SPHEREx Test and Calibration Control and Archive Software: User Guide

Version: 1.0

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1 Introduction and Setup

The SPHEREx Test and Calibration Control and Archive Software provides a set of graphical user interface based tools allowing a user to interface with the suite of spectral and focus calibration instrumentation to specify automated measurement runs or manually control instruments in a measurement setup. This document provides a practical guide on how to use this GUI toolset in the SPHEREx test and calibration lab.

To run the most recent version of the GUI, navigate to the **SPHEREx-Test-Cal** folder located on the desktop of the b111-lab Lenovo laptop and double click the SpectralCalControl_dev_version.sh file after following the hardware setup instructions found in Appendix A.

Note that this version of the User Guide covers the use of the most recent development version (as of 07-12-2021).

Once the executable has started running, you should see two windows appear that are similar to what is seen in figure 1. One window is titled the *Housekeeping Window* while the other is the *Control Window*. As can be readily inferred from these titles, the *Control Window* can be used to control lab instrumentation and set up automated measurement runs, while the *Housekeeping Window* displays live time-streams of continuously sampled data.

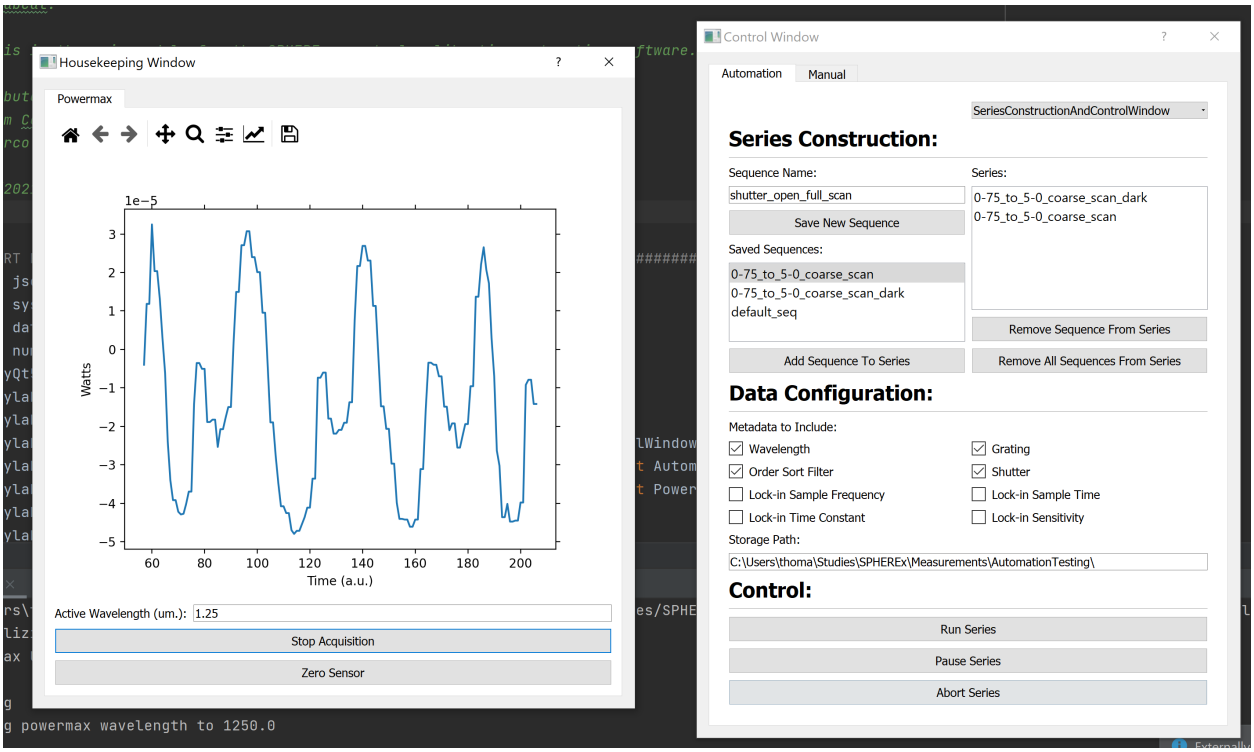

Figure 1: SPHEREx Test and Calibration Control and Archive GUI Main Windows: This figure shows the *Housekeeping* and *Control* windows which form the two main windows in version 1.0of the control software. Upon starting up the software, these windows should pop up. However, the plot seen in the *Housekeeping Window* will be blank as only time-streams taken during the current session will be plotted.

