

LabVIEW Guide – Installation Instructions

LabVIEW source available from: https://github.com/D-TACQ/acq400_lv/releases/tag/2.0.0



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Latest release

2.0.0

038c2ee

Verified

Full_House_includes_ACQ1014

petermilne released this 20 hours ago

Assets

[Source code \(zip\)](#)

[Source code \(tar.gz\)](#)

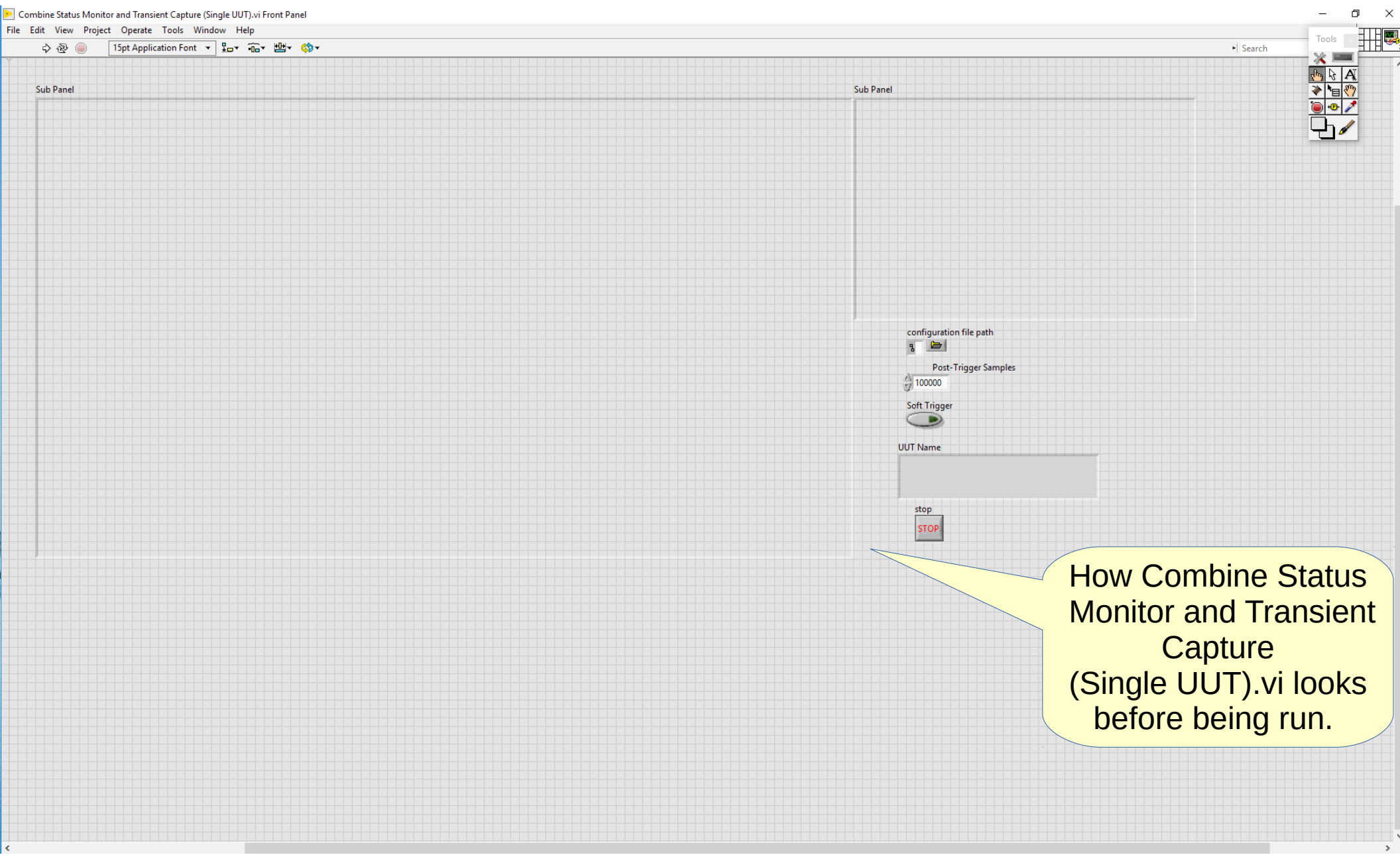
Merge pull request #4 from seanalsop/master

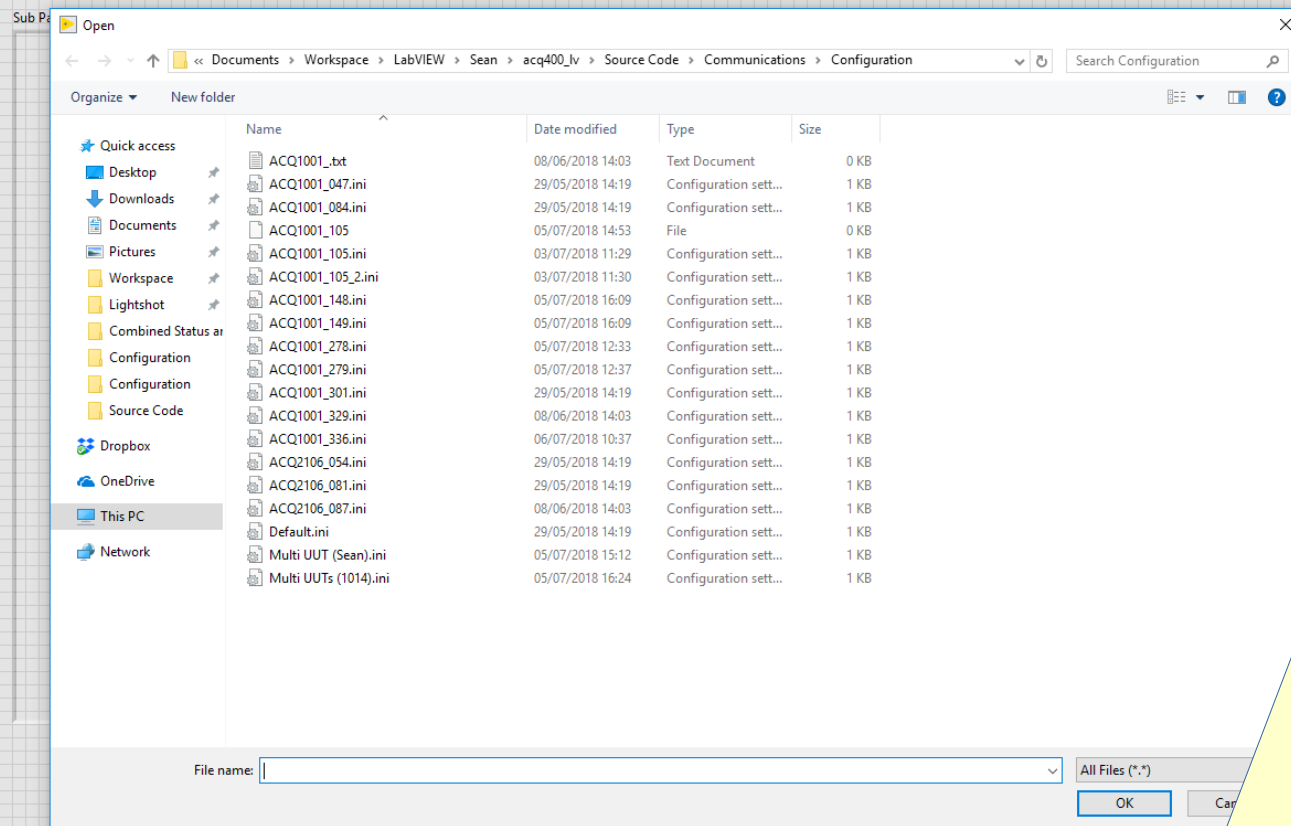
Working transient capture and acq1014 plotting tools.

