

Triton X User Guide



June 14, 2021

System Requirements

1. Computer Requirements

- a. Windows OS 7 or later. Will work on older versions of Windows, but is not guaranteed.
- b. 2GHz single core processor, or 1.4GHz multi-core processor
- c. 2GB RAM
- d. Minimum 10GB free space on your Hard Drive. More is preferred. Actual requirement depends on how long you intend to capture recordings.
- e. USB 2 or USB 3 port
 - With USB 3.0, the Triton X can be powered via the USB for up to 16-channels.
 - With USB 2.0, you may need to use the included power adapter for 16-channels or more.

2. Package Contents

- a. Triton X amplifier
 - Headstages are integrated in the amplifier
 - Digitizer is integrated in the amplifier
- b. 6-foot (1.8 meter) Mini-USB cable
- c. Power adapter. Power adapter is needed for:
 - 24-channels or more when using a USB 3 port
 - 16-channels or more when using a USB 2 port
 - The Power Adapter is not needed for:
 - 8 or 16-channel system with a USB 3 port
 - 8-channel system with a USB 2 port
- d. USB thumb drive with the following
 - Driver
 - TecellaLab software
 - Documentation
- e. Cable. Following options are available.
 - BNC
 - SMA
 - SMB
 - Pin – 1mm, 1.3mm, 1.5mm, 1.8mm, or 2mm diameter
 - Terrapin



