

OSCILLOSCOPES & PROBES FROM ROHDE & SCHWARZ



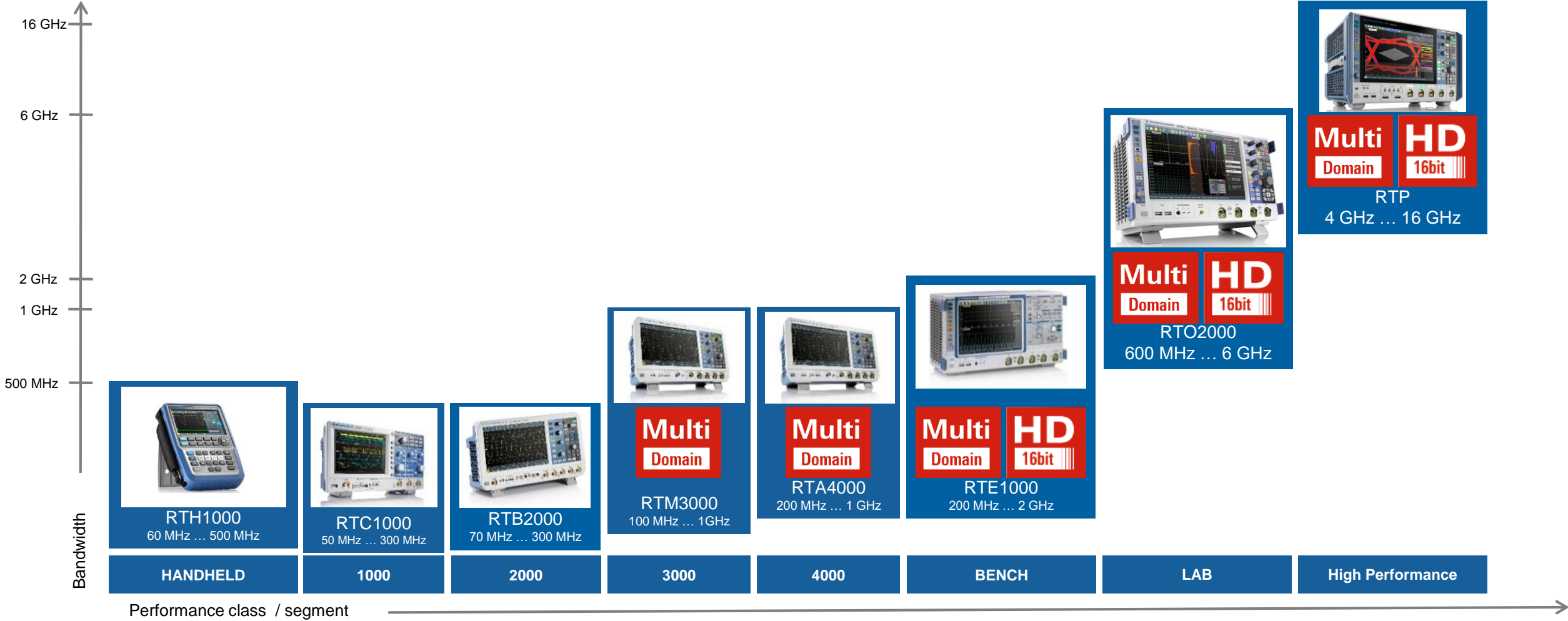
ROHDE & SCHWARZ

Make ideas real



R&S OSCILLOSCOPE PORTFOLIO

MOST MODERN SCOPE LINE FROM 50 MHz TO 16 GHz



R&S® RTH1000 SCOPERIDER

2 MINUTES TO BE SURE

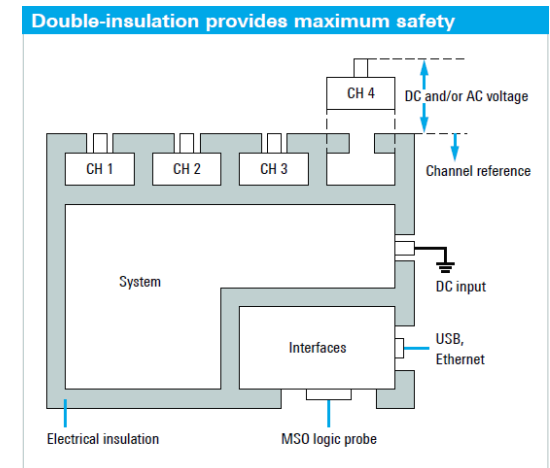
► Unique Features

- Deep memory, fastest update rate, 10-bit ADC and best trigger system give lab performance in the handheld form factor
- Isolated inputs with up to CAT IV rating, IP51 housing, integrated WiFi* / Ethernet
- 8 in 1: Integrated scope, multimeter, protocol analyzer*, MSO*, data logger, counter*, Spectrum Analyzer* and harmonics Analyzer*



