TecellaLab
User Guide

December 2010

Tecella

Installation & UI Version Selection

Install TecellaLab by simply unzipping the zip file to a folder on your computer.

Double-click on the TecellaLab icon, and you will first be asked to select between V1 and V2 interfaces.

V1 interface is better suited for simple protocols, and V2 interface is better suited for more complex protocols, such as episodic.

Both interfaces are described in this document, so you can glance at the screen shots to determine which interface is better suited for your application.

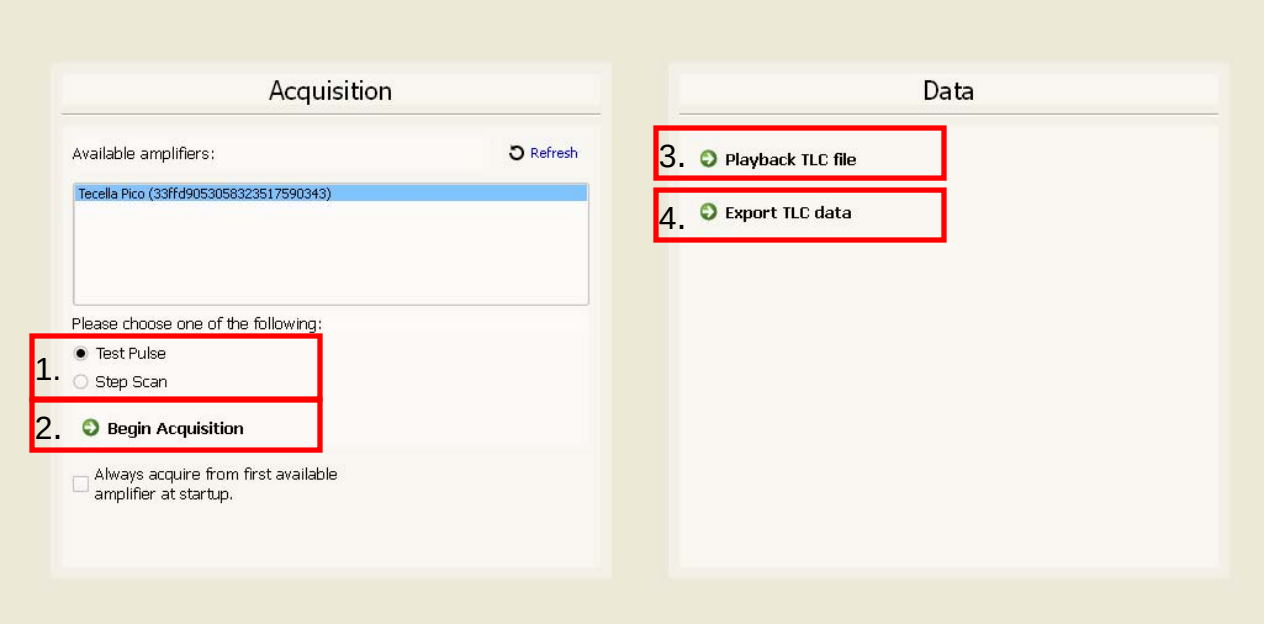
After you select the UI version, you will see screen shots as shown in the following pages. First, the V1 screen shots will be shown, followed by the V2 screen shots.

V1 screen shots will be notated as “UI 1”, and V2 screen shots will be notated as “UI 2”.

UI 1 Screen shots

The following pages pertain the UI version 1.

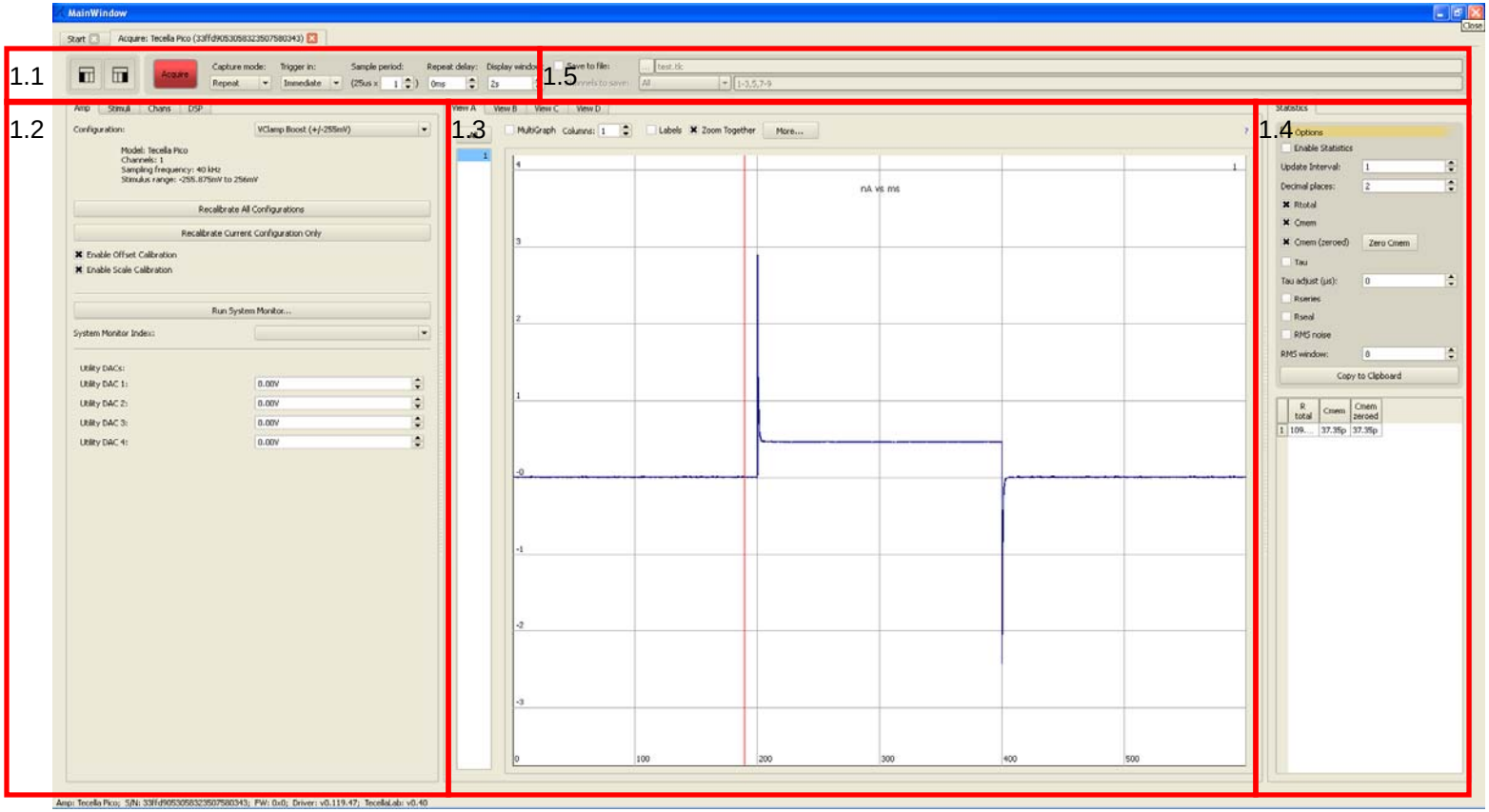
UI 1: Startup Screen



1. Select Experiment type.
2. Press “Begin Acquisition” to start Experiment.
3. Playback previously saved TLC file.
4. Convert TLC file to another file format.

To get acquainted with the software, simply select “Test Pulse”, then click on “Begin Acquisition.

