KEITHLEY
A Tektronix Company

KickStart Instrument Control Software

Version 1.9.8

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General Information

Supported Test-Types

KickStart comes with the following Test-Types:

- Communication Terminal
- IV Characterizer
- Power Supply
- Data Logger
- Precision Multimeter
- High Resistance

Supported models

This Software is intended for use on the following Keithley Instruments product models:

Test Type	Models Supported	Min Firmware Version	Command Set (TSP, SCPI, 488.1)	Communication Bus
IV Characterizer	2450 2450-NFP 2450-RACK 2450-NFP-RACK	1.3.0s	TSP Only	USB LAN GPIB
	2400 2400-C 2401 2410 2410-C 2420 2420-C 2425 2425-C 2430 2430-C 2440 2440-C 6430	6430: C27 2401: A01 All other 2400's: C32	SCPI Only	GPIB (only)
	2460 2460-NFP 2460-RACK 2460-NFP-RACK	1.3.0s	TSP Only	USB LAN GPIB
	2461 2461-NFP 2461-RACK 2461-NFP-RACK	1.4.1d	TSP Only	USB LAN GPIB
	2601A & B 2602A & B 2604B 2611A & B 2612A & B 2614B 2634B 2635A & B 2636A & B	A Models: 2.2.6 B Models: 3.2.2	TSP Only	USB LAN GPIB
Precision DC Power	2280S-60-3 2280S-32-6	1.06 1.06	SCPI	USB LAN

	2281S-20-6	1.07		GPIB
Data Logger	2700	B09	SCPI	GPIB
	2701	D05	SCPI	LAN
	2750	A13	SCPI	GPIB
Precision Multimeter	DMM7510 DMM7510-NFP DMM7510-RACK DMM7510-NFP-RACK	1.3.0s	TSP or SCPI	USB LAN GPIB
High Resistance Application	6517B 6517A	A13 C03	SCPI	GPIB
Communication Terminal	All models listed above	N/A	TSP or SCPI	USB LAN GPIB

Supported Operating Systems

KickStart is supported on the following operating systems:

- Windows 10, 32-bit and 64-bit (Windows 10, Windows 10 Pro)
- Windows 8.1, 32-bit and 64-bit (Windows 8.1, Windows 8.1 Pro)
- Windows 8, 32-bit and 64-bit (Windows 8, Windows 8 Pro)
- Windows 7, SP1 32-bit and 64-bit (Professional, Enterprise, Ultimate)

PC Requirements

Windows 10, Windows 8 and Windows 7:

- Processor: 1 GHz or faster (2 GHz or greater recommended)
- RAM: 1 GB (32-bit) or 2 GB (64-bit) (4 GB or greater recommended)

Windows XP:

- Not supported

Screen resolution

- Minimum 1024 by 768

Hard Drive Space Required

- 600 MB

Installation instructions

Abbreviated Installation Instructions

Run KickStartSetup.exe from the KickStart CD-ROM or from the unzipped image downloaded from the Keithley Website (www.tek.com/keithley).

Follow all installation instructions and accept all default settings.

The installer will install the required files into the following default location on a 32-bit O/S: C:\Program Files\Keithley Instruments\KickStart and the following location on a 64-bit O/S: C:\Program Files (x86)\Keithley Instruments\Keithley KickStart

Detailed Installation Instructions

Prerequisites to installing KickStart software:

NOTE: All prerequisites will be automatically installed by default. However, if anything goes wrong during the normal installation, each of the prerequisites can be installed individually.

- You must have NI-VISA™ Runtime Engine version 5.3 or greater installed on your computer. If you do not already have it installed, you can install it from the KickStart CD-ROM (visa530runtime.exe).

- You must have the Microsoft® .NET Framework 4.6.1 installed on your computer. Most computers already have this installed, but if you do not have the 4.6.1 version, you can download it from the Microsoft website (www.microsoft.com).

For more information on KickStart, see the "KickStart Instrument Control Software Quick Start Guide" (document number: KKS-903-01). This Quick Start Guide is available as a shortcut under "Start", "All Programs", "Keithley Instruments", "KickStart Quick Start Guide" or online at http://www.tek.com/support.

KickStart Instrument Control Software Release History

Version 1.0.0.5 is the initial release the Keithley KickStart Software Application. – August 2013
Version 1.1.0 is a minor upgrade that is compatible with version 1.0.0.5 – January 2014
Version 1.2.0 adds support for the Keithley Model 2280 – August 2014
Version 1.3.0 adds support for the Keithley 2700, 2701 and 2750 – September 2014
Version 1.4.0 adds support for the Keithley 2460 – November 2014
Version 1.5.0 adds support for the Keithley 7510 and an update for the Data Logger – January 2015
Version 1.6.0 adds updates for all the existing Test Types plus throughput enhancements and new features for the Advanced Graph control – July 2015
Version 1.7.0 has a Chinese version of the Data Logger Test Type and some minor fixes to other Test Types – October 2015
Version 1.8.0 adds support for the Keithley Model 2461 – February 2016
Version 1.8.1 a hotfix – March 2016
Version 1.8.2 a hotfix for IV Characterizer – April 2016
Version 1.8.3 a hotfix for IV Characterizer and Precision Dmm – April 2016
Version 1.8.4 adds support for the Keithley 2281S-20-6 – June 2016
Version 1.9.0 added High resistivity application for the 6517B and miscellaneous fixes – November 2016
Version 1.9.1 miscellaneous fixes – Dec 2016
Version 1.9.2 miscellaneous fixes – Jan 2017
Version 1.9.3 miscellaneous fixes – Jan 2017
Version 1.9.5 adds support for all 2400 models, 6430, all 2600A models and all 2600B models – Apr 2017
Version 1.9.6 a hot fix for IV Characterizer – May 2017
Version 1.9.7 Hot fixes for High Resistance App. – July 2017
Version 1.9.8 fixes several bugs in IV Characterizer – January 2018

Version 1.9.8 Release

Overview

Software Version 1.9.8:

- Fixed several IV Characterizer issues.