Download source code as a zip file and extract to a known location. All paths given in this document are relative to the install location of the LabVIEW source Code. Any release from

LabVIEW Guide – Transient capture

Vi available from: acq400_1\Source Code\Combined Status and Transient\Combine Status Monitor and Transient Capture (Single UUT).vi





configuration file path
Post-Trigger Samples
100000
Soft Trigger
UUT Name

Use the configuration file path button to view the list of .ini files. Choose a single file and select OK.

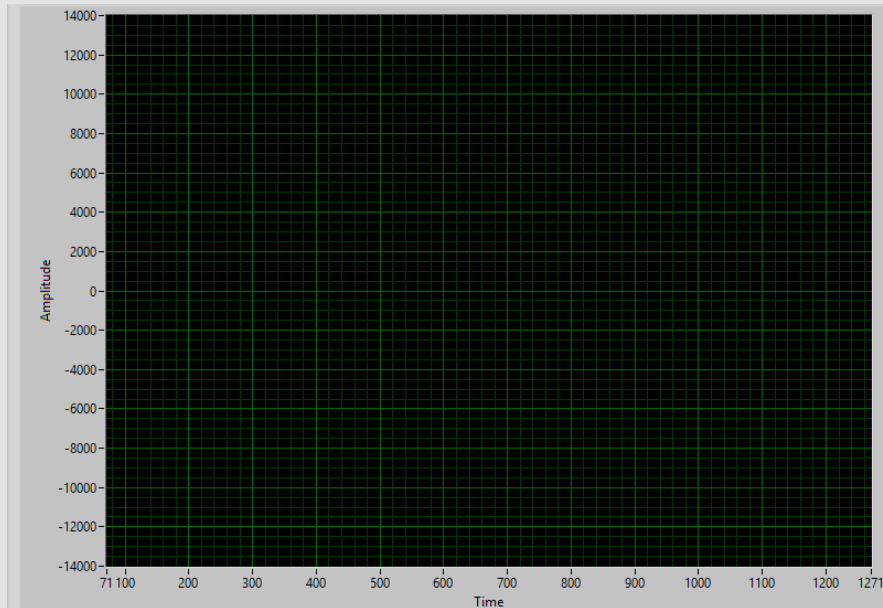
After choosing a configuration file use the soft trigger button to configure a soft trigger unless you want to use an external trigger with your UUT.

Press the “run vi” button in the top left of the screen and the graph and status monitor will be ready to display data as shown above.

Combine Status Monitor and Transient Capture (Single UUT).vi

File Edit View Project Operate Tools Help

Sub Panel



Device Name

FIRE

Sub Panel

Device State

IDLE

Demuxing

Pre-Buffered Samples

0

Total Samples

0

Post-Buffered Samples

0

configuration file path

Stop

configuration file path

Post-Trigger Samples

100000

Soft Trigger

UUT Name

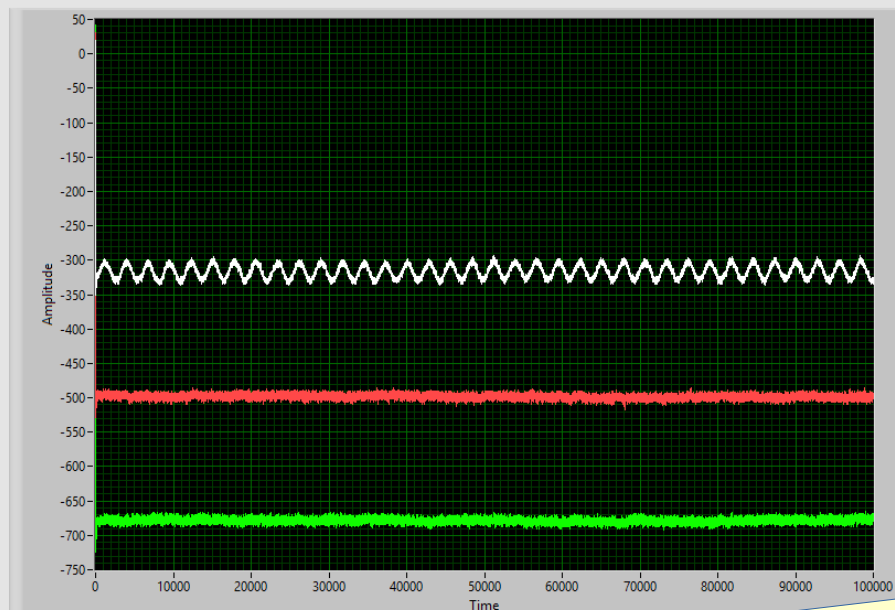
ACQ1001_105

stop

STOP



Sub Panel



- ☒ Plot 0
- ☒ Plot 1
- ☒ Plot 2
- ☐ Plot 3
- ☐ Plot 4
- ☐ Plot 5
- ☐ Plot 6
- ☐ Plot 7

FIRE

Sub Panel

Device State
RUN_POST-TRIGGER ● Demuxing

Pre-Buffered Samples
0

Post-Buffered Samples
100000

Total Samples
524288

configuration file path

Stop

configuration file path

Post-Trigger Samples
100000

Soft Trigger

UUT Name
ACQ1001_105

stop
STOP

Press the "FIRE" button and the UUT is armed.