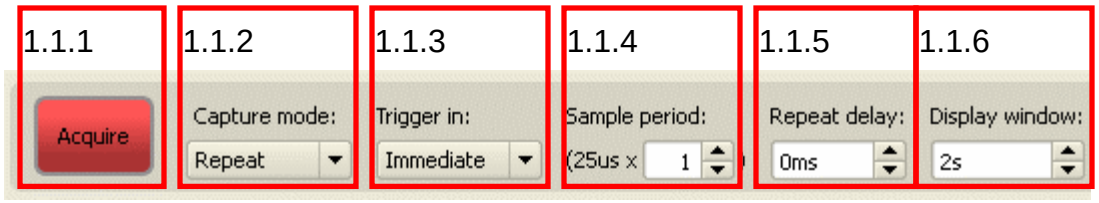
UI 1: Main Window



The above depicts the Main Window of TecellaLab. The Main Window consists of:

1.1 Acquisition Controls
1.2 Amplifier Controls
1.3 Graph
1.4 Statistics
1.5 Save to File

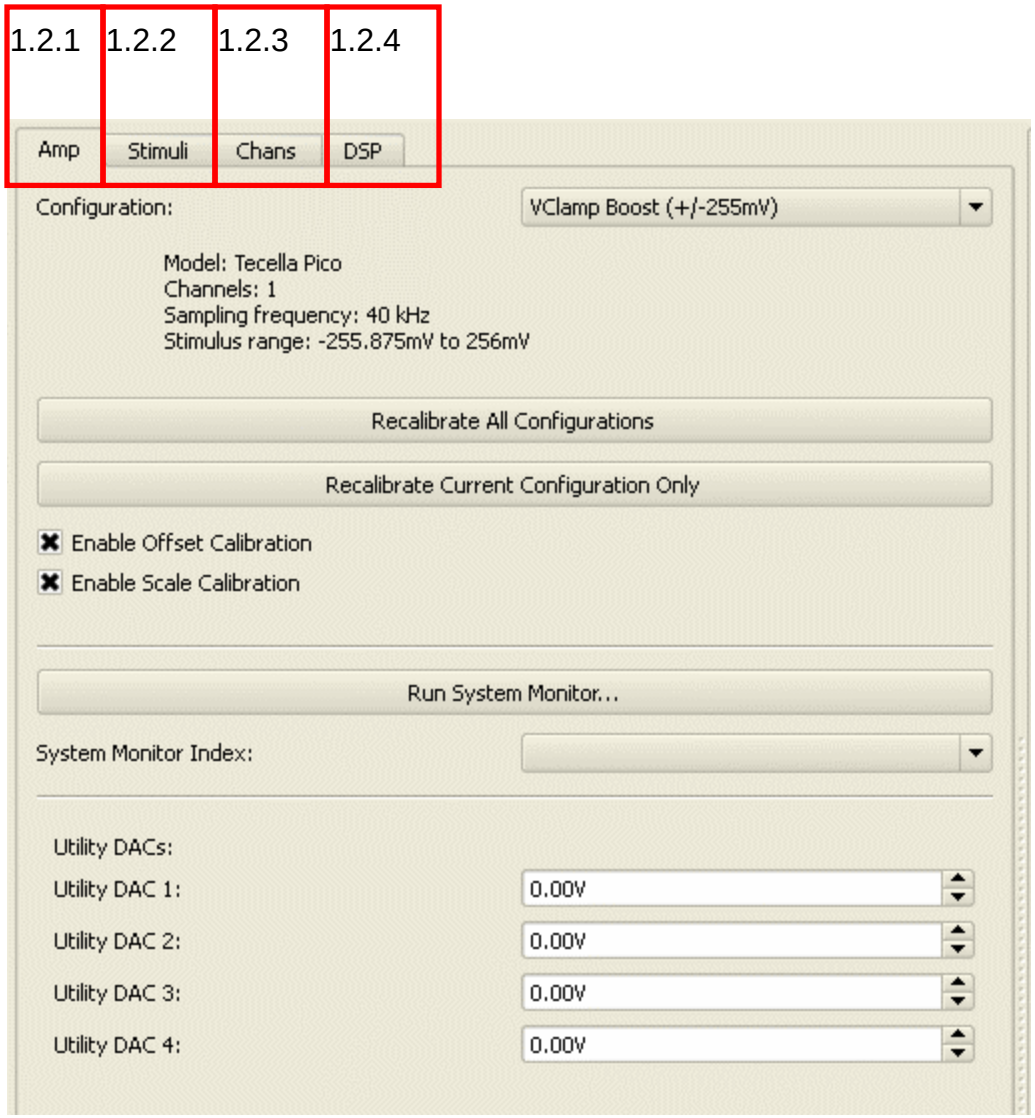
UI 1.1: Acquisition Controls



Acquisition Controls consists of the following:

1.1.1 Acquire Button
Begins and ends acquisition.
1.1.2 Capture mode
Choices include Single, Repeat, Continuous.
Continuous mode is the same as Gap Free mode.
1.1.3 Trigger In
Choose Trigger In source
1.1.4 Sample Period
Allows you to choose Sample Period as a multiple of base period.
1.1.5 Repeat Delay
Specify delay between Repeats in Repeat Capture mode.
1.1.6 Display Window
Specify size of Display window in Continuous Capture mode

UI 1.2: Amplifier Controls



Amplifier Controls consists of the following 4 tabs

1.2.1 Amplifier Tab

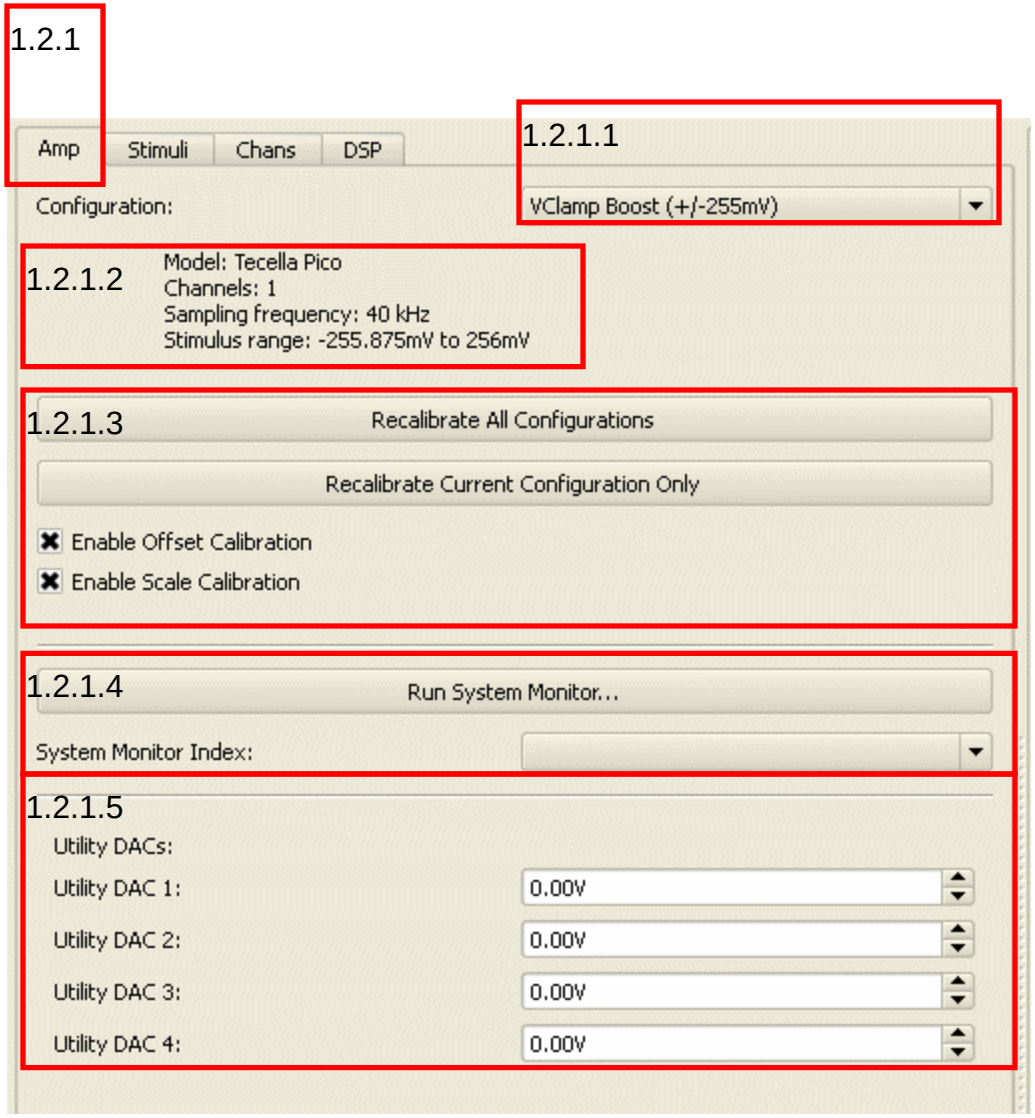
1.2.2 Stimuli Tab

1.2.3 Channels Tab

1.2.4 DSP Tab

These are explained in detail on the following pages.