RTH1000 Key Specifications

Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTH1054/52	500 MHz	RTH1004: 1.25 GSa/s per channel 2.5 GSa/s (2 ch. Interlea.)	2 / 4	8	50 000 wfms/s	9	125 kSa / 500 kSa,
RTH1034/32	350 MHz						
RTH1024/22	200 MHz	RTH1002: 2.5 GSa/s per channel 5 GSa/s (2 ch. Interlea.)	2 / 4	8	50 000 wfms/s	9	
RTH1014/12	100 MHz						
RTH1004/02	60 MHz						



* Option required

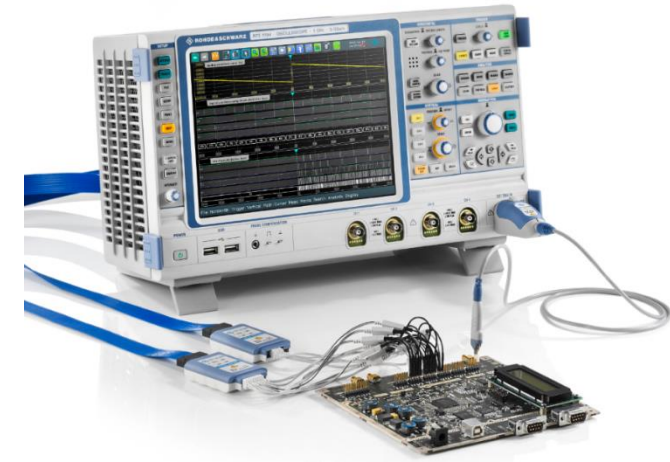
R&S® RTE1000

EASY. POWERFUL



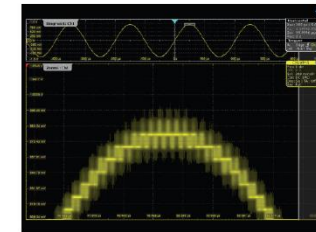
► Unique Features

- Best scope update rate, memory depth, digital triggering
- Fully upgradable (Bandwidth, MSO, Analysis)
- HW based Spectrum Analysis with DDC
- Class leading low noise with up to 16-bits of resolution



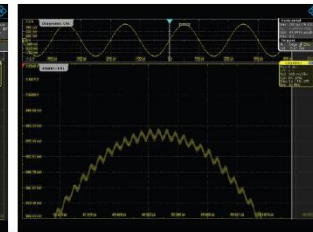
RTE1000 Key Specifications							
Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution*	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTE1204/02	2 GHz	5 GSa/s per channel	2 / 4	16	> 1 Mio wfms/s	16 in HD Mode	Standard: 50 MSa / 200 MSa
RTE1154/52	1,5 GHz						
RTE1104/02	1 GHz						
RTE1054/52	500 MHz						
RTE1034/32	350 MHz						
RTE1024/22	200 MHz						

HD Mode Off



Quantization steps clearly visible.

HD Mode On



"Hidden" low level signal becomes visible. Signal characteristics can be measured.

* Option required

R&S®RTA4000

POWER OF TEN



► Unique Features

- Best signal integrity in class with 10-bit ADC, 500µV/Div, lowest noise and ultra stable timebase
- Capture long acquisitions at high sample rates with standard 100 MSample Memory (up to 1000MSa with History/Segmented)
- Fast spectrum analysis *

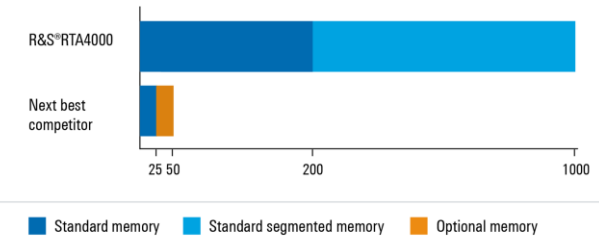


RTA4000 Key Specifications

Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTA4004	1 GHz	2.5 GSa/s per channel 5 GSa/s (2 ch. Interlea.)	4	16	> 64.000 wfms/s	16 with HiRes decimation	100 MSa / 200 MSa
RTA4004	500 MHz						
RTA4004	350 MHz						
RTA4004	200 MHz						

