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# Versatile Oscilloscopes Capture Signals To 1 GHz

## These flexible and powerful oscilloscopes feature measurement bandwidths to 1 GHz in two- and four-channel versions with handy, high-resolution 10.4-in. color touchscreen displays.

**OSCILLOSCOPES ARE USUALLY** the first instrument of choice when scouring for agile or unknown analog or digital signals. Modern oscilloscopes offer impressive functionality, but operating these scopes can be a challenge. As a welcome contrast, the new R&S RTE digital oscilloscopes from Rohde & Schwarz (www.rohde-schwarz.com) provide generous measurement capabilities, minus the operating complexity.

The R&S RTE digital oscilloscopes *(see photo)* are engineered to capture even low-level signals and display results over a wide dynamic range. The different models share a sampling rate of 5 GSamples/s and a fast acquisition rate of more than 1 million waveforms/s. The model lineup is as follows: R&S RTE1022 (two channels, 200-MHz bandwidth); R&S RTE1024 (four channels, 200-MHz bandwidth); R&S RTE1032 (two channels, 350-MHz bandwidth); R&S RTE1034 (four channels, 350-MHz bandwidth); R&S RTE1052 (two channels, 500-MHz bandwidth); R&S RTE1054 (four channels, 500-MHz bandwidth); R&SRTE1102 (two channels, 1-GHz bandwidth); and R&SRTE1104 (four channels, 1-GHz bandwidth).

The 200-MHz models provide better than 1.75-ns risetime, while the 350-MHz instruments achieve risetime of better than 1 ns. The 500-MHz and 1-GHz models offer risetimes of better than 700 and 350 ps, respectively. For frequencies at or less than 500 MHz, the input VSWR is 1.25:1; for frequencies above 500 MHz, the input VSWR is 1.40:1. The oscilloscopes offer input sensitivities of 1 mV/div to 1 V/div input sensitivity at 50 Ω and 1 mV to 10 V/div at 1 MΩ.

The oscilloscopes are highly accurate with low measurement jitter, with typical timebase accuracy of ±10 ps during a normal calibration interval and ±5 ps timebase accuracy following a calibration. The instruments are beneficiaries of a high-performance, single-core 8-b analog-to-digital converter. These flexible, high-performance oscilloscopes employ a unique trigger approach to maintain high accuracy, even when capturing and displaying low-amplitude signals. With this trigger system, one common signal path is used for the acquisition or measurement signal and the trigger signal.

**R&S RTE digital oscilloscopes are available in two- and four-channel versions at measurement bandwidths to 1 GHz.**

Of course, all this measurement power and capability could be easily lost with a complex operating system. This is where the R&S RTE digital oscilloscopes shine, with each 10.4-in. color touchscreen display. With the touch of a finger, measurements can be defined, initiated, and completed, and results can be organized and presented on a full-color 1024 × 768 pixel screen.

The SmartGrid function additionally allows a user to divide the display screen into several "subscreens," to simultaneously show different waveforms and the results of different measurements. Coupled with the instruments' "history mode," which stores previous waveform data, an operator can analyze the background of a signal sequence in search of a glitch.

In support of the oscilloscopes, the firm offers a variety of options, including a power measurement option, option (B1) for the addition of 16 digital test channels that turns the oscilloscopes into mixed-signal analyzers, where a logic button provides direct access to the digital channels. The company has developed a broad range of probes to address a variety of applications, usable across all of the firm's different models. MW

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