UI 1.2.1: Amplifier Tab



Amplifier Tab consists of the following:

1.2.1.1 Amplifier Configuration – Choose between configurations (VClamp, IClamp)

1.2.1.2 Amplifier Information

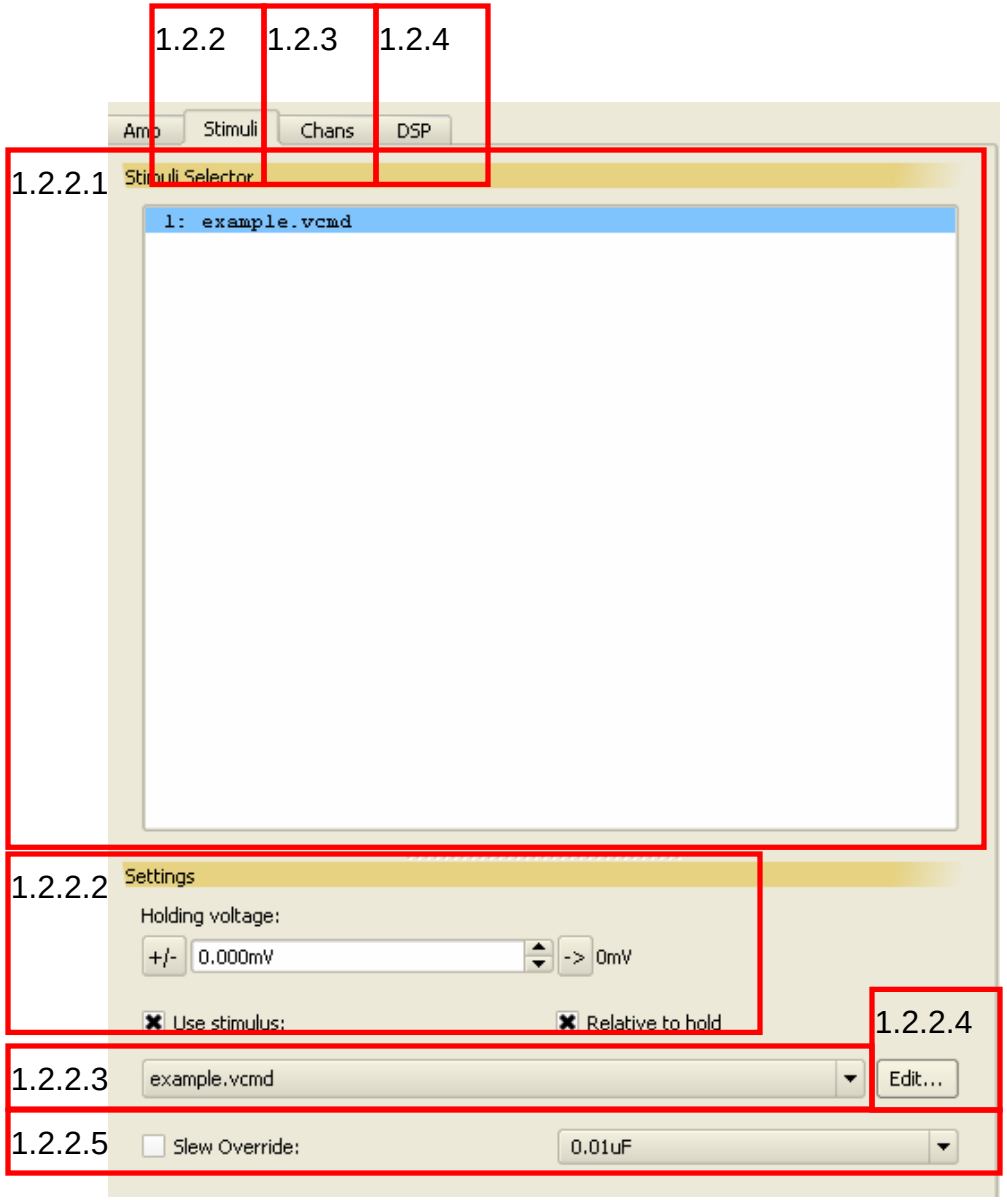
1.2.1.3 Offset and Scale Calibration

Note: This is strictly to calibrate the amplifier internal circuitry, and is different from Offset due to the experiment setup.

1.2.1.4 System Monitor

1.2.1.5 Utility DAC Control

UI 1.2.2: Stimuli tab



The Stimuli tab consists of the following:

1.2.2.1 Stimuli Selected – shows which stimulus is programmed

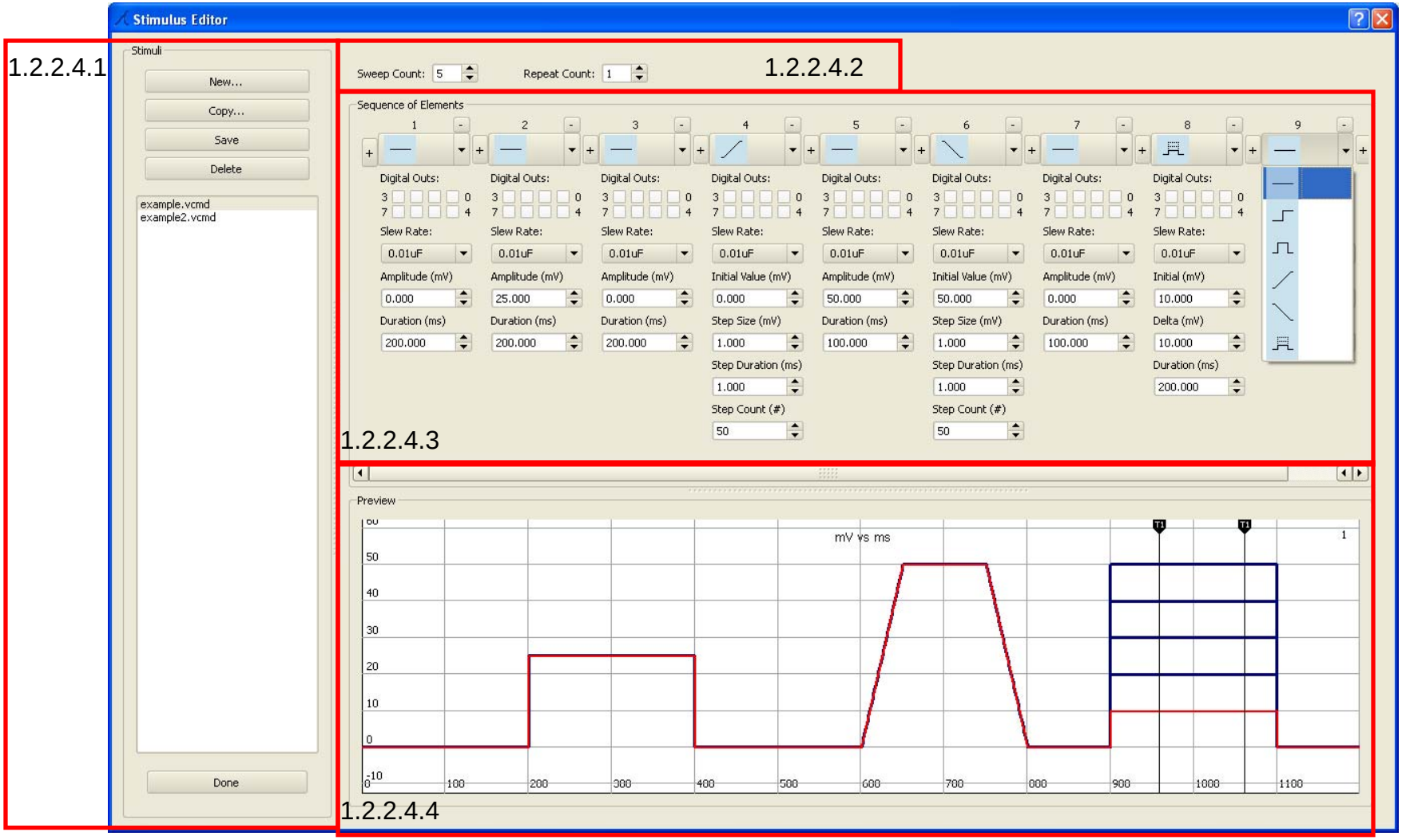
1.2.2.2 Stimulus Settings

1.2.2.3 Choose stimulus

1.2.2.4 Edit – Open stimulus editor UI

1.2.2.5 Slew Override

UI 1.2.2.4 – Stimulus Editor



UI 1.2.2.4 Stimulus Editor

1.2.2.4.1 File save and create controls

1.2.2.4.2 Sweep and repeat count controls

Sweep only applies when multiple steps are specified.