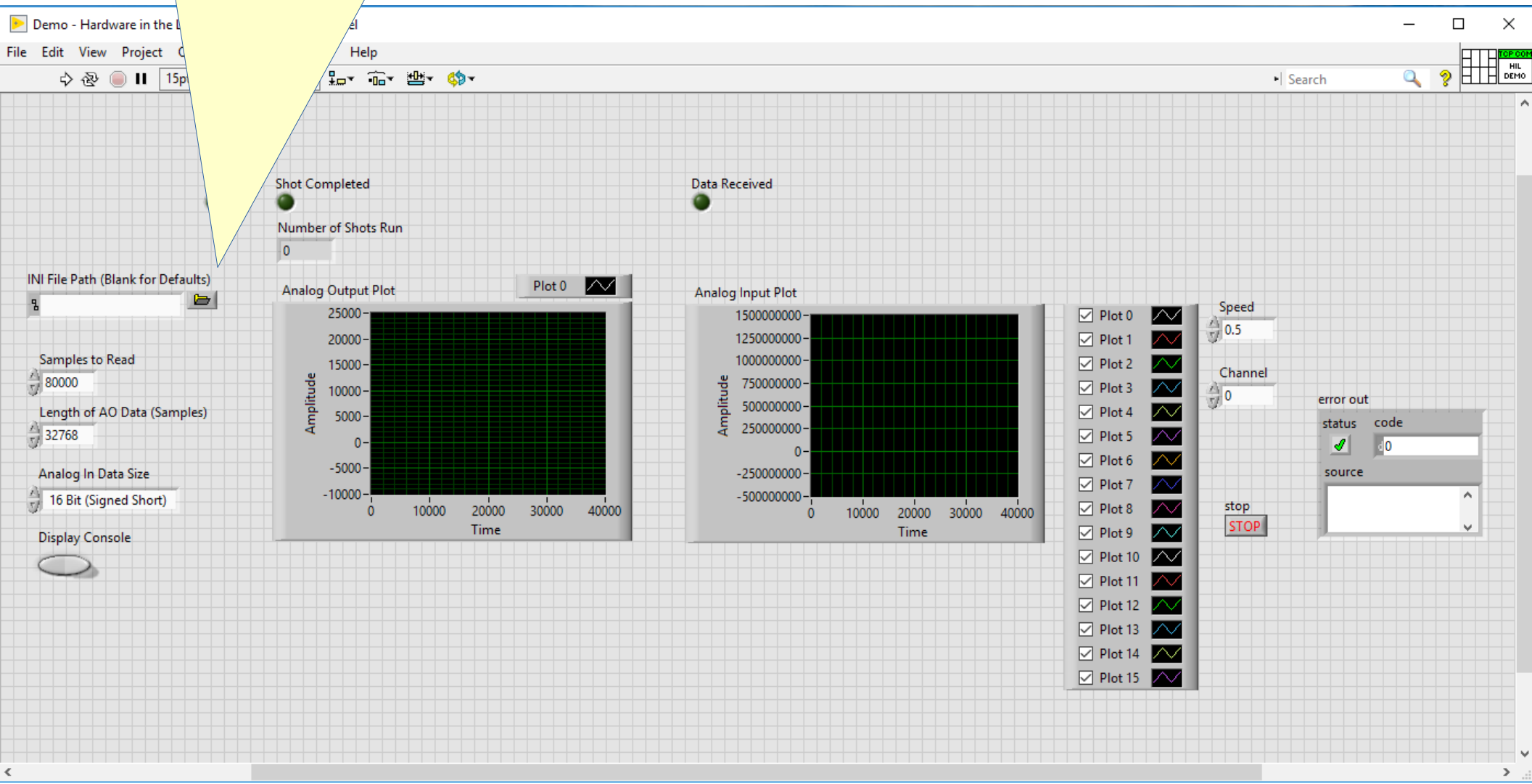
If the soft trigger button on the right is selected the UUT will soft trigger and the data will be displayed in the graph above.

When the UUT is armed it will display its status here.

LabVIEW Guide – Hardware in the Loop

Vi available from: acq400_iv\Source Code\Hardware in the Loop (Advanced Demo)\Demo - Hardware in the Loop Application.vi

How the vi looks before it is run. Click the INI file path button and choose a single file for the HIL test.



Open

< > ↑

<< Documents > Workspace > LabVIEW > Sean > acq400_iv > Source Code > Communications > Configuration

Search Configuration

Organize

New folder

Quick access

Desktop

Downloads

Documents

Pictures

Workspace

Lightshot

Configuration

Configuration

Source Code

transient_with_statu

Dropbox

OneDrive

This PC

Network

Name	Date modified	Type	Size
ACQ1001_047.ini	29/05/2018 14:19	Configuration sett...	1 KB
ACQ1001_084.ini	29/05/2018 14:19	Configuration sett...	1 KB
ACQ1001_105.ini	03/07/2018 11:29	Configuration sett...	1 KB
ACQ1001_105_2.ini	03/07/2018 11:30	Configuration sett...	1 KB
ACQ1001_148.ini	05/07/2018 16:09	Configuration sett...	1 KB
ACQ1001_149.ini	05/07/2018 16:09	Configuration sett...	1 KB
ACQ1001_278.ini	05/07/2018 12:33	Configuration sett...	1 KB
ACQ1001_279.ini	05/07/2018 12:37	Configuration sett...	1 KB
ACQ1001_301.ini	29/05/2018 14:19	Configuration sett...	1 KB
ACQ1001_329.ini	08/06/2018 14:03	Configuration sett...	1 KB
ACQ1001_336.ini	06/07/2018 10:37	Configuration sett...	1 KB
ACQ2106_054.ini	29/05/2018 14:19	Configuration sett...	1 KB
ACQ2106_081.ini	29/05/2018 14:19	Configuration sett...	1 KB
ACQ2106_087.ini	08/06/2018 14:03	Configuration sett...	1 KB
Default.ini	29/05/2018 14:19	Configuration sett...	1 KB
Multi UUT (Sean).ini	05/07/2018 15:12	Configuration sett...	1 KB
Multi UUTs (1014).ini	05/07/2018 16:24	Configuration sett...	1 KB

File name:

Configuration File (*.ini)