8 to 20 times more memory depth compared to traditional oscilloscopes in the same instrument class

Capture the longest time periods with class-leading total 1000 Msample memory



* Option required

R&S®RTM3000

POWER OF TEN



► Unique Features

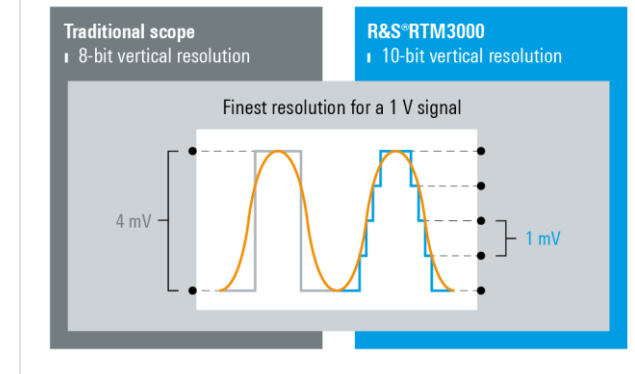
- See sharper waveforms with the class-first 10-bit ADC
- Easily see the waveform and control the scope with a standard class-first 10" Capacitive Touch Display
- Capture long acquisitions at high sample rates with standard 40 MSample Memory (up to 400MSa with History/Segmented*)
- Fast spectrum analysis *



RTM3000 Key Specifications

Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTM3004/02	1 GHz	2.5 GSa/s per channel 5 GSa/s (2 ch. Interlea.)	2 / 4	16	> 64.000 wfms/s	16 with HiRes decimation	40 MSa / 80 MSa
RTM3004/02	500 MHz						
RTM3004/02	350 MHz						
RTM3004/02	200 MHz						
RTM3004/02	100 MHz						

10-bit A/D converter: uncovers even small signal details



* Option required

R&S®RTB2000

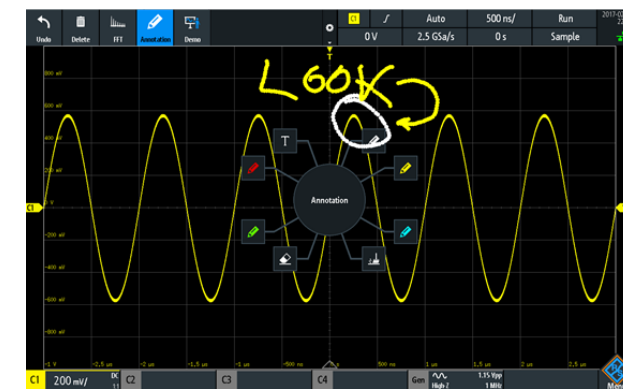
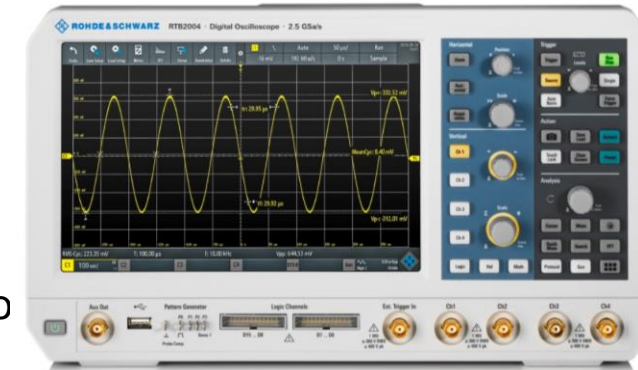
POWER OF TEN

► Unique Features

- See sharper waveforms with the class-first 10-bit ADC
- Easily see the waveform and control the scope with a standard class-first 10" Capacitive Touch Display
- Capture long acquisitions at high sample rates with standard 10 MSample Memory (up to 160MSa with History/Segmented*)

RTB2000 Key Specifications

Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTB2004/02	300 MHz	1.25 GSa/s per channel 2.5 GSa/s (2 ch. Interlea.)	2 / 4	16	50 000 wfms/s	16 with HiRes decimation	10 MSa / 20 MSa
RTB2004/02	200 MHz						
RTB2004/02	100 MHz						
RTB2004/02	70 MHz						



