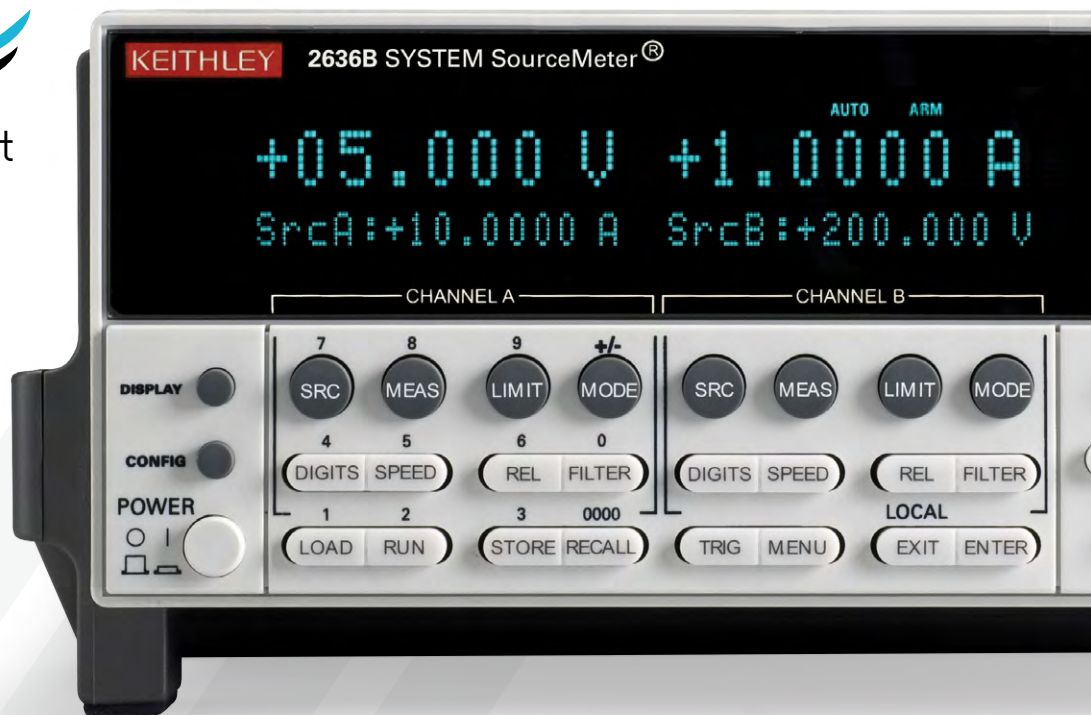




# Automation and KickStart Software: Large Scale Testing

WHITE PAPER



## Introduction

Some workflows require the ability to test and monitor a high volume of devices in a single sitting. Typically, when dealing with large scale testing, the solution is to create custom code scripts to control the test system. However, not everyone has the time or expertise to create these test scripts. This is where no-code software solutions such as Keithley KickStart Software come into play.

## Large Scale Test Options in KickStart Software

While KickStart Software is a popular software companion to the test bench, it also has capabilities that allow for testing at high volumes. This is because KickStart Software allows users the freedom to run eight different app instances in parallel simultaneously.

### Using the Data Logger App

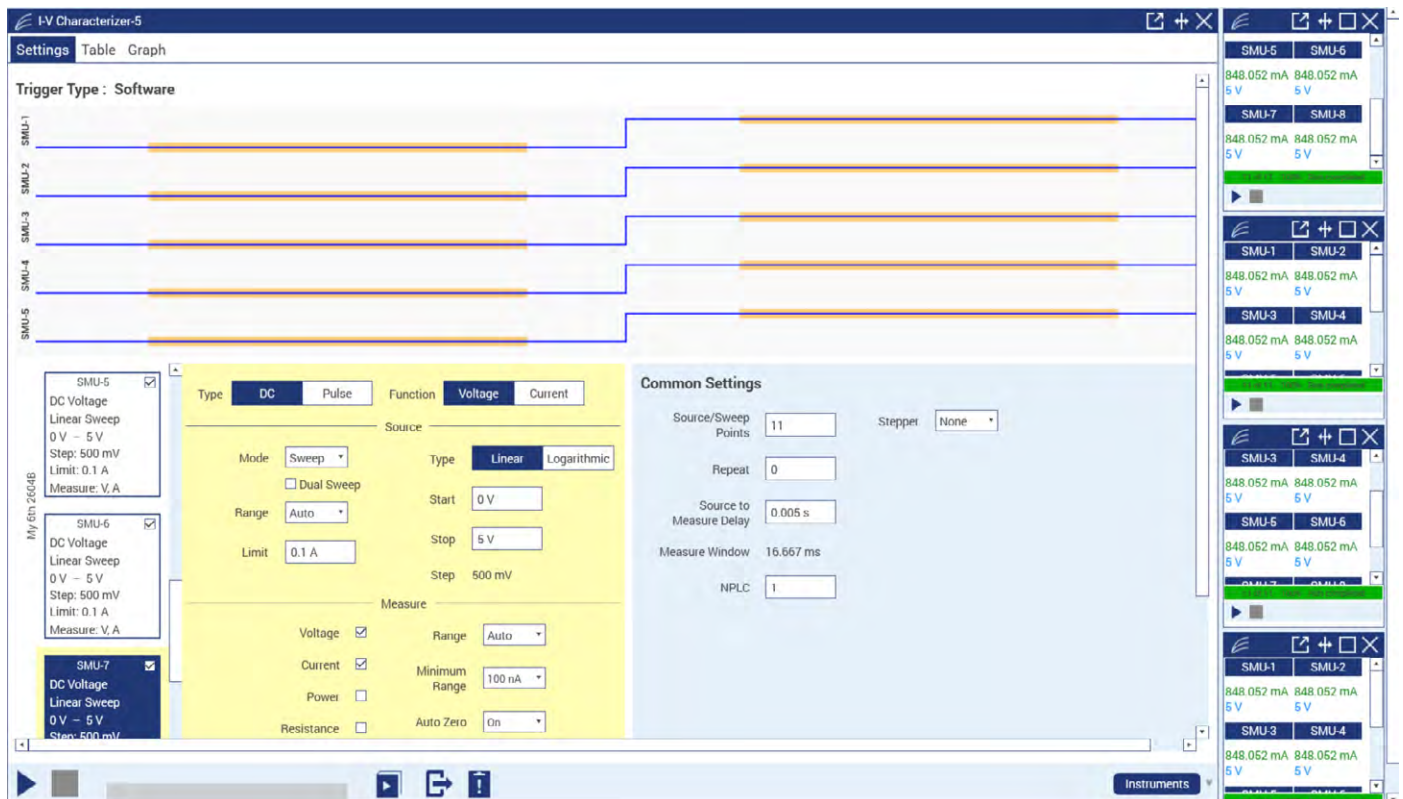
The obvious choice for high volume data collection is the KickStart Software Data Logger App. Depending on the instrumentation used and the cards installed, KickStart Software can collect data from thousands of channels at