1.2.2.4.3 UI Stimulus controls

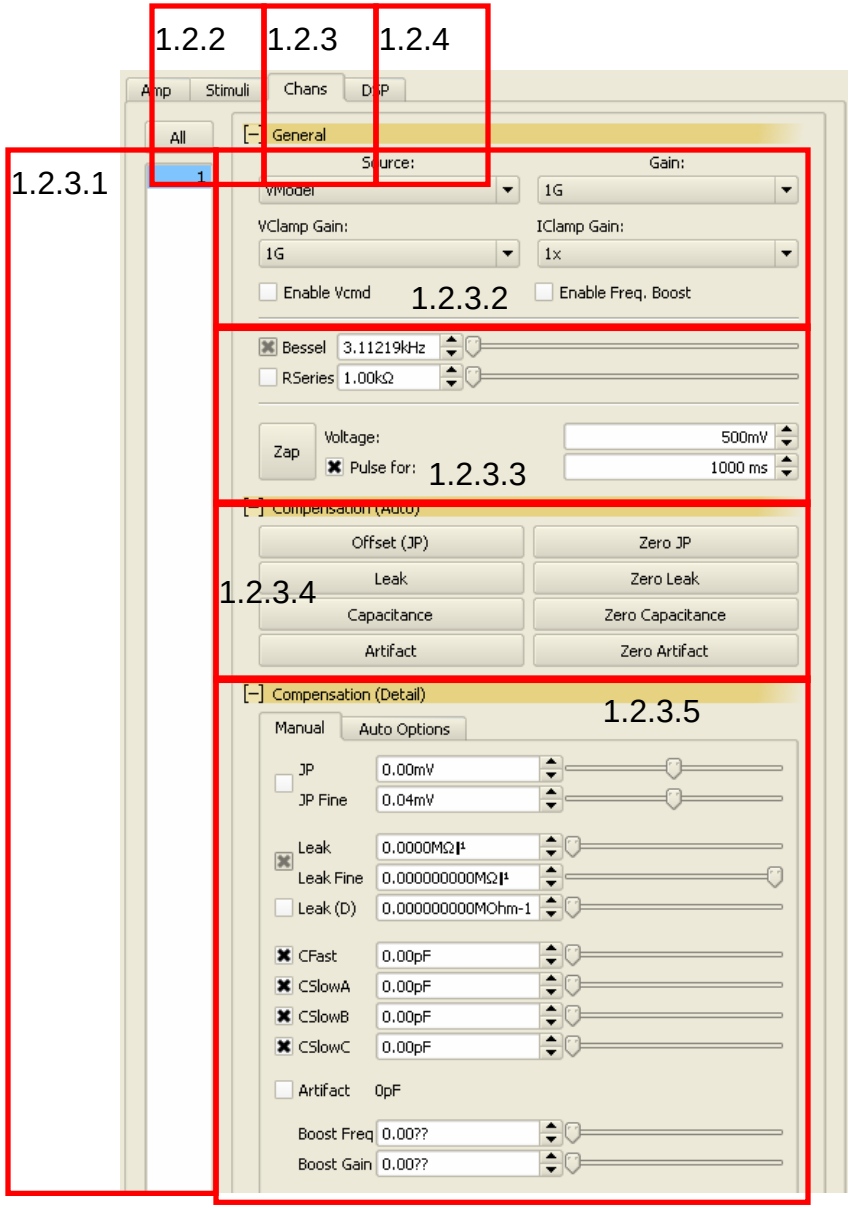
Add, remove segments.

Specify segment length, magnitude, ramp size.

1.2.2.4.4 Preview

Visual representation of stimulus.

UI 1.2.3 Channel Control tab



Channel Control tab consists of the following:

1.2.3.1 Channel selector

Select which channels to control

1.2.3.2 Source and Gain control

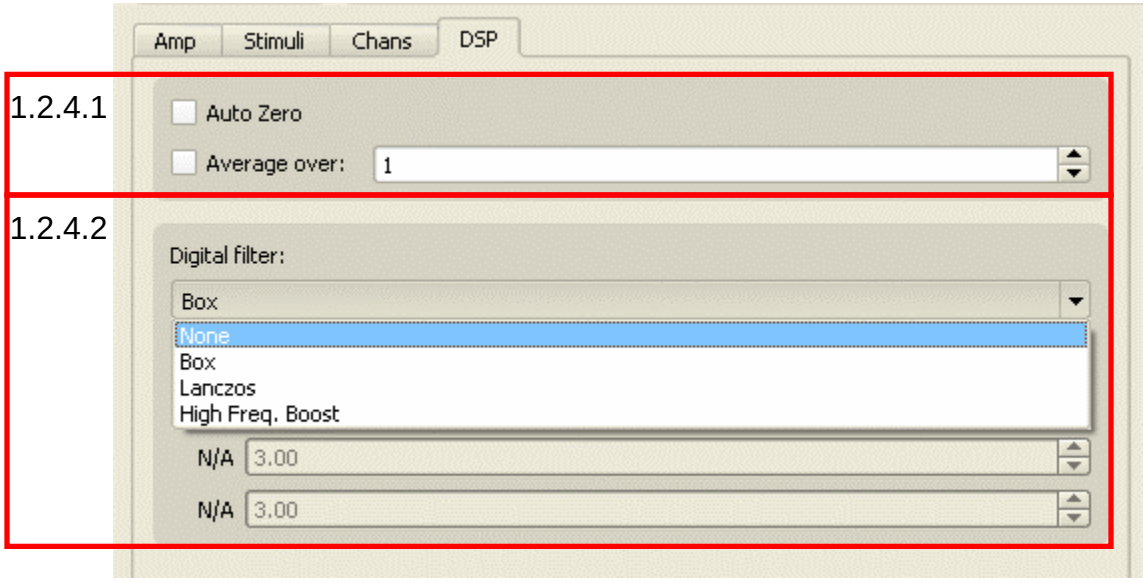
1.2.3.3 Bessel filter, RSeries compensation, Zap control

1.2.3.4 Automatic Compensation control

1.2.3.5 Manual Compensation control

UI 1.2.4 DSP tab

1.2.2	1.2.3	1.2.4

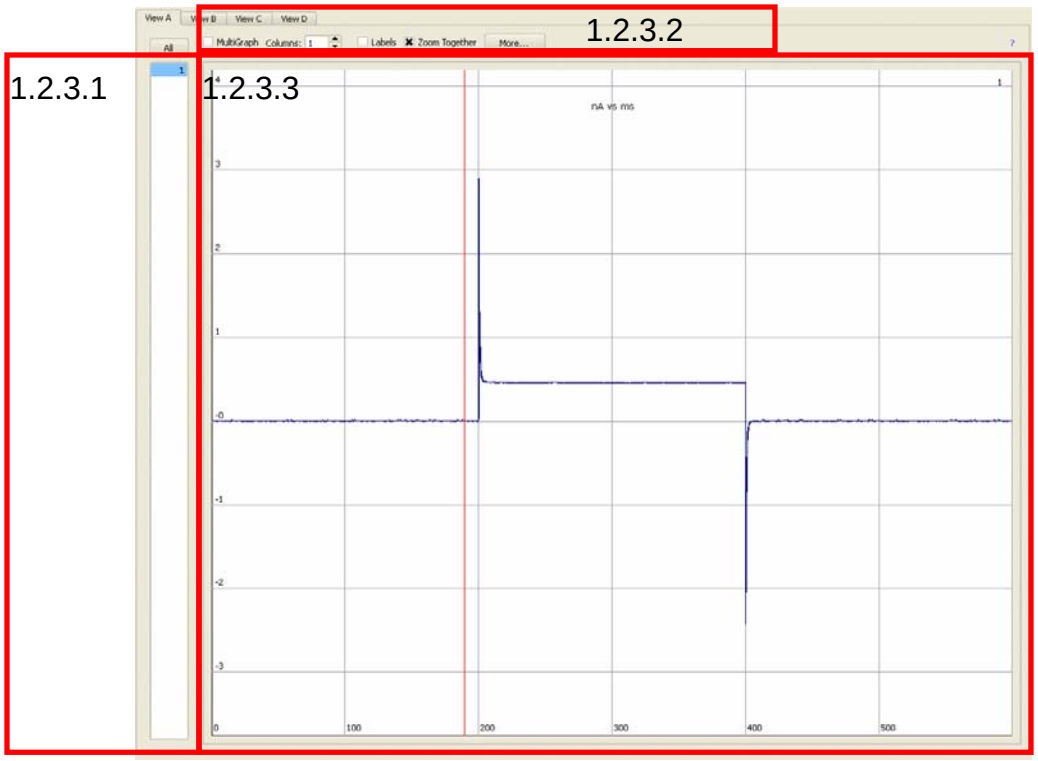


DSP tab consists of the following:

