Competitive Comparison

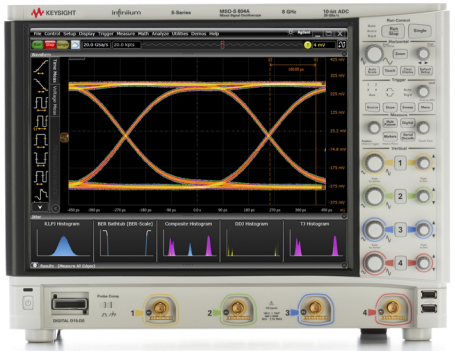
Keysight S-Series vs Teledyne-LeCroy HDO4000/6000/8000[1]

DC Power Rail Measurements

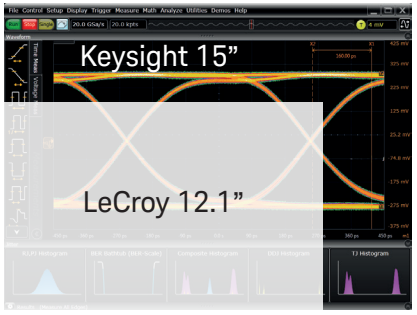
The Keysight Technologies, Inc. S-Series oscilloscopes provide bandwidths up to 8 GHz with class-leading signal integrity and analysis. Custom ASICs, including the industry's first 40 GSa/s, 10-bit ADC, allow you to see your real signal. Class-leading deep memory and a large suite of analysis tools complement a designed-for-touch user interface and the industry's first 15" multi-touch capacitive display. Paired with the N7020A power rail probe, you gain complete visibility into the signals hiding on your DC power rails.

	Teledyne-LeCroy HDO4000/6000/8000 [2]		**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
Effective Number of Bits (ENOB) at 1 GHz BW and 100 mV/div	6.5[3]	X	8.0	√
Noise at 1 mV/div 1 GHz to 50 Ω	151 uV RMS[3]	X	90 uV RMS	√
Display	12.1" resistive touch	X	15" capacitive multi-touch	√
Knob per vertical channel	No – muxed	X	Yes	√
Number of simultaneous math functions	8 (12 on HDO8000)	X	16	√
Timescale accuracy	± 1,500 ppb	X	± 75 ppb	√
Max Offset of scope @ 10 mV/div	8 V	√	800 mV	X
Max offset of scope @ 10 mV/div with dedicated "power rail" probe	NA	X	± 24 V	√

Keysight S-Series



Teledyne-LeCroy HDO4000/6000/8000



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

1. This information was prepared in September, 2015 and is subject to change without notice. For the most current version of this document, go to: http://literature.cdn.keysight.com/litweb/pdf/5992-0947EN.pdf.

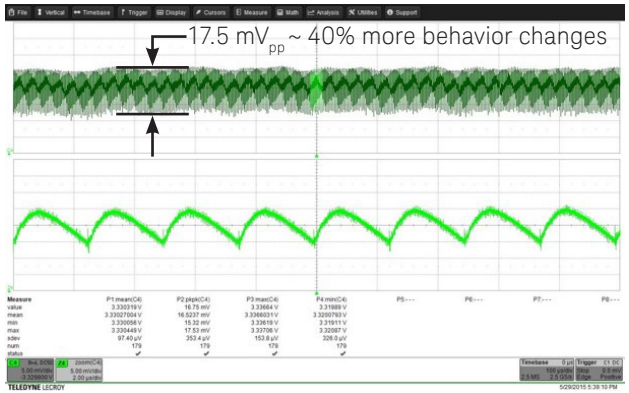
KEYSIGHT TECHNOLOGIES

Unlocking Measurement Insights

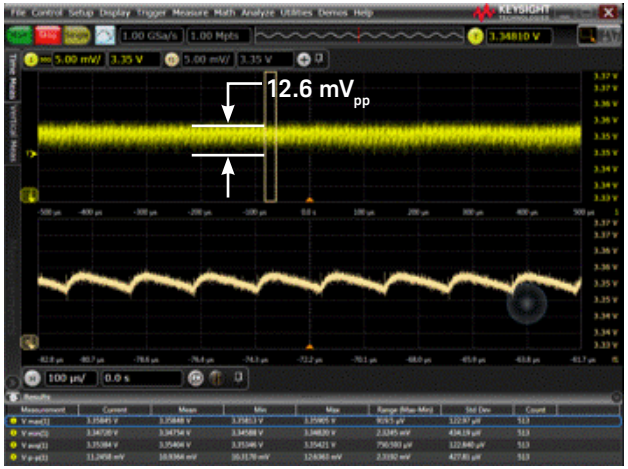
That... or This...

Characterizing ripple and noise in your DC power supply doesn't have to be time consuming or filled with guess work. You just have to choose the right tools.

Teledyne-LeCroy HDO 4000/6000/8000 with 50 Ω coax cable



Keysight S-Series with N7020A Power Rail Probe



Keysight N7020A power rail probe

- 50 kΩ DC input impedance
- ± 24 V DC offset range
- 1:1 attenuation

Product	Bandwidth
N7020A	2 GHz

That ...

The LeCroy solution measures the signal at 17.5 mVpp. The 50 Ω loading of the coax cable is loading the supply and as a result the behavior changes by ~40%.

This...

Keysight S-Series and N7020A power rail probe measures 12.6 mVpp on the output of the same DC supply. The difference is due to the low DC loading of the N7020A power rail probe.

	LeCroy HDO 4000/6000 with 50 Ω coax cable		Keysight S-Series with N7020A power rail probe	
Noise	1.4 mVpp @ 1 GHz, 2 mV/div[3]	√	0.9 mVpp @ 1 GHz, 2 mV/div	√
Offset	10 V but with decreased sensitivity[2]	X	24 V without compromise	√
Loading at DC	50 Ω[2]	X	50 kΩ	√
Bandwidth	Up to 1 GHz[2]	X	Up to 2 GHz	√

2. Teledyne-LeCroy specifications were obtained from the 2014 HDO4000, HDO6000 and HDO8000 data sheets found on the LeCroy website.
3. Specifications listed here that are not found in Teledyne-LeCroy literature were measured by Keysight engineers with a LeCroy HDO6104 oscilloscope following IEEE standard.

Learn more. Visit:

www.keysight.com/find/switch2sseries

Infiniium S-Series oscilloscope

- 500 MHz – 8 GHz bandwidth (upgradeable)
- 20 GSa/s sampling, up to 800 Mpts memory
- 16 Ch logic channel, serial data analysis

Product	Bandwidth	CH
DSOS204A	2 GHz	4

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