OK

Cancel

Search

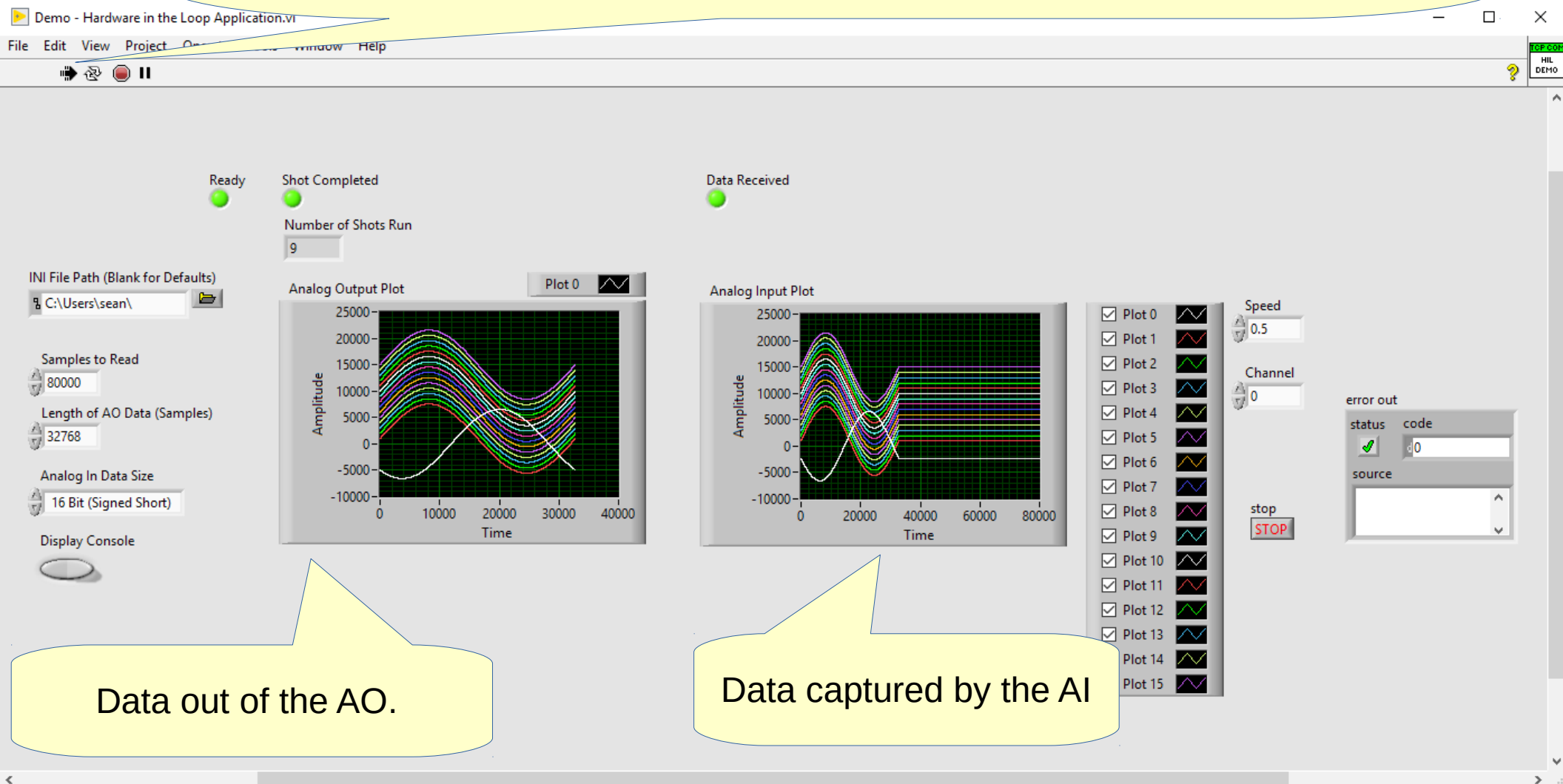
error out

status

code

source

If the default settings are okay for the hardware you are using then click the run button in the top left of the window and the loop test will begin.

