

Keithley Instruments
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GENERAL INFORMATION**SUPPORTED MODELS**

This software is intended for use with the following Keithley Instruments and Tektronix product models using USB, LAN (ethernet), or GPIB interfaces. The use of RS-232 (serial) is not supported.

Product category**DAQ**

| | | | | | |
|------|------|------|-------|-----------|----------|
| 2700 | 2701 | 2750 | 3706A | 3706A-NFP | DAQ6510* |
|------|------|------|-------|-----------|----------|

*Includes DAQ6510-US

DMM

| | | | | | |
|------|------|------|------|----------|----------|
| 2000 | 2010 | 2100 | 2110 | DMM6500* | DMM7510* |
|------|------|------|------|----------|----------|

*Includes DMM6500-US, DMM-7510-US, DMM-7510-NFP, DMM7510-NFP-US, DMM7510-RACK, DMM7510-RACK-US, DMM7510-NFP-RACK, DMM7510-RACK-US



Product category**SMU**

| | | | | | |
|--------|--------|--------|-------|-------------|-------|
| 2400 | 2400-C | 2401 | 2410 | 2410-C | 2420 |
| 2420-C | 2425 | 2425-C | 2430 | 2430-C | 2440 |
| 2440-C | 2450 | 2460 | 2461 | 2470 | 2601A |
| 2601B | 2602A | 2602B | 2604B | 2606B | 2611A |
| 2611B | 2612A | 2612B | 2614B | 2634B | 2635B |
| 2636A | 2636B | 2651A | 2657A | 2601B-PULSE | |

Sensitive

| | | | | | |
|------|------|------|------|-------|-------|
| 6430 | 6485 | 6487 | 6514 | 6517A | 6517B |
|------|------|------|------|-------|-------|

Power Supply

| | | | | | |
|------|------|------------|------------|------------|--|
| 222x | 223x | 2280S-32-6 | 2280S-60-3 | 2281S-20-6 | |
|------|------|------------|------------|------------|--|

Oscilloscope

| | | | | | |
|--------------|--------------|------------|------------|--------------|-----------|
| DPO3012 | DPO3014 | DPO3032 | DPO3034 | DPO3052 | DPO3054 |
| DPO4014B | DPO4032 | DPO4034 | DPO4034B | DPO4054 | DPO4054B |
| DPO4102B | DPO4102B-L | DPO4104 | DPO4104B | DPO4104B-L | MDO3012 |
| MDO3014 | MDO3022 | MDO3024 | MDO3032 | MDO3034 | MDO3052 |
| MDO3054 | MDO3102 | MDO3104 | MDO32 | MDO34 | MDO4014-3 |
| MDO4014B-3 | MDO4024C | MDO4034-3 | MDO4034B-3 | MDO4034C | MDO4054-3 |
| MDO4054-6 | MDO4054B-3 | MDO4054B-6 | MDO4054C | MDO4104-3 | MDO4104-6 |
| MDO4104B-3 | MDO4104B-6 | MDO4104C | MSO3012 | MSO3014 | MSO3032 |
| MSO3034 | MSO3052 | MSO3054 | MSO4012B | MSO4012B-L | MSO4032 |
| MSO4034 | MSO4034B | MSO4054 | MSO4054B | MSO4104 | MSO4104B |
| MSO4012B-L | TBS1000C | TBS1022 | TBS1032B | TBS1032B-EDU | TBS1042 |
| TBS1052B | TBS1052B-EDU | TBS1052C | TBS1062 | TBS1064 | TBS1072B |
| TBS1072B-EDU | TBS1072C | TBS1102 | TBS1102C | TBS1104 | TBS1152 |
| TBS1152B | TBS1154 | TBS1202B | TBS1202C | TBS2072B | TBS2074B |
| TBS2102B | TBS2104B | TBS2202B | TBS2204B | | |

