R&S®RTA4000
versus
Keysight 4000 X-Series

Designed with class-leading signal integrity and responsive ultra-deep memory, the R&S®RTA4000 brings the power of 10 to a new level. A Rohde & Schwarz designed 10-bit ADC plus class-leading noise and memory depth give you sharp waveforms, more accurate measurements and confidence when facing unexpected measurement challenges. And a widely acclaimed user interface in a compact form factor with a high resolution 10.1" capacitive touchscreen allows you to easily see and use those benefits.

Your benefit	Features
Sharp waveforms, more accurate measurements	10-bit ADC with class-leading noise performance gives you more accurate measurements and sharper waveforms. Measure your signal, not the noise on your scope.
Capture long periods at high sample rate	The R&S®RTA4000 oscilloscope's standard deep memory gives you extra insurance for those difficult measurements where other scopes run out of capacity, and the excellent timebase accuracy means your deep memory measurements are more accurate.
Debug in the domain you're most comfortable with	Not only does the R&S®RTA4000 provide excellent time domain capabilities, it also offers advanced frequency domain analysis with simple RF setup, spectrogram and time-gated RF views.

Comparison

▪ 50 times more standard memory allows you to capture long periods of time with a high sample rate. Optional 1 Gsample of memory with segmented memory/history option gives you 250 times more memory.

R&S®RTA4000 standard 200 Msample memory   R&S®RTA4000 standard 1 Gsample segmented memory

← 4000 times standard 4 Msample memory

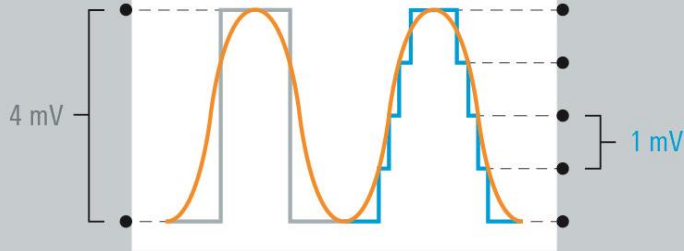| Parameter	R&S®RTA4000	Keysight 4000 X-Series
Acquisition system		
Bandwidth (MHz)	200, 350, 500, 1000 (1GHz) (upgradable)	200, 350, 500, 1000 (1 GHz), 1500 (1.5 GHz) (upgradable)
ADC resolution	10-bit	8-bit
Max. resolution	16-bit in high resolution mode	12-bit in high resolution mode
Max. sampling rate	5 Gsample/s	5 Gsample/s
Standard memory depth	100 Msample per ch all channels 200 Msample per ch interleaved	2 Msample per ch all channels 4 Msample per ch interleaved
Segmented memory depth/history mode	500 Msample per ch all channels 1 Gsample per ch interleaved	4 Msample - no option to add more, no history
Waveform update rate	64 000 waveforms/s standard 700 000 waveforms/s in fast segmented memory mode	1 000 000 waveforms/s
Hardware dynamic range, full bandwidth	1 MΩ: 5 mV to 100 V 50 Ω: 5 mV to 10 V	1 MΩ: 32 mV to 80 V 50 Ω: 32 mV to 40 V
Zone triggering	no	yes
Frequency domain	yes, optional spectrogram	yes (FFT), no spectrogram
Signal integrity		
Noise 1 mV/div, 200 MHz, 50 Ω, % full scale	0.6 %	2.0 %
DC gain accuracy	1 % to 2.5 %	2.0 % to 8.0 %
Timebase accuracy	±0.5 ppm	±10 ppm
Form factor		
Display	10.1" WXGA (1280 x 800)	12.1" VGA (800 x 600)
Boot time	~ 10 s	~ 50 s
Dimensions	390 mm x 220 x 152 mm	454 mm x 275 mm x 156 mm
Weight	3.3 kg	6.3 kg

▷ For more information, see www.rohde-schwarz.com/catalog/RTA4000

ROHDE & SCHWARZ

10-bit ADC provides 4 times the vertical resolution of an 8-bit ADC
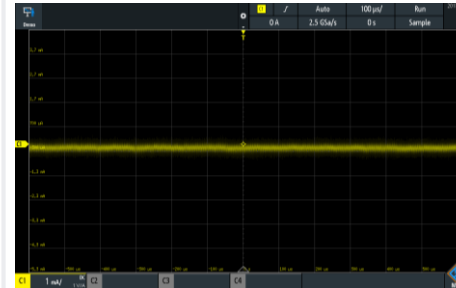
Traditional scope
■ 8-bit vertical resolution

R&S®RTA4000
■ 10-bit vertical resolution

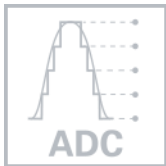Finest resolution for a 1 V signal

4 mV

1 mV

Noise at 1GHz, 1 mV/div, 50 Ω, 50 % intensity

The R&S®RTA4000 features a low-noise frontend designed to take advantage of the 10-bit ADC and allow you to see more signal detail.

The 4000 X-Series has 5 times the noise of the R&S®RTA4000. Higher noise lowers the accuracy of measurements and makes it more difficult to see small details.
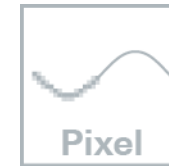
Advantage factors of R&S®RTA3000 versus Keysight 4000 X-series

4 times more ADC resolution

3 times lower noise

50 times more memory

250 times more segmented memory

2.1 times more display pixels

48 % less weight