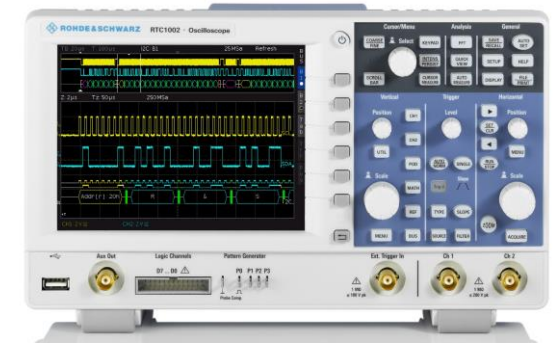
Documentation made easy with on screen annotation

* Option required

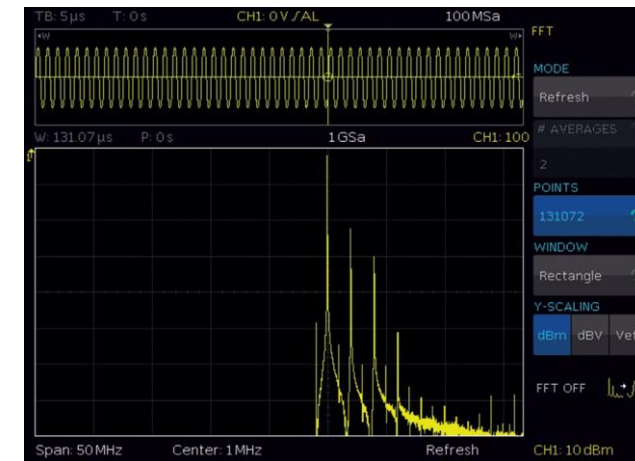
R&S® RTC1000 GREAT VALUE

► Unique Features

- Deep memory standard
- Low Noise w/ up to 16-bits of resolution
- 8-in-1 Integration (Standard pattern generator, FG, component tester, DVM, 6-digit counter, MSO and protocol analysis*)



RTC1000 Key Specifications							
Model	Bandwidth	Sampling Rate	Number of Channels		Max. Update Rate	Max. Bits of Resolution	Max Memory (per ch / 1 ch active)
			Analog	Digital*			
RTC1002	300MHz	1 GSa/s per channel 2 GSa/s (2 ch. Interlea.)	2	8	10 000 wfms/s	16 with HiRes decimation	1 MSa / 2 MSa
RTC1002	200MHz						
RTC1002	100MHz						
RTC1002	70MHz						
RTC1002	50MHz						

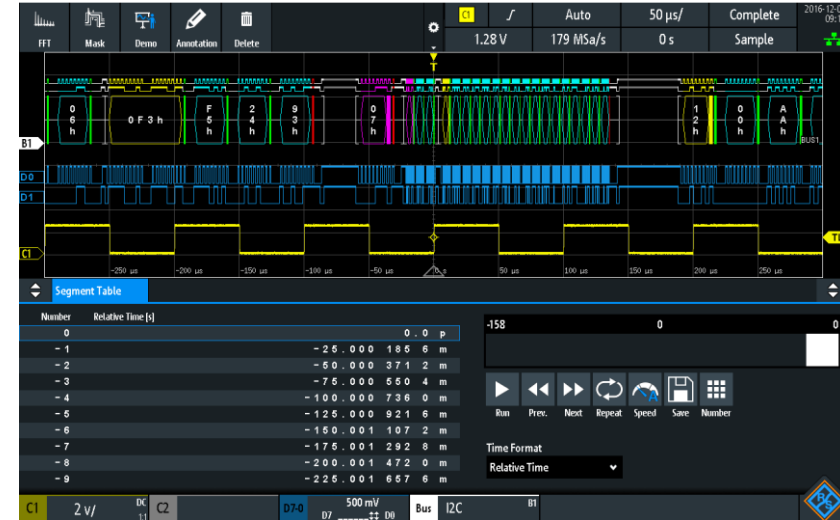


* Option required

R&S OSCILLOSCOPE OPTIONS OVERVIEW

HISTORY AND SEGMENTED MEMORY

- ▶ History Mode
 - Access to previous waveform acquisitions in the acquisition memory
- ▶ Ultra-Segmentation Mode in RTE & RTA4000
- ▶ Acquisition of data with long idle times (e.g. packetized serial communication or pulse signals)



