Tektronix

Keithley TSP Toolkit

Software

QUICK START GUIDE

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Keithley Instruments TSP Toolkit

Quick Start Guide

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Introduction

The Keithley TSP™ Toolkit is a Microsoft™ Visual Studio Code™ extension that provides support for Keithley's Test Script Processor (TSP) technology to edit and execute scripts on TSP-enabled Keithley instruments.

The extension includes language features such as syntax error detection, code navigation, and code-completion suggestions, as well as `.tsp` command set documentation and hover help.

This guide will show you how to:

- Install the TSP Toolkit extension
- Set up your workspace
- Connect to an instrument
- Configure a project
- Run a `.tsp` script
- Use the Terminal
- Download and use `.tsp` example scripts

NOTE

You can download Visual Studio Code from code.visualstudio.com/.

Install the TSP Toolkit extension

NOTE

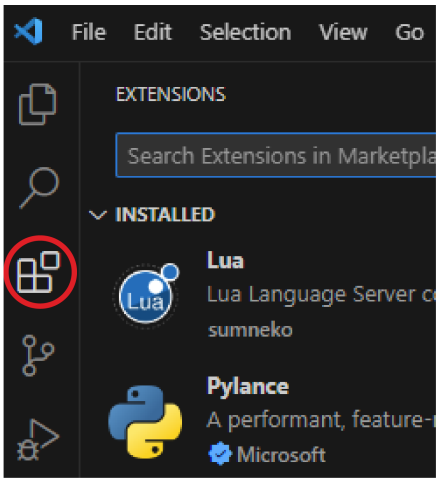
Before installing the extension from the Marketplace, select **Help > Check for Updates** to make sure that you have the most recent version of Visual Studio Code.

If you are using Microsoft Windows, be sure to also have the latest Visual C++ Redistributable library installed.

To install the extension from the Visual Studio Code Marketplace:

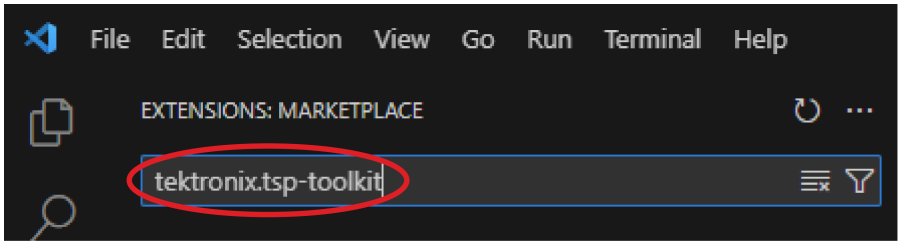
1. Select the extensions icon.

Figure 1: Search field



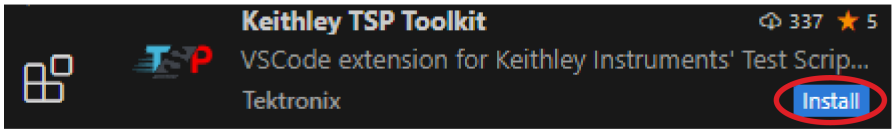
2. Select the search icon, then enter `tektronix.tsp-toolkit` in the search field.

Figure 2: Searching for the TSP Toolkit



3. Select **Install** under the Keithley TSP Toolkit.

Figure 3: Installing the TSP Toolkit



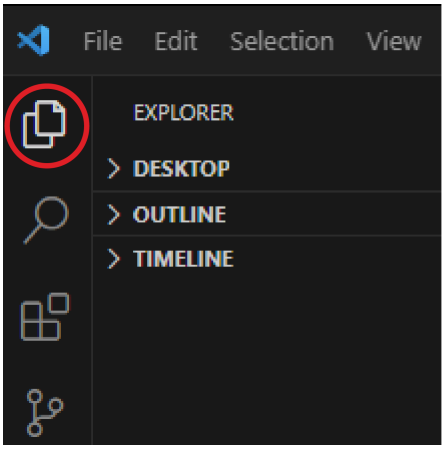
4. The extension will install. Reload the window if you are prompted.

