

# Tektronix 6 Series MSO vs. Keysight S-Series

## COMPETITIVE FACT SHEET

### Oscilloscope Performance Specs

Tektronix 6 Series MSO	Keysight S-Series
✓ 8 GHz & 25 GS/s on <u>four</u> channels	✗ 8 GHz & 20 GS/s on <u>two</u> channels
✓ Up to 32 digital channels (500MHz, 25GS/s)	✗ MSO model only - 16 digital channels (400 MHz, 2 GS/s)
✓ 100 GS/s of 12-bit ADCs (4x at 25 GS/s), shared for analog or digital FlexChannels™	✗ 40 GS/s of 10-bit ADCs (2x at 20 GS/s) for analog channels only
✓ <b>Industry's Only</b> Std. embedded OS or Optional Windows 10 OS	✗ Windows 7 OS Only
✓ Full HD 1920 x 1080 15.6" Multi-touch capacitive display	✗ XGA 1024 x 768 15" Multi-touch capacitive display
✓ 3 Year standard warranty	✗ 1 Year standard warranty



*The 6 Series MSO features the same award-winning user interface as the 5 Series MSO*



reddot award  
product design



GOLDEN  
MOUSETRAP  
AWARDS  
2018 WINNER



### Best in Class Noise Performance<sup>1,2</sup>

Bandwidth	Volts / Div	6 Series MSO	S-Series
1 GHz	1 mV	54.8 μV ✓	90 μV
	10 mV	90.9 μV ✓	110 μV
	100 mV	941 μV ✓	960 μV
	1 V	7.65 mV ✓	6.5 mV
4 GHz	1 mV	97.4 μV ✓	153 μV
	10 mV	124 μV ✓	220 μV
	100 mV	1.92 mV ✓	1.6 mV
	1 V	16.3 mV	12.5 mV ✓
8 GHz	1 mV	158 μV ✓	260 μV
	10 mV	342 μV ✓	390 μV
	100 mV	3.46 mV ✓	3.10 mV
	1 V	29.7 mV ✓	24.1 mV

Note 1: Keysight uses 8 divisions full scale, Tektronix uses 10 division full scale; Green checks are given for best noise at % full scale  
 Note 2: All noise levels are at full bandwidth and represent typical values from both vendors datasheets

### Channel Bandwidth & Sample Rate

Tektronix 6 Series MSO	Keysight S-Series
✓ Up to 8 GHz on <u>four</u> channels	✗ Up to 4 GHz on <u>four</u> channels
✓ 25 GS/s on <u>four</u> channels	✗ 10 GS/s on <u>four</u> channels

### Vertical Resolution

Tektronix 6 Series MSO	Keysight S-Series
✓ 12-bit Analog-to-Digital Converter (ADC)	✗ 10-bit Analog-to-Digital Converter
✓ 12-bits data used at 12.5 GS/s and below, High Res and Peak Detect modes	✗ 8-bit data used at 5 GS/s or lower, High Res and Peak Detect modes
✓ ENOB: 8.2 bits (1 GHz), 7.6 bits (2.5 GHz), 7.25 bits (4 GHz), 6.5 bits (8 GHz)	✗ ENOB: 7.8 bits (1 GHz), 7.4 bits (2.5GHz), 7.2 bits (4 GHz), 6.4 bits (8 GHz)

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### Key Specifications Comparison

	Tektronix 6 Series MSO		Keysight S-Series	
<b>Max Bandwidth (on <u>two</u> channels / <u>four</u> channels)</b>	✓	8 GHz on <u>four</u> channels	✗	8 GHz on <u>two</u> channels / 4 GHz on <u>two</u> channels
<b>Total Sample Rate in Oscilloscope</b>	✓	100 GS/s of sample rate (4x 25 GS/s ADCs)	✗	40 GS/s of sample rate (2x 20 GS/s ADCs)
<b>Analog Sample Rate (<u>two</u> channels / <u>four</u> channels)</b>	✓	25 GS/s on <u>four</u> channels	✗	20 GS/s <u>two</u> channels / 10 GS/s <u>four</u> channels
<b>Number of Digital Channels</b>	✓	Up to 32 – with FlexChannels probes (4x TLP058)	✗	MSO model provides only 16 digital channels
<b>Digital Channel Specifications</b>	✓	25 GS/s, 500 MHz	✗	2 GS/s, 400 MHz
<b>Number of Math / Bus channels / Measurements</b>	✓	As many as you want! (until memory runs out)	✗	16 math / 4 buses / 20 measurements
<b>Automated Search and Mark Functionality</b>	✓	On all Trigger and Decode Bus Events	✗	Search on Serial Decode Events (no trigger events)
<b>Optional Arbitrary Function Generator (AFG)</b>	✓	Yes – 50 MHz	✗	No AFG option
<b>Optional DVM/ Trigger Freq. Counter</b>	✓	Yes – Free with Registration	✗	No DVM / Counter option
<b>Standard Record Length (on <u>four</u> channels)</b>	✗	62.5 Mpts	✓	100 Mpts
<b>Max Optional Record Length (on <u>four</u> channels)</b>	✗	250 Mpts (optional)	✓	400 Mpts (optional)
<b>Max Segmented Memory segments</b>	✓	>691,000 segments	✗	65,535 segments
<b>Waveform Capture Rate (non-segmented memory)</b>	✓	>500,000 wfms/second	✗	Not Specified*
<b>Effective Number of Bits (ENOB)**</b>	✓	8.2 bits (1 GHz), 7.6 bits (2.5 GHz), 7.25 bits (4GHz), 6.5 bits (8 GHz)	✗	7.8 bits (1 GHz), 7.4 bits ( 2.5GHz) 7.2 bits (4 GHz), 6.4 bits (8 GHz)
<b>DC Gain Accuracy - Warranted</b>	✓	+/- 1.0%	✗	+/- 2.0%
<b>Visual Trigger / Zone Trigger</b>	✓	Included Standard – Draw as many as you want!	✗	Optional – Only up to 8 zones
<b>Screen Size &amp; Resolution</b>	✓	15.6" Full High Definition 1920 x 1080	✗	15" XGA 1024 x 768
<b>Operating System</b>	✓	Std. Embedded OS or optional Windows 10 OS	✗	Windows 10 Only
<b>Standard Warranty</b>	✓	3 Year Standard Warranty	✗	1 Year Standard Warranty
<b>Analysis / Compliance Packages</b>	✗	Jitter, Power, USB, Automotive, Ethernet, MIPI, DDR3 & LPDDR3, more coming soon	✓	Jitter, Power, USB, PCIe, Automotive, Ethernet, MIPI, DDR, HDMI, eMMC, MHL

\* Not specified by Keysight, but maximum rate measured by Tektronix was 600 wfms/sec

\*\* ENOB was tested by Tektronix at 500mV Full Scale and 90% of screen. Keysight is tested at 300mV Full Scale