KEITHLEY
A Tektronix Company

Series 2600B System SourceMeter® Instruments

Version 4.0.4 Software Release Notes

Contents

GENERAL INFORMATION

SUPPORTED MODELS

CAUTION

Do not install this firmware on Series 2600 (Models 2601, 2602, 2611, 2612, 2635, 2636), Series 2600A (Models 2601A, 2602A, 2611A, 2612A, 2635A, 2636A), or Series 2650A (Models 2651A, 2657A) instruments. Also, you cannot install version 4.0.4 on instruments that have version 3.x.x firmware. For additional instrument information, see the Upgrade considerations for all Series 2600B Models below.

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

2601B, 2602B, 2602B

2606B

2611B, 2612B, 2614B

2634B, 2635B, 2636B

INSTALLATION INSTRUCTIONS

You can use the next topic for Upgrading the firmware. However, for additional firmware installation instructions, refer to "**Upgrading the firmware**" topic in the "**Maintenance**" section of the *Series 2600B System SourceMeter® Instruments User's Manual* (document number: 2600BS-900-01). This manual is available online at Series 2600B System SourceMeter instrument User's Manual. If you decide to upgrade the firmware in your instrument, follow the instructions in the manual. Alternatively, you can arrange to have Keithley Instruments upgrade your firmware by calling your local Keithley Instruments support office.

Upgrade files are available for download from the Keithley Product Support and Downloads web page in the category "Software." After downloading the file, unzip the file. The file with the extension `.x` is the firmware file.

UPGRADING THE FIRMWARE

Use this procedure to upgrade the firmware in your instrument. The step-by-step procedure to accomplish this upgrade is below.

You can use a USB flash drive or select a file from a computer. From the front panel, you must use the USB flash drive. Make sure the USB flash drive is empty except for the firmware file. From the web interface, Test Script Builder, or remote interface, you can select the file from the computer.

CAUTION

Disconnect the input and output terminals before you upgrade the firmware. Do not remove power from the instrument or remove the USB flash drive while an upgrade is in progress. Wait until the instrument completes the procedure and shows the opening display. If you are upgrading an instrument with no front panel (NFP), the LAN and 1588 LEDs on the front panel blink in unison during the upgrade and stop when the upgrade is complete. Do not initialize or reset TSP-Link before starting the upgrade. Before starting the upgrade, turn the instrument power off, wait a few seconds, then turn the instrument power on.

To upgrade the firmware using the front panel:
1. Turn the instrument power off.
2. Turn the instrument power on.
3. Copy the firmware file to a USB flash drive.
4. Disconnect the input terminal from the instrument.
5. If the instrument is in remote mode, press the **EXIT (LOCAL)** key once to place the instrument in local mode.
6. Insert the flash drive into the USB port on the front panel of the Model 26xxB.
7. From the front panel, press the **MENU** key.
8. Turn the navigation wheel to go to the **UPGRADE** menu item, and then press the **ENTER** key.
9. Turn the navigation wheel to go to select .
10. Press the ENTER key to upgrade the firmware. The status of the upgrade is displayed.

The instrument reboots automatically when the upgrade is complete.

UPGRADE CONSIDERATIONS FOR ALL SERIES 2600B MODELS

The following table lists the considerations that should be made when deciding whether to upgrade your Series 2600B instrument firmware to version 4.0.4.

Consideration for upgrade	version 4.0.4
Recalibration required?	No
Backward compatibility concerns?	No
Requalification recommended?	No
Should you upgrade?	Yes[1]

NOTE

For your instruments to work properly, the minimum firmware version is 4.0.3.

---

[1] Review the complete list of changes made in all firmware versions between your current version and the version you are installing. Upgrade if any of the fixes or enhancements are needed.

VERSION 4.0.4 RELEASE

OVERVIEW

Version 4.0.4 is the latest release of the Series 2600B firmware.

CRITICAL FIX USAGE NOTE

SK-1897:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	Refer to <u>Upgrading the firmware</u> topic before accomplishing the following task. Alternatively, you can arrange to have Keithley Instruments support team upgrade your firmware by calling your local Keithley Instruments support office.

When upgrading firmware from version 4.0.3 to a newer version, the instrument may become unresponsive during the firmware upgrade. If this happens, use one of the following two methods to resolve this issue.

Firmware upgrade option one:

1. Recycle the power.

2. Call the command `collectgarbage()`.

3. Upgrade the firmware to the newest version.

If this option did not work, the scripts will need to be removed from the instrument. Follow the steps below.