	RTE1000	RTA4000	RTM3000	RTB2000	RTH1000
History and segmented memory	Standard	Standard	R&S®RTM-K15	R&S®RTB-K15	R&S®RTH-K15
Maximum segments	99,999	87,380	34,952	13,107	5,000
Minimum segment size	1 kSa	5 kSa	5 kSa	10 kSa	2.5 kSa
Maximum segment size	200 MSa	200 MSa	200 MSa	20 MSa	500 kSa
Maximum acquisition rate in segmented mode	> 1,600,000 wfms/s	700,000 wfms/s	700,000 wfms/s	50,000 wfms/s	50,000 wfms/s
Maximum memory in segmented mode	200 MSa	1000 MSa	400 MSa	160 MSa	50 MSa
Blind time in segmented mode	< 400 ns	< 1,5 µs	< 1,5 µs	< 3 µs	

R&S OSCILLOSCOPE OPTIONS OVERVIEW

HARDWARE OPTIONS AND EXTENDED ANALYSIS



	RTE1000	RTA4000	RTM3000	RTB2000	RTC1000	RTH1000
Selected Hardware Options						
Mixed Signal Option	R&S®RTE-B1	R&S®RTA-B1	R&S®RTM-B1	R&S®RTB-B1	R&S®RTC-B1	R&S®RTH-B1
Arbitrary Waveform Generator	R&S®RTE-B6	R&S®RTA-B6	R&S®RTM-B6	R&S®RTB-B6	R&S®RTC-B6	-

	RTE1000	RTA4000	RTM3000	RTB2000	RTC1000	RTH1000
extended Analysis Functions						
History & Segmented Memory	Standard		R&S®RTM-K15	R&S®RTB-K15	-	R&S®RTH-K15
High Definition 16 Bit	Standard	-	-	-	-	-
Spectrum Analysis	DDC based Standard	Basic FFT				
extended Spectrum Analysis	R&S®RTE-K18	R&S®RTA-K18	R&S®RTM-K18	-	-	R&S®RTH-K18
Power Analysis	R&S®RTE-K31	R&S®RTA-K31	R&S®RTM-K31	-	-	-
Digital Voltmeter (DVM)	Standard					
Frequency Counter	-	-	-	-	-	R&S®RTH-K33
Harmonic Analysis	-	-	-	-	-	R&S®RTH-K34
User Scripting	-	-	-	-	-	R&S®RTH-K38
Frequency Response Analysis	-	R&S®RTA-K36	R&S®RTM-K36	R&S®RTB-K36	-	-

R&S OSCILLOSCOPE OPTIONS OVERVIEW

SERIAL BUS TRIGGER AND DECODE



Serial standard	RTE1000		RTA4000	RTM3000	RTB2000	RTC1000	RTH1000
	Trigger	Decode	Trigger & Decode	Trigger & Decode	Trigger & Decode	Trigger & Decode	Trigger & Decode
I ² C/ SPI	R&S [®] RTE-K1		R&S [®] RTA-K1	R&S [®] RTM-K1	R&S [®] RTB-K1	R&S [®] RTC-K1	R&S [®] RTH-K1
UART/RS-232/RS-422/RS-485	R&S [®] RTE-K2		R&S [®] RTA-K2	R&S [®] RTM-K2	R&S [®] RTB-K2	R&S [®] RTC-K2	R&S [®] RTH-K2
CAN/ LIN	R&S [®] RTE-K3		R&S [®] RTA-K3	R&S [®] RTM-K3	R&S [®] RTB-K3	R&S [®] RTC-K3	R&S [®] RTH-K3
FlexRay™	R&S [®] RTE-K4		-	-	-	-	-
I ² S/ LJ/ RJ/ TDM	R&S [®] RTE-K5		R&S [®] RTA-K5	R&S [®] RTM-K5	-	-	-
MIL STD-1553	R&S [®] RTE-K6		R&S [®] RTA-K6	R&S [®] RTM-K6	-	-	-
ARINC 429	R&S [®] RTE-K7		R&S [®] RTA-K7	R&S [®] RTM-K7	-	-	-
Ethernet	R&S [®] RTE-K8		-	-	-	-	-
CAN-FD (require CAN/LIN)	R&S [®] RTE-K9		-	-	-	-	R&S [®] RTH-K9
SENT	R&S [®] RTE-K10		-	-	-	-	R&S [®] RTH-K10
Bus Analysis	R&S [®] RTE-K35		-	-	-	-	-
Custom Dec. (NRZ/Manchester)	R&S [®] RTE-K50		-	-	-	-	-
MDIO	R&S [®] RTE-K55		-	-	-	-	-
100BASE-T1	R&S [®] RTE-K57		-	-	-	-	-
USB 1.0/1.1/2.0/HSIC	R&S [®] RTE-K60		-	-	-	-	-
USB Power Delivery	R&S [®] RTE-K63		-	-	-	-	-
SpaceWire	R&S [®] RTE-K65		-	-	-	-	-
CXPI	R&S [®] RTE-K76		-	-	-	-	-
Applications Bundle	R&S [®] RTE-TDBNDL		R&S [®] RTA-PK1	R&S [®] RTM-PK1	R&S [®] RTB-PK1	-	R&S [®] RTB-PK1