2 Control Window

As mentioned above, the *Control Window* can be used to manually control instruments in a measurement setup or run entire automated measurement runs. Automation and manual control is divided into two tabs within the *Control Window*. The highlight shown in Figure 2 shows where these tabs can be selected.

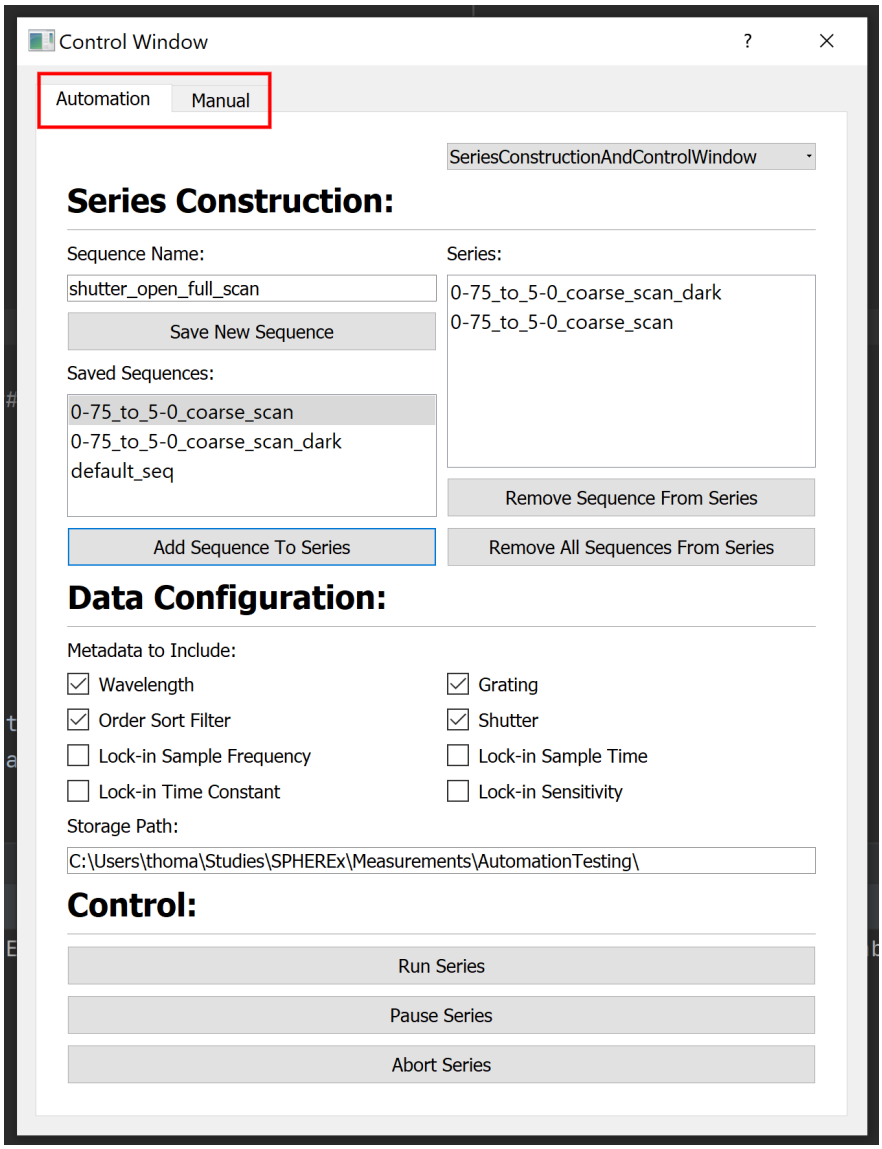

Figure 2: Control window with Automation and Manual tabs highlighted.

2.1 Automation Tab

Within the *Control Window*, the *Automation Tab* is used to setup and control entire automated measurement runs. The building blocks of an automation run are coined the *Sequence* and the *Series*. These terms are defined below:

1. **Sequence**: A set of parameters specifying automated measurement actions to take and metadata to include in the final data package.
2. **Series**: A collection of sequences. Used to specify an entire automation run.