

# Competitive Comparison

## Keysight S-Series versus Danaher-Tektronix DPO7000C<sup>1</sup>

### DC Power Rail Measurements

The Keysight Technologies, Inc. S-Series oscilloscope provides 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 touch-screen display. Paired with the N7020A power rail probe, you gain complete visibility into the signals hiding on your DC power rails.

	Danaher-Tektronix DPO7000C <sup>2</sup>	Keysight Infiniium S-Series
Bandwidth	Up to 3.5 GHz	✗ Up to 8 GHz
Upgradable bandwidth	No	✗ Yes – license key
Standard full channel sampling rate	10 GSa/s on 2.5/3.5 GHz 5 GSa/s on 500 MHz/1 GHz	✓ 10 GSa/s on all models
Max sampling rate	40 GSa/s 1 channel	✗ 20 GSa/s 2 channel
Standard memory depth	25 Mpts	✗ 50 Mpts
Max memory depth (2 ch)	250 Mpts	✗ 800 Mpts
ADC bits	8 bits	✗ 10 bits
Effective Number of Bits (ENOB) at 1 GHz BW and 100 mV/div	6.7	✗ 8.0
Timescale accuracy	± 2500 ppb	✗ ± 12 ppb
Waveform update rate (normal mode)	Up to 40 wfms/s	✗ Up to 2,000 wfms/s
Waveform update rate (special mode)	Up to 250,000 wfms/s	✓ Not available
Display	12.1" resistive touch	✗ 15" capacitive multi-touch
MSO	No	✗ Optional – 16 ch
Number of simultaneous math functions	4	✗ 16
Internal drive	HDD (SSD option)	✗ SSD
Max Offset of scope @ 10 mV/div	1 V	✓ 800 mV
Max offset of scope @ 10 mV/div with dedicated power integrity probe	NA	✗ ± 24 V

### Keysight S-Series



### Danaher-Tektronix DPO7000C Series



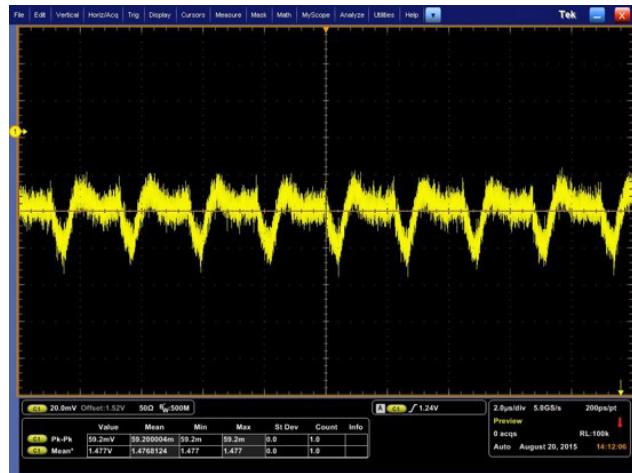
A 15" multi-touch capacitive touch-screen display offers 2x more viewing area and much greater sensitivity to user inputs.

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/5992-1067EN.pdf>.

## 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.

### Tektronix DPO7000C with P6246/7



That ...

The Tektronix 7000C solution measures the same FPGA but there is so much noise on the signal that you cannot see any of the details, making it impossible to know if you are within tolerance.

### Keysight S-Series with N7020A power rail probe



This ...

Measuring the DC power supply of an FPGA with a Keysight S-Series and an N7020A power rail probe, you can see all the subtle details of the trace.

Tektronix DPO7000C with P6246/7 differential probe 1:1 attenuation		
Noise	13 mVpp @ 1 GHz, 20 mV/div <sup>3</sup>	X
Offset	0.7 V <sup>2</sup>	X
Loading at DC	200 kΩ <sup>2</sup>	✓
Bandwidth	Up to 1 GHz <sup>2</sup>	X

### Keysight S-Series with N7020A power rail probe 1:1 attenuation

	0.9 mVpp @ 1 GHz, 20 mV/div	✓
Offset	24 V	✓
Loading at DC	50 kΩ	✓
Bandwidth	Up to 2 GHz	✓

2. Danaher-Tektronix specifications were obtained from the 2014 DPO7000C technical specifications found on the Tektronix website.
3. Specifications listed here that are not found in Danaher-Tektronix literature; rather, they were measured by Keysight engineers using a Tektronix DPO7104C oscilloscope.

### Keysight N7020A power rail probe



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

Product	Bandwidth
N7020A	2 GHz

Learn more visit  
[www.keysight.com/find/switch2sseries](http://www.keysight.com/find/switch2sseries)

### Infiniium S-Series oscilloscope

- 500M ~ 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