THE ROHDE & SCHWARZ PROBE PORTFOLIO



High voltage



Single ended compact



Differential modular



EMC near field



Power rail



Standard



Broadband



Differential High voltage



Differential compact



Precise V&I Multichannel



Current

PASSIVE

ACTIVE

SPECIALIZED

CURRENT PROBES

- ▶ All R&S®RT-ZCXXB support R&S probe interface:
 - no external power supply needed
 - automatic setup of the oscilloscope vertical setting (50Ohm, readout Ampere)
 - degauss & autozero done from the probe menu
 - fully remote control possible

Current Probe	Designation	Connector
RT-ZC02	20 kHz, AC/DC, 0.01 V/A, 100 A (RMS) or 0.001V/A, 1000 A (RMS)	BNC
RT-ZC03	100 kHz, AC/DC, 0.1 V/A, 20A (RMS)	BNC
RT-ZC05B	2 MHz, AC/DC, 0.01 V/A, 500 A (RMS)	R&S Probe Interface
RT-ZC10	10 MHz, AC/DC, 0.01 V/A, 150 A (RMS)	BNC
RT-ZC10B	10 MHz, AC/DC, 0.01 V/A, 150 A (RMS)	R&S Probe Interface
RT-ZC15B	50 MHz, AC/DC, 0.1 V/A, 30 A (RMS)	R&S Probe Interface
RT-ZC20	100 MHz, AC/DC, 0.1 V/A, 30 A (RMS)	BNC
RT-ZC20B	100 MHz, AC/DC, 0.1 V/A, 30 A (RMS)	R&S Probe Interface
RT-ZC30	120 MHz, AC/DC, 1 V/A, 5 A (RMS) , high sensitivity	BNC



ACTIVE SINGLE ENDED PROBES

► Highlights:

- Robust and ergonomic design
- Configurable micro button at probe head (e.g. start/stop)
- Accurate DC Voltmeter R&S® ProbeMeter (0.1%)
- High input impedance (1 MΩ) for all active probe models



Probe Model	Probe Type	Bandwidth	Attenuation	Input Impedance	Connector
RT-ZS10L*	Active Single Ended	1 GHz	10:1	1 MΩ / 0.9 pF	BNC
RT-ZS10E*	Active Single Ended	1 GHz	10:1	1 MΩ / 0.8 pF	R&S Probe Interface
RT-ZS10	Active Single Ended	1 GHz	10:1	1 MΩ / 0.8 pF	R&S Probe Interface
RT-ZS20	Active Single Ended	1.5 GHz	10:1	1 MΩ / 0.8 pF	R&S Probe Interface
RT-ZS30	Active Single Ended	3 GHz	10:1	1 MΩ / 0.8 pF	R&S Probe Interface
RT-ZS60	Active Single Ended	6 GHz	10:1	1 MΩ / 0.8 pF	R&S Probe Interface

* No R&S® ProbeMeter and micro button for the R&S® RT-ZS10E/L

POWERRAIL AND PRECISE MULTICHANNEL PROBES

- ▶ Highlights Powerrail probe:
 - 1:1, low noise active Probe
 - up to 60V Offset
 - Accurate DC Voltmeter R&S® ProbeMeter (0.1%)
 - Wide range of standard accessories including browser



Probe Model	Probe Type	Bandwidth	Attenuation	Input Impedance	Connector
RT-ZPR20	Active Single Ended	2 GHz	1:1	50 k Ω	R&S Probe Interface
RT-ZPR40	Active Single Ended	4 GHz	1:1	50 k Ω	R&S Probe Interface

ACTIVE HIGH VOLTAGE DIFFERENTIAL PROBES

► Highlights:

- Robust and ergonomic design
- Up to 80 dB CMRR, up to 2kV Offset, up to 6kV Input voltage
- Configurable micro button at probe head (e.g. start/stop)
- Accurate DC Voltmeter R&S® ProbeMeter (0.1%)*

