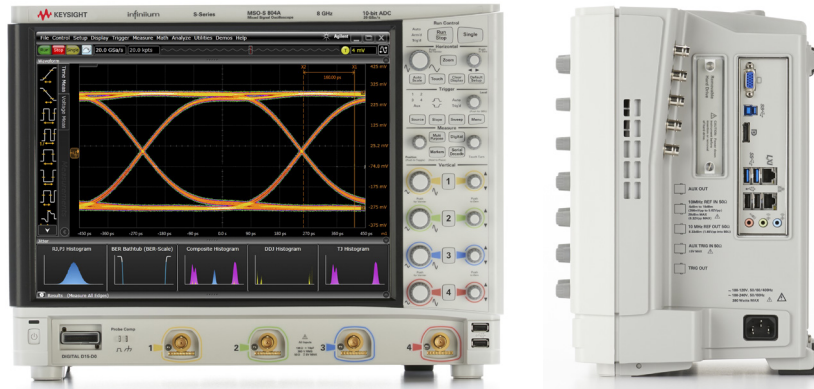# Keysight Technologies
Competitive Comparison:
Keysight 4000 X-Series versus Rohde & Schwarz RTE Series
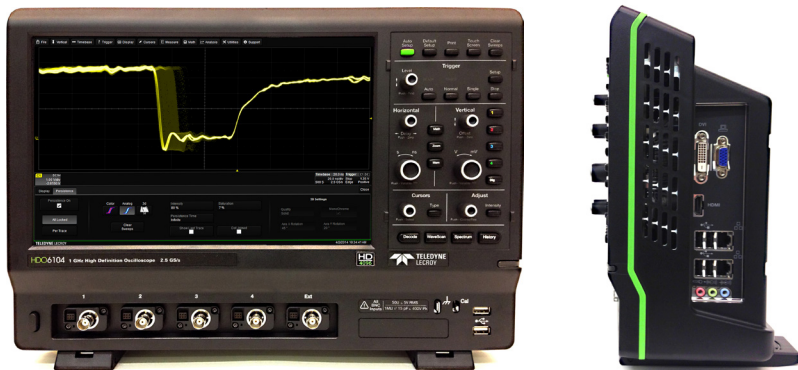
Keysight S-Series

Teledyne-LeCroy HDO4000/6000

The Keysight Technologies, Inc. S-Series oscilloscopes provide bandwidths up to 8 GHz with class-leading signal integrity and analysis. Custom ASICs, including the industry's first 40 GSa/s, 10-bit ADC, allow you to see your real signal. Class-leading deep memory and a large suite of analysis tools complement a designed-for-touch user interface and the industry's first 15" multi-touch capacitive display.
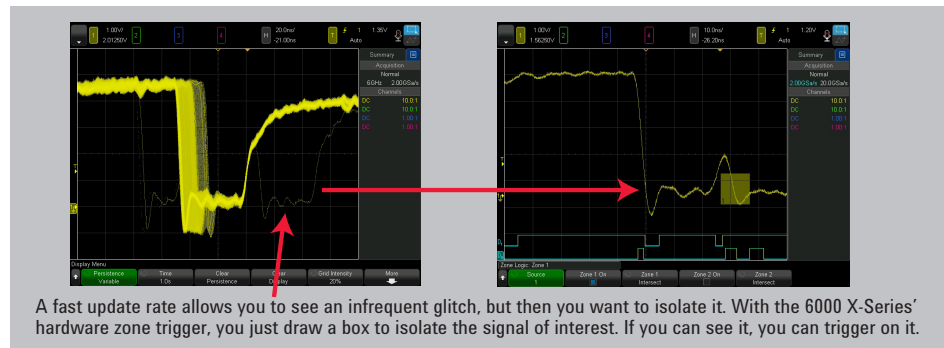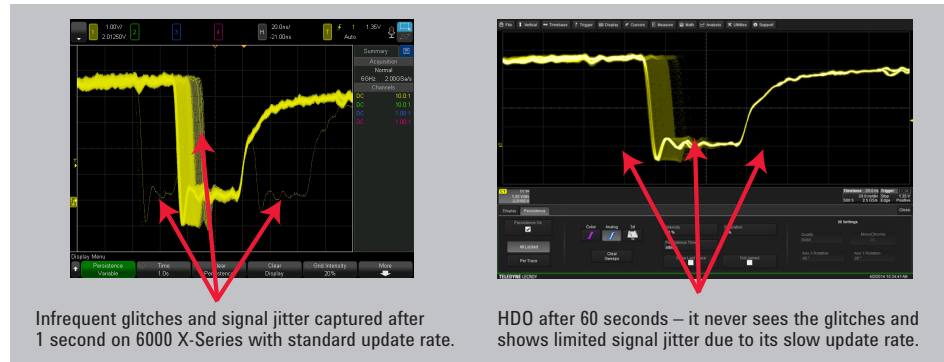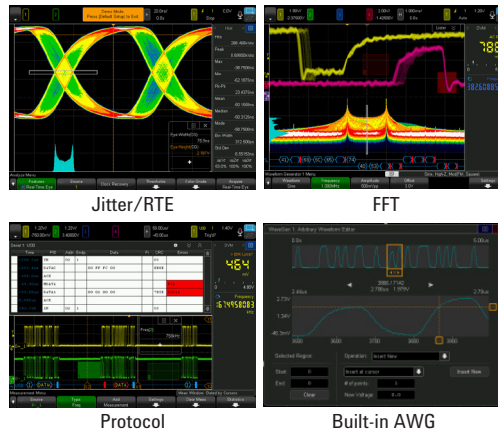
	LeCroy HDO4000/6000		Keysight S-Series	
Bandwidth	Up to 1 GHz	x	Up to 8 GHz	√
Upgradable bandwidth	No	x	Yes – license key	√
Max sampling rate	2.5 GSa/s	x	20 GSa/s	√
Standard memory depth (4 ch)	50 Mpts	√	50 Mpts	√
Max memory depth (2 ch)	250 Mpts	x	800 Mpts	√
ADC bits	12 bits	√	10 bits	x
Noise at 1 mV/div 1 GHz to 50 Ω	151 uV RMS	x	90 uV RMS	√
Display	12.1" resistive touch	x	15" capacitive multi-touch	√
Knob per vertical channel	No – muxed	x	Yes	√
Offline analysis software	No	x	Yes	√
Math functions	8	x	16	√
Timescale accuracy	± 1,500 ppb	x	± 75 ppb	√
Mean time before failure (typical)	Not specified	x	110,000 hours	√
BenchVue support	Not available	x	Yes	√