1.2.4.1 Auto Zero and Average Samples

1.2.4.2 Digital Filter

UI 1.3 Graph



The Graph display consists of the following:

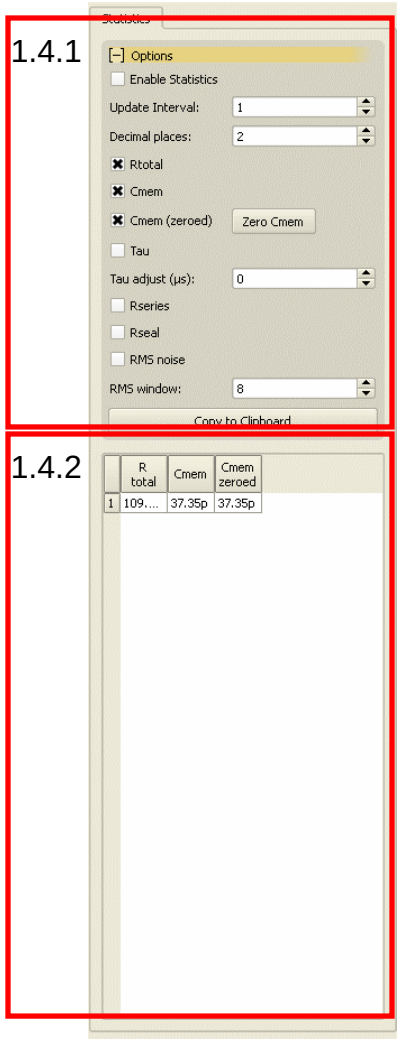
1.2.3.1 Channel Selector

Select channels to view.

1.2.3.2 Graph Options Control

1.2.3.3 Graph Display

UI 1.4 Statistics



1.4.1 Statistics Options – Select Statistics to Display

1.4.2 Statistics Display – Shows Selected Statistics for all channels.

UI 1.5 Save to File

1.5.1 Save to File Checkbox

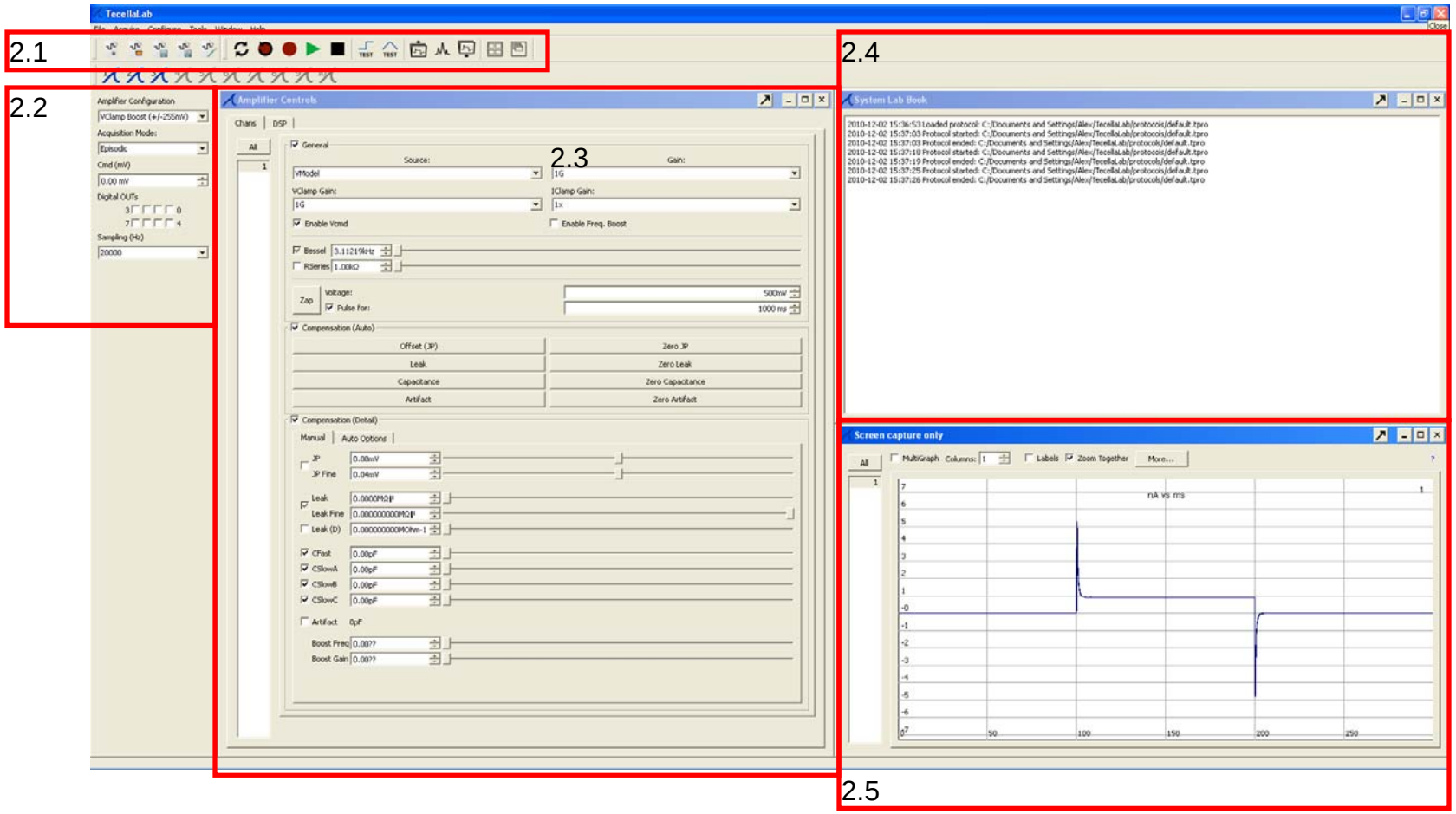
1.5.2 File Selector

1.5.3 Select Channels to Save

UI 2 Screen shots

The following pages pertain the UI version 2.

UI 2 Main Window



UI 2.1

2.1.1 File Save and Load Options

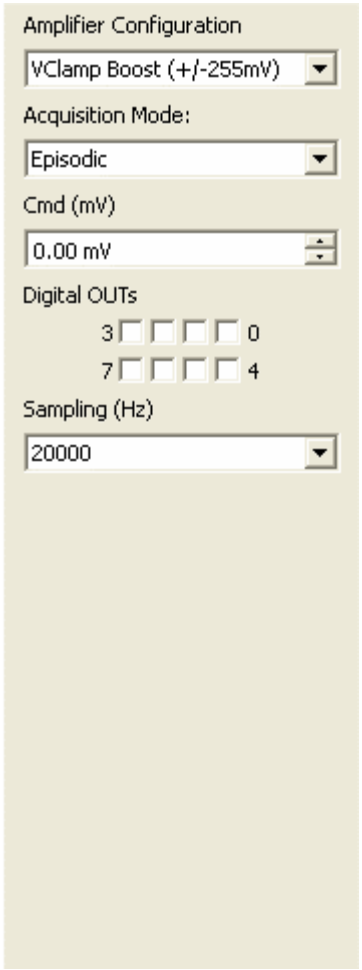
2.1.2 Acquisition Play/Stop/Record Options

