Instructions for Running the ESC_Test Harness

Overview

The initial run of the ESC Test Harness will convert the included waveforms from binary (.dat) to .tdms format prior to playing the waveforms. As a result, there will be a 60 second delay before the waveforms plays. Once each of the waveforms are converted to .tdms, each waveform will play sequentially with no delay. The new TDMS files will appear in the "Test" directory as in Fig. 8.

Required equipment

- PXI
- Ni VST 5646

Required Software

- Windows 7 or higher
- LabVIEW 2017

Download the ESC_Test_Harness-master
Copy the up-zipped file to a computer hosting LabVIEW and PXI.

Starting the ESC Tester Start Python Server, start LabVIEW Web server and run web browser (Fire fox)

1) Locate and double click the "StartUp.bat" file located in the "ESC_Test_Harness-master" folder as in Fig. 1.
   - The Python status window will appear as in Fig. 1a.
   - The ESC_Server will appear as in Fig. 2a.

2) Start the ESC_Server by right clicking on the "v1" as in Fig. 2a. Select "Start" to initiate the session (Fig. 2b). You will see Debug Web service windows appears as in Fig. 3. Click "OK".
   - The ESC Test Harness interface will appear as in Fig. 4. Press "log in".
   - The default user name and password are "admin" and "default".

3) To stop the Python web server, select the running Python screen. Select "Ctrl + C"
   To Stop the LabVIEW player right click on "v1" as in Fig. 2c. Select "Stop"