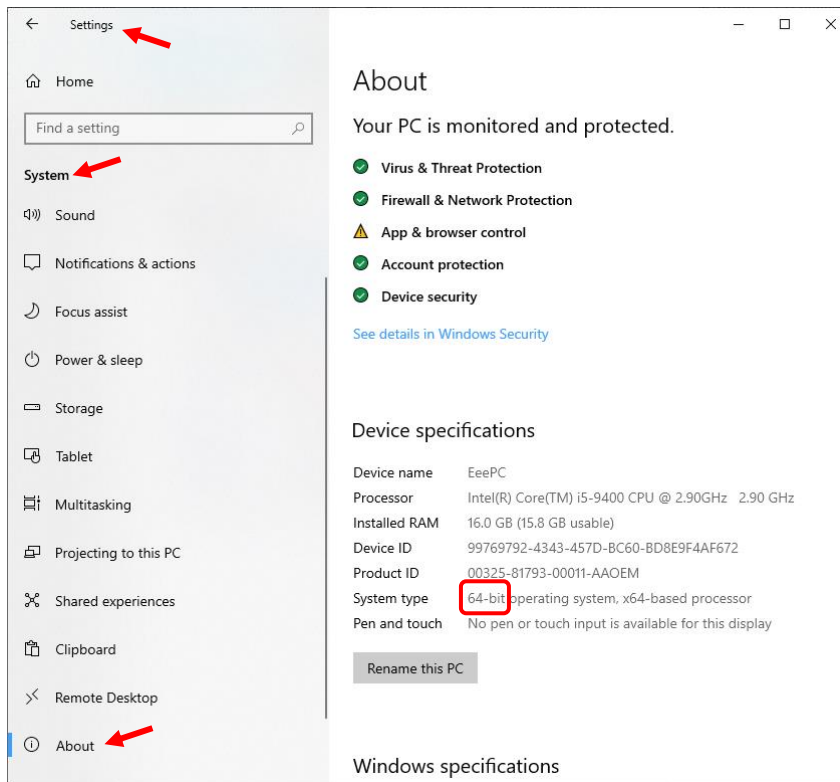
Driver Installation

3. Driver installation

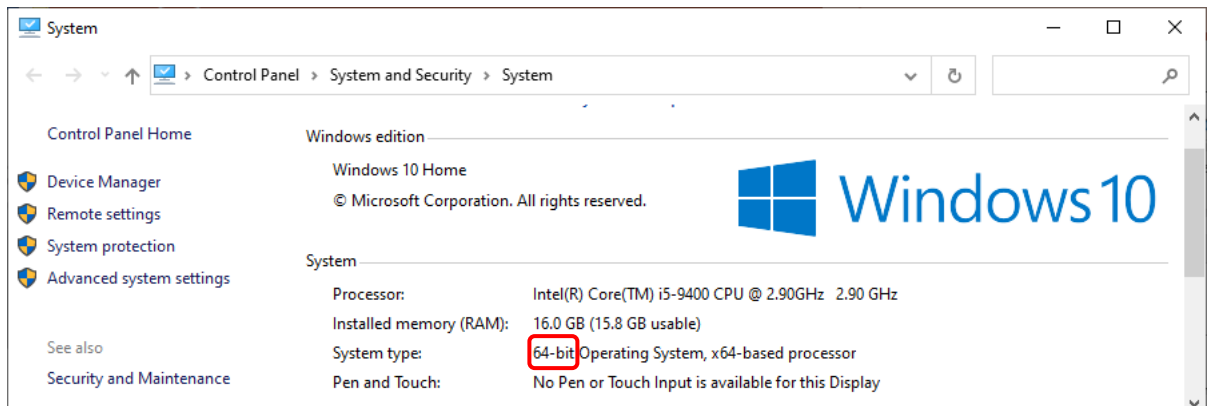
- a. Both the 32-bit and 64-bit drivers are included in the USB thumb drive.
- b. Drivers can also be downloaded from www.tecella.com under DOWNLOADS. Direct links are provided below:
 - 64-bit: http://downloads.tecella.com/driver/Driver_64bit_4.5.6.exe
 - 32-bit: http://downloads.tecella.com/driver/Driver_32bit_4.5.6.exe

Most systems today are 64-bit systems. If you wish to check your system, the following are two methods. You can also check the internet for other methods.

- Settings > System > About

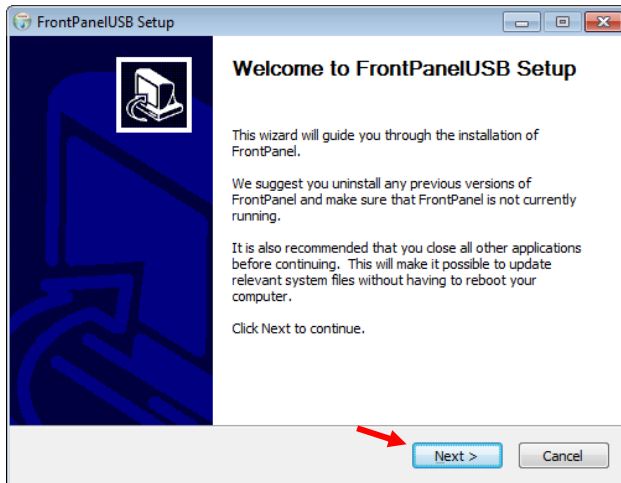


- Right click on your Computer icon, and either go to “Properties” or “More > Properties”

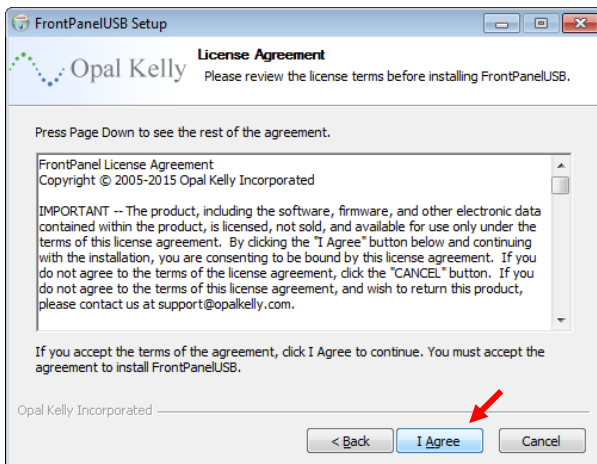


Driver Installation

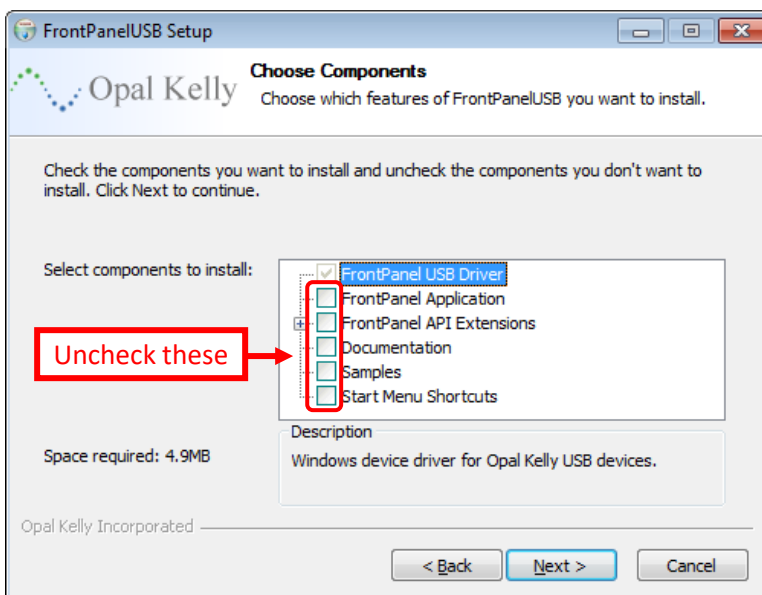
- c. Run the appropriate 32-bit or 64-bit driver installer.
 - Click on “Next”.