IV Characterizer

Compatibility concerns

None

Critical fixes

AR-57100: Fixed a bug that caused measurements to autorange even if a fixed range was selected, when the source was configured as a voltage or current bias.

AR-60139: Corrected power envelope checks for 2600A and 2600B models.

AR-60346: Fixed bug that prevented negative source values in sweeps.

Fixed bug that prevented 2600A and 2600B models from being discovered if Windows was configured to use certain European languages.

Fixed a bug that resulted in a LAN timeout while collecting data from 2600A or 2600B models.

Enhancements

None

Noncritical fixes

None

Known Issues / limitations

KickStart generates a FileFormatException error on launch if the .NET Framework January 2018 Rollup has been installed. Please refer to https://github.com/Microsoft/dotnet/issues/599 for details on how to resolve this issue.

Version 1.9.7 Release

Overview

Software Version 1.9.7:

- Updating on formula implementation in High Resistance app.
- Fix for unit error in High Resistance app.
- Fix for graph issue in High Resistance app.

High Resistance

Compatibility concerns

None

Critical fixes

AR-56942: Updated implementation for formula calculating effective area of electrodes for volume resistivity test.

Fixed bug that the thickness unit and electrode effective area unit are not unified in the calculation for resistivity.

Fixed bug that setting graph scale as manual scale causes error when loading saved KST file.

Enhancements

None

Noncritical fixes

None

Known Issues / limitations

Version 1.9.6 Release

Overview

Software Version 1.9.6:

- Fix for using multiple 2600's in a multi-SMU test.
- Fix for instrument error with 2461

IV Characterizer

Compatibility concerns

None

Critical fixes

PR-61189 (AR 56323): Setting the stepper to source current would actually source voltage. Only happens with a multi-SMU configuration with the model 2600.

PR-61216: pulse sweep and DIO trigger per pulse causes an instrument error with Model 2461

Enhancements

Added support for 2400 family and 2600A/B family of instruments. Doesn't support 2651A and 2657A

Noncritical fixes

None

Known Issues / limitations

Version 1.9.5 Release

Overview

Software Version 1.9.5:

- Adds support for the following models (see supported models table for complete list of models):
  - 2400 family:
  - 6430
  - 2600A family
  - 2600B family
- High Resistance Measurement Application: Now exports the test and material settings along with the data for the step response and high resistance test.
- Datalogger Application: Graph tool now allows plotting of channel data on the X-axis to allow data from one channel to be plotted against another channel's data.
- Miscellaneous fixes to IV Characterizer Test Type
- Miscellaneous fixes and enhancements to the High Resistance Test Type
- Miscellaneous fixes and enhancements to the Precision Power Supply Test Type

IV Characterizer

Compatibility concerns
None

Critical fixes
None

Enhancements
Added support for 2400 family and 2600A/B family of instruments. Doesn't support 2651A and 2657A

Noncritical fixes
None

Known Issues / limitations

- Does not support pulsing on the Model 2430 and 2600 family.
- Does not support 2651A & 2657A.
- Using multiple SMU instruments in an I-V Characterizer test requires that the SMU have TSP-Link
  - Only a single series Model 2400 (non-graphical) SMU is supported by the I-V Characterizer.
  - I-V Characterizer does not allow configuring a test with both Series 2600 and Series 2400 Graphical SMU instruments.
  - A maximum of 4 instruments is supported. For a 2450/60/61 combination that would be a total of 4 channels. Series 2600 SMU instruments, there could be as many as 8 channels if the instruments are all dual channel.
  - 2604B, 2614B & 2634B do not support TSP-Link but they can be used in a family of curves test with a maximum of 2 channels.

Hi-Resistance

Compatibility concerns
None

Critical fixes
PR60957: KickStart HRMA app High Resistance test hangs when test time exceeds 45 minutes.
PR60201: X-axis time scale values are extremely large - do not agree with actual data.

Enhancements
PR60958: When exporting data to Excel (not csv export) important settings, used to take the data, are exported also.

Noncritical fixes
None

Known Issues

Precision Power Supply

Compatibility concerns
None

Critical fixes
None

Enhancements

Noncritical fixes
PR60790: Errors when OVP is set less than set voltage

Known Issues

Version 1.9.3 Release

Overview

Software Version 1.9.3:

- Miscellaneous fixes.

IV Characterizer

Compatibility concerns

None

Critical fixes

PR60580: KickStart will not detect the Model 2400. This was working correctly in 1.9.0 but broken in 1.9.1

Enhancements

None

Noncritical fixes

None

Known Issues

Version 1.9.2 Release

Overview

Software Version 1.9.2:

- Miscellaneous fixes.

