



A Tektronix Company

2450-800 Electrochemistry Scripts

Rev. E Release Notes

Keithley Instruments
28775 Aurora Road
Cleveland, Ohio 44139
1-800-935-5595
tek.com/keithley

CONTENTS

General Information	2
Supported Models	2
Installation Instructions	2
Upgrade Instructions	3
Version 2450-800E Release Notes	4
Overview	4
Critical Fixes	4
Noncritical Fixes	4
Enhancements	4
Version 2450-800D Release Notes	5
Known issues	5



GENERAL INFORMATION

SUPPORTED MODELS

This software is used on the following Keithley Instruments products:

- **2450-EC:** Approved for firmware versions 1.5.0 to 1.6.7 and 1.7.2 and later.
- **2460-EC:** Approved for firmware versions 1.5.0 to 1.6.7 and 1.7.2 and later.
- **2461-EC:** Approved for firmware versions 1.6.0 to 1.6.7 and 1.7.2 and later.

INSTALLATION INSTRUCTIONS

Your SMU is shipped with all test applications and supporting scripts loaded into memory.

If you are upgrading your SMU with the EC-UPGRADE kit, you can run the test applications from the flash drive or copy the files from the flash drive to the instrument. If you choose to copy the applications, you must also copy the support files `EC_Framework.tsp` and `EC_Images.tsp` to your SMU.

To copy new electrochemistry scripts to the SMU:

1. Insert the USB flash drive into the instrument.
2. Press the **MENU** key.
3. Under Scripts, select **Manage**.
4. Select the test script that you want to copy to the SMU. See the next table for a list of all electrochemistry scripts and support files.
5. Select **<**. The test script is transferred to the instrument.
6. Repeat steps 4-5 for all electrochemistry scripts.

Electrochemistry scripts (Revision E)	
EC_Framework.tsp	CurrentPulseAndSquareWave.tsp
EC_Images.tsp	CyclicVoltammetry.tsp
Chronoamperometry.tsp	OpenCircuitPotential.tsp
Chronopotentiometry.tsp	PotentialPulseAndSquareWave.tsp

See “Copy a script to the instrument” in the *SMU Potentiostats and EC-UPGRADE Kit Quick Start Guide* or *Model 2450-EC, 2460-EC, or 2461-EC Potentiostats and Galvanostats User's Manual* for additional information.

UPGRADE INSTRUCTIONS

If you want to upgrade from a previous version of the electrochemistry script (for example, 2450-800D), you should first determine your script version.

To view the version of an installed electrochemistry script:

1. Press the **MENU** key.
2. Under Scripts, select **Run**.
3. Select the test script that you want to run.
4. Select **Run Selected**.
5. Locate the version near the top right corner of the application's graph.
6. Compare the script version with the table below for 2450-800E.

Chronoamperometry.tsp	version 189427
Chronopotentiometry.tsp	version 189427
CurrentPulseAndSquareWave.tsp	version 189427
CyclicVoltammetry.tsp	version 189427
OpenCircuitPotential.tsp	version 189427
PotentialPulseAndSquareWave.tsp	version 189427

If your script version is earlier than listed in the table for 2450-800E, continue with the instructions to delete the old scripts and copy the new scripts to your SMU.

To delete old electrochemistry scripts from the SMU:

1. Press the **MENU** key.
2. Under Scripts, select **Manage**.
3. Select the script that you want to delete.
4. Select the delete icon located between the two lists.
5. Select **Yes**.
6. Repeat steps 3-5 for all electrochemistry scripts.

To copy new electrochemistry scripts to the SMU:

7. Insert the USB flash drive into the instrument.
8. Press the **MENU** key.
9. Under Scripts, select **Manage**.
10. Select the test script that you want to copy to the SMU. See the next table for a list of all electrochemistry scripts and support files.
11. Select **<**. The test script is transferred to the instrument.
12. Repeat steps 4-5 for all electrochemistry scripts.

Electrochemistry scripts (Revision E)	
EC_Framework.tsp	CurrentPulseAndSquareWave.tsp
EC_Images.tsp	CyclicVoltammetry.tsp
Chronoamperometry.tsp	OpenCircuitPotential.tsp
Chronopotentiometry.tsp	PotentialPulseAndSquareWave.tsp

VERSION 2450-800E RELEASE NOTES

OVERVIEW

Version 2450-800E is a maintenance release of the electrochemistry scripts. This release includes one critical fix, two noncritical fixes, and three enhancements.

CRITICAL FIXES

Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC, EC-UPGRADE
Symptom:	Firmware releases for the 2450, 2460, and 2461 between 1.6.7 and 1.7.2 cause the menu to display buttons incorrectly in the electrochemistry scripts. This prevents the user from accessing all of the menu buttons.
Resolution:	This issue has been corrected.

NONCRITICAL FIXES

Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Symptom:	Voltage point misalignment in cyclic voltammetry script.
Resolution:	This issue has been corrected.
Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Symptom:	Sweeping set voltage has slight shift between multiple cycles in the cyclic voltammetry script.
Resolution:	This issue has been corrected.

ENHANCEMENTS

Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Description:	Added the High Capacitance mode option to the cyclic voltammetry script.
Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Description:	Enhanced points-per-second accuracy in cyclic voltammetry script.
Reference number:	NS-1915
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Description:	With firmware version 1.7.2 and later, the output will turn off when End App is selected.

VERSION 2450-800D RELEASE NOTES

KNOWN ISSUES

Reference number:	PR-61811
Models affected:	2450-EC, 2460-EC, 2461-EC. EC-UPGRADE
Symptom:	Firmware releases for the 2450, 2460, and 2461 between 1.6.7 and 1.7.2 cause the menu to display buttons incorrectly in the electrochemistry scripts. This prevents the user from accessing all of the menu buttons.
Workaround:	Upgrade the 2450, 2460, or 2461 firmware to version 1.7.2 or downgrade to a firmware version earlier than 1.7.0.