Firmware upgrade option two:

1. Recycle power.

2. Obtain a list of all your scripts from the instrument. To get a list of all the installed scripts you can either visit the webpage and navigate to the TSB Embedded tab or you can write a simple TSP script to list all the scripts. For example:
   ```
   for Name in script.user.catalog() do
     print(Name)
   end
   ```

3. Backup your scripts. You can go to the webpage and find TSB Embedded where you will select a script and select **Export to USB** or **Export to PC** (personal computer). Or you can export the scripts to a USB drive that is inserted into the front panel of the instrument using TSP commands. For instance, if there is a script named `Test.tsp` on the instrument, you can use the command `Test.save("Test1.tsp")`. This will save the `Test.tsp` script on the instrument to the USB drive using the name `Test1.tsp`. Similarly, a file path can be added to the save command if a specific file path is wanted.

4. Once all the scripts have been backed up, they should be deleted. This is accomplished using the TSB Embedded tab in the webpage or using the TSP commands. To accomplish this using the webpage, go to the TSB Embedded section of the webpage and highlight the script in the list of user scripts, then select the **Delete script** button. To delete a script using the TSP commands, call the command `script.delete("Test")`.

	5. Upgrade the firmware to the newest version. After the upgrade is complete, the scripts can be re-installed on the instrument using the backup. Use the webpage or a USB device on the front panel. If using the webpage, navigate to the TSB Embedded tab and select the **Import from PC** button. This will allow you to import scripts from the PC (or a USB device inserted into the PC) to the instrument. Once imported, the script will need to be saved to the instrument. This can be done using the Save Script button on the TSB Embedded webpage. Scripts can be removed from the USB device that is inserted into the instrument using the `script.load()` and `script.save()` commands.
Resolution:	This issue has been resolved in software version 4.0.4.

CRITICAL FIXES

SK-1944:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	Digital I/O reads may return an incorrect value.
Resolution:	This issue has been resolved.

SK-1877:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	When using a socket connection to communicate with the instrument, if the connection remains in an idle state for several minutes, the instrument fails to respond to the query commands.
Resolution:	This issue has been resolved.

SK-1866:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	While using ACS software to run tests, the initial test will run once to completion, however, subsequent tests cause the software to become unresponsive.
Resolution:	This issue has been resolved.

SK-1598:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	When operating in a TSP-LINK network with multiple instruments, occasionally the Master Node would lose connection with one of the connected nodes in the network causing an error.
Resolution:	This issue has been resolved.

KNOWN ISSUES

SK-1665:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	When the Line Frequency setting is set to Auto, under rare circumstances the instrument detects 50Hz line frequency as 60 Hz.
Work around:	Manually set the correct line frequency using one of the following two options.
	Option one *(this step is only executed one time; the instrument saves this setting during the power cycle):*
	Use the `localnode.linefreq` = 50 / 60 remote command.
	Option two:
	1. Press the **MENU** key then turn the navigation wheel to select **LINE-FREQ**.
	2. Press **ENTER**.
	3. Turn the navigation wheel to select the appropriate frequency and press **ENTER**.
	4. Press the **EXIT (LOCAL)** key to return to the main display.

SK-1608:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	LAN trigger multicast protocol is not supported in version 4.0.4. You will need to use the supported TCP or UDP protocols when using the LAN triggers.

VERSION 4.0.3 RELEASE

OVERVIEW

Version 4.0.3 release of the Series 2600B firmware.

CRITICAL FIXES

SK-1781:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	In Version 4.0.1 when using DHCP/Auto LAN feature without a DHCP server, the instrument would not switch over to DLLA mode correctly, which caused the instrument to wait for an IP address indefinitely.
Resolution:	This issue has been resolved.

SK-1505:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	The instrument does not respond the first time the output on/off button is pressed.
Resolution:	This issue has been resolved.

SK-1401:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	When taking measurements after using the instrument in a TSP-Link network, the instrument will spontaneously lockup for a period then return to normal operating status.
Resolution:	This issue has been resolved.

SK-1397:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	Some USB thumb drive devices are not recognized by the instrument when inserted.
Resolution:	This issue has been resolved.

SK-1374:	**Models affected**: 2601B, 2602B, 2604B, 2611B, 2612B, 2614B, 2634B, 2635B, 2636B
Description:	The SMU intermittently adds an offset to current values while it is sourcing and measuring.
Resolution:	This issue has been resolved.

SERIES 2600B FIRMWARE RELEASE NOTES VERSION 4.X.X HISTORY

Version	Release date	Release Notes Information
4.0.4	February 2024	Several critical defects were fixed in version 4.0.4. It is recommended that you upgrade your instrument firmware to version 4.0.4
4.0.3	October 2023	Version 4.0.3 was a public release.
4.0.2	N/A	Version 4.0.2 was an internal purposes only release.
4.0.1	May 2023	Version 4.0.1 was a public release. For your instruments to work properly, it is required that you upgrade your firmware to version 4.0.3
4.0.0	N/A	Version 4.0.0 was an internal purposes only release.