Common Framework

PR60505: Between KickStart v1.9.0 and v1.9.1 logic was added to the installer to install the 64-bit version of Microsoft Visual Studio 2015 runtime on Win7 64-bit machines. This was an ERROR. The 32-bit version of MSVS 2015 runtime needs to be installed on both Win7 32-bit and Win7 64-bit systems. KickStart v1.9.2 ensures this requirement.

IV Characterizer

Compatibility concerns

None

Critical fixes

PR60487: Unable to run test where 2(or more) 2461's are configured for current pulse.

Enhancements

None

Noncritical fixes

None

Known Issues

Hi-Resistance

Compatibility concerns

None

Critical fixes

Enhancements

PR60466 (AR54888): Added the ability to export Step response data

Noncritical fixes

PR60465 (AR54888): Step Response Test Time field has no range checking.
PR60543: Step Response Test causes the main **Start** button to flip it's **Stop** state.

Known Issues

Version 1.9.1 Release

Overview

Software Version 1.9.1:

- Miscellaneous fixes

DataLogger

Compatibility concerns

PR57645: There is an issue using the Google Pinyin keyboard in when using Min Max fields in the Graph. Use the Microsoft Pinyin keyboard instead.

Critical fixes

Enhancements

Noncritical fixes

PR60365 DataLogger Sheet is stuck in decimal mode with decimal precision of 2
PR60385(AR#54811) KickStart DataLogger Chinese mode has mix of English and Chinese

Known Issues

Version 1.9.0 Release

Overview

Software Version 1.9.0:

- Added the Hi-Resistance Application to support the 6517B and 6517A
- Added support for the Model 2281S-20-2
- Miscellaneous IV Characterizer Issues

Precision Power Supply

Compatibility concerns

Critical fixes

Enhancements

Noncritical fixes

PR60167(AR54030): There was a limitation of 15000 readings on the bias measurement. This has now been removed.

Known Issues

IV Characterizer

Compatibility concerns

Critical fixes

Enhancements

Noncritical fixes

PR60054: The trigger per sweep point not returning the correct number of measurements.
PR60055: DIO trigger always using rising edge

Known Issues

Precision Multimeter

Compatibility concerns

Critical fixes

Enhancements

Noncritical fixes

Known Issues

DataLogger

Compatibility concerns

PR57645: There is an issue using the Google Pinyin keyboard in when using Min Max fields in the Graph. Use the Microsoft Pinyin keyboard instead.

Critical fixes

Enhancements

Noncritical fixes

Known Issues

Version 1.8.4 Release

Overview

Software Version 1.8.4:

- Added support for the Model 2281S-20-2
- Max sweep delay for 2450, 2460 and 2461 changed from 4 secs to 10,000 secs

Precision Power Supply

Enhancements

PR59135: Added support for the Model 2281S-20-6

IV Characterizer

Known Issues

PR59112: IV Characterizer: The maximum sweep delay has changed from 4 secs to 10,000 secs to match the capability of the 2450, 2460 and 2461.

Version 1.8.3 Release

Overview

Software Version 1.8.3:

- Several fixes to the IV Characterizer
- Single fix to the Precision Dmm

Common Framework

Enhancements

PR58412: KickStart graph labels are incorrect.

When ‘Auto’ scale is selected in the ‘Options’ section of a graph the graph will auto scale to show the entire data set correctly. The precision of the axes labels is defaulted to 0 (Decimal Display Precision setting) so for data sets that don’t rather greatly the labels will appear odd as there is not enough precision. The default display precision setting has been removed and a “g” format specifier is being used.

IV Characterizer

Compatibility concerns

None

Critical fixes

PR58395: KickStart script generates error on 2450 in multi-SMU test with one SMU disabled.
PR58410: KickStart generates error when opening multi-SMU test created prior to version 1.8
PR58408: KickStart fills the sheets empty data slots with 00 and creates an unbalanced table (too many rows)
PR58451: KickStart should set a fixed measure range on SMUs in which "enable" measurement checkbox is not checked

Enhancements

None

Noncritical fixes

None

Known Issues

PR58427: IV Characterizer: In multi-SMU test, it is not evident to the user which delay is being enforced.

In a multi-Smu test it really doesn’t make sense to set different source delays for the different Smu’s as all the Smu’s are triggered together the test will run at the slowest delay. If you do set different source delays the delay for the last Smu in the test is used.

PR57445: Dual sweeps are not allowed during a Multi SMU test.
Also: Repeat count, contact check and external trigger are not supported during a multi SMU test.

PR57710: The digitize function can be used with a single SMU only.

Precision Multimeter

Compatibility concerns
None

Critical fixes
AR52789 (PR58472): Error: Input string was not in correct format with Dmm App and 7510

Enhancements
None

Noncritical fixes
None

Known Issues

Version 1.8.2 Release

Overview

Software Version 1.8.2:

- 2 fixes to the IV Characterizer
- No other updates to this release from 1.8.0.

IV Characterizer

Compatibility concerns

None

Critical fixes

PR58273: 4-wire Digitization on 2461 does not work.

- If a multi SMU project from a version of KickStart previous to 1.8 is opened in 1.8 or 1.8.1 it will complain about the “Repeat Count” being set to greater than 1. There was no way to change the value so a new project had to be created with the same configuration.

