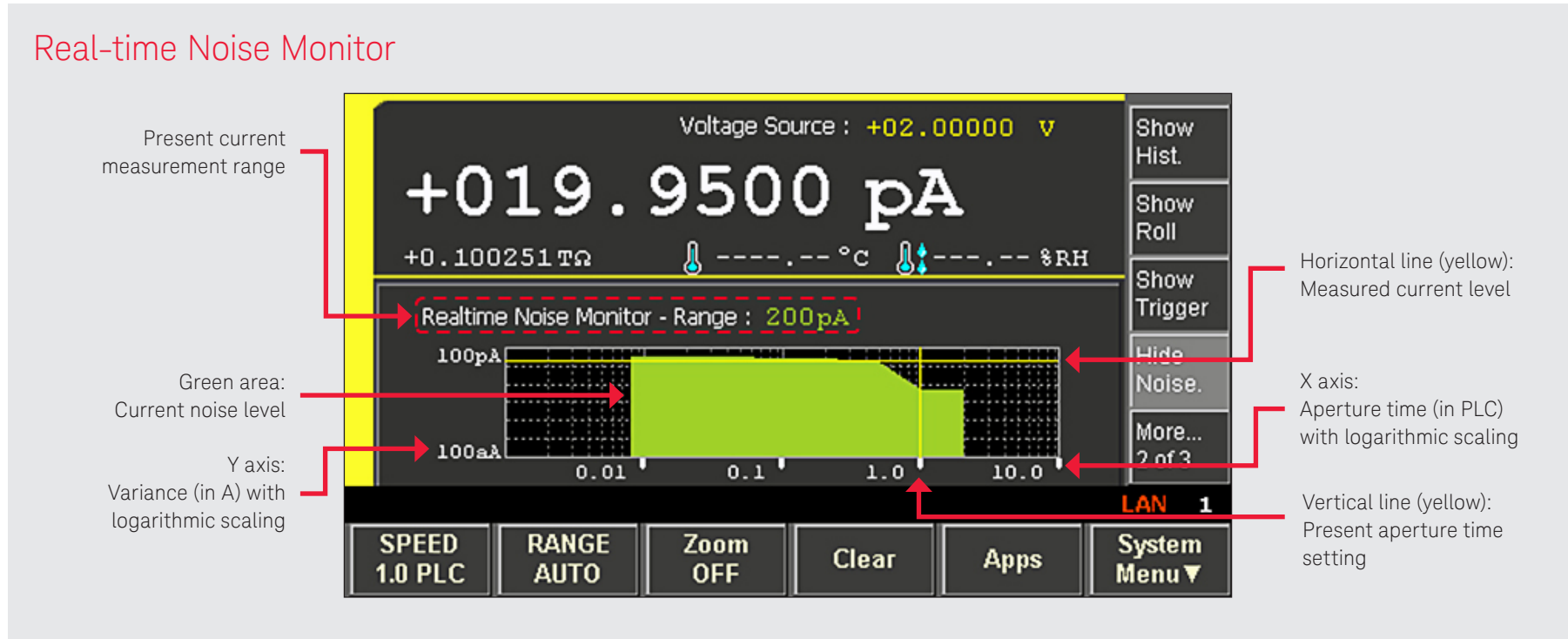


Keysight Real-time Noise Monitor Function Increases Sensitive Measurement Confidence

Built-in function in the Keysight B2980A Series Femto/Picoammeter & Electrometer/High Resistance Meter

The Real-time Noise Monitor function is a useful and time-saving Keysight B2980A Series feature that improves your current measurement environment. It allows you to visualize the current noise level and compare it to the measured current level. The Real-time Noise Monitor function enables you to efficiently tune your measurement settings (i.e. measurement integration time, etc.) and environment (i.e. cable connections, etc.). It is available in firmware revision 2.0 and later. You can find the latest firmware at <http://www.keysight.com/find/precisionMeasure>



Why is the Real-time Noise Monitor function useful?

The Real-time Noise Monitor function measures current noise under your measurement conditions, calculates its standard deviation and displays it. With this visual information, you can easily determine whether or not current measurement parameters such as aperture time setting need to be adjusted.

