analyzer. The application also runs on the R&S®RTM3000, and R&S®RTA4000 models for users who need a higher bandwidth oscilloscope.

Save test results to a USB device or to a PC (connected via LAN or USB MTP) for documentation.

► For more information, visit
www.rohde-schwarz.com/scope-bode

Profiling the amplitude



Profiling the amplitude output level of the generator. This is helpful to suppress the noise behavior of your DUT when measuring control loop response or power supply rejection ratio and to improve the signal-to-noise-ratio.

Improve resolution



Choose the points per decade to set up and modify the resolution of your plot. The oscilloscope supports up to 500 points per decade. Drag markers to the desired position directly on the plotted trace and easily determine the phase and gain margin.

Measurement table

Index	Frequency	Gain	Phase	Amplitude
0.1	0.1 Hz	0.00 dB	0.00°	100mVpp
0.2	0.2 Hz	0.00 dB	0.00°	100mVpp
0.5	0.5 Hz	0.00 dB	0.00°	100mVpp
1	1 Hz	0.00 dB	0.00°	100mVpp
2	2 Hz	0.00 dB	0.00°	100mVpp
5	5 Hz	0.00 dB	0.00°	100mVpp
10	10 Hz	0.00 dB	0.00°	100mVpp
20	20 Hz	0.00 dB	0.00°	100mVpp
50	50 Hz	0.00 dB	0.00°	100mVpp
100	100 Hz	0.00 dB	0.00°	100mVpp

The measurement results table provides detailed information about each measured point (frequency, gain and phase shift). When using markers, the associated row of the result table is highlighted. For reporting, quickly save screen shots, table results, or both to a USB device.

Low-noise accessories



Accurate control of loop response or power supply rejection ratio characterization highly depends on choosing the right probes since the peak-to-peak amplitudes of both V_{in} and V_{out} can be very low at some test frequencies. The low-noise R&S RT-ZP1X 38 MHz bandwidth 1:1 passive probes with low noise improve dynamic range.

Model configuration information

Base unit	Ordering No.
R&S®RTB2002 oscilloscope, 70 MHz, 2 ch.	1333.1005.02
R&S®RTB2004 oscilloscope, 70 MHz, 4 ch.	1333.1005.04
R&S®RTM3002 oscilloscope, 100 MHz, 2 ch.	1335.8794.02
R&S®RTM3004 oscilloscope, 100 MHz, 4 ch.	1335.8794.04
R&S®RTA4004 oscilloscope, 200 MHz, 4 ch.	1335.7700.04
Software options	Ordering No.
R&S®RTB-K36 frequency response analysis (Bode plot) option	1335.8007.02
R&S®RTM-K36 frequency response analysis (Bode plot) option	1335.9178.02
R&S®RTA-K36 frequency response analysis (Bode plot) option	1335.7975.02
Probes	
R&S®RT-ZP1X, 38 MHz, 1 MΩ, 1:1	1333.1370.02
Low frequency injection transformers	
Picotest J2120A for PSRR (10 Hz to 10 MHz)	
Picotest J2100A (1 Hz to 5 MHz) or J2101A (10 Hz to 45 MHz)	
Omicron WIT100 wide injection transformer (1 Hz to 10 MHz)	
Omicron B-LFT100 (1 Hz to 30 KHz)	