Enhancements

None

Noncritical fixes

None

Known Issues

PR57445: Dual sweeps are not allowed during a Multi SMU test.
Also: Repeat count, contact check and external trigger are not supported during a multi SMU test.

PR57710: The digitize function can be used with a single SMU only.

Version 1.8.1 Release

Overview

Software Version 1.8.1:

- This is not a public release.
- This hotfix release adds the ability to give the instruments that show in the Instrument Manager an alias (a friendly name).
- No other updates to this release from 1.8.0.

Version 1.8.0 Release

Overview

Software Version 1.8.0:

- Support for the Model 2461 has been added to KickStart. The IV Characterizer now supports Pulsing and Digitizing with the Model 2461 only.

Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Common Framework

Compatibility concerns

KickStart versions 1.0 through 1.7 required the Microsoft .NET framework 4.0. KickStart 1.8 now requires the .NET framework version 4.6. A consequence of this is that Windows XP is no longer supported with KickStart 1.8.

Critical fixes

None

Enhancements

None

Noncritical fixes

None

Known Issues

PR57801: Pulse List Sweeps will not work with AUTO source range.
Workaround ➔ Use a fixed source range OR best fixed source range when running any pulse list sweep.

Precision Multimeter

Compatibility concerns

None

Critical fixes

None

Enhancements

None

Noncritical fixes

None

Known Issues

Data Logger

Compatibility concerns

None

Critical fixes

None

Enhancements
The Data Logger now uses the Advanced Graph that all the other Test-Types use. A consequence of this change is that the Data Logger now has cursor statistics.

Noncritical fixes

Known Issues

IV Characterizer

Compatibility concerns
None

Critical fixes
None

Enhancements
The following enhancements are for the Model 2461 only
- Pulse Configuration
- Digitize Configuration
- Contact-check

The following enhancements are for all IV Characterizer supported models
- External Digital In trigger
- Multiple Graphs can be selected

Noncritical fixes
None

Known Issues
PR57445: Dual sweeps are not allowed during a Multi SMU test.
Also: Repeat count, contact check and external trigger are not supported during a multi SMU test.

PR57710: The digitize function can be used with a single SMU only.

Precision DC Power

Compatibility concerns
None

Critical fixes
None

Enhancements
None

Noncritical fixes
None

Known Issues
See compatibility concerns.

Version 1.7.0 Release

Overview

Software Version 1.7.0:

- KickStart and the Data Logger Test Type will check the locale now and if Chinese it will show in Chinese. If the locale is anything else then it will show in English. This doesn't apply to any of the other Test Types as they remain in English.

Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Common Framework

Compatibility concerns
None

Critical fixes
PR56722: KickStart would automatically close if a blank port number was entered when adding a Legacy Ethernet address.

Enhancements
None

Noncritical fixes
None

Known Issues
PR56429: If KickStart closes suddenly during communication with an instrument when KickStart is relaunched it may not discover the same instrument immediately due to a USB protocol error. Select "Refresh Instrument Discovery" or re-run KickStart and it will show up again in the list of found instruments.

AR50710: KickStart has a buffer of 701,000 data points to prevent "out of memory" errors. Once the maximum data points have been reached the first 1/3 of the buffer is thrown away to allow room for new data. Since the graph is based off of the readings in the buffer, readings that were thrown away will no longer be visible on the graph either. Furthermore, thrown away readings are no longer able to be exported using the export feature.

To calculate the number of data points, multiply the number of rows on the sheet tab by the number of columns; include the Item column as well. The maximum number of measurements can be obtained by turning off timestamps, limits, and secondary functions—thus reducing the number of columns.

To retain a record of all readings taken across all runs of a test, ensure "Data Streaming" is enabled. When enabled, KickStart will automatically stream all incoming readings into a CSV file. To ensure compatibility when opening the file in Microsoft Excel, if greater than 1 million readings are taken, the data will be divided into multiple files.

Precision Multimeter

Compatibility concerns
None

Critical fixes

None

Enhancements
None

Noncritical fixes
None

Known Issues
The Dmm Simulator only supports simulating data for the primary function only. It doesn't support: secondary function, limits, relative, triggering and math.

Data Logger

Compatibility concerns
None

Critical fixes
None

Enhancements
None

Noncritical fixes

Known Issues
PR56206: If KickStart closes suddenly with the Data Logger Application and a 2701 and in re-running KickStart the same 2701 doesn't show up you may need to restart the 2701 and your PC as VISA has hung-up.

IV Characterizer

Compatibility concerns
None

Critical fixes
None

Enhancements
None

Noncritical fixes
None

Known Issues
AR43166: VISA timeout error when running KickStart IV Characterizer using a 2400.
Only Model 2400's with Digital board revision J or higher are supported. This information can be found on a unit by using the front panel menu structure as follows:

MENU >> GENERAL >> SERIAL# then scroll to the right will give you the digital-board version (D:version).

PR56557: If an existing project file is configured for a 2450 and on opening up the project file a 2460 is swapped out KickStart will error and prevent you from running the test. Switching the instruments in the above scenario is also true.

Precision DC Power

Compatibility concerns
PR56546: KickStart now requires that the firmware version for the 2280 be 1.06 or greater.