Set up your workspace

To set up your workspace in Visual Studio Code:

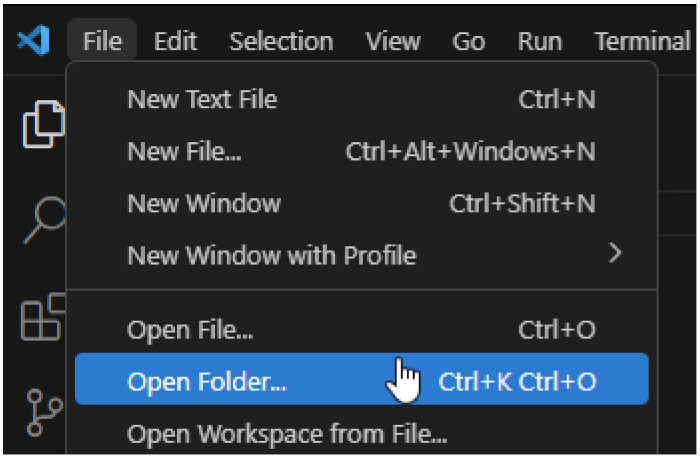
1. Select the explorer icon.

Figure 4: Selecting the Explorer



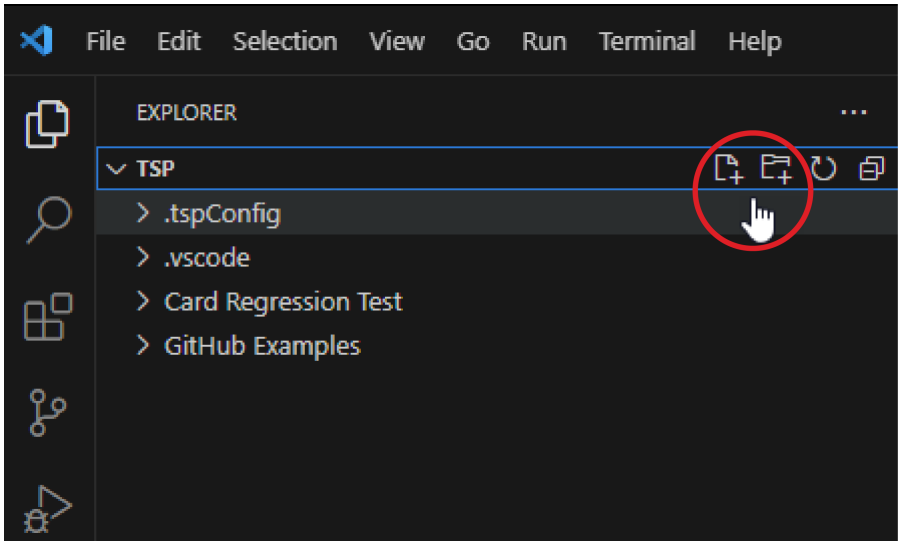
2. Select **File**.
3. Select **Open Folder** to select a folder or create a new folder to use as your workspace.

Figure 5: Opening a folder



4. In your workspace, use the **New File** and **New Folder** icons to create new `.tsp` files and subfolders.

Figure 6: New File and New Folder icons



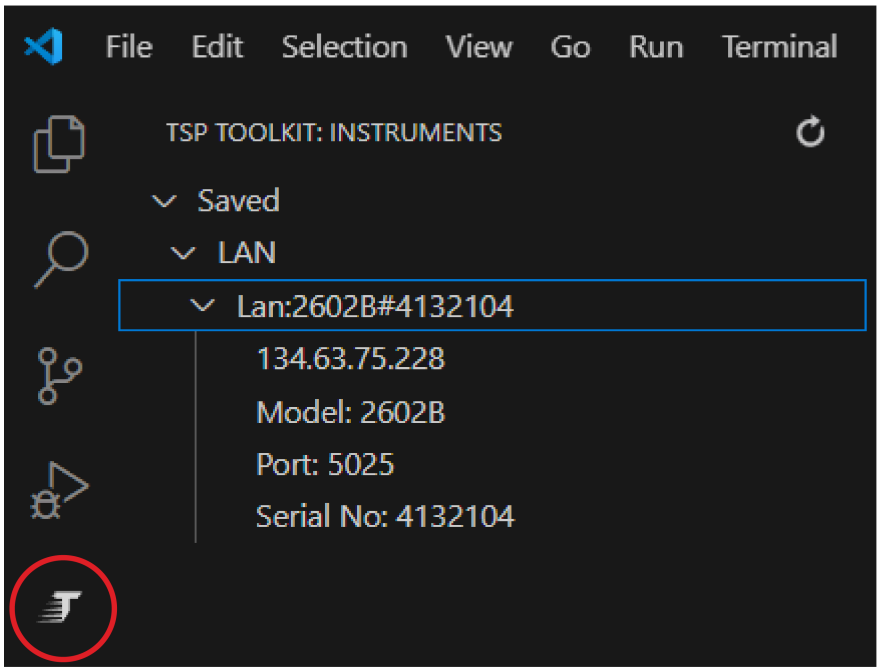
Connect to an instrument

You can connect your TSP-enabled instrument to your computer with a LAN, GPIB, or USB connection. GPIB and USB connections require a VISA driver.