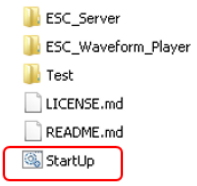

Figure 1: Start up in directory

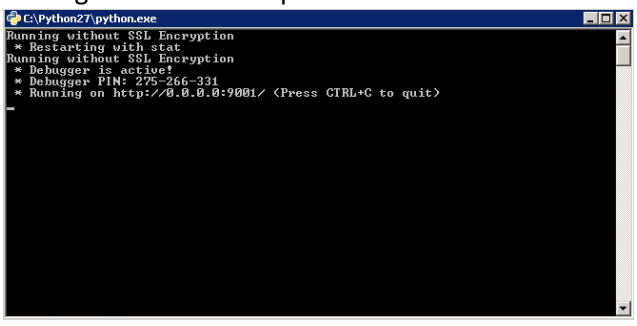

Figure. 1a: Python window

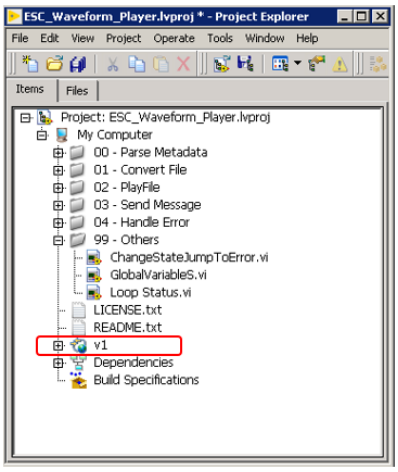

Figure 2a: LabVIEW project window

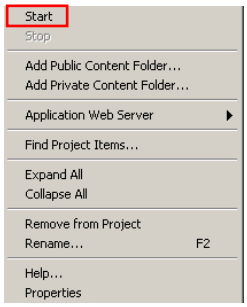

Figure 2b: Start up LabVIEW player

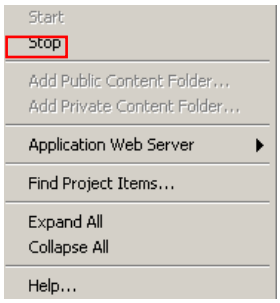

Figure 2c: Stop LabVIEW player

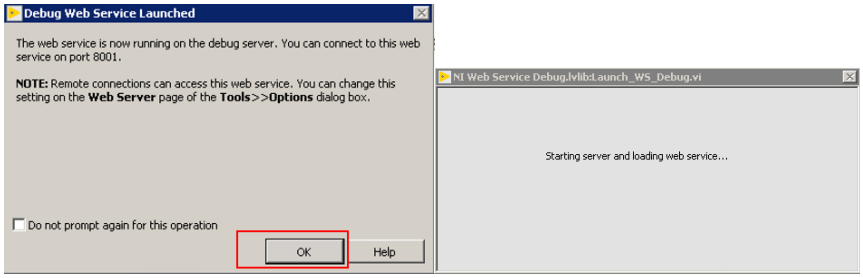

Figure 3: LabVIEW Debug window

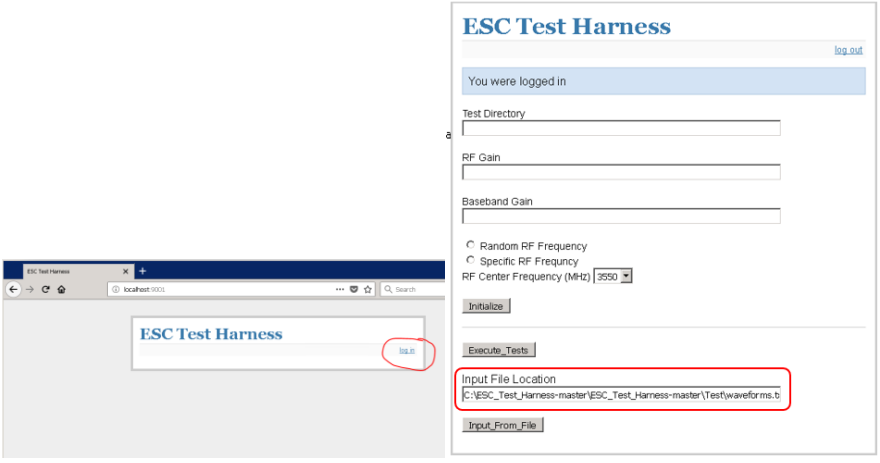

Figure 4: ESC user interface

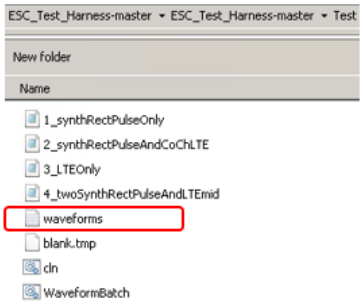

Figure 5: waveform file

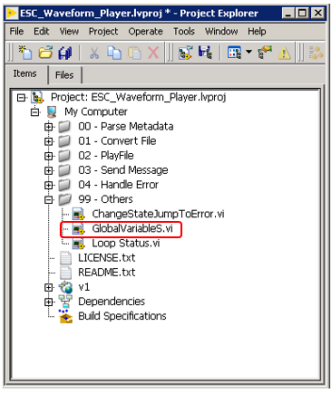

Figure 6: Location for global variables status

4) Locate the "waveforms.txt" file located in your "Test" folder. See Fig. 5. Enter the full path of the "waveform.txt" file into the "Input File Location" and press "Input_From_File" to play the waveforms as in Fig. 4.

The status of the waveform conversions and waveform playing can be monitored on the GlobalVriables.vi Front Panel.

4) Go to the LabVIEW project and expand the folder "99 – Others". Double click the "GlobalVariables.vi". The GlobalVariables.vi front panel will appear as in Fig. 7.

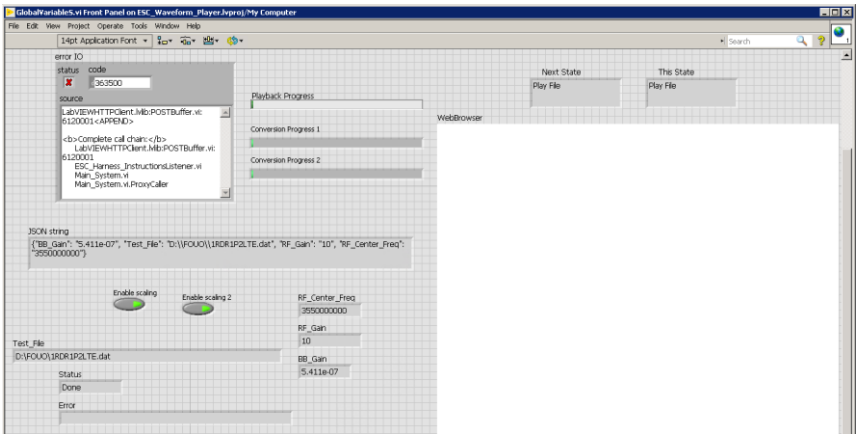

Figure 7: Status of waveform playback

Note: the waveforms can be viewed on your spectrum analyzer. See optional step 6 for configuring your spectrum analyzer.