2.1.3 Membrane Test (Square/Triangle Wave)

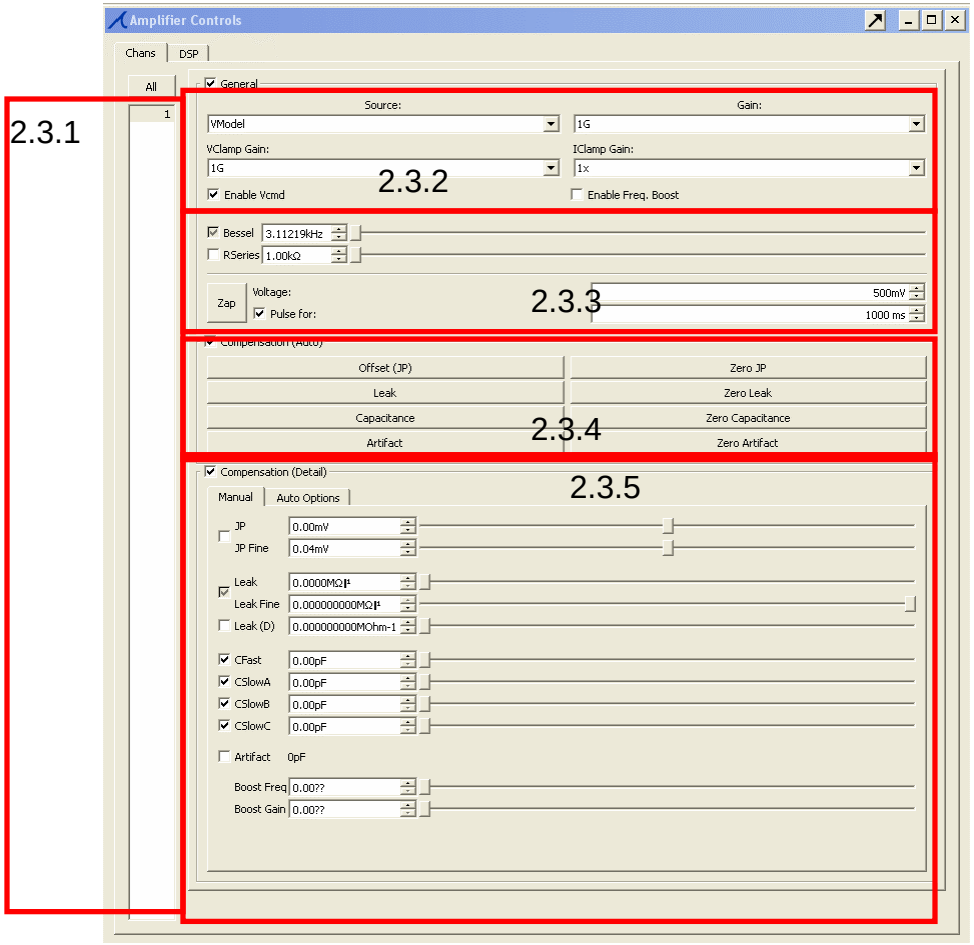
2.1.4

2.1.5 Sub Window Display Options

U2.2 Quick Controls



U2.3



2.3.1 Channel selector – Select which channels to control

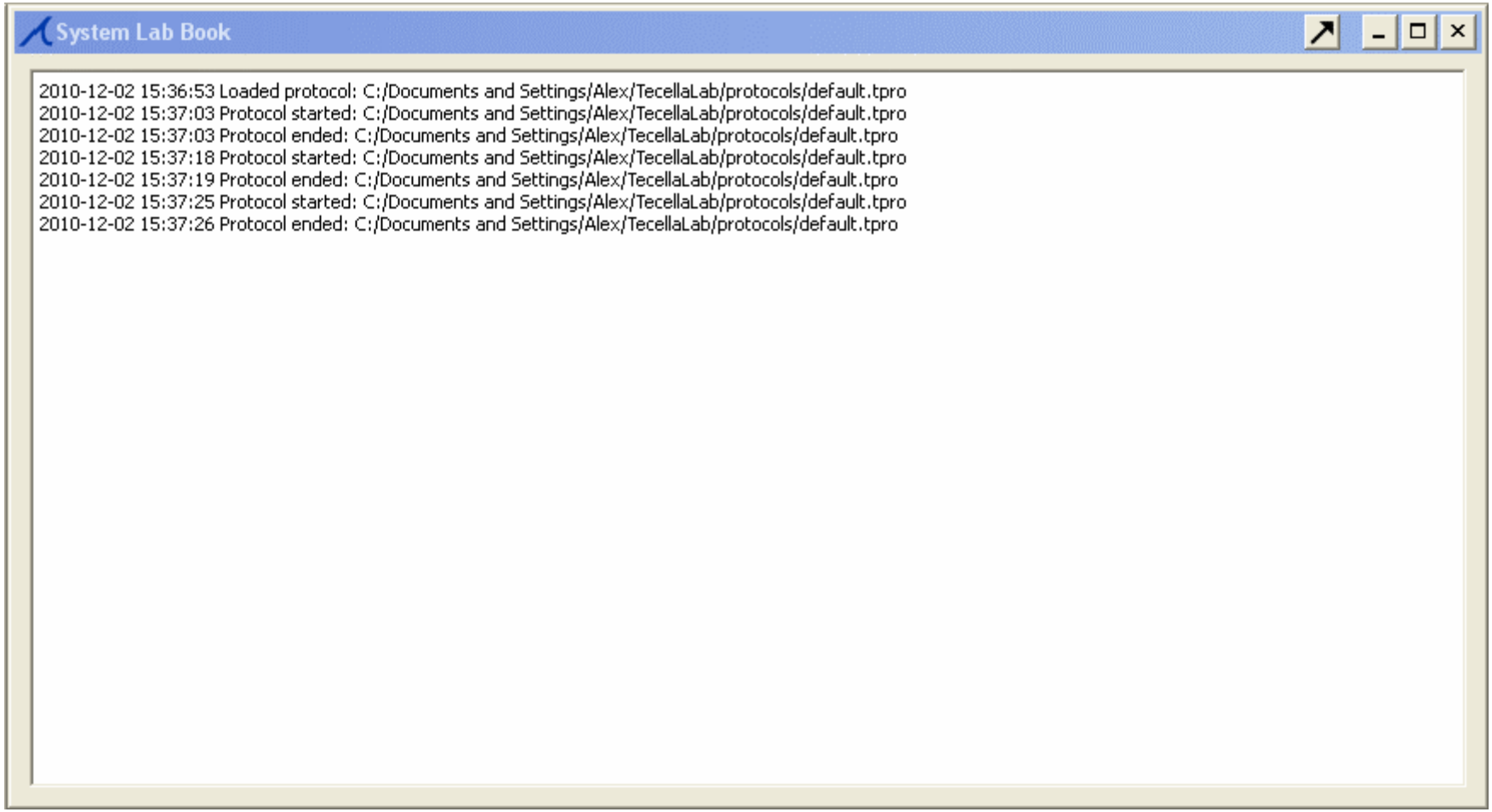
2.3.2 Source and Gain control

2.3.3 Bessel filter, RSeries compensation, Zap control

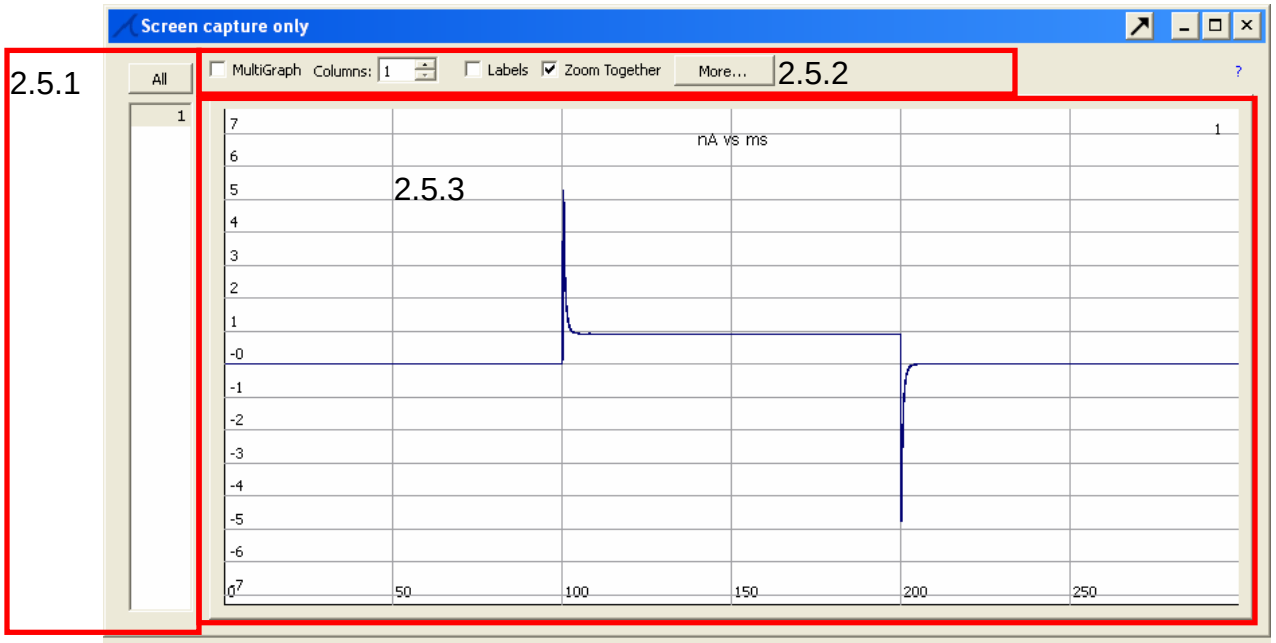
2.3.4 Automatic Compensation control

2.3.5 Manual Compensation control

U2.4 Log Book


System Lab Book
2010-12-02 15:36:53 Loaded protocol: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:03 Protocol started: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:03 Protocol ended: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:18 Protocol started: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:19 Protocol ended: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:25 Protocol started: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro
2010-12-02 15:37:26 Protocol ended: C:/Documents and Settings/Alex/TecellaLab/protocols/default.tpro

