

Scopes Check Coms Signals to 6 GHz

With outstanding measurement power, this family of oscilloscopes provides frequency- and time-domain functionality and flexible triggering for analysis of complex signals.

When is an oscilloscope more than “just” a scope? When it is a member of the R&S RTO2000 oscilloscope family from Rohde & Schwarz, with the capabilities to capture and show signals in the time and frequency domains at bandwidths to 6 GHz. With their high performance levels, multiple-domain flexibility, large display screens, and intuitive functionality, these oscilloscopes can reveal the finest details about signals within their capture ranges—be they analog, digital, or powerline (see photo).

The R&S RTO2000 scope family includes two- and four-channel models with 3-dB analog bandwidths from 600 MHz to 6 GHz (see table). The highest-frequency model is the R&S RTO2064, with maximum



The R&S RTO2000 family of oscilloscopes includes models with two and four channels and analog bandwidths from 0.6 to 6.0 GHz, along with a host of functions that show signals in frequency and time domains.

bandwidth of 4 GHz when four channels are used and 6 GHz when two channels are used. The maximum sampling rate is 10 GSamples/s on each channel for all models.

The only exceptions are the R&S RTO2044 and R&S RTO2064 oscilloscopes, which provide maximum sampling rate of 10 GSamples/s on each channel for all four channels and 20 GSamples/s per channel in two-channel measurement mode. The combination of a low-noise front end and 10-GSamples/s analog-to-digital conversion enables the oscilloscopes to capture and display 1 million waveforms/s.

The vertical resolution is 8 b, with 16-b resolution available for some reduction in sampling rate. A high-resolution option

THE R&S RTO2000 OSCILLOSCOPES AT A GLANCE

Model	Number of channels	Bandwidth (GHz) (ps)	Rise/fall time
R&S RTO2002	2	≥0.6	510
R&S RTO2004	4	≥0.6	510
R&S RTO2012	2	≥1	280
R&S RTO2014	4	≥1	280
R&S RTO2022	2	≥2	140
R&S RTO2024	4	≥2	140
R&S RTO2032	2	≥3	116
R&S RTO2034	4	≥3	116
R&S RTO2044	4	≥4	100
R&S RTO2064	4	≥6 (on 2 channels)	76

(the R&S RTO-K17 option) is also available, which provides 16-b vertical resolution while preserving the highest sampling rate. The 50- Ω and 1-M Ω input ports for each oscilloscope are rated for maximum input voltages of 5 and 150 V RMS, respectively.

The input sensitivity can be set from 1 mV/div to 10 V/div for the entire analog bandwidth of an instrument. The isolation between channels is better than 60 dB to 2 GHz, better than 50 dB to 4 GHz, and better than 40 dB to 6 GHz.

The R&S RTO2000 family of oscilloscopes is built around a 12.1-in. capacitive touch-sensitive color display screen, with integrated spectrum analysis and spectrogram display functions for performing signal analysis in the frequency and time domains. Each instrument includes an application cockpit with icons for direct access to all applications, such as trigger and decoding functions.

The scopes include color-coded controls to simplify operation. In addition, a unique digital zone trigger function assists in isolating captured signal events in the frequency and time domains to facilitate analysis of signals with complex modulation formats, protocol signals, and precise timing signals. As many as eight zones can be defined to separate different events shown on the screen.

A handy trigger time stamp can be used to label historical measurements and save them for future reference. The oscilloscopes incorporate enough memory (2 GSamples) to capture and analyze even long data sequences and pulse trains.

To further simplify operation, the R&S RTO2000 series includes more than 90 measurements in internal software, allowing users to perform tests automatically with the push of a few buttons. The measurements include amplitude-related, time-domain-related, and jitter measurements, along with the creation of eye diagrams and histograms. Numerous trend, track, and math functions are included to dig deep into signal analysis.

ROHDE & SCHWARZ GmbH & Co., P.O. Box
80 14 69, 81614 Munich, Germany; 888-TEST-
RSA (1-888-837-8772); www.rohde-schwarz.com.