- Click on “I Agree”.

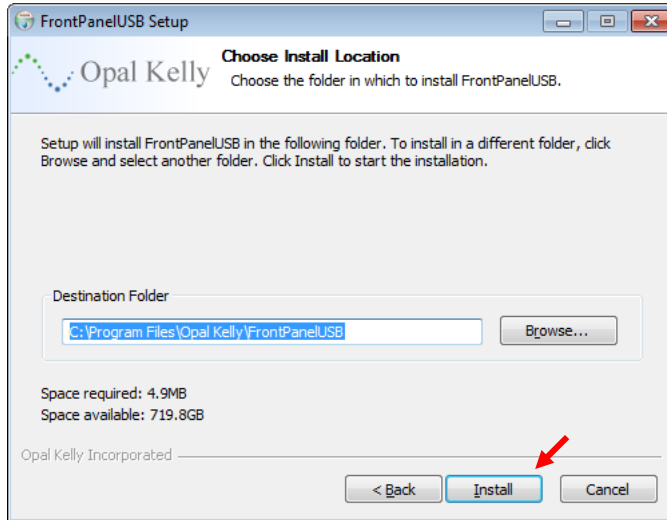


- Uncheck everything except “FrontPanel USB Driver”. (“FrontPanel USB Driver” cannot be unchecked.)

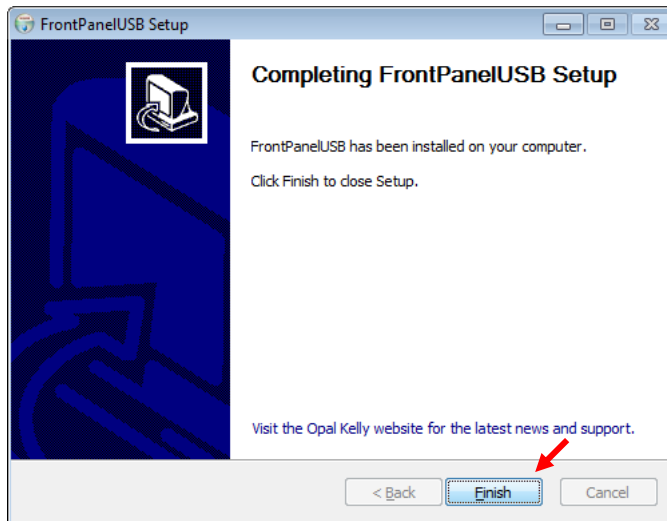


Driver Installation

- Click on “Install”.



- Click on “I Agree”.



- Driver installation has been completed.

Amplifier Setup

4. Amplifier Setup

- a. Connect the USB cable and the power supply as shown. For 8-channel and 16-channel systems connected to a USB 3 port, the power supply is not needed. If supplying power from USB3, be sure to connect directly to the USB port on the computer. If using a hub, then make sure that hub is a powered hub.



Power Supply

USB

- b. Power on the amplifier as shown.



Channels
1-16

Channels
17-32

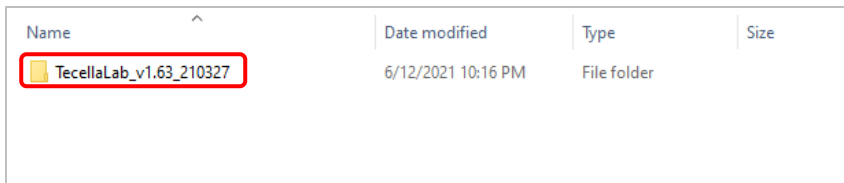
Channels
33-48

Left: Power Supply
Center: OFF
Right: USB-powered (16 channels on USB 3)