UI 2.5 Graph

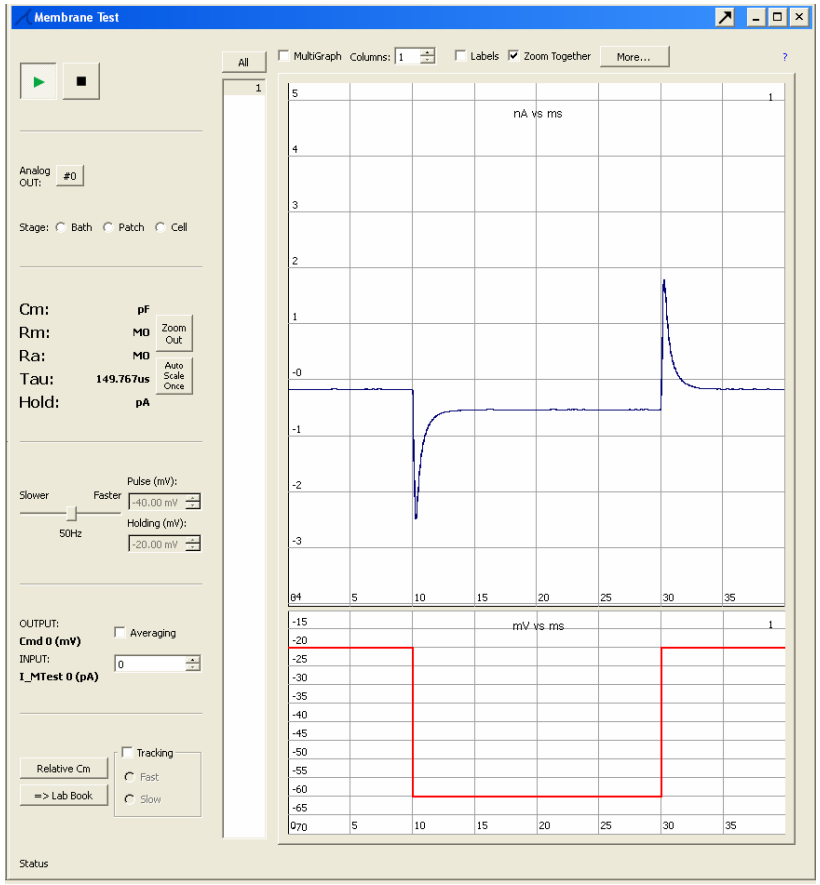


2.5.1 Channel Selector – Select channels to view

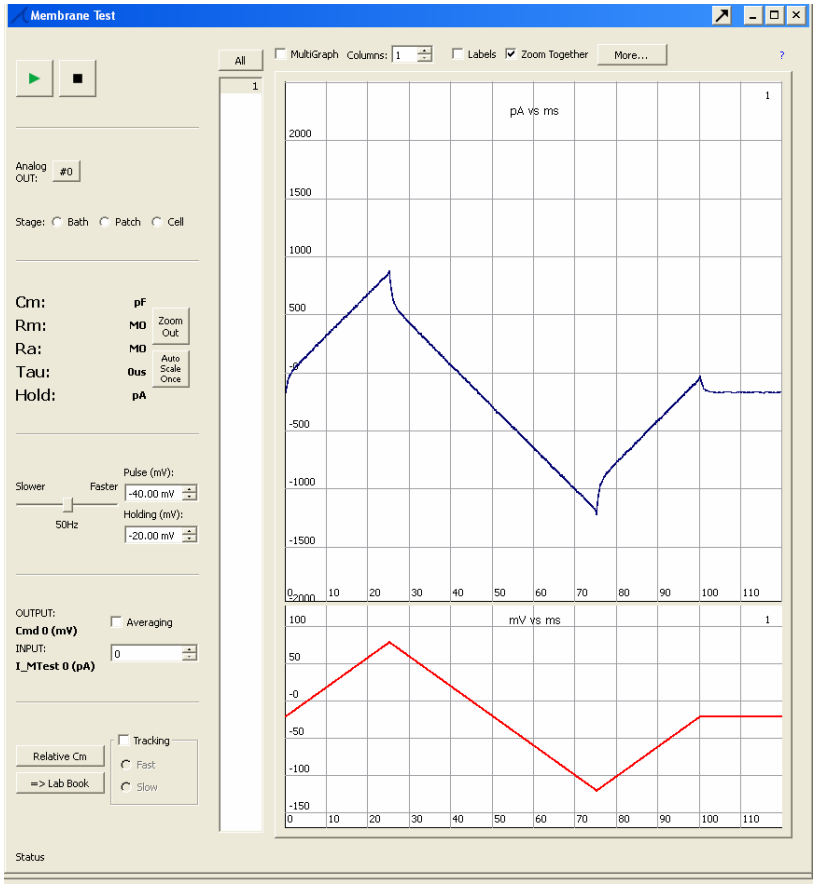
2.5.2 Graph Options Control

2.5.3 Graph Display

UI 2.6 Membrane Test

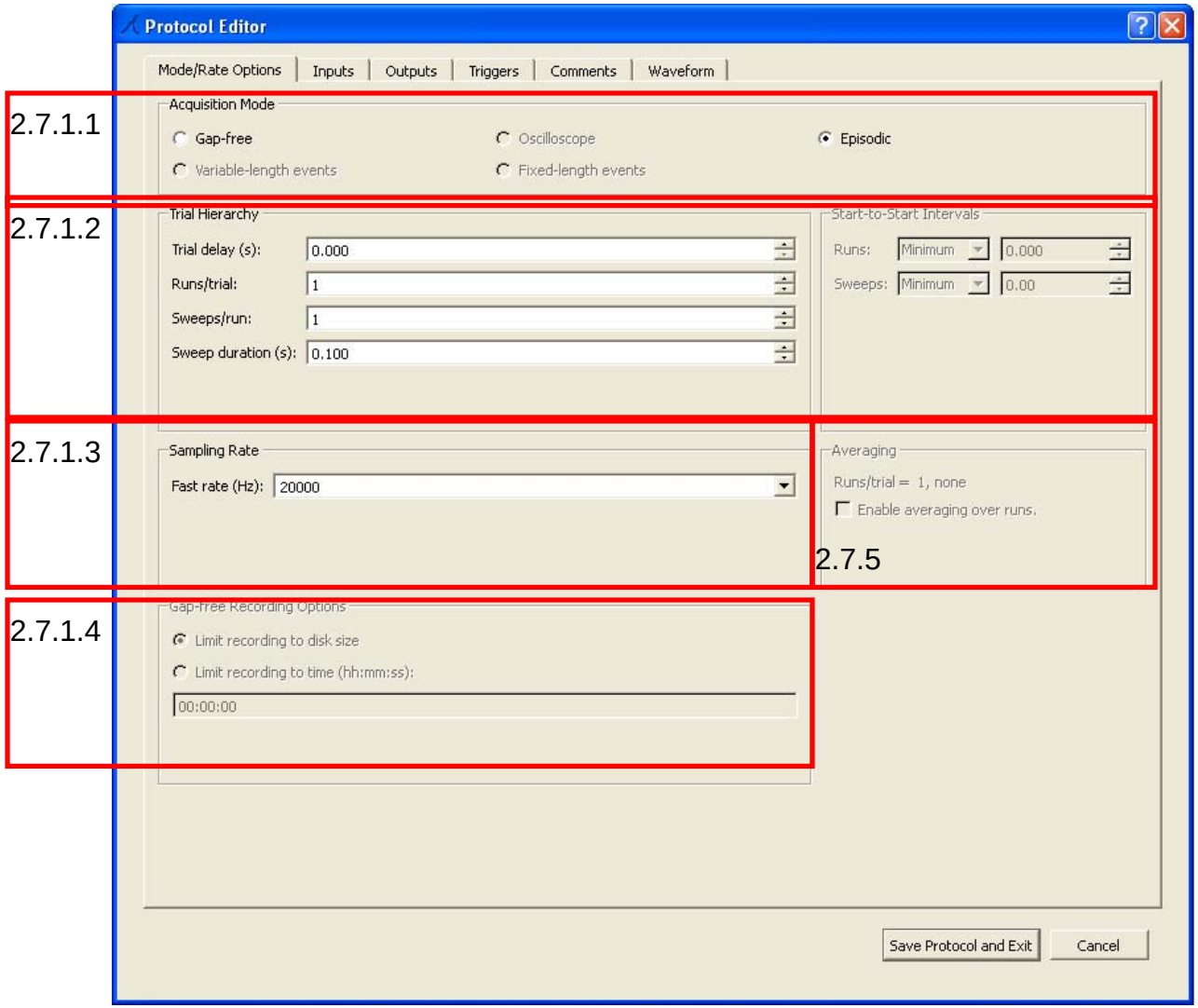


2.6.1 Membrane Test - Square



2.6.2 Membrane Test - Triangle

UI 2.7 Protocol Editor



2.7.1 Mode Rate Options

2.7.1.1Acquisition Mode

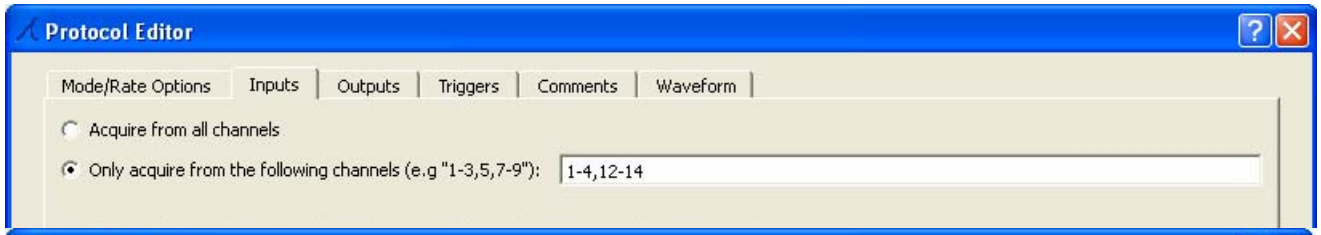
2.7.1.2 Trial Options

2.7.1.3 Sampling Rate