PR56547: Previous versions of KickStart had a “List Sweep” mode. This is now called the “List Sweep (Points)” mode. A “List Sweep (Time)” mode has been added to this version of KickStart.

Critical fixes
None

Enhancements
None

Noncritical fixes
None

Known Issues
See compatibility concerns.

Version 1.6.0 Release

Overview

Software Version 1.6.0:

- Adds an updated Precision DMM application
- Adds an updated Data Logger application
- IV Characterizer and DC Power Apps have a new graph control and some minor fixes.

Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Common Framework

Compatibility concerns

None

Critical fixes

PR56529: The graph image can now only be exported if the graph is being viewed.

Enhancements

- A diagnostics log file is created in “My Documents\Keithley Instruments\KickStart\Log directory. The filename of the log file will have the timestamp it was created at in the name. Presently it just shows what is happening when the Refresh Instrument Discovery icon is selected. Use this file to trouble-shoot why an instrument is not showing up in KickStart
- If multiple VISA’s are installed on the same system USB instruments found by KickStart (VISA) may show up in duplicate. This is noticeable in the properties window of the instrument as having the same serial number. If you look at the USB VISA resource one will show the vendor id in Hex while another shows it in decimal. Either one works ok.
- KickStart does not support using UNC path names.
- In the adding “Legacy Ethernet Instruments” there is now a drop down list for the port number. Use port 1394 for a 2701. The VXI-11 option allows you to add a VXI-11 instrument that was not auto detected due to a firewall or router blocking the discovery packets.
- AR42334: The Precision DMM, IV Characterization and DC Power Apps all have an upgraded graph control :
    - Ability to change series colors easier
    - Enhanced zoom features
    - Many performance improvements.
    - Cursors with statistics
    - Grid lines
    - Graph settings are now saved and recalled on a per project basis.

Noncritical fixes

None

Known Issues

PR56429: If KickStart closes suddenly during communication with an instrument when KickStart is relaunched it may not discover the same instrument immediately due to a USB protocol error. Select “Refresh Instrument Discovery” or re-run KickStart and it will show up again in the list of found instruments.

AR50710: KickStart has a buffer of 701,000 data points to prevent “out of memory” errors. Once the maximum data points have been reached the first 1/3 of the buffer is thrown away to allow room for new data. Since the graph is based off of the readings in the buffer, readings that were thrown away will no longer be visible on the graph either. Furthermore, thrown away readings are no longer able to be exported using the export feature.

To calculate the number of data points, multiply the number of rows on the sheet tab by the number of columns; include the Item column as well. The maximum number of measurements can be obtained by turning off timestamps, limits, and secondary functions—thus reducing the number of columns.

To retain a record of all readings taken across all runs of a test, ensure “Data Streaming” is enabled. When enabled, KickStart will automatically stream all incoming readings into a CSV file. To ensure compatibility when opening the file in Microsoft Excel, if greater than 1 million readings are taken, the data will be divided into multiple files.

Precision Multimeter

Compatibility concerns
None

Critical fixes

PR54951: Repeatedly running continuity test with a large number of point’s causes timeouts. This requires the latest firmware for the DMM7510.

Enhancements
- When the “Clear Data before Start Test” is not selected the new data acquired will be”
    - Appended to the end of the existing data for any Dmm function.
    - The new data is overlaid to the existing data i.e. a new column on the sheet is created for Digitizer functions. This allows waveforms to be compared (overlaid).
      The maximum number of waveforms that can be overlaid is 3. The maximum number of appended data with the Dmm functions is 1 million.
- Graph Control – see common framework notes

Noncritical fixes
None

Known Issues
The Dmm Simulator only supports simulating data for the primary function only. It doesn’t support: secondary function, limits, relative, triggering and math.

Data Logger

Compatibility concerns
None

Critical fixes
None

Enhancements
PR55765: You can now assign Math units to a channel group. The valid input for math units is only a-z and A-Z. All other input will be rejected.

PR54052: Added ability to clear the error log.

PR53379: Improved real-time graphing performance and UI responsiveness for high data rate measurements.

PR51551: Added the ability to not retrieve timestamps. Select “None”.

Noncritical fixes

Known Issues
PR56206: If KickStart closes suddenly with the Data Logger Application and a 2701 and in re-running KickStart the same 2701 doesn’t show up you may need to restart the 2701 and your PC as VISA has hung-up.

IV Characterizer

Compatibility concerns
None

Critical fixes
AR55869 (PR55869): Output Off mode and Hi-Z mode not being applied correctly when using multiple SMU’s TSP-Linked together.

PR56458 - Stepper is stepping 1 point too early, before sweeper's last point.

Enhancements
Graph Control – see common framework notes

Noncritical fixes
None

Known Issues
AR43166: VISA timeout error when running KickStart IV Characterizer using a 2400.
Only Model 2400’s with Digital board revision J or higher are supported. This information can be found on a unit by using the front panel menu structure as follows:

MENU >> GENERAL >> SERIAL# then scroll to the right will give you the digital-board version (D:version).

PR56557: If an existing project file is configured for a 2450 and on opening up the project file a 2460 is swapped out KickStart will error and prevent you from running the test. Switching the instruments in the above scenario is also true.

Precision DC Power

Compatibility concerns
PR56546: KickStart now requires that the firmware version for the 2280 be 1.06 or greater.