TecellaLab Software Installation

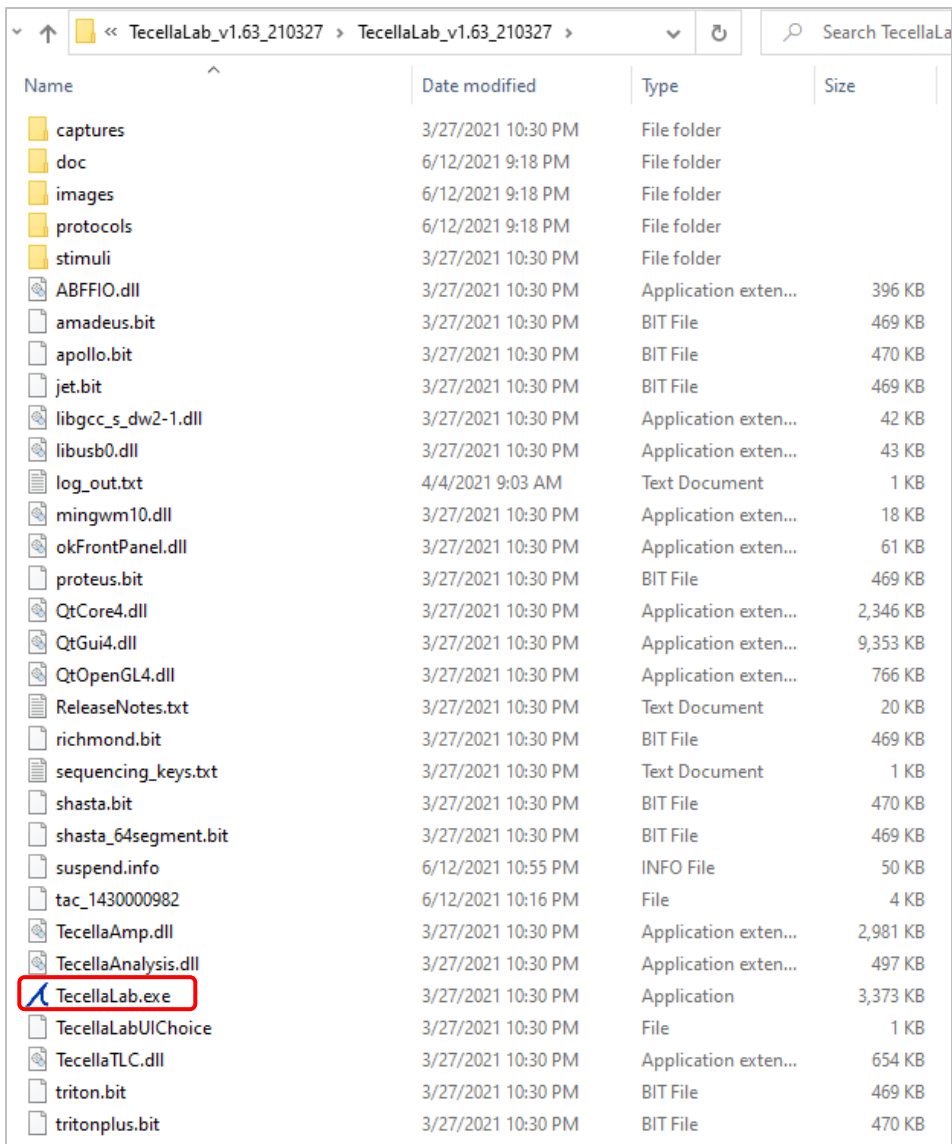
5. TecellaLab software installation

- a. TecellaLab version 1.63 or later is required to support the Triton X, and is included in the USB thumb drive.
- b. TecellaLab can also be downloaded from www.tecella.com under DOWNLOADS. The direct link to version 1.63 is provided below:
 - TecellaLab version 1.63: http://downloads.tecella.com/TecellaLab_v1.63_210327.zip
- c. Installation of the TecellaLab is very simple. You just need to copy the TecellaLab folder to your desired location. You can even run TecellaLab from the USB thumb drive.



Name	Date modified	Type	Size
TecellaLab_v1.63_210327	6/12/2021 10:16 PM	File folder	

- d. To run TecellaLab, you need to have the amplifier connected to the computer and powered up. Then, double click on “TecellaLab.exe” to start the software.