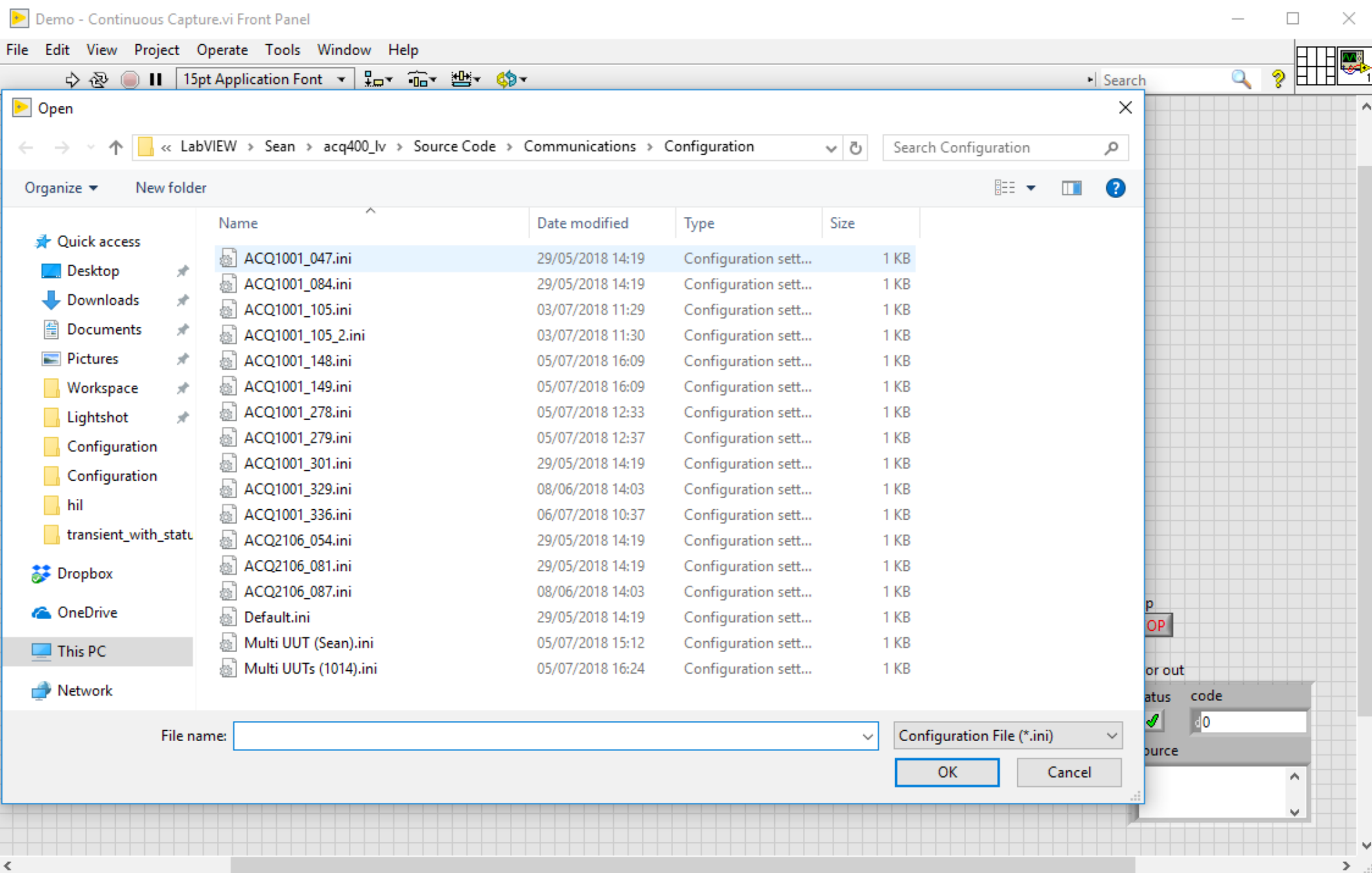


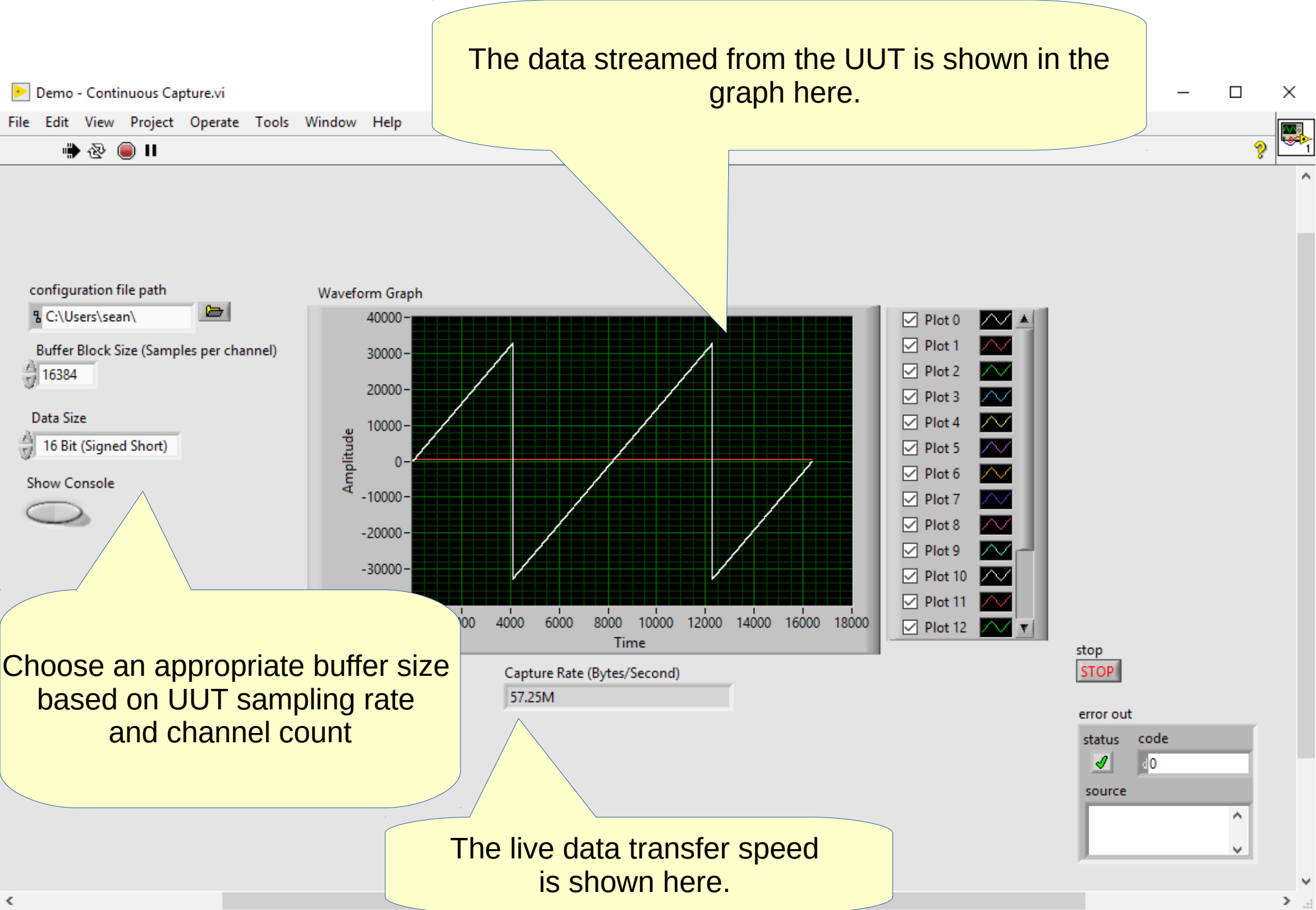
LabVIEW Guide – Streaming data

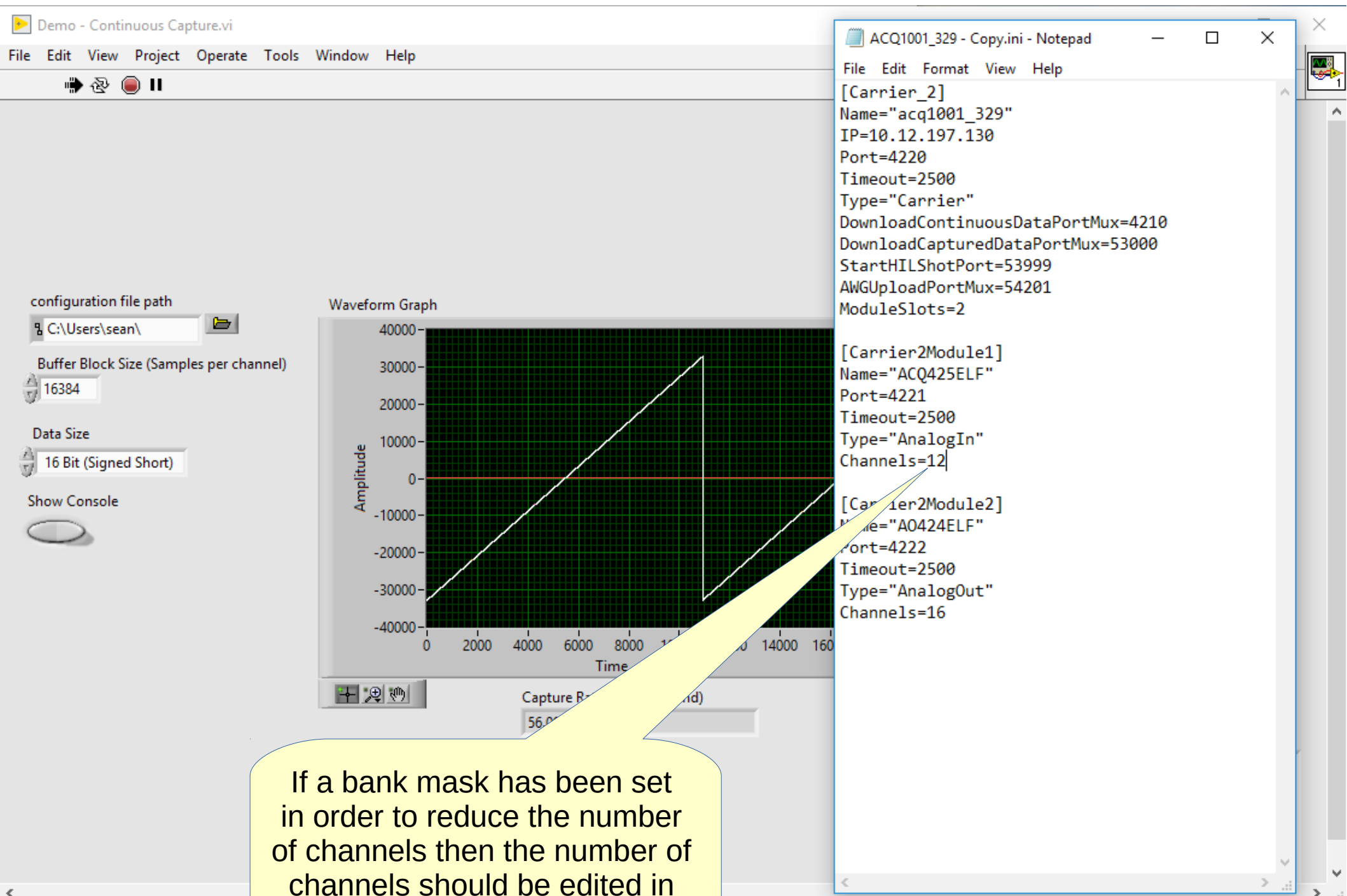
Vi available from: acq400_iv\Source Code\Continuous Capture (Advanced Demo)\Demo - Continuous Capture.vi

Click the configuration file path button and choose a single ini file.

The screenshot displays the LabVIEW front panel for 'Demo - Continuous Capture.vi'. The interface includes a menu bar (File, Edit, View, Project, Operate, Tools, Window, Help) and a toolbar with icons for running, stopping, and other functions. On the left, there are controls for 'configuration file path' (with a file selection button), 'Buffer Block Size (Samples per channel)' (set to 256), 'Data Size' (set to 16 Bit (Signed Short)), and a 'Show Console' button. The central 'Waveform Graph' shows 'Amplitude' on the y-axis (ranging from -8000 to 8000) and 'Time' on the x-axis (ranging from 0 to 27500). To the right of the graph is a list of 13 plots, each with a checkbox and a color-coded waveform icon. Below the graph, the 'Capture Rate (Bytes/Second)' is displayed as 0. On the far right, there is a 'stop' button (labeled STOP) and an 'error out' section with 'status' (a green checkmark icon) and 'code' (a numeric display showing 0).





