

# Competitive Comparison

## Keysight S-Series vs Danaher-Tektronix DPO5000B<sup>1</sup>

### DC Power Rail Measurements



TEL:02-2278-9886  
www.pinsyun.com.tw

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 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 DPO5000 <sup>2,3</sup>		Keysight Infiniium S-Series	
Bandwidth	Up to 2 GHz	X	Up to 8 GHz	✓
Upgradable bandwidth	No	X	Yes – license key	✓
Max sampling rate	10 GSa/s on 1, 2 GHz	X	20 GSa/s on all models	✓
	5 GSa/s on 350/500 MHz	X		✓
Std memory depth	25 Mpts	X	50 Mpts	✓
Max memory depth (2 ch)	250 Mpts	X	800 Mpts	✓
ADC bits	8 bits	X	10 bits	✓
Effective Number of Bits (ENOB) at 1 GHz BW and 100 mV/div	6.0	X	8.0	✓
Timescale accuracy	± 2500 ppb	X	± 12 ppb	✓
Noise at 10 mV/div 2 GHz to 50 Ω	750 uV RMS calculated	X	163 uV RMS	✓
Bandwidth filters	Up to 5	X	Up to 16	✓
Waveform update rate (normal mode)	Up to 40 wfms/s	X	Up to 2,000 wfms/s	✓
Waveform update rate (special mode)	Up to 250,000 wfms/s	✓	Not available	X
Display	10.4" resistive touch	X	15" capacitive multi-touch	✓
Upgradable MSO	No	X	Yes	✓
Number of simultaneous math functions	4	X	16	✓
Std passive probe	500 MHz or 1 GHz	✓	500 MHz	X
Max offset of scope @ 10 mV/div	1 V	✓	800 mV	X
Max offset of scope @ 10 mV/div with dedicated "power rail" probe	NA	X	± 24 V	✓

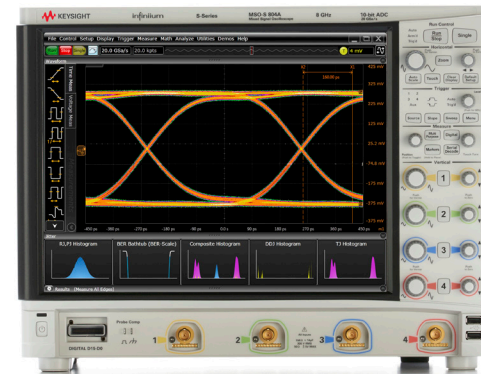


Unlocking Measurement Insights

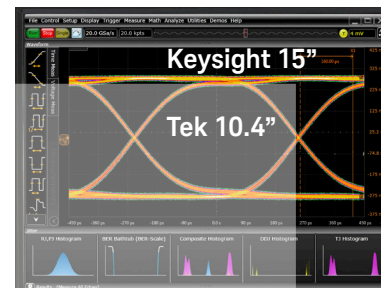
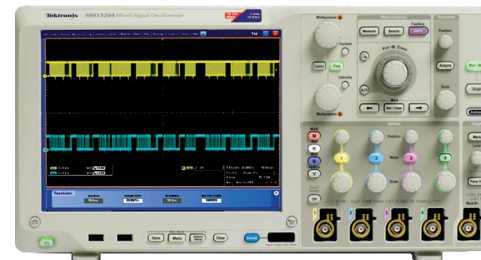


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### Keysight S-Series



### Danaher-Tektronix DPO5000B Series



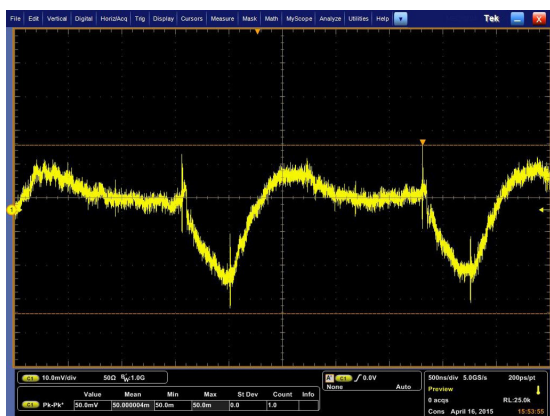
A 15" multi-touch capacitive touch-screen display offers 2x more viewing area and much greater sensitivity to user inputs.

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/5992-1066EN.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 DPO5000B with P6246/7



### That...

The Tektronix 5000B solution measures the same signal but there is so much noise on the signal that you cannot see any of the transients present, making it impossible to know if you are within tolerance or not.

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



### This...

Measuring DDR3 DC power supply with the Keysight S-Series and N7020A power rail probe, you can see all of the subtle details of the trace.

### 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)

	Tektronix DPO5000B with P6246/7 differential probe		Keysight S-Series with N7020A power rail probe	
Noise	14.2 mVpp @ 1 GHz, 10 mV/div	X	0.9 mVpp @ 1 GHz, 2 mV/div	✓
Offset	0.7 V	X	24 V	✓
Loading at DC	200 kΩ	✓	50 kΩ	✓
Bandwidth	Up to 1 GHz	X	Up to 2 GHz	✓

- Danaher-Tektronix specifications were obtained from the 2014 DPO5000 technical specifications found on the Tektronix website.
- Specifications listed here that are not found in Danaher-Tektronix literature; rather, they were measured by Keysight engineers using a Tektronix MSO5204AB oscilloscope.

### 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

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