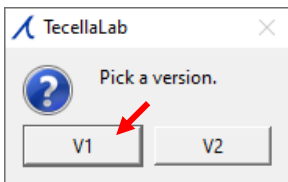


Name	Date modified	Type	Size
captures	3/27/2021 10:30 PM	File folder	
doc	6/12/2021 9:18 PM	File folder	
images	6/12/2021 9:18 PM	File folder	
protocols	6/12/2021 9:18 PM	File folder	
stimuli	3/27/2021 10:30 PM	File folder	
ABFFIO.dll	3/27/2021 10:30 PM	Application exten...	396 KB
amadeus.bit	3/27/2021 10:30 PM	BIT File	469 KB
apollo.bit	3/27/2021 10:30 PM	BIT File	470 KB
jet.bit	3/27/2021 10:30 PM	BIT File	469 KB
libgcc_s_dw2-1.dll	3/27/2021 10:30 PM	Application exten...	42 KB
libusb0.dll	3/27/2021 10:30 PM	Application exten...	43 KB
log_out.txt	4/4/2021 9:03 AM	Text Document	1 KB
mingwm10.dll	3/27/2021 10:30 PM	Application exten...	18 KB
okFrontPanel.dll	3/27/2021 10:30 PM	Application exten...	61 KB
proteus.bit	3/27/2021 10:30 PM	BIT File	469 KB
QtCore4.dll	3/27/2021 10:30 PM	Application exten...	2,346 KB
QtGui4.dll	3/27/2021 10:30 PM	Application exten...	9,353 KB
QtOpenGL4.dll	3/27/2021 10:30 PM	Application exten...	766 KB
ReleaseNotes.txt	3/27/2021 10:30 PM	Text Document	20 KB
richmond.bit	3/27/2021 10:30 PM	BIT File	469 KB
sequencing_keys.txt	3/27/2021 10:30 PM	Text Document	1 KB
shasta.bit	3/27/2021 10:30 PM	BIT File	470 KB
shasta_64segment.bit	3/27/2021 10:30 PM	BIT File	469 KB
suspend.info	6/12/2021 10:55 PM	INFO File	50 KB
tac_1430000982	6/12/2021 10:16 PM	File	4 KB
TecellaAmp.dll	3/27/2021 10:30 PM	Application exten...	2,981 KB
TecellaAnalysis.dll	3/27/2021 10:30 PM	Application exten...	497 KB
TecellaLab.exe	3/27/2021 10:30 PM	Application	3,373 KB
TecellaLabUIChoice	3/27/2021 10:30 PM	File	1 KB
TecellaTLC.dll	3/27/2021 10:30 PM	Application exten...	654 KB
triton.bit	3/27/2021 10:30 PM	BIT File	469 KB
tritonplus.bit	3/27/2021 10:30 PM	BIT File	470 KB