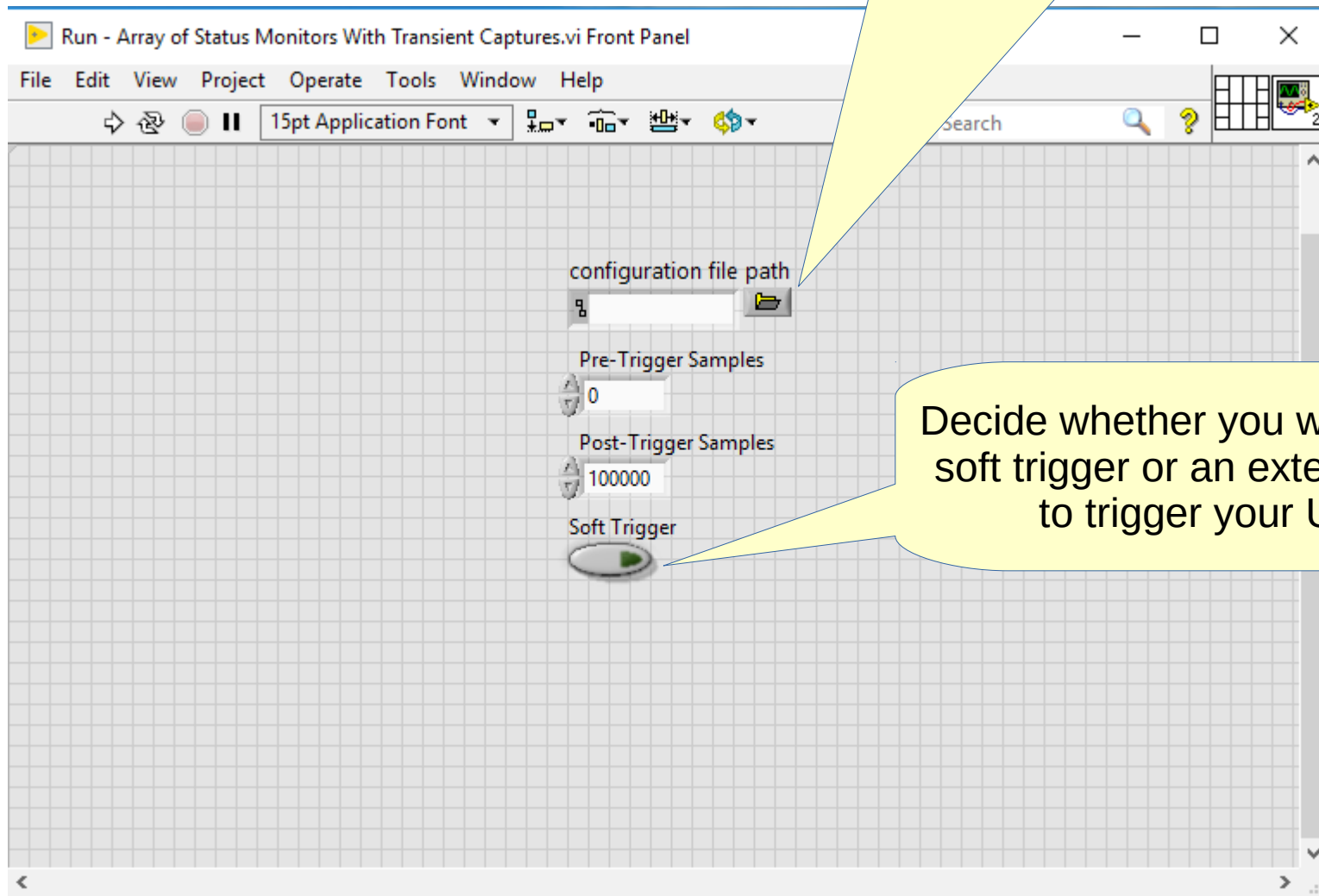


If a bank mask has been set in order to reduce the number of channels then the number of channels should be edited in the UUTs ini file as shown here.

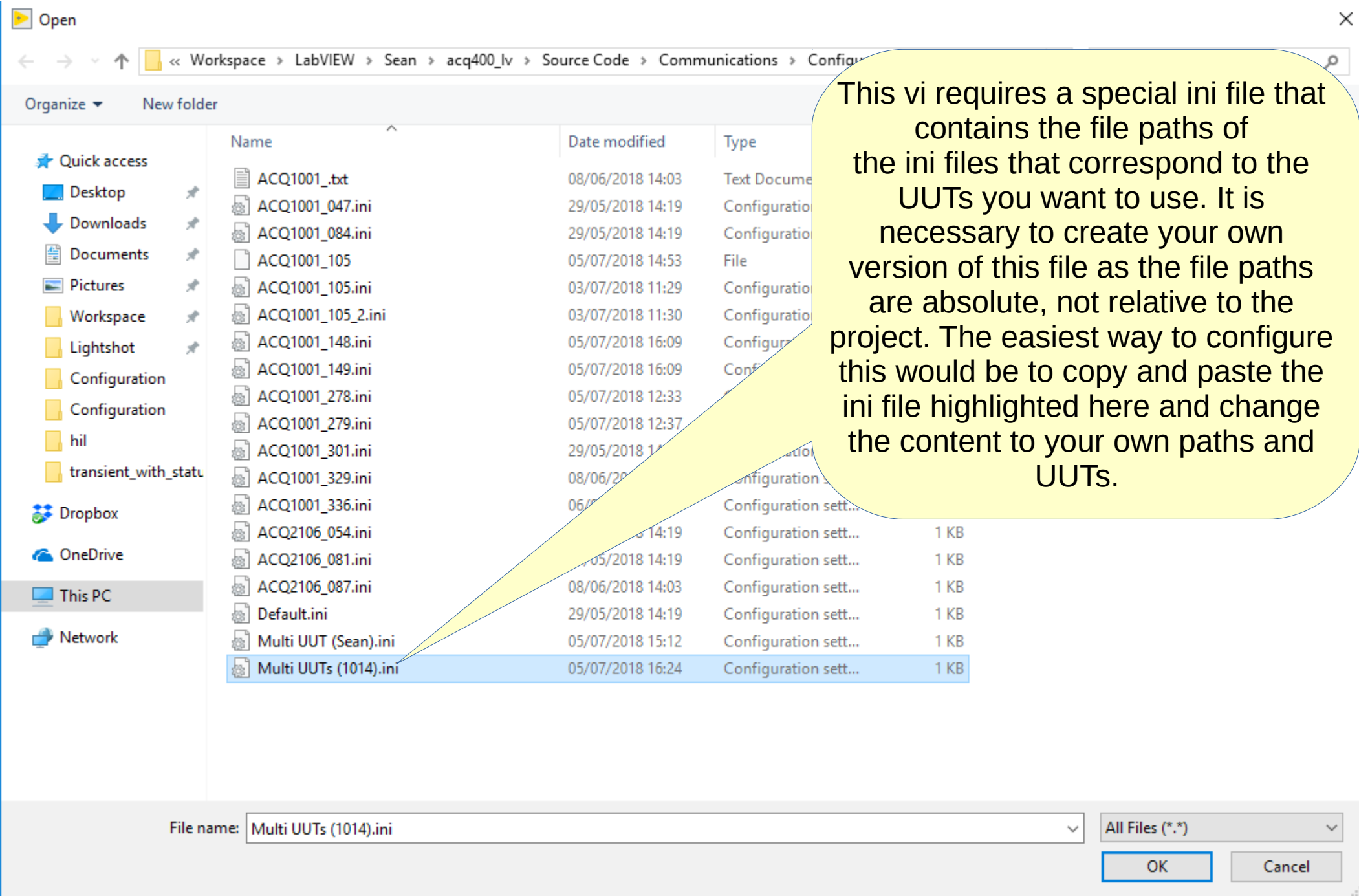
LabVIEW Guide – acq1014 Interface

Vi available from: acq400_iv\Source Code\Combined Status and Transient\Run - Array of Status Monitors With Transient Captures.vi