To connect to a TSP-enabled instrument:

1. Select the TSP icon on the left of the screen to open the instrument pane.

Figure 7: Selecting the TSP icon



2. Right-click your instrument, then select **Connect**.

If the connection was successful, a terminal window opens, and your instrument's `*IDN?` string will be displayed.

Configure a project

You can configure your project to have language features enabled for your TSP instruments and TSP-Link node network.

To configure a project:

1. Open any workspace folder.
2. If your workspace folder is empty, create a `.tsp` file (for example, `mytspfile.tsp`).
3. Connect to your instrument using the instrument pane or the `TSP: Connect` command.
4. Right-click the `.vscode/tspConfig` folder.
5. Select **Fetch TSP-Link Nodes for Connected Instrument**.

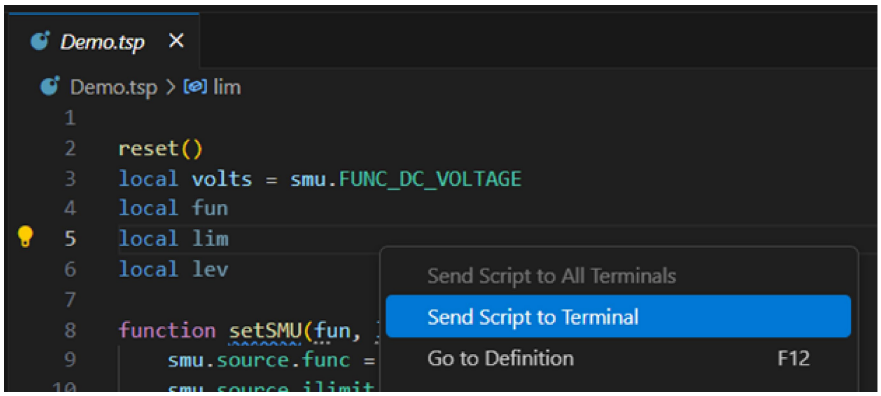
When your project is configured, you are shown relevant code-completion suggestions, signature help, and command documentation for your connected instruments.

Run a .tsp script

To run a .tsp script:

1. Open a `.tsp` script in the editor by clicking on it in the workspace or by selecting **File > Open File**.
2. Right-click anywhere within the script editor to display the context menu.
3. Select **Send Script to Terminal** to run the script.

