



R&S®RTx-K36: FREQUENCY RESPONSE ANALYSIS (BODE PLOT) OPTION 1)

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 determine the power supply's output stability

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 the 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 save results as an image or in CSV format for documentation or additional analysis

Your benefit	Features
Integrated low frequency response analysis on your scope	Use your oscilloscope to make low frequency phase and gain measurements. The application supports frequencies from 10 Hz to 25 MHz
Low entry price	The application with a two-channel R&S®RTB2000 is available for 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
Easy documentation	Save test results to a USB device or to a PC (connected via LAN or USB MTP) for documentation

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

Profile the amplitude



Profiling the amplitude output level of the generator helps suppress the noise behavior of your DUT when measuring the control loop response or PSRR. Profiling also improves the signal-to-noise ratio.

Measurement table



The measurement results table provides detailed information about each measured point (frequency, gain and phase shift). When using markers, the applicable row of the results table is highlighted. Screenshots and table results can be quickly saved to a USB device for reporting.

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.

Low-noise accessories



Accurate control of loop response or PSRR 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 1:1 passive, 38 MHz bandwidth probe improves dynamic range.

Model configuration information

Base model	Order No.
R&S®RTB2002 oscilloscope, 70 MHz, 2 channels	1333.1005.02
R&S®RTB2004 oscilloscope, 70 MHz, 4 channels	1333.1005.04
R&S®RTM3002 oscilloscope, 100 MHz, 2 channels	1335.8794.02
R&S®RTM3004 oscilloscope, 100 MHz, 4 channels	1335.8794.04
R&S®RTA4004 oscilloscope, 200 MHz, 4 channels	1335.7700.04

Software option

Software option	Order 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

Application bundle

Application bundle	Order No.
R&S®RTB-PK1 consists of the following options: -K1, -K2, -K3, -K15, -K36, -B6	1333.1092.02
R&S®RTM-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6	1335.8942.02
R&S®RTM-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6	1335.9190.02
R&S®RTA-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6	1335.7775.02
R&S®RTA-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6	1335.7998.02


Probe

Probe	Order No.
R&S®RT-ZP1X, 38 MHz, 1 MΩ, 1:1	1333.1370.02

Low frequency injection transformers

Picostest J2120A for PSRR (10 Hz to 10 MHz)
Picostest 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)

All options can be retrofitted

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