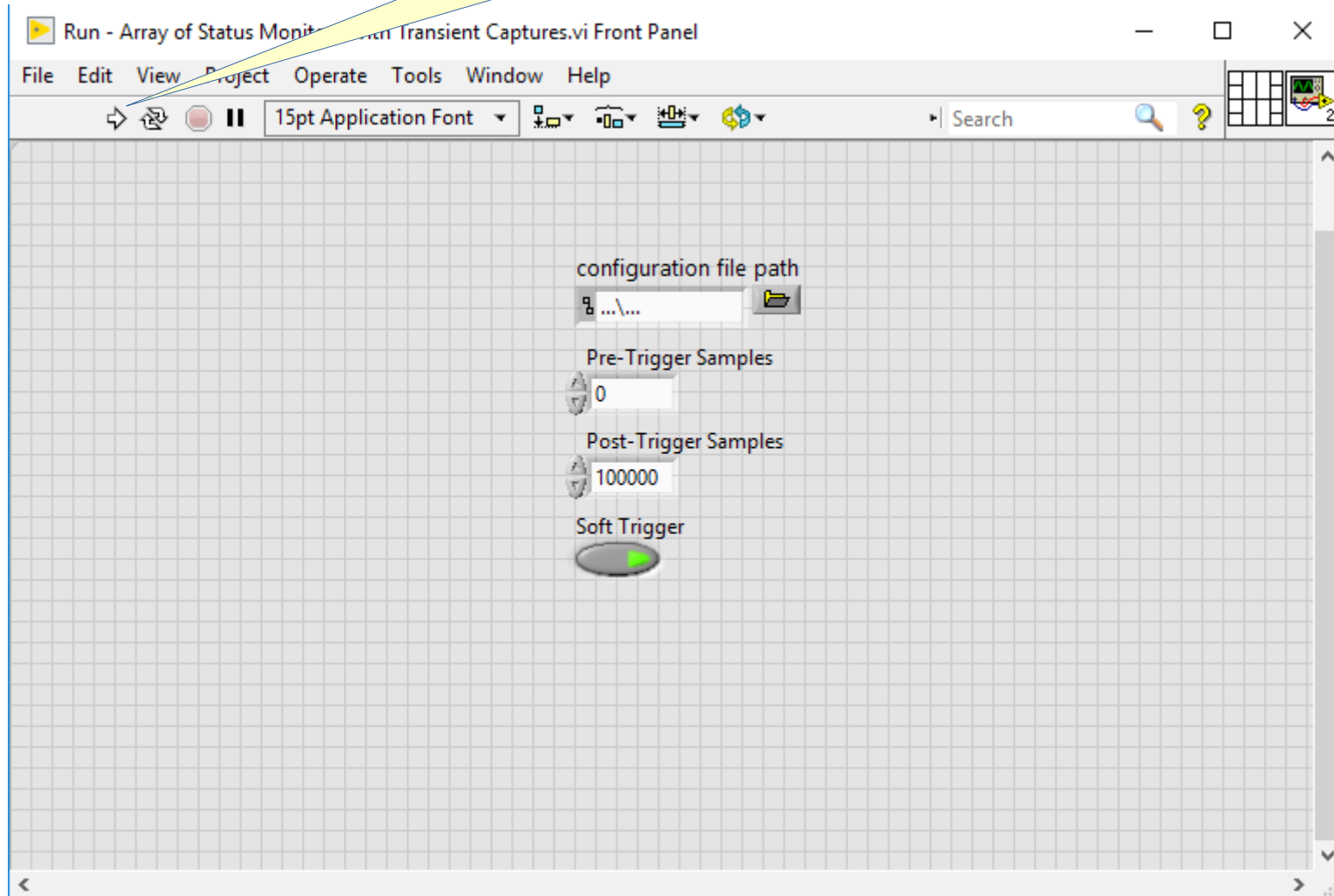
Choose a configuration file using the configuration file path button.

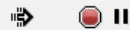


Decide whether you wish to use a soft trigger or an external trigger to trigger your UUTs.



Once the correct ini file has been chosen run the vi from the button in the top left of the window.





Currently Selected Unit Under Test

Previous

Next

Arm All

Graph All

Abort

Stop All

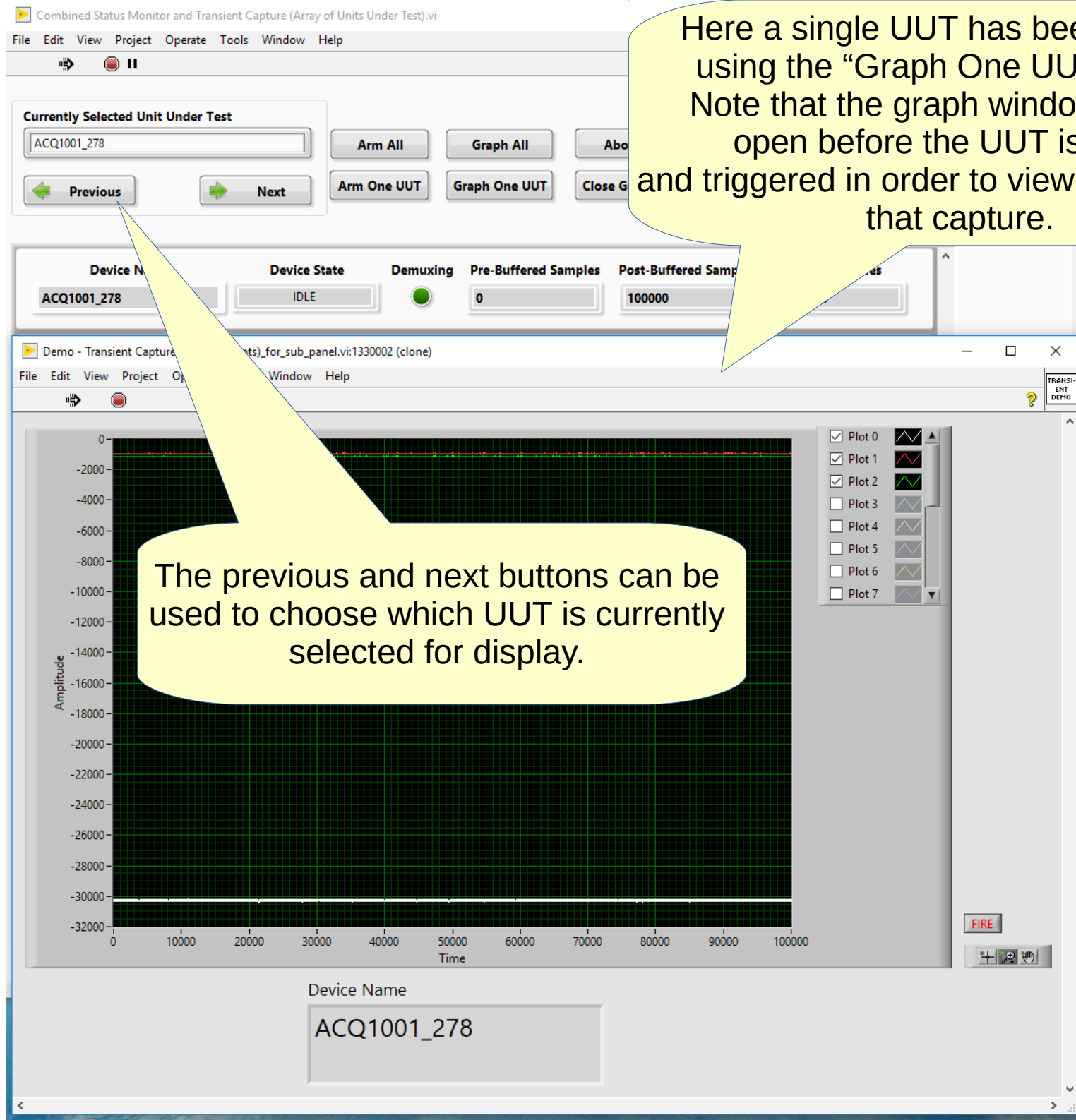
Arm One UUT

Graph One UUT

Close Graphs

The vi displays the status of all of the UUTs in the ini file. Use the buttons shown here to use the UUTs.

Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_278	IDLE		0	0	0
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_279	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_148	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_149	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_278	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_279	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_148	IDLE		0	200000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_149	IDLE		0	200000	1310720





[UUT]
MAIN
MENU

Currently Selected Unit Under Test

ACQ1001_278



Previous



Next

Arm All

Graph All

Abort

Arm One UUT

Graph One UUT

Close Graph

Device states are shown here when the UUTs are armed.

Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_278	POST_PROCESS		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_279	CLEANUP		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_148	POST_PROCESS		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_149	IDLE		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_278	POST_PROCESS		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_279	CLEANUP		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_148	POST_PROCESS		0	100000	1310720
Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_149	IDLE		0	100000	1310720

Currently Selected Unit Under Test

ACQ1001_278

Previous

Next

Arm All

Graph All

Abort

Arm One UUT

Graph One UUT

Close Graphs

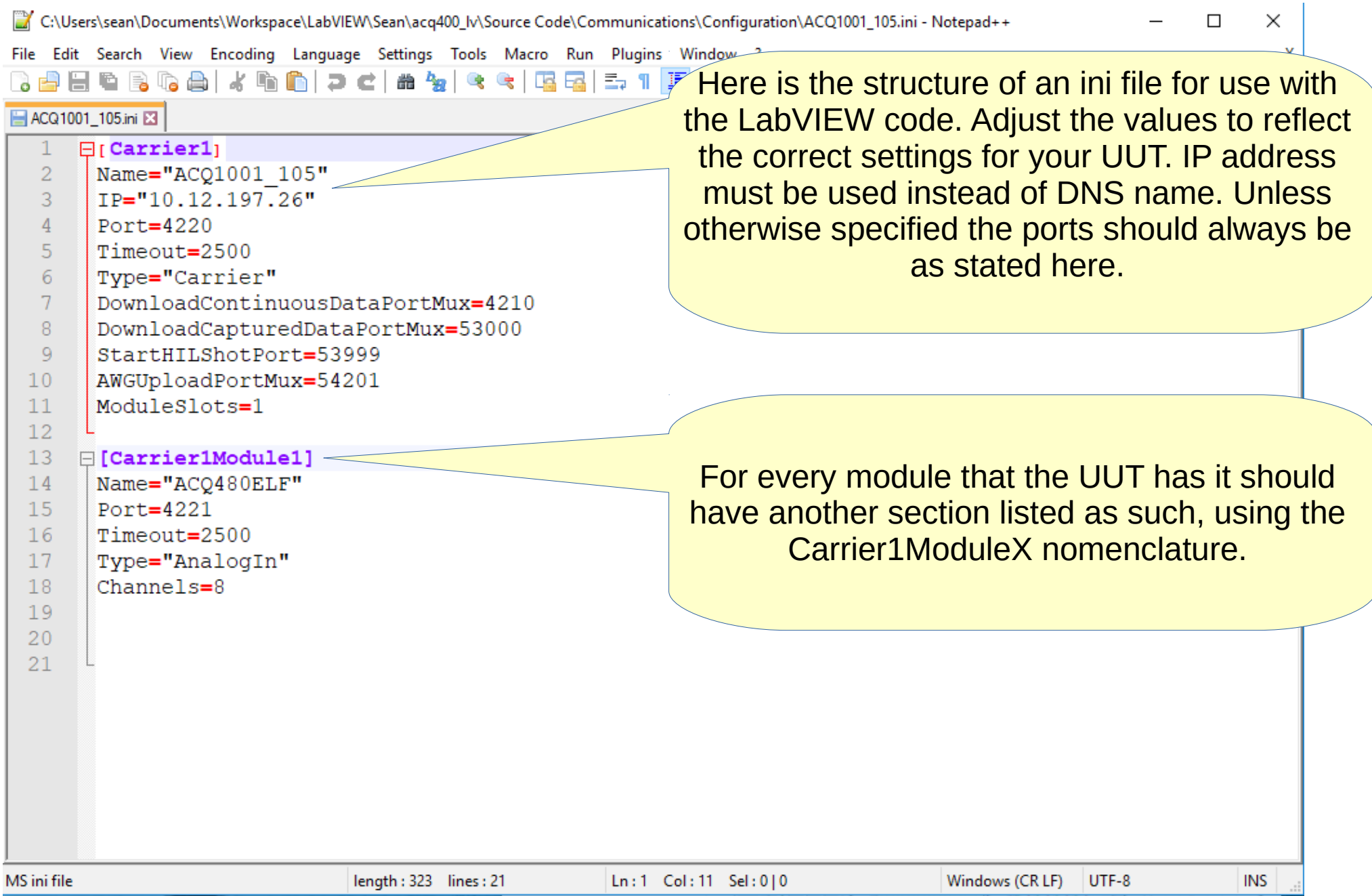
Stop All

Once all tasks have been completed with the Interface use the "Stop All" button to stop all of the vi's from running.

Device Name	Device State	Demuxing	Pre-Buffered Samples	Post-Buffered Samples	Total Samples
ACQ1001_278	IDLE		0		
ACQ1001_279	IDLE		0		
ACQ1001_148	IDLE		0		
ACQ1001_149	IDLE		0	100000	1310720
ACQ1001_278	IDLE		0	100000	1310720
ACQ1001_279	IDLE		0	100000	1310720
ACQ1001_148	IDLE		0	100000	1310720
ACQ1001_149	IDLE		0	100000	1310720

LabVIEW Guide – ini files

Ini files available from: acq400_iv\Source Code\Communications\Configuration



C:\Users\sean\Documents\Workspace\LabVIEW\Sean\acq400_iv\Source Code\Communications\Configuration\ACQ1001_105.ini - Notepad++

File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window

ACQ1001_105.ini

```
1 [Carrier1]
2 Name="ACQ1001_105"
3 IP="10.12.197.26"
4 Port=4220
5 Timeout=2500
6 Type="Carrier"
7 DownloadContinuousDataPortMux=4210
8 DownloadCapturedDataPortMux=53000
9 StartHILShotPort=53999
10 AWGUploadPortMux=54201
11 ModuleSlots=1
12
13 [Carrier1Module1]
14 Name="ACQ480ELF"
15 Port=4221
16 Timeout=2500
17 Type="AnalogIn"
18 Channels=8
19
20
21
```

Here is the structure of an ini file for use with the LabVIEW code. Adjust the values to reflect the correct settings for your UUT. IP address must be used instead of DNS name. Unless otherwise specified the ports should always be as stated here.

For every module that the UUT has it should have another section listed as such, using the Carrier1ModuleX nomenclature.

MS ini file length : 323 lines : 21 Ln : 1 Col : 11 Sel : 0 | 0 Windows (CR LF) UTF-8 INS