Figure 8: Running a .tsp script



NOTE

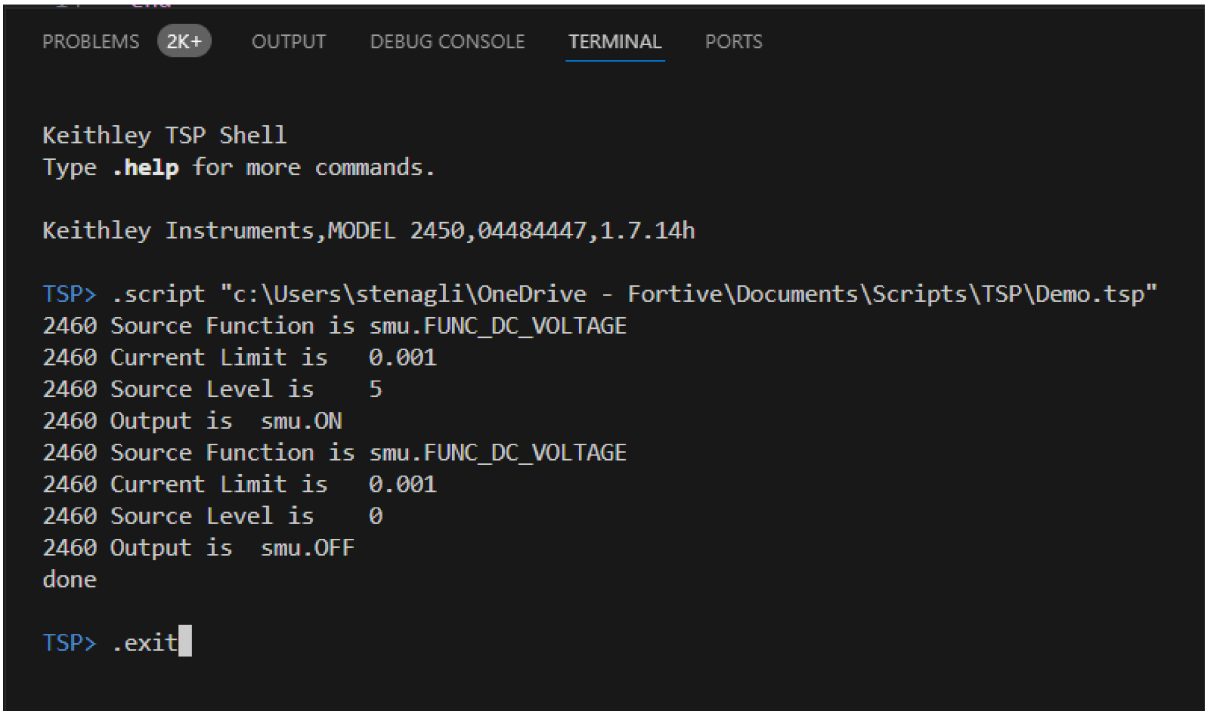
When scripts or commands are run from the Terminal, errors are only fetched after the requested action completes. No new errors are printed while the operation is in progress.

Using the Terminal

Once you have established a connection with your instrument, the Terminal can be used to send `.tsp` commands and run `.tsp` scripts.

To close the Terminal and disconnect from the instrument, send the `.exit` command.

Figure 9: TSP Terminal window



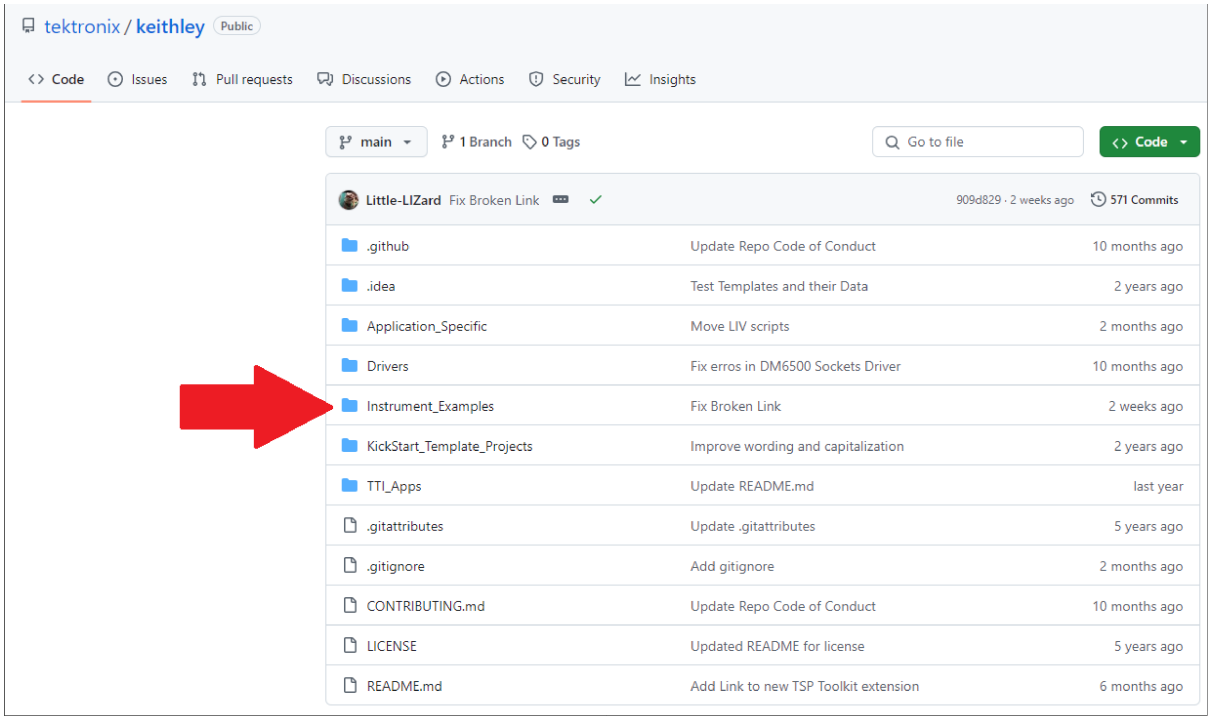
Downloading and using TSP example scripts

Example TSP Scripts are available for download on the Keithley TSP GitHub Repository.