PR56547: Previous versions of KickStart had a “List Sweep” mode. This is now called the “List Sweep (Points)” mode. A “List Sweep (Time)” mode has been added to this version of KickStart.

Critical fixes
None

Enhancements
Graph Control – see common framework notes

Noncritical fixes
PR56535: All Power Supply fields are now settable with the test running. Previously the current range wasn’t.

Known Issues

See compatibility concerns.

Version 1.5.0 Release

Overview

Software Version 1.5.0:

- Adds support for the DMM7510 to the Keithley KickStart Software Application. The 7510 works with the Precision Multimeter and Communication Terminal Test Types.
- A new release of the Data Logger.
- Two minor updates to the SMU Simulator.
- A warning about upgrading the firmware on the Model 2280.

Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Common Framework

PR5521: The Legacy Ethernet Instruments controls on the toolbar are only to support the 2701 and not for connecting to any other LAN based instruments.

Precision Multimeter

Compatibility concerns

None

Critical fixes

None

Enhancements

None

Noncritical fixes

None

Known Issues

- PR54951: Repeatedly running continuity test with a large number of point's causes timeouts.
- PR55232: Trigger options not being recalled correctly when opening a saved project file.
- PR55192: Can't enter Trigger Delays less than 165 µs.
- PR55161: Export graph not working when not on graph tab.
- DMM Simulator only simulates DC Voltage.
- PR55272: KickStart doesn't support UNC path file names (e.g. \\x2Smb\homes\MyDmmTest)

Data Logger

Compatibility concerns

None

Critical fixes

None

Enhancements

1. PR51551, PR54133: Added "None" as a new type for timestamp configuration. When this type is selected, the returned data from instrument does not have timestamp content.
2. PR54127: Added the ability to make customization the group name.
3. PR54421: Added support for limits in the DAQ simulator.

4. PR51748: New date time picker control for entering Start Time/Stop Times.
5. PR51965, PR55081, PR55085: Add Select All/Clear All button and checkbox for group configuration and graph axis configuration.
6. PR54052: Added button for clearing the log window.

Noncritical fixes

1. PR54048: Fixed the ability to enable the manual trigger button during scan executions.
2. PR55019: Made Start Time/Stop Time trigger timer continuous to support larger time values.

Known Issues

1. PR55115: DAQ-Simulator does not support scan cases with large quantities of data (400K readings)

IV Characterizer

Compatibility concerns

None

Critical fixes

None

Enhancements

None

Noncritical fixes

1. PR54480 Start/Stop values for the SMU Simulator can now be negative values
2. PR54867: The Simulated Time stamps are now shown as Relative Time Stamps instead of Absolute times

Known Issues

None

Precision DC Power

Compatibility concerns

Don't install any firmware versions greater than 1.03 on your 2280 if you want the 2280 to work with KickStart. Firmware version 1.01 through 1.03 are compatible with KickStart.

Critical fixes

None

Enhancements

None

Noncritical fixes

None

Known Issues

See compatibility concerns.

Version 1.4.0 Release

Overview

Software Version 1.4.0 adds support for the 2460 to the Keithley KickStart Software Application. Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

The 2460 works with the IVCharacterizer and Communication Terminal Test Types.

Compatibility concerns

None with Version 1.3.0; see other version information for upgrading from an earlier version.

Critical fixes

Enhancements

Noncritical fixes

Known Issues

1. Models 2450 and 2460 will only be discovered by KickStart if the instrument is in TSP Mode.

   Select Menu->Settings->Command Set and select TSP.

Version 1.3.0 Release

Overview

Software Version 1.3.0 adds support for the following models: 2700, 2701, and 2750 to the Keithley KickStart Software Application. Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Compatibility concerns

None with Version 1.2.0; see Version 1.1.0 Release information for upgrading from an earlier version.

Critical fixes

None.

Enhancements

1. New Data Logger Test Type that supports the Models 2700, 2750 and 2701
2. CSV Data Streaming Support for all test types.
3. Circular buffer for infinite test run times.
4. Faster Data Handling with lower memory requirements.
5. Improved real-time graphing performance and UI responsiveness for high data rate measurements.

Noncritical fixes

None.

Known Issues

PR53634 **Screen redraw problems when switching tabs with a Multi-Monitor setup**

Models affected:

Model 2700, 2701 & 2750

Symptom:

When using KickStart on a computer system with multiple monitors and multiple display adapters you may experience the screen not redrawing when switching tabs. This is observed as nothing happening when clicking on a different tab in an open test. If you move the mouse around the window, elements of the tab you clicked on will begin to appear and sometimes the rest of the tab draws. Usually though, the rest of the tab does not draw and you have to switch to another tab and then back and maybe then the whole tab will draw.

Workaround:

If a tab fails to draw, switching to another tab and then back to the desired tab will usually make the desired tab draw. To prevent the issue from occurring at all, avoid using computer systems with multiple monitors connected to multiple video adapters.

PR53629 **KickStart crashes when Y1 sliders are brought together**

Models affected:

Model 2700, 2701 & 2750

Symptom:

It is possible to cause KickStart to crash by bringing the upper and lower Y1 zoom sliders together until they meet.

Workaround:

This problem is not easily reproducible but if it does happen avoid bringing the sliders together such that they meet. Alternatively, you can export the data to Excel and examine the data in Excel or if you had Data Streaming on then you can load the recorded csv file in Excel.

