

New Keithley SMU Modules Solve Tough Test Challenges Involving Low Current, High Capacitance

Modules for Keithley 4200A-SCS Parameter Analyzer Ideal for Applications with High Test Connection Capacitance, Unstable Low Current Measurements

BEAVERTON, Ore., Oct. 29, 2019 /PRNewswire/ -- Tektronix, Inc. today announced the availability of two new source measure unit (SMU) modules for the [Keithley 4200A-SCS Parameter Analyzer](#) that can perform low-current measurements even in the presence of high load capacitance due to long cables and complex test setups. Among the notable test applications facing this challenge are LCD display manufacturing and nano FET device testing on a chuck.

The new 4201-SMU and 4211-SMU are designed specifically for test setups with long cables, switch matrices, gate contacts to the chuck, and other fixturing. Such test setups, which are required in a number of low current measurement applications, can increase the capacitance seen at the output of the SMU, even though the device under test itself has very low capacitance. When the test connection capacitance is too high, the resulting low current measurements can become unstable.

To address these challenges, the new modules can source voltage and measure current with longer cables or more connection capacitance than possible using traditional SMUs. This saves researchers and manufacturing test engineers the time and cost that would otherwise be spent troubleshooting and reconfiguring test setups.

"High load capacitance resulting from elaborate test setups is a growing problem as current levels are reduced to save energy, as is the case with testing the large LCD panels that ultimately end up in smartphones or tablet computers," said Peter Griffiths, General Manager Systems & Software, Keithley division of Tektronix. "Our new modules excel at making stable low-current measurements and will immediately benefit many of our existing and future customers."

At the lowest supported current measurement range, the 4201-SMU and 4211-SMU can source into and measure a system that is 1,000 times more capacitive than what's possible today. For example, if the current level is between 1 to 100 pA (picoamp), the new Keithley modules can be stable with as much as 1 μ F (microfarad) of load capacitance. In contrast, the maximum load capacitance competitive units can tolerate before measurement stability degrades is just 1,000 pF (picofarad), or 1,000 times worse.

The 4201-SMU and 4211-SMU can be ordered pre-configured with a 4200A-SCS for a full parameter analysis solution or as a field upgrade for existing units. The upgrade can be easily accomplished on site without the need to send the unit to a service center, potentially saving weeks of downtime.

About the 4200A-SCS

The 4200A-SCS is a customizable and fully-integrated parameter analyzer that provides synchronized insight into current-voltage (I-V), capacitance-voltage (C-V), and ultra-fast pulsed I-V characterization to accelerate semiconductor, materials, and process development and manufacturing. Each 4200A-SCS can be configured with up to nine SMUs. The system's Clarius Software user interface provides touch-and-swipe or point-and-click control for advanced test definition, parameter analysis, graphing, and automation capabilities for modern semiconductor, materials, and process characterization.

Availability

Available now worldwide, the 4201-SMU and 4211-SMU modules are priced from \$7,190 US MSRP, not including the 4200A-SCS Parameter Analyzer. For more information go to: <https://www.tek.com/keithley-4200a-scs-parameter-analyzer>

About Tektronix

Tektronix, Inc., headquartered in Beaverton, Oregon, delivers innovative, precise and easy-to-operate test, measurement and monitoring solutions that solve problems, unlock insights and drive discovery globally. Tektronix has been at the forefront of the digital age for over 70 years. More information on our products and solutions is available at [Tek.com](https://www.tek.com).

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