2.7.1.4 Gap-Free Recording Options

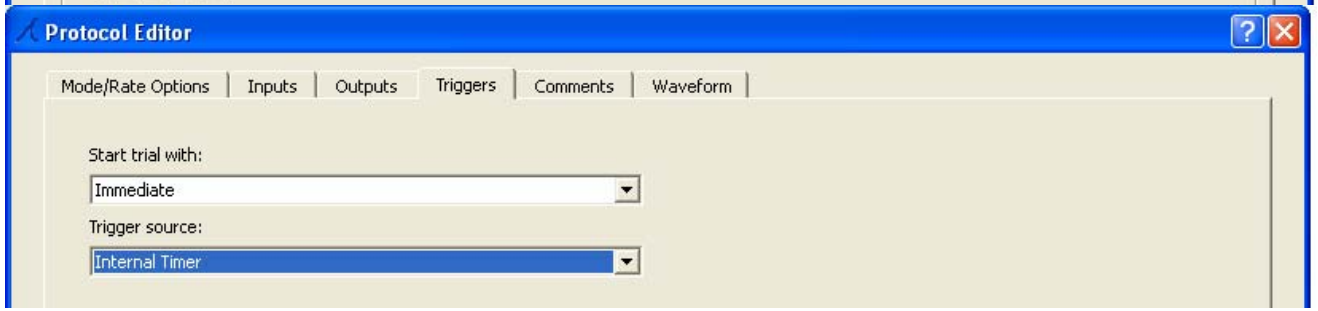
2.7.1.5 Averaging options

UI 2.7



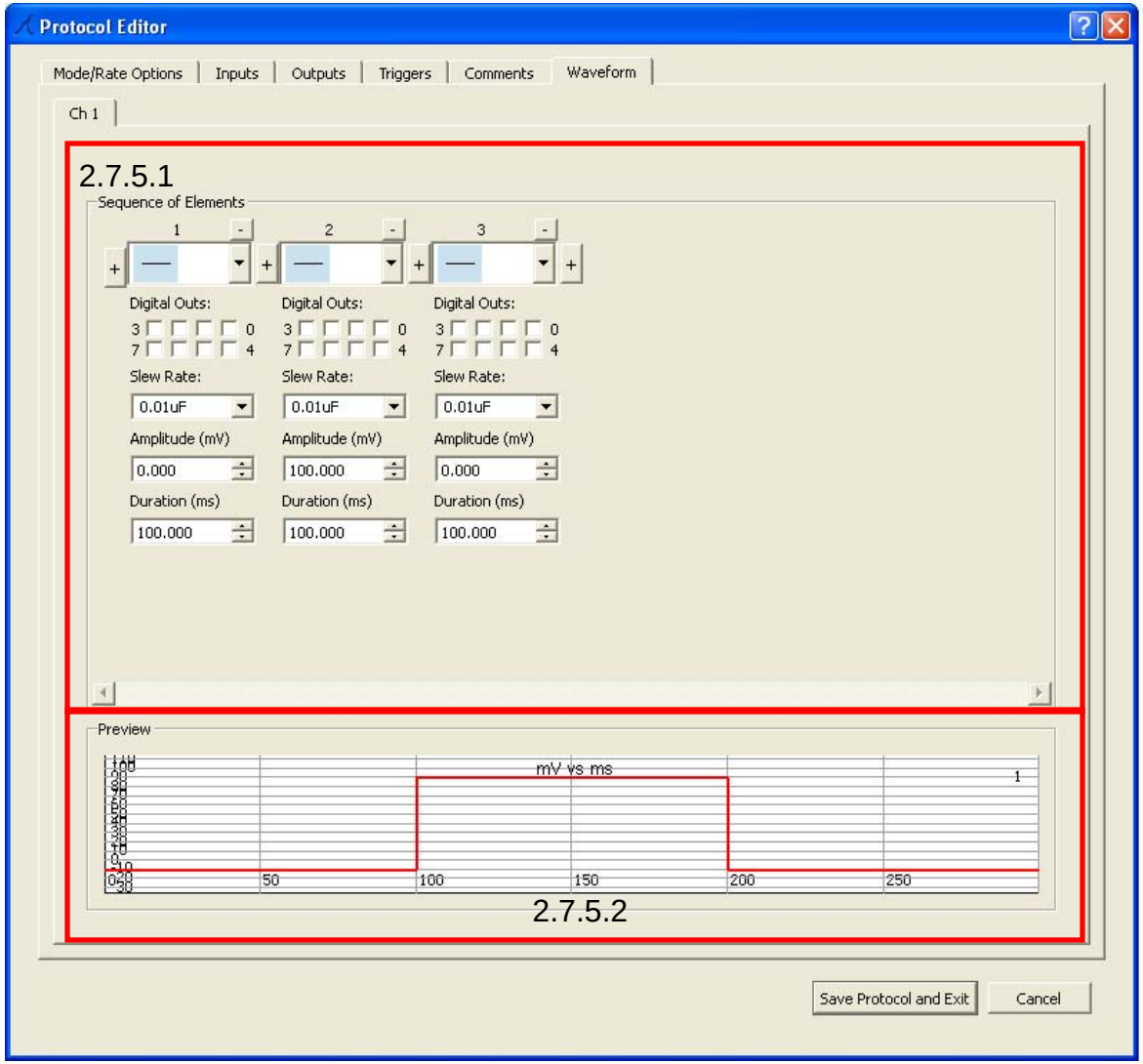
2.7.2 Inputs – Select channels to acquire from

2.7.3 Outputs – Select Analog/Digital Output levels.



2.7.4 Triggers – Select Trigger source.

U2.7.5 Stimulus Editor



2.7.5.1 UI Stimulus controls – Add, remove segments; specify segment length, magnitude, ramp size.

2.7.5.2 Preview - Visual representation of stimulus in 2.7.5.1