PR53417 **KickStart can't keep up with 2701 0.01 nplc single channel test hangs and eventually crashes**

Models affected:

Model 2701

Symptom:

If the NPLC value is set to 0.01 and the delay is set to 0, the data from the instrument may come so quickly that the GUI cannot keep up. The Graph will fail to refresh and appear to be locked up. This typically occurs only when a scan contains only a single channel or an extremely fast scan card like the 7710 is used and/or the sample count is large.

Workaround:

Increase the NPLC value and/or delay value to reduce the rate of incoming data. Setting the NPLC value to 0.1 and turning on “Auto Delay” will sufficiently reduce the incoming data rate.

PR53685 **Data Logger Test-Type not working correctly on some European versions of Windows**

Models affected:

Model 2700, 2701 & 2750

Symptom:

The Data Logger Test-Type has not been fully converted so that it will work correctly on some European versions (Locale) of Windows e.g. German, Italian, French etc. It will generate errors on the instrument as it is sending commands to the instrument with commas as the decimal place character.

All other Test-Types have been fully converted to work on European Windows.

Workaround:

Change the locale of your Windows Computer to US-English

PR53158 **Data Logger to support RS-232 connections**

Models affected:

Model 2700, 2701 & 2750

Symptom:

There is limited support for RS-232 connections on the: 2700, 2750 and 2701. The 2700 and 2750 will start to drop data which will cause errors to be generated on the front panel of the instrument.

Workaround:

Due to problems with the RS-232 connection to this series of instruments RS-232 will not be supported with the Data Logger at the present time.

PR53520 **7707 Digital Input and Digital Output functionality missing**
PR52827 **Channels missing on Multifunction Operation tab when save files are reloaded.**
PR52964 **Multifunction channels become grayed out and appear inoperable when tabs are switched.**
PR52965 **Out-of-range voltage entries for the 7706 analog output are accepted.**

Models affected:

Model 2700, 2701 & 2750

Symptom:

Due to this accumulation of PR's the Multi-Function Tab in the Data Logger Test Type is not supported in this release of KickStart

Workaround:

Issues will be resolved in a future release of KickStart

Version 1.2.0 Release

Overview

Software Version 1.2.0 adds support for the Model 2280 Precision Measurement Supply to the Keithley KickStart Software Application. Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Compatibility concerns

None with Version 1.1.0; see Version 1.1.0 Release information for upgrading from an earlier version.

Critical fixes

1. PR52303 Fixed issue with floating point numbers being displayed and input on country locales that use a symbol other than '.' as a decimal point
2. The state of "Clear data before run" is preserved through power cycle
3. Added the ability to manually add socket based LAN instruments. These added manual instruments are saved and recalled through a power cycle.

Enhancements

1. Added support for Model 2280S-32-6 and Model 2280S-60-3
2. The Load Plugins button on the toolbar has been disabled; appropriate tests for the selected instrument are now automatically filtered

Noncritical fixes

1. The Execute/Abort button has been renamed Start Test/Stop Test

Known Issues

Data point limitation

Models affected:

Model 2280S-32-6, Model 2280S-60-3

Symptom:

A limit of 15,000 points has been set for the Precision DC Power test type. By default, the data will be cleared while the test continues to run, collecting a new data set.

Workaround:

If you intend to leave a KickStart test running in Single Source mode for a long duration, consider slowing down data collection by setting NPLC (Main Settings) and Reading Interval (Advanced Settings) to high values. If the "Clear Data before Execute Test" (on the Settings tab) flag is not set, the test will just stop when it reaches this limit. Otherwise, the test will be stopped and restarted automatically to clear all previous test data when this amount of data has been collected.

VISA

Models affected:

All

Symptom:

KickStart makes use of NI VISA software for connectivity to instruments and will attempt to install NI VISA during the installation process. If you have any other manufacturer's VISA software installed and

do not have NI VISA software installed already, NI VISA installation will fail resulting in connectivity issues when running KickStart.

Workaround:

Please uninstall any other manufacturer's VISA software before installing KickStart.

VISA

Models affected:

All

Symptom:

KickStart makes use of NI VISA software for connectivity to instruments. Connectivity issues in KickStart may occur if NI VISA software and Tek VISA software are both installed.

Workaround:

If you experience connectivity problems in KickStart please run the Tek Visa utility Visa64 Conflict Manager, disable Tek VISA and click save. Restart KickStart and connectivity should be restored.

Version 1.1.0 Release

Overview

Software Version 1.1.0 is a minor update to the initial release the Keithley KickStart Software Application. Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Compatibility concerns

1. The maximum number of sweep points for a 2450 is now reduced from 300,000 to 10,000.
2. For KickStart to show connected 2450's on the TSP-Link bus the firmware version for all the 2450's connected must be 1.1 or greater.
3. Log graphing is removed for 1.1.0.

Critical fixes

1. PR51058: Graphing zero or negative values in Logarithmic mode will hang KickStart. Logarithmic graphing was removed to fix this issue.
2. PR51064: Large data sets cause KickStart to be unresponsive.
3. PR51127: Enforce minimum firmware version and ensure all like models have same version for TSP-Link 2450's.
4. PR50290: Changing the number of steps between runs with data clear disabled causes "Data Application error.
5. PR50971: Adding measure selections mid-test causes crash.