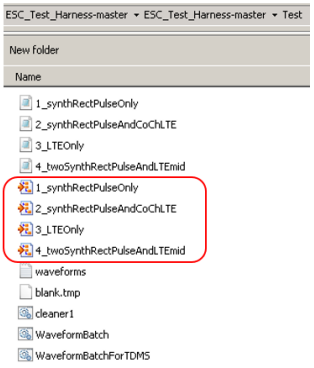

Figure 8: TDMS files

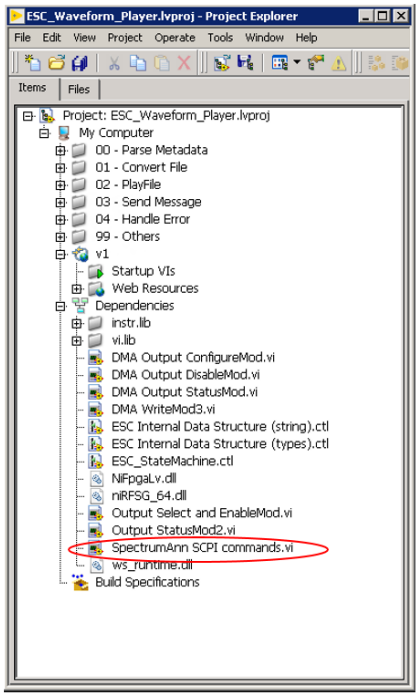

Figure 9: Location of SCPI commands

This is an optional Step

5) **Configuring your spectrum analyzer**

The spectrum analyzer settings are controlled with Standard Commands for Programmable Instruments (SCPI) commands. The address for the VISA connection will need to be changed.

- To change the VISA address, go to the LabVIEW Project Explorer, expand the Dependencies tab.
- Locate and open the "SpectrumAnn SCPI commands.vi" as in Fig. 9.
- Enter the VISA address for your instrument. See Fig. 11.
- Expand the menu in the case structure to reveal the spectrum analyzer settings for the different waveforms as in Fig. 12.

If you prefer manual configurations, the "local" key on the spectrum analyzer will end the remote session.