To download and use a script:

1. Select either the **Application_Specific** or **Instrument_Examples** folder to find `.tsp` scripts.

Figure 10: GitHub .tsp script site

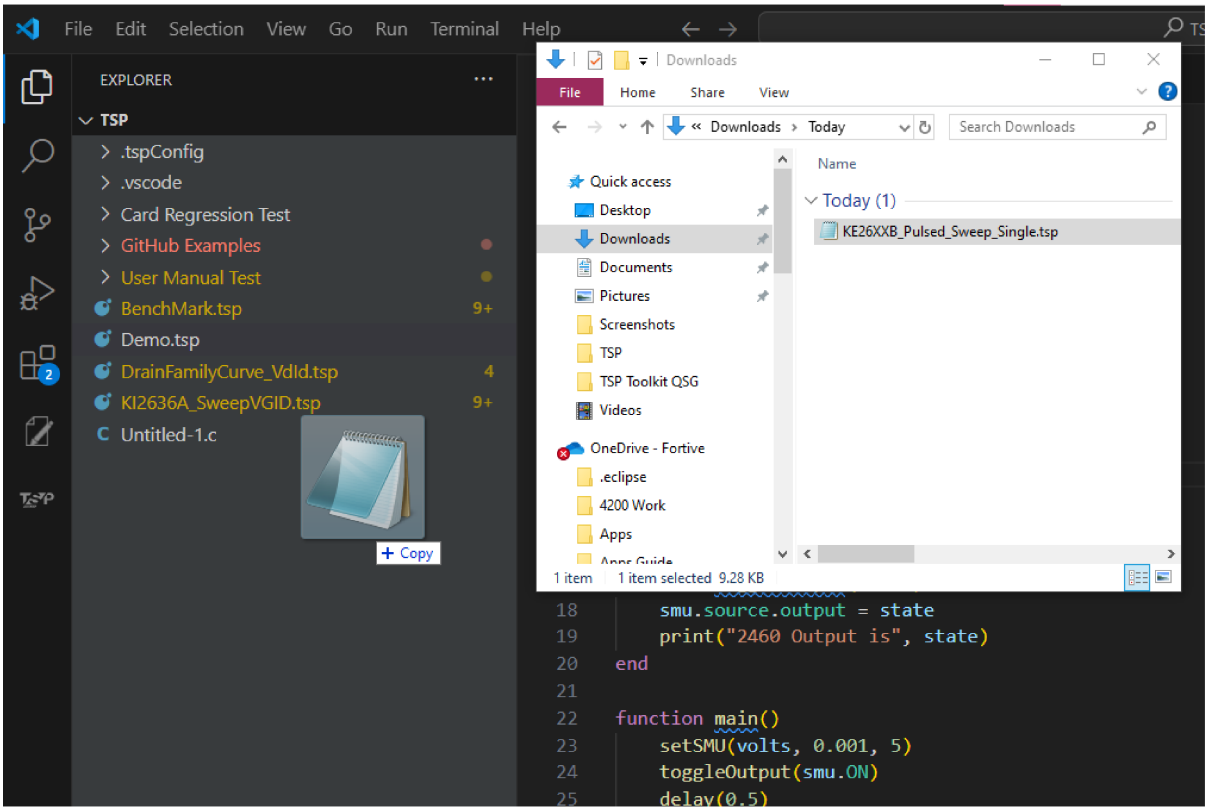


2. Navigate the folders to find example scripts organized by instrument and application.
3. You can click on a script to view the code within GitHub. Select the download icon to copy the script to your computer.

Figure 11: Downloading a script

4. When the download is finished, copy the script to your TSP Toolkit Workspace file location.

Figure 12: Script in Workspace



Additional resources and tutorials

Application note: How to write scripts for TSP

Tektronix/Keithley TSP GitHub script example repository

TSP page on Tek.com

TSP Toolkit feature walkthrough video

TSP Toolkit product page

TSP video series

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