Enhancements

1. The IV Characterizer now supports up to four Model 2450's daisy chained together using the TSP-Link bus. This allows support for nested sweeping. See IV Characterizer help for more information.
2. The graph in the IV Characterizer Test-Type now has manual X&Y axes configuration. PR49861.
3. Switching projects or closing KickStart will now prompt you to save the project if it has changed.

Noncritical fixes

1. PR50508: In the SMU simulator the spreadsheet values should match the source values.
2. PR51089: Notes scrolling window has an issue when pasting a large amount text into the Notes tab.
3. PR51119: Change the test tab "Spreadsheet" to simply "Sheet".
4. PR50287: See description in Version 1.0.0 section.
5. PR50229: Error message shows twice if entering a bad value into the List Sweep control

Known issues

PR50294:

Models affected:

All models

Issue:

When columns have different lengths, x-axis on graph disappears.

Suggested Procedure:

None

PR51071:

Models affected:

All models

Issue:

Need a way to differentiate between multiple traces on one Y Axis.

Suggested Procedure:

Use the Y2-Axis.

The following PR's are still known issues from Version 1.0.0. See version 1.0.0 for details:
PR50230, PR49919 and PR50276.

Version 1.0.0 Release

Overview

Software Version 1.0.0 is the initial release the Keithley KickStart Software Application.
Known Issues, Usage Notes, and Upcoming Enhancements are listed below in this document.

Compatibility concerns

N/A

Critical fixes

N/A

Enhancements

N/A

Noncritical fixes

N/A

Known issues

PR50230 **Models affected:**

All Models

Symptom:

If KickStart software is taking a very long time to open or is not opening at all, you may need to download a patch for a known Microsoft bug.

For more information, see Microsoft Article ID 2484841 at http://support.microsoft.com/kb/2484841/_en-us

Workaround:

Link to download the patch:

http://archive.msdn.microsoft.com/KB2484841/Release/ProjectReleases.aspx?ReleaseId=5583

PR50229 **Models affected:**

All Models

Symptom:

When adding a bad character or an out of range value into the Voltage or Current List Sweep grid control the error message is shown twice.

Workaround:

Just click twice on the OK button in the popup message**.**

PR49919 **Models affected:**

All Models

Symptom:

Communication Terminal interprets questions marks in quotes as query commands.

Workaround:

The Communications Terminal does not implement a full SCPI or TSP parser, so compound entries may be misunderstood. A workaround is to only use simple TSP or SCPI commands. A full parser will be included in a future release.

PR49861 **Models affected:**

All Models

Symptom:

Graph needs improved auto-scaling on the Y-Axis.

Workaround:

The auto-scaling algorithm is designed to give a good visible representation with most measurements. In some cases, the results are not ideal for all users. A workaround is to use the Display Series Info option to display an approximate result, or use the zoom feature to display an areas of interest. Manual scaling will be included in a future release. Alternatively you can export the data to Microsoft excel format and graph the data in Excel.

PR50276 **Models affected:**

All Models

Symptom:

If an alpha character is entered into the Voltage List Sweep or Current List Sweep list of values then a red line appears around the cell to indicate an error. If you then navigate to a different Source Mode screen like the Current Bias when you return to the List Sweep screen it will have no controls on the left hand side.

Workaround:

There is no workaround if you want to show the correct List Sweep screen after doing this then you need to restart KickStart.

PR50287 **Models affected:**

All Models

Symptom:

Any changes to the setup of a test will be lost if you don’t do a “Save” or Save As” before closing KickStart or selecting a new project or opening an existing project.

Workaround:

You need to remember to select “Save” or “Save As” before closing a project or you can reconstruct the settings each time you select that test type.

Usage Notes

PR49391 **Models affected:**

All 2450 models

Issue:

When running KickStart with the Model 2450, the user must have FULL access. If the Instrument Access Mode is anything less than FULL, the 2450 front panel will display the following error:

```
FAILURE: Another interface has control, LOGIN to access.
```

Suggested Procedure:

Before running KickStart with the Model 2450, set the instruments access to FULL. Please see the 2450 Reference Manual for further information on Access Modes.

Using SCPI commands

```
SYSTem:ACCess FULL
```

Using TSP commands

```
localnode.access = localnode.ACCESS_FULL
```

PR49424 PR49848 **Models affected:**

All 2450 models

Issue:

If a 2450 is detected by KickStart and it is in SCPI mode it will not show up in the discovered instruments pane.

Suggested Procedure:

Switch the 2450 into TSP mode via the front panel of the instrument.

PR49370 **Models affected:**

All models

Issue:

The IV Characterizer Test doesn't currently support power measurements although there are disabled controls to configure this.

Suggested Procedure:

This feature will be available in a future release.

PRXXXX **Models affected:**

All models

Issue:

KickStart comes with demo projects that get installed to the hard-drive but the location is different depending on the Operating System.

Suggested Procedure:

On Windows XP the projects will be under:
C:\Documents and Settings\<user>\My Documents\Keithley Instruments\KickStart

On Vista and Win 7 the projects will be under:
C:\Users\<user>\My Documents\Keithley Instruments\KickStart.

The “<user>” directory name is the user account of the person installing KickStart.