For example, the noise distribution in Figure 1 shows that the measurement result is within the noise for integration times under 1.0 PLC and that the noise level is under 1 pA rms for integration times greater than 1.0 PLC. In addition, if you have a high noise level you may also be able to lower it via improved fixturing (i.e. by using a shielding box). Figure 2 shows how you can immediately determine the effect of any such actions. Thus, the Real-time Noise Monitor function helps you to efficiently tune your measurement settings and environment

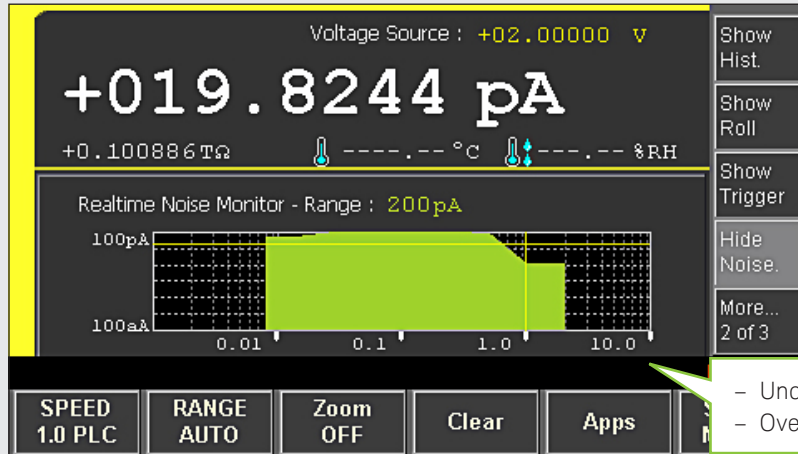


Figure 1. Measurement result (without shielding box)

DUT: 100 GΩ
Applied Voltage: 2.0 V
Measured Current: Around 20 pA (= 2.0 V/100 GΩ)

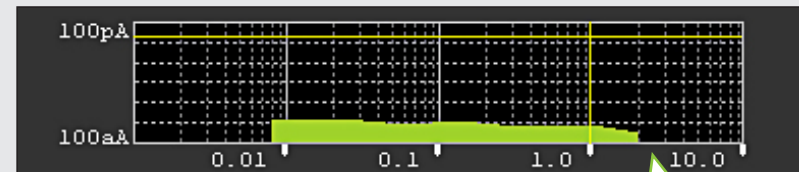


Figure 2. Measurement result (with shielding box)

- Under 1.0 PLC, the measurement results are within the noise
- Over 1.0 PLC, the noise level is less than 1 pA rms

Using a shielding box, the noise is eliminated

Need further noise analysis in your test environment?

The Keysight N1420A Setup Integrity Checker is optional software that allows you to compare, evaluate and record noise emanating from external test setup elements. It enables you to isolate noise caused by exterior cables, connectors, shields, test chambers, etc. The Setup Integrity Checker function permits you to compare a baseline noise with no external elements connected against the system noise characteristics with different external setup elements connected. The results are displayed statistically on the front panel in a convenient tabular format. The "SIC" (Setup Integrity Checker) license is required to enable this noise checking function.

To learn more, please visit our website:

<http://www.keysight.com/find/b2980a>, <http://literature.cdn.keysight.com/litweb/pdf/5992-0558EN.pdf?id=2583124>



Setup Integrity Checker						
Date	Range	NPLC	Reference (σ)	Target (σ)	Variance Ratio	
12/1/2014 2:53:06 PM	2nA	0.1	6.4E-14	8.7E-14	1.9	
12/1/2014 2:54:07 PM	2nA	0.1	6.3E-14	9.0E-14	2.1	
12/1/2014 2:55:06 PM	2nA	0.1	5.9E-14	8.1E-14	1.9	
12/1/2014 2:56:43 PM	200pA	0.1	8.6E-16	1.3E-15	2.1	
12/1/2014 2:58:29 PM	200pA	0.1	7.3E-16	1.4E-15	3.8	

N1420 Setup Integrity Checker function



Unlocking Measurement Insights

This information is subject to change without notice.

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Published in USA, March 18, 2016

5992-1482EN

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