R&S®RTO Digital Oscilloscope

Key facts

- 600 MHz bandwidth, up to 10 Gsample/s sampling rate, up to 80 Msample standard memory depth
- Two-channel and four-channel models
- Low-noise frontend – best in its class
- Full bandwidth even at 1 mV/div
- Single-core ADC delivers industry best ENOB of > 7 bit
- 1 million waveforms/s even when performing measurements and analysis
- Hardware-accelerated measurements
- Industry best trigger jitter < 1 ps (RMS)
- Triggering and decoding of serial protocols: I²C, SPI, RS-232, UART, CAN, LIN, FlexRay™ and Audio
- Mixed signal analysis with MSO option
- Software interface for acquisition and downconversion of I/Q data

Scope of the art: created to be unique

The R&S®RTO oscilloscopes combine excellent signal fidelity, high acquisition rate and the world's first realtime digital trigger system with a compact device format in the 600 MHz to 4 GHz class.

Models

Designation	Type	Order No.
Digital Oscilloscope, 600 MHz, 2 channels	R&S®RTO1002	1316.1000.02
Digital Oscilloscope, 600 MHz, 4 channels	R&S®RTO1004	1316.1000.04
Bandwidth upgradeable up to 4 GHz		

Application	How the R&S®RTO meets your needs
Embedded design and debugging	▪ High acquisition rate to identify rare signal faults fast ▪ Innovative trigger system for high accuracy and trigger flexibility ▪ Hardware-accelerated measurement and analysis functions (e.g. histogram, mask testing) ▪ Full vertical resolution of ADC for multiple waveforms thanks to multigrid display ▪ Advanced triggering and decoding (I²C, SPI, RS-232, UART) option ▪ Mixed signal analysis ▪ Powerful and user-friendly FFT-based spectrum analysis: ideal for time-frequency correlated measurements and EMI debugging ▪ History view function ▪ Intuitive user interface for most efficient work ▪ Active probes with innovative features such as micro button and R&S®ProbeMeter ▪ Low weight; lowest acoustic noise; compact lab instrument
Signal validation	▪ High signal fidelity provides additional measurement margin ▪ Digital trigger for lowest trigger jitter in realtime ▪ Lowest noise floor in its class ▪ Active probe with premium specifications ▪ Full bandwidth also for amplitude ranges ≤ 10 mV/div enables true representation of weak signals
Automotive electronics	▪ High signal fidelity for trustable measurement results ▪ Advanced trigger and decode option for CAN/LIN/FlexRay™ interfaces ▪ High acquisition rate to identify rare signal faults fast
Manufacturing test	▪ Comprehensive set of automated measurement functions ▪ Fast remote interface covers complete function set of instrument ▪ Installation in standard 19" racks possible ▪ LXI class C support

R&S®RTO digital oscilloscope options		
Designation	**Type**	**Order No.**
Hardware options		
MSO Option, 400 MHz, scope of the art 	R&S®RTO-B1	1304.9901.03
OCXO 10 MHz	R&S®RTO-B4	1304.8305.02
GPIB Interface	R&S®RTO-B10	1304.8311.03
Replacement Hard Disk incl. firmware	R&S®RTO-B19	1304.8328.02
Memory Upgrade, 50 Msample per channel	R&S®RTO-B101	1304.8428.02
Memory Upgrade, 100 Msample per channel	R&S®RTO-B102	1304.8434.02
Software options		
I²C/SPI Triggering and Decoding	R&S®RTO-K1	1304.8511.02
RS-232/UART Serial Decoding	R&S®RTO-K2	1304.8528.02
CAN/LIN Triggering and Decoding	R&S®RTO-K3	1304.8534.02
FlexRay™ Triggering and Decoding	R&S®RTO-K4	1304.8540.02
I²S/LJ/RJ/TDM Serial Triggering and Decoding	R&S®RTO-K5	1317.3620.02
I/Q Software Interface	R&S®RTO-K11	1317.2975.02
Accessories		
Front Cover	R&S®RTO-Z1	1304.9101.02
Soft Case for R&S®RTO oscilloscopes and accessories	R&S®RTO-Z3	1304.9118.02
Rackmount Kit	R&S®ZZA-RTO	1304.8286.00

Oscilloscope probes

	Scope series	**HMO**							**R&S®RTM**		**R&S®RTO**
	Model	**722/4**	**1022/4**	**1522/4**	**2022/4**	**3032/4**	**3042/4**	**3052/4**	**2032/4**	**2052/4**	**1002/4**
	Bandwidth	**70 MHz**	**100 MHz**	**150 MHz**	**200 MHz**	**300 MHz**	**400 MHz**	**500 MHz**	**350 MHz**	**500 MHz**	**600 MHz**
Passive probes											
HZ154	10/100 MHz	■	■	○	○	○	○	○	○	○	○
HZ51	150 MHz	○	○	○	○	○	○	○	○	○	○
HZ52	250 MHz	○	○	○	○	○	○	○	○	○	○
HZO10	250 MHz	○	○	■	■	○	○	○	○	○	○
HZ350	350 MHz	○	○	○	○	■	■	○	○	○	○
HZ355	500 MHz	○	○	○	○	●	●	■	○	○	○
R&S®RTM-ZP10	500 MHz	○	○	○	○	○	○	○	■	■	○
R&S®RT-ZP10	500 MHz	○	○	○	○	○	○	○	○	○	■
Transmission line probes											
R&S®RT-ZZ80	8 GHz								○	○	●
Active probes											
HZO30	1 GHz	●	●	●	●	●	●	●			
R&S®RT-ZS10E	1 GHz								●	●	●
R&S®RT-ZS10	1 GHz								●	●	●
R&S®RT-ZS20	1.5 GHz								○	○	○
R&S®RT-ZS30	3 GHz								○	○	○
R&S®RT-ZS60	6 GHz								○	○	○