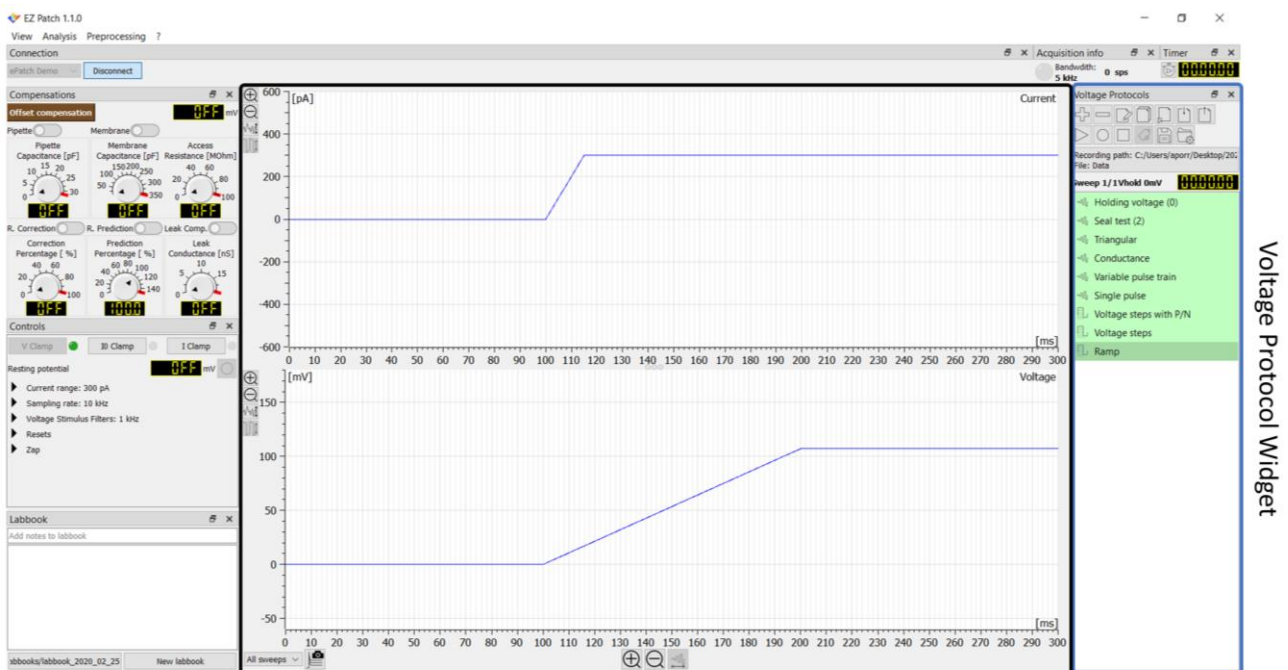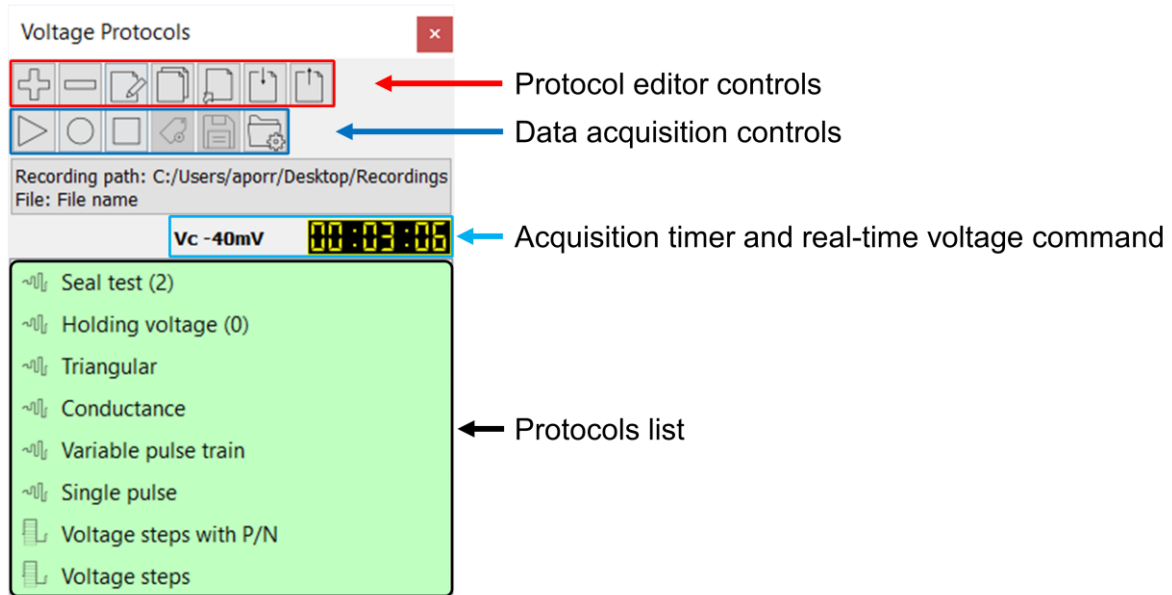# EZ Patch quick guide

<u>Record, display and save data</u>

Oscilloscope window

This short guide illustrates how to record, display and save data with EZ Patch software. All these controls are in the "Voltage Protocol" widget, together with the commands for the management of the protocols.