once. For example, a 3706A System Switch and Multimeter with a 3722 96-channel multiplexer card installed in each of its 6 slots provides access to 576 data logger channels. Paired with KickStart Software's ability to support 8 instances of the Data Logger App, suddenly collecting data from 4,608 channels is possible.

The caveat is that the 8 separate app instances means that the data is separated into 8 separate tables and graphs. However, if having all 4,608 channels in one plot is necessary, the data can be exported from each of the 8 instances and then processed outside of KickStart Software.

### Using the I-V Characterizer App

The I-V Characterizer App use case is similar to the previous Data Logger App use case outlined previously. A single instance of the I-V Characterizer App can support up to 4 SMUs. If each of these SMUs has 2 channels, that amounts to a total of 8 SMU channels per app instance. If a user were to have 8 instances of the I-V Characterizer App open, with 4 dual channel SMUs being utilized in each instance, that is a total of 64 SMU channels being controlled by KickStart Software simultaneously!



## Multi-App Use Cases

Having 8 app instances open in KickStart Software isn't limited to using the same app either. Depending on the application, multiple KickStart Software Apps can be used in tandem.

For frequency response measurements, consider using the Power Supply App with the AFG App and Scope App to power the device under test, apply the input signal, and capture the resulting waveform. (See [Analyzing Frequency Response Using the AFG31000, MDO3000, and KickStart Software.](#))

For wide bandgap reliability testing, the Data Logger App and Power Supply App make for a powerful combination. The Power Supply App can be used to apply output a constant bias voltage for stressing or to customize the

output sequence using the list sweep function, while the Data Logger App is used to monitor the device behavior during stressing. (See [Wide Bandgap Device Reliability Testing with Keithley's KickStart Software.](#))

## Conclusion

There are several applications where KickStart Software may be an appropriate solution for large scale automation. This is particularly true for workflows that don't require advanced sequencing and/or don't have time to invest into creating scripts. KickStart Software can accommodate up to 8 apps at a time, which allows for high volume characterization and data logging as well as applications which require the use of multiple instrument families simultaneously.

## Contact Information:

Australia 1 800 709 465  
Austria\* 00800 2255 4835  
Balkans, Israel, South Africa and other ISE Countries +41 52 675 3777  
Belgium\* 00800 2255 4835  
Brazil +55 (11) 3530-8901  
Canada 1 800 833 9200  
Central East Europe / Baltics +41 52 675 3777  
Central Europe / Greece +41 52 675 3777  
Denmark +45 80 88 1401  
Finland +41 52 675 3777  
France\* 00800 2255 4835  
Germany\* 00800 2255 4835  
Hong Kong 400 820 5835  
India 000 800 650 1835  
Indonesia 007 803 601 5249  
Italy 00800 2255 4835  
Japan 81(3) 6714 3086  
Luxembourg +41 52 675 3777  
Malaysia 1 800 22 55835  
Mexico, Central/South America and Caribbean 52 (55) 88 69 35 25  
Middle East, Asia, and North Africa +41 52 675 3777  
The Netherlands\* 00800 2255 4835  
New Zealand 0800 800 238  
Norway 800 16098  
People's Republic of China 400 820 5835  
Philippines 1 800 1601 0077  
Poland +41 52 675 3777  
Portugal 80 08 12370  
Republic of Korea +82 2 565 1455  
Russia / CIS +7 (495) 6647564  
Singapore 800 6011 473  
South Africa +41 52 675 3777  
Spain\* 00800 2255 4835  
Sweden\* 00800 2255 4835  
Switzerland\* 00800 2255 4835  
Taiwan 886 (2) 2656 6688  
Thailand 1 800 011 931  
United Kingdom / Ireland\* 00800 2255 4835  
USA 1 800 833 9200  
Vietnam 12060128

\* European toll-free number. If not accessible, call: +41 52 675 3777

Rev. 02.2022



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7/2023 SBG 1KW-74013-0