Product category

Oscilloscope

| | | | | | |
|--------------|-------------|----------|----------|-------------|----------|
| TBS1202B-EDU | TBS2000B | TBS2072 | TBS2074 | TBS2102 | TBS2104 |
| TBS2202 | TBS2204 | TDS210 | TDS220 | TDS224 | TDS1001 |
| TDS1001B | TDS1001C-SC | TDS1002 | TDS1002B | TDS1002C-SC | TDS1012 |
| TDS1012B | TDS1012C-SC | TDS2001C | TDS2002 | TDS2002B | TDS2002C |
| TDS2004 | TDS2004B | TDS2004C | TDS2012 | TDS2012B | TDS2012C |
| TDS2014 | TDS2014B | TDS2014C | TDS2022 | TDS2022B | TDS2022C |
| TDS2024 | TDS2024B | TDS2024C | | | |

Switch cards

| | | | | | |
|-----------|-------------|------|------|------|------|
| 2000-SCAN | 2001-TCSCAN | 3720 | 3721 | 3722 | 3723 |
| 3724 | 7700 | 7701 | 7702 | 7703 | 7706 |
| 7707 | 7708 | 7710 | | | |

SUPPORTED OPERATING SYSTEMS

KickStart is supported on the following operating systems:

- Windows® 10, 64-bit (Creator's update)
- Windows® 8, 64-bit
- Windows® 7, 64-bit

SUPPORTED COMMUNICATION INTERFACES

- USB
- LAN
- GPIB

PC REQUIREMENTS

- Processor: Dual-core processor 2 GHz or better
- NTFS file system
- RAM: 8GB
- Display resolution: Minimum 1920 × 1080 recommended
- Disk drive space required: 8 GB of free space

SOFTWARE PREREQUISITES:

- NI VISA™ 17.5 Runtime Engine or later (installation package included in KickStart installer)
- Microsoft® Visual Studio® C++ 2013 x64 Redistributable Package
- Microsoft® Visual Studio® C++ 2017 x64 Redistributable Package
- .NET Framework 4.7.

When installing KickStart without an internet connection, make sure that the last three software prerequisites are installed on your computer before installing. The NI VISA 17.5 Runtime Engine is packaged with the KickStart installer.

INSTALLATION INSTRUCTIONS

Download the KickStart 2.4.0 installer from tek.com/keithley-kickstart. Unzip the file and run `KickStartSetup.exe`.

Follow the installation instructions and accept all default settings.

The installer installs the required files into the following default location: `C:\Program Files\Keithley Instruments\KickStart`.

KickStart version 2.4.0 requires a software license. You can install a one-time 60-day free trial with most KickStart apps. For more information on licenses available for KickStart version 2.4.0, please visit tek.com/keithley-kickstart.

For more information on KickStart, see the *KickStart Quick Start Guide* (document number: KKS-903-01), available online at tek.com/keithley-kickstart.

KICKSTART INSTRUMENT CONTROL SOFTWARE HISTORY

| Version | Release date |
|---------|----------------|
| 2.0.0 | April 2018 |
| 2.0.1 | July 2018 |
| 2.0.2 | July 2018 |
| 2.0.3 | August 2018 |
| 2.0.4 | October 2018 |
| 2.0.5 | November 2018 |
| 2.0.6 | February 2019 |
| 2.1.0 | June 2019 |
| 2.1.1 | September 2019 |
| 2.2.0 | November 2019 |
| 2.2.1 | February 2020 |
| 2.3.0 | April 2020 |
| 2.4.0 | November 2020 |

VERSION 2.4.0 RELEASE NOTES

VERSION 2.4.0 KNOWN ISSUES

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|----------------------|--|
| Issue number: | KS-3667 |
| Description: | In the I-V Characterizer App, if the graph is visible while running a pulsed I-V test, the graph may stop updating. |
| Workaround: | To correct this issue, press the autoscale button. |
| Issue number: | KS-3730 |
| Description: | When using a 2461 with version 1.7.2b firmware, the sheet and graph will not display the first pulse in the "IV Characterizer Pulse" test. This only occurs with complete pulse measurements and not pulse measurements. To display the first pulse, configure one more pulse than you need. |
| Issue number: | KS-3751, NS-1952 |
| Description: | Current pulse list sweep tests in the I-V Characterizer do not produce the correct results. |
| Issue number: | KS-3783 |
| Description: | In a Pulse test with the I-V Characterizer and the model 2461, the sample rate can automatically change when switching from Complete Pulse to Top of Pulse and vice versa. The number of pulses * (pulse delay + pulse width + pulse off time) * Sample Rate can: <ol style="list-style-type: none"> 1. Produce too much data for the five million instrument reading buffer. 2. Increase test time due to the enormous amount of data. <p>Due to these issues, the App will change the sample rate attempting to alleviate the issues. Consequently, reducing the sample rate means some pulses may not show the measurement level accurately since the reading is taken during the rising or falling edge of the pulse.</p> |