Protocol editor controls

Data acquisition controls

Acquisition timer and real-time voltage command
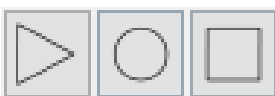
Protocols list

Data acquisition controls

Set file properties

Before real data are recorded, define the file name, the data format and the destination directory where data will be saved. All these settings are in the "Recording properties" dialog box within the data acquisition controls.
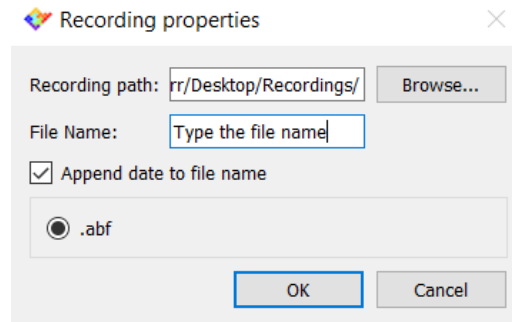
Display & Record data

Select one of the protocols of the list and click the run button to display data on the oscilloscope window without saving anything to disk. Alternatively, click the record button to save data in the previously defined folder. The record button turns red to signal that data recording is active. The voltage

command applied is shown in real time above the protocol list together with the timer time of the acquisition. When the protocol ends, the holding voltage associated with the protocol is shown.

Use the "save last run" button to save to a file the last data previewed using the display button. This option is available only when neither the sampling rate, nor the gain have been changed during the acquisition

Insert tag with comment

Tags with an associated comment, can be inserted to annotate data while the acquisition is running. This option is available only for gap-free protocols, in recording acquisition mode. Clicking the dedicated button, a tag is inserted in the file, and a dialog box appears to let you type the desired text, up to 56 characters. Remember that the tag is inserted when the button is clicked, not when you finish typing the comment. The inserted tags are embedded in the saved data file and are displayed as flags superimposed to the raw trace.

**Digital 4th order low pass and high pass Butterworth filters**
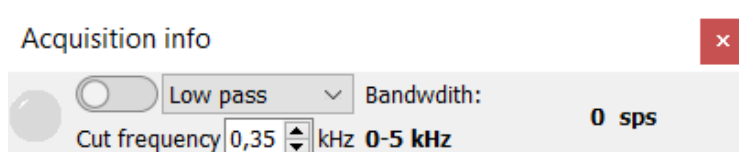
Digital filters can be easily applied to the acquired signal using the acquisition info widget. Select either the "Low Pass" or High pass" filter option and set the cut frequency by typing the desired value within the "cut frequency" field. Below the bandwidth label, the bandwidth range is displayed depending on the selected Sampling Rate. When no digital filters are applied the value corresponds to the full bandwidth available (SR/2). When a digital filter is applied the bandwidth correspond to the set "cut frequency" value. The cut frequency can be set in the interval [SR/40, SR/2-SR/40].

The oscilloscope window

The oscilloscope window (see image in the cover page) displays digitized data in real time during data acquisition, both in display and recording modalities.

Trigger tools
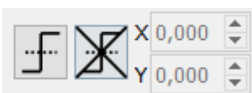
For gap-free recordings, trigger thresholds can be applied and adjusted using the dedicated buttons. Place the mouse cursor over the buttons to bring up the pop-up window with useful tips on its use. After placing a trigger, adjust the X and Y values to accurately define the trigger position (place the cursor over the value and use the mouse wheel to easily change it).

Axes scales

The scales of the axes can be adjusted either by means of the magnification glasses positioned at the borders of the plot or using the auto-scale buttons. Alternatively, use the left button of the mouse to draw an area of interest within the oscilloscope window: the marked area will be set to fill the oscilloscope screen. Place the cursor over the plot and use the wheel to shifts the traces up and down, or right to go back to the previous axis settings.

Sweep-shot tool

The sweep-shot command preserves the last trace displayed on the oscilloscope window, making it easier to quickly compare data before and after a treatment. This tool is available in episodic mode only.

Sweep-viewer tool
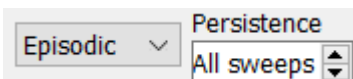
The sweep-viewer tool allows to clear the previous sweeps of an episodic protocol leaving on the oscilloscope only those selected by the user in the "persistence" drop down menu.