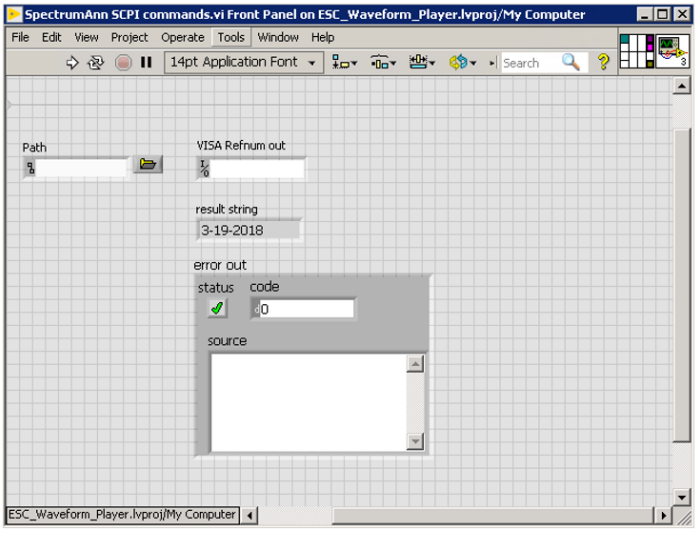

Figure 10: Spectrum analyzer configuration front panel

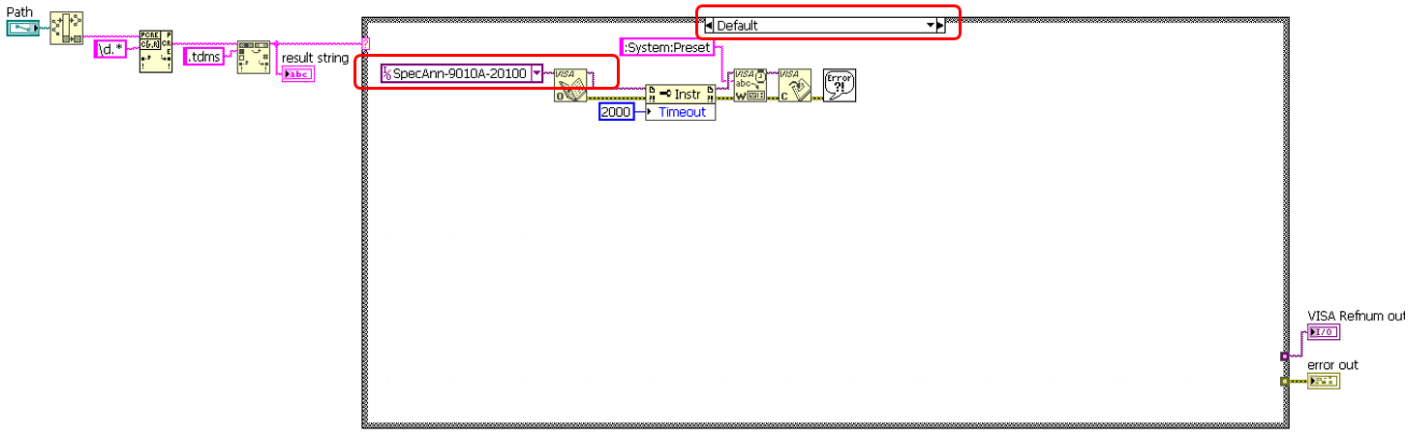

Figure 11: Spectrum analyzer settings

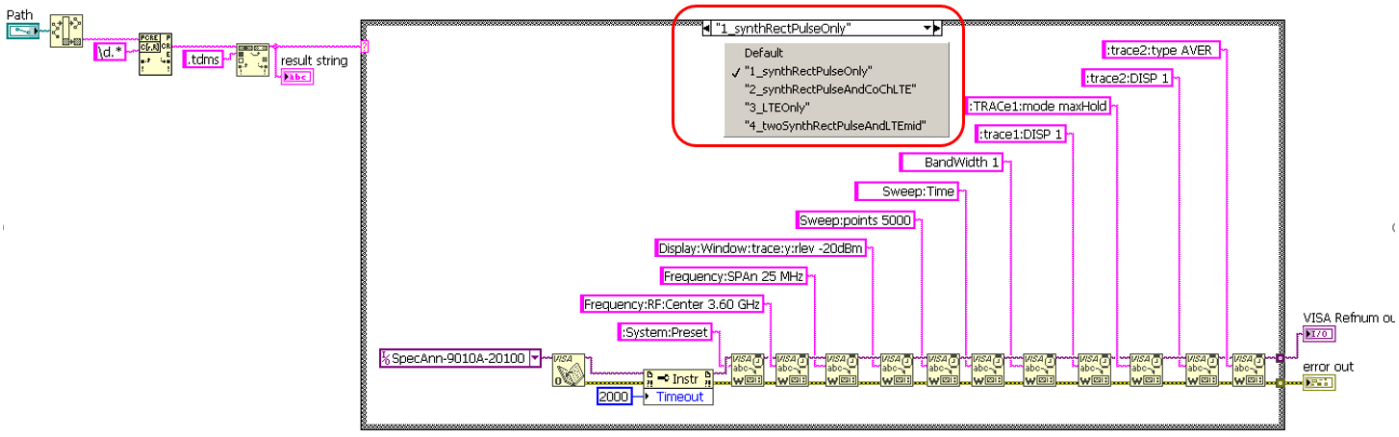

Figure 12: Spectrum analyzer settings