Probe Model	Probe Type	Bandwidth	Attenuation	Input Impedance	Connector
RT-ZD01	Active Differential	100 MHz	100:1 / 1000:1	Diff: 8 MΩ / 3.5 pF	BNC
RT-ZD002	Active Differential	25 MHz	10:1 / 100:1	Diff: 4 MΩ / 5.5 pF	BNC
RT-ZD003	Active Differential	25 MHz	20:1 / 200:1	Diff: 4 MΩ / 5.5 pF	BNC
RT-ZHD07	Active Differential	200 MHz	25:1 / 250:1	Diff: 5 MΩ / 2 pF	R&S Probe Interface
RT-ZHD15	Active Differential	100 MHz	50:1 / 500:1	Diff: 10 MΩ / 2 pF	R&S Probe Interface
RT-ZHD16	Active Differential	200 MHz	50:1 / 500:1	Diff: 10 MΩ / 2 pF	R&S Probe Interface
RT-ZHD60	Active Differential	100 MHz	100:1 / 1000:1	Diff: 40 MΩ / 2 pF	R&S Probe Interface

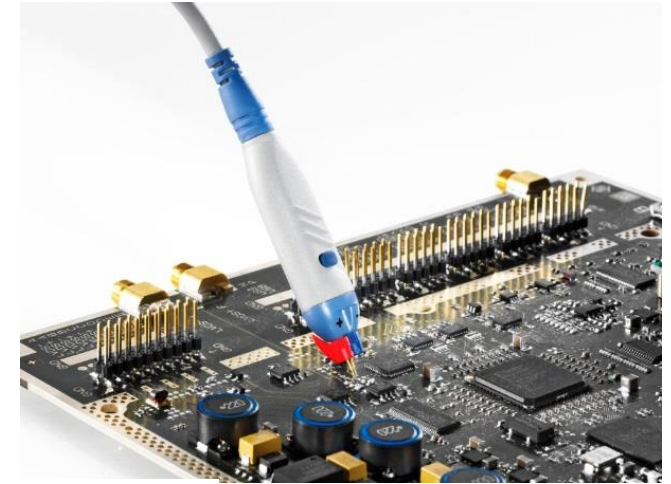


* No R&S® ProbeMeter and micro button for the RT-ZD01/002/003

ACTIVE DIFFERENTIAL PROBES

► Highlights:

- Robust and ergonomic design
- Configurable micro button at probe head (e.g. start/stop)
- Accurate DC Voltmeter R&S® ProbeMeter (0.1%) *
- High input impedance (1 MΩ) for all active probe models >1 GHz



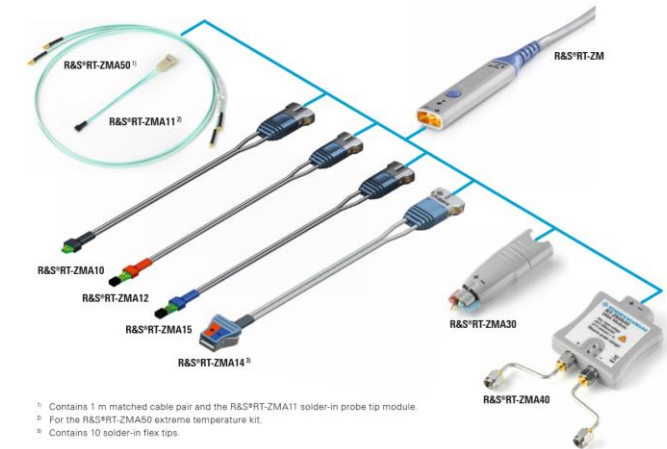
Probe Model	Probe Type	Bandwidth	Attenuation	Input Impedance	Connector
RT-ZD02*	Active Differential	200 MHz	10:1	Diff: 1 MΩ / 3.5 pF	BNC
RT-ZD08*	Active Differential	800 MHz	10:1	Diff: 200 kΩ / 1 pF	BNC
RT-ZD10	Active Differential	1 GHz	10:1 / 100:1 <small>(with Add-on Attenuator)</small>	Diff: 1 MΩ / 0.6 pF	R&S Probe Interface
RT-ZD20	Active Differential	1.5 GHz	10:1	Diff: 1 MΩ / 0.6 pF	R&S Probe Interface
RT-ZD30	Active Differential	3 GHz	10:1	Diff: 1 MΩ / 0.6 pF	R&S Probe Interface
RT-ZD40	Active Differential	4.5 GHz	10:1	Diff: 1 MΩ / 0.6 pF	R&S Probe Interface

* No R&S® ProbeMeter and micro button for the RT-ZD02/08

MODULAR ACTIVE DIFFERENTIAL PROBES

► Highlights:

- MultiMode functionality (Differential/Common/Single mode)
- Configurable micro button at probe head (e.g. start/stop)
- Accurate DC Voltmeter R&S® ProbeMeter (0.1%)
- High input impedance (400 kOhm) for low DC loading



¹ Contains 1 m matched cable pair and the R&S®RT-ZMA11 solder-in probe tip module.
² For the R&S®RT-ZMA50 extreme temperature kit.
³ Contains 10 solder-in flex tips.