VERSION 2.4.0 ENHANCEMENTS

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|----------------------|---|
| Issue number: | KS-2550 |
| Improvement: | Added support for configuring LineSync in the DataLogger app. |
| Issue number: | KS-2870 |
| Improvement: | Improved speed of running large sweeps with SMU instruments 26xx, 2450, 2460, and 2461 in the I-V Characterizer by increasing number of readings transferred with each query of the instrument (from 500 to 20,000). |
| Issue number: | KS-2905 |
| Improvement: | The PowerSupply app now supports multiple-channel power-supply instruments, and an improved graphical user interface. The newly-supported models are: Two-channel models: 2220-30-1, 2220J-30-1, 2220G-30-1, 2220GJ-30-1 Three-channel models: 2230-30-1, 2230J-30-1, 2230G-30-1, 2230GJ-30-1, 2230G-30-3, 2230G-30-6, 2230G-60-3 |

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| Issue number: | KS-2997 |
| Improvement: | When using a DAQ6510 in the DataLogger app, the time delay between the run button selection and actual start of a scan is now shorter. |
| Issue number: | KS-3053 |
| Improvement: | Added support for configuring AutoZero in the DataLogger app. |
| Issue number: | KS-3085 |
| Improvement: | Time to configure an instrument with a 200-channel scan in the DataLogger app has been reduced from 2 minutes to less than 30 seconds. |
| Issue number: | KS-3452 |
| Improvement: | Added KickStart support for the TBS1000C and TBS2000B Digital Storage Oscilloscopes. |
| Issue number: | KS-3514, KS-3515 |
| Improvement: | The High Resistivity app has been added to KickStart 2.4.0. This app allows the user to measure insulation resistivity according to the procedure stated in ASTM D257. Additionally, it supports Keithley's alternating polarity technique for improving accuracy in insulation resistivity measurements. |
| Issue number: | KS-3633 |
| Improvement: | Added support for the Model 6517B in the DMM app. |
| Issue number: | KS-3646 |
| Improvement: | Added support to change selected scanner-card configuration for the DMM6500 using the Identify Instruments button located in the right-click context menu of the instrument in the KickStart instrument manager. |
| Issue number: | KS-3656 |
| Improvement: | Time is now the default X-axis source in the I-V Characterizer Graph when measuring Complete Pulse. |
| Issue number: | KS-3739 |
| Improvement: | "Touch, Test, Invent™" SMUs now switch to the processing screen when digitizing in order to maximize data transfer throughput. |
| Issue number: | KS-3744 |
| Improvement: | Added a toggle switch to the Scope app to control continuous polling to synchronize instrument settings. |
| Issue number: | KS-3793 |
| Improvement: | The DMM app now has the ability to set customized units of measure for math operations. |
| Issue number: | KS-3821 |
| Improvement: | Tooltip and help text about viewing data and comparing multiple runs has been added to the Run history button and the Run history pop-up. |
| Issue number: | KS-3830 |
| Improvement: | Made X and Y axis settings panels more discoverable in the graph by showing them when you hover over the Legend. |

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| Issue number: | KS-3837 |
| Improvement: | Added tooltips to the buttons in the graph legend. |
| Issue number: | KS-3839 |
| Improvement: | Improved graph log scaling; labels and gridlines are spaced in log format. |
| Issue number: | KS-3958, KS-3959, KS-3962, KS-4004 |
| Improvement: | <p>New perpetual and annual licensing options are now supported in KickStart.</p> <p>New and improved app-based trial licensing has been implemented that allows you to try any KickStart app independently and on demand.</p> <p>Made user interface changes to the app cards to show license information.</p> <p>Manage Licenses window can now be accessed directly from the KickStart main window.</p> <p>Made user experience improvements to the Manage Licenses window to show sufficient details about the installed licenses and also make the transfer of floating licenses simpler.</p> |