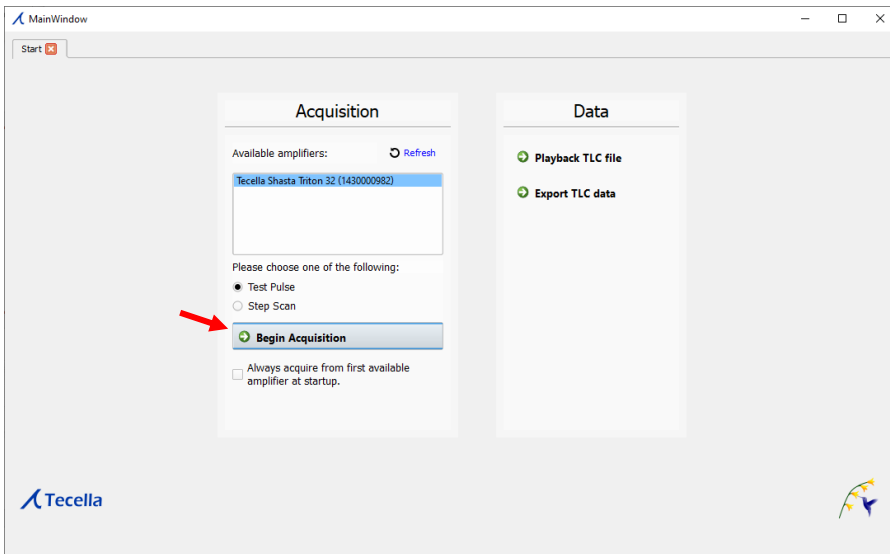
Quick Start with TecellaLab

6. Quick Start with TecellaLab

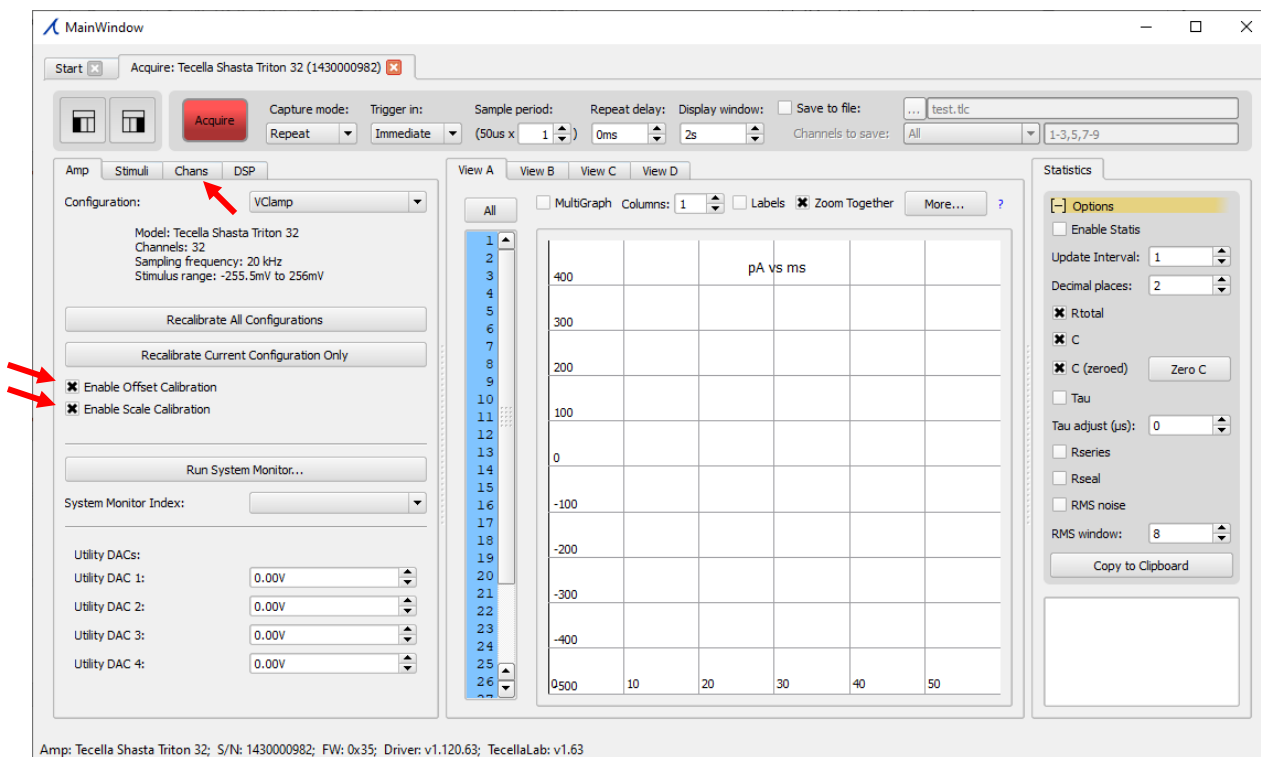
- a. Start TecellaLab.
- b. Click on “V1”.



- c. Click on “Begin Acquisition”



- d. Ensure “Enable Offset Calibration” and “Enable Scale Calibration” are checked. Select “Chans” tab.



Quick Start with TecellaLab

- e. Select “Source” = “Model”. Select “Gain” = “1Gig”. On the right channel selector, select channels 1 thru 16.