Probe Model	Probe Type	Bandwidth	Attenuation	Input Impedance	Connector
RT-ZM15/30/ 60/90/130/160	Amplifier Module	1.5/3/6/9/13/16 GHz	10:1 / 2:1	Diff: 400 kΩ	R&S Probe Interface
RT-ZMA10	Solder-in Tip	16 GHz	-	77 fF	
RT-ZMA12	Square-pin Tip	6 GHz	-	279 fF	
RT-ZMA14	Flex Connect Solder-in Tip	16 GHz	-	77 fF	
RT-ZMA15	Quick-connect Tip	12 GHz	-	109 fF	
RT-ZMA30	Browser Tip	16 GHz	-	32 fF	
RT-ZMA40	SMA module Tip	16 GHz	-	100 Ω	
RT-ZMA50	Extreme Temperature Tip	2.5 GHz	-	77 fF	

HIGH VOLTAGE PASSIVE PROBE PORTFOLIO

- ▶ Highlights:
 - Robust design
 - Versatile usage with many instruments



Probe Model	Probe Type	Bandwidth	Attenuation / Max. Voltage	Input Impedance	Connector
RT-ZH03	Passive Single Ended	250 MHz	100:1 / 850 V _{rms}	100 MΩ / 6.5 pF	BNC
RT-ZH10	Passive Single Ended	400 MHz	100:1 / 1000 V _{rms}	50 MΩ / 7.5 pF	BNC
RT-ZH11	Passive Single Ended	400 MHz	1000:1 / 1000 V _{rms}	50 MΩ / 7.5 pF	BNC

PASSIVE PROBE PORTFOLIO

► Highlights:

- Robust design
- Versatile usage with many instruments



Probe Model	Probe Type	Bandwidth	Attenuation / Max. Voltage	Input Impedance	Connector
R&S® RT-ZP1X	Passive Single Ended	38 MHz	1:1 / 55 V (RMS)	1 M Ω / 39 pF	BNC
R&S® RT-ZP03	Passive Single Ended	300 MHz 10 MHz	10:1 / 400 V (RMS) 1:1 / 55 V (RMS)	10 M Ω / 12 pF 1 M Ω / 82 pF	BNC
R&S® RT-ZP05	Passive Single Ended	500 MHz	10:1 / 300 V (RMS)	10 M Ω / 9.5 pF	BNC
R&S® RT-ZP10	Passive Single Ended	500 MHz	10:1 / 400 V (RMS)	10 M Ω / 9.5 pF	BNC
R&S® RTM-ZP10	Passive Single Ended	500 MHz	10:1 / 400 V (RMS)	10 M Ω / 9.5 pF	BNC
R&S® RT-ZZ80	Passive Single Ended	8 GHz	10:1 / 20 V (RMS)	500 Ω / 0.3 pF	BNC

EMI PROBE PORTFOLIO

- ▶ Highlights:
 - Perfect match to sensitive low noise R&S Scopes
 - Versatile usage with many instruments



Probe Set	Description	Bandwidth	Connector
R&S® HZ-15	Probe Set for E and H near-field emission measurements	30 MHz to 3 GHz	BNC
R&S® HZ-16	Preampfier 20 dB for R&S HZ-15	100 kHz to 3 GHz	BNC

TEKTRONIX PROBE ADAPTER

► Highlights:

- Use of selected Tektronix Probes (with TekProbe Interface Level II)
- available with all R&S Oscilloscopes with R&S Probe interface
- Easy to use through predefined probe settings



Adapter	Description	Supported Probe Type	Tektronix Material
R&S® RT-Z2T	Probe Interface Adapter for TekProbe level II	Single ended active probes	P6205, P6243, P6245, P6241, P6249
		Current probes	TCP202
		Differential active probes	P6246, P6247, P6248, P6250, P6251
		High-voltage differential probes	P5205, P5210
		Electro-optical probes	P6701B, P6703B, P6711