VERSION 2.4.0 USAGE NOTES

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|----------------------|---|
| Issue number: | KS-3912 |
| Description: | When using a 6517B in the DMM app, if $mX+b$ is selected as the math function, the instrument displays Poly as the function even though the performed math operation is actually $mX+b$. |

VERSION 2.4.0 RESOLVED ISSUES

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| Issue number: | KS-2071 |
| Resolution: | Resolved an issue where instrument errors may occur when stopping a pulse test using the Model 2461. |
| Issue number: | KS-2611, 2612 |
| Resolution: | Resolved an issue where the instrument selector window was empty after opening a saved project when connected to an instrument operating in non-TSP command set. |
| Issue number: | KS-2947 |
| Resolution: | Resolved an issue where the instrument pane lists an instrument as unsupported when using a Model 2450, 2461, DMM6500, or DAQ6510. |
| Issue number: | KS-2953 |
| Resolution: | Resolved an issue where KickStart would become unresponsive when the Identify Instruments button is selected while the oscilloscope is busy or in use. |
| Issue number: | KS-2964 |
| Resolution: | Resolved an issue where a dark-themed graph intermittently appeared when the light theme was selected in KickStart. |
| Issue number: | KS-3635 |
| Resolution: | Resolved an issue where an incorrect measure range was being set on the instrument when using a Model 6430. |

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| Issue number: | KS-3645, KS-3735 |
| Resolution: | Fixed an issue with the reading table showing blank rows of data when using the DataLogger app connected to a Model DMM6500. |
| Issue number: | KS-3651 |
| Resolution: | Fixed an issue with the graph log scale, where zooming in and out of the graph when configured for log scale would result in jitter and a crash of KickStart. |
| Issue number: | KS-3782 |
| Resolution: | In the I-V Characterizer app during voltage or current pulsing, if the voltage or current readback setting was turned off, this setting would be turned back on when the project was saved. This has been resolved. |
| Issue number: | KS-3987 |
| Resolution: | When operating in the measurements mode of the Scope app, sometimes CH1 was incorrectly shown as disabled even when it was turned on in the Scope app. This issue has been resolved |
| Issue number: | KS-3991 |
| Resolution: | When using the I-V Characterizer app and selecting a previous run in the run history, a new run was created. This issue has been resolved. |
| Issue number: | KS-3995 |
| Resolution: | Resolved an issue where 2600B Series SMU instruments would not turn off output immediately after finishing sweep or pulse. Resolving this issue reduces time between the completion of the sweep and the time that the output is turned off. |
| Issue number: | KS-4012 |
| Resolution: | When a saved KickStart project containing an I-V Characterizer app using two dual-channel 26xx instruments is reopened, the following errors were noticed: <ol style="list-style-type: none"> 1. Index was out of range; it must be non-negative and less than the size of the collection. Parameter name: index. 2. App Alias Already Exist. This issue has been resolved. |
| Issue number: | KS-4038 |
| Resolution: | Running the DataLogger app configured to collect Current measurements using the 3706A with the 3721 card resulted in a test being stopped without collecting any measurements. This issue has been resolved. |
| Issue number: | KS-4069 |
| Description: | A VISA timeout exception was encountered in the I-V Characterizer when the Delay (time) setting is > 3 s. An issue was fixed with the 26xxB driver where the Run was timing-out for larger Source Delay over USB and LAN. This issue has been resolved. |
| Issue number: | KS-4074 |
| Description: | When performing an Auto Export function with the DataLogger app when the scan setup contains a long scan interval (≥ 360 s), the export may fail. This issue has been resolved. |

Issue number: KS-4075

Description: When performing an Auto Export function with the DataLogger app when the scan setup contains an excessively long scan interval (≥ 3600 s), the export may include the Run History description. This issue has been resolved.