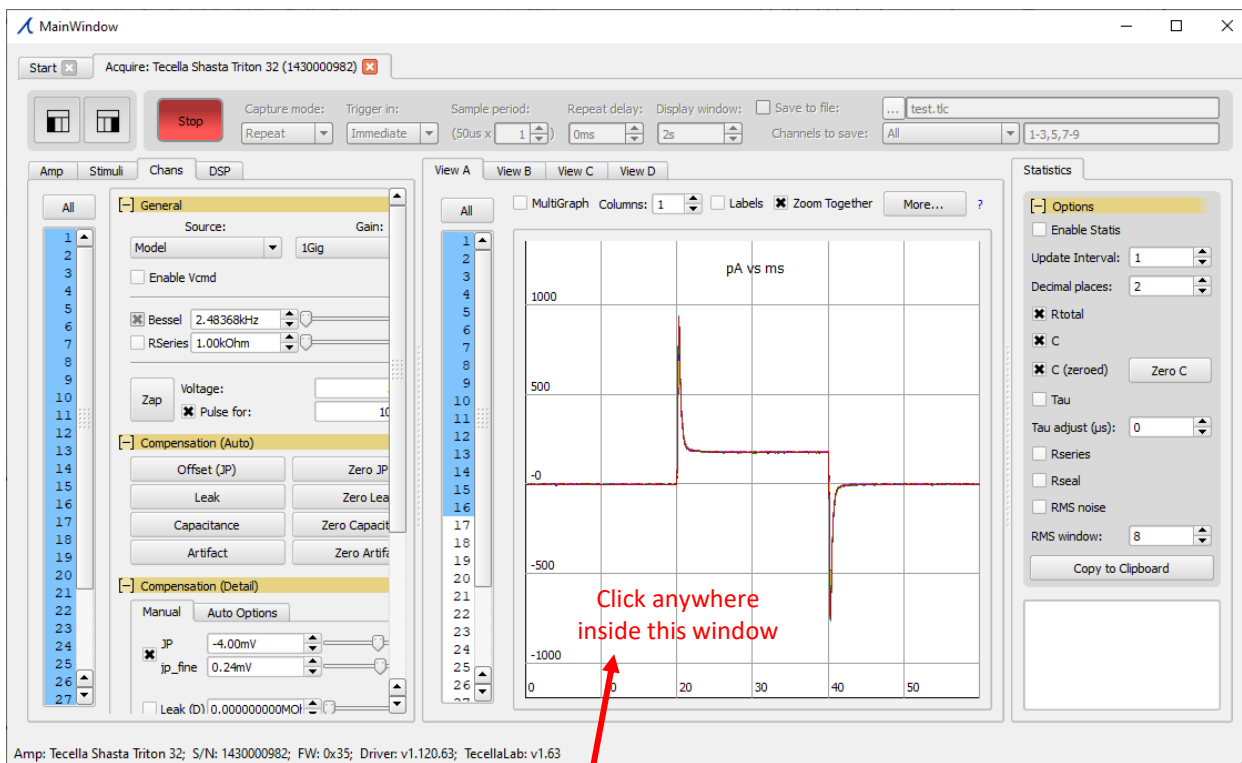
The screenshot shows the TecellaLab software interface. The 'Acquire' button is highlighted with a red arrow. The 'Source' is set to 'Model' and 'Gain' is set to '1Gig'. The channel selector on the right shows channels 1 through 16 selected, indicated by a red box. The 'Statistics' panel on the right shows various options like 'Enable Stats', 'Update Interval', 'Decimal places', 'Rtotal', 'C', 'C (zeroed)', 'Tau', 'Tau adjust (µs)', 'Rseries', 'Rseal', 'RMS noise', and 'RMS window'.

- f. Click on “Acquire”. The button will toggle to display “Stop”. You should see waveforms.

The screenshot shows the TecellaLab software interface after clicking 'Acquire'. The 'Stop' button is now visible, highlighted with a red arrow. The 'Statistics' panel on the right shows the same options as in the previous screenshot. The main plot area shows a waveform labeled 'pA vs ms' with a red trace showing a sharp peak and a subsequent decay.

Quick Start with TecellaLab

- g. Double-click in the graph window to make the waveform fit inside the window. Drag while holding down the left mouse button to move the waveform. Drag while holding down the right mouse button to zoom in/out in both the horizontal and vertical directions.



- Double-click: Fit waveform inside window.
Left-click and drag: Pan. Move the waveform around the window.
Right-click and drag: Zoom in/out, and horizontally/vertically.

- h. For additional information on using the TecellaLab, please refer to TecellaLab_Getting_Started.pdf included in the USB thumb drive, or refer to the link below.
- TecellaLab Getting Started: http://tecella.com/doc/TecellaLab_Getting_Started.pdf
- i. This Triton X Use Guide is included in the USB thumb drive, and is also available at the link below.
- Triton X User Guide: http://tecella.com/doc/TritonX_User_Guide.pdf