A 15" multi-touch capacitive display offers significantly more viewing area and much greater sensitivity to user inputs.

KEYSIGHT
TECHNOLOGIES

Competitive Comparison:
Keysight 6000 X-Series versus Teledyne-LeCroy HDO4000/6000

Jitter/RTE

FFT

Protocol

Built-in AWG

Keysight's 6000 X-Series oscilloscopes offer bandwidths up to 6 GHz with the key benefits of the InfiniiVision line: affordability, excellent visualization, 6-in-1 integration and investment protection. Speed your debugging with its uncompromised fast update rate, combined with the industry's only hardware zone trigger. Operation is simplified with a localized GUI that is designed for touch and the industry's first 12.1" multi-touch capacitive display. Voice control makes doing oscilloscope inputs easy while your hands are holding probes.

	LeCroy HDO4000/6000		Keysight 6000 X-Series	
Bandwidth	Up to 1 GHz	x	Up to 6 GHz	√
Upgradable bandwidth	No	x	Yes – license key	√
Max sampling rate	Up to 2.5 GSa/s	x	Up to 20 GSa/s	√
Std memory depth	Up to 50 M	√	Up to 4 M	x
ADC bits	12 bits	√	8 bits	x
Noise at 1 mV/div 1 GHz to 50 Ω	151 uV RMS	x	115 uV RMS	√
Waveform update rate	< 1,000 wfms/s	x	Up to 450,000 wfms/s	√
Zone trigger	Not available	x	Yes – hardware-based > 100 K triggers/s	√
Display	12.1" resistive touch	x	12.1" capacitive multi-touch	√
Other integration	Not available	x	2 ch AWG, counter, DVM	√
Operating system	Windows 7	x	Embedded	√
Std passive probe	500 MHz	x	700 MHz	√
Voice control	No	x	Yes – localized	√
Knob per vertical channel	No – muxed	x	Yes	√
Operating range	5 to 40 °C, 3,048 M	x	0 to 50 °C, 4,000 M	√
Calibration interval	1 year	x	2 years	√
Mean time between failure	Not specified	x	> 120,000 hours	√
BenchVue support	Not available	x	**Yes**	√

Infrequent glitches and signal jitter captured after 1 second on 6000 X-Series with standard update rate.

HDO after 60 seconds — it never sees the glitches and shows limited signal jitter due to its slow update rate.

A fast update rate allows you to see an infrequent glitch, but then you want to isolate it. With the 6000 X-Series' hardware zone trigger, you just draw a box to isolate the signal of interest. If you can see it, you can trigger on it.

Three-Year Warranty
www.keysight.com/find/ThreeYearWarranty
Keysight's commitment to superior product quality and lower total cost of ownership. The only test and measurement company with three-year warranty standard on all instruments, worldwide.

Keysight Assurance Plans
www.keysight.com/find/AssurancePlans
Up to five years of protection and no budgetary surprises to ensure your instruments are operating to specification so you can rely on accurate measurements.

KEYSIGHT TECHNOLOGIES