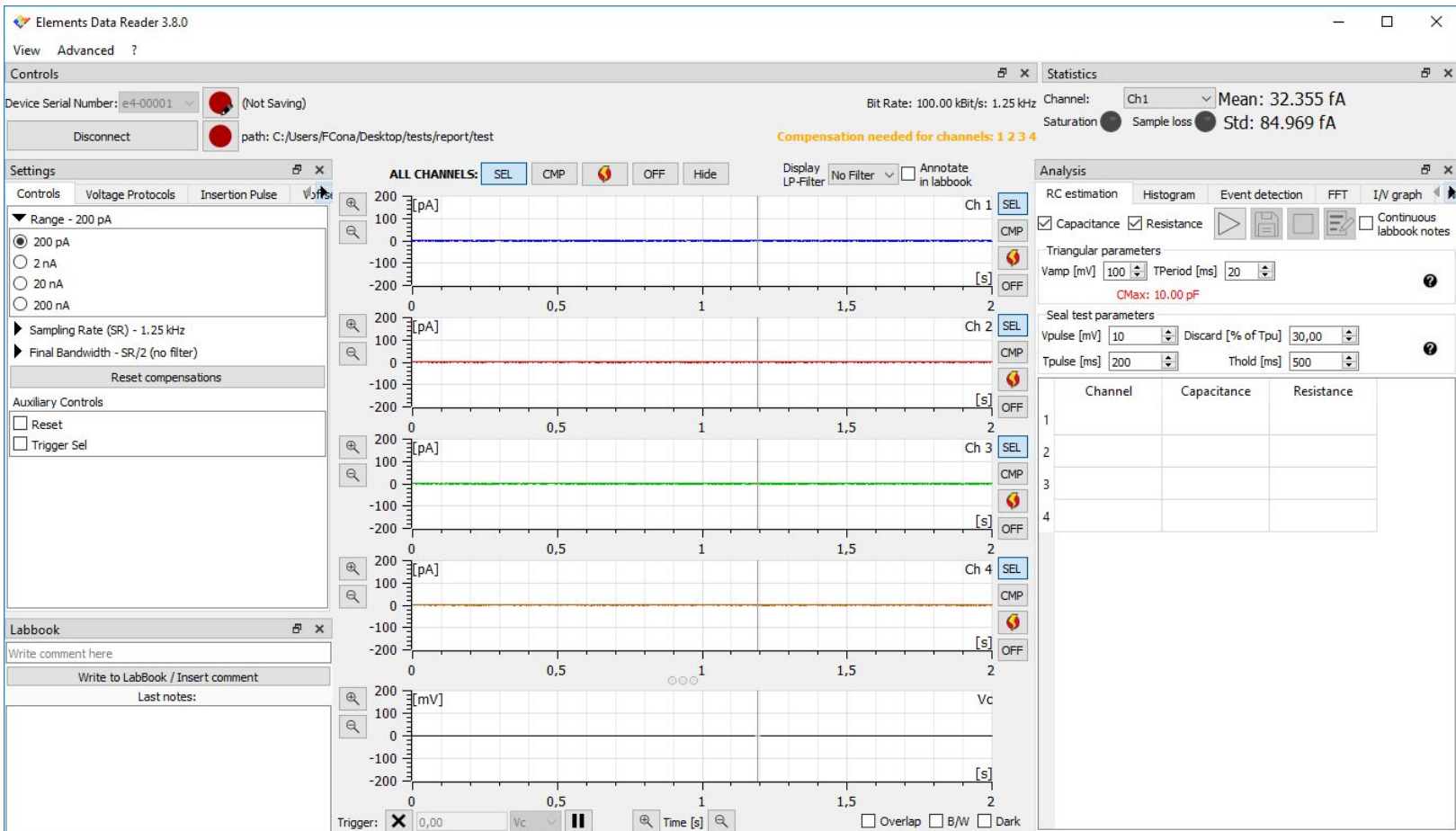


## What's new in EDR 3.8.0



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## Single channel buttons

On the right side of current plots a list of buttons is available



These buttons have been around for a while now, but only for multichannel devices, while single channel devices used to have some of them in other parts of the interface. Now all devices that implement a specific channel wise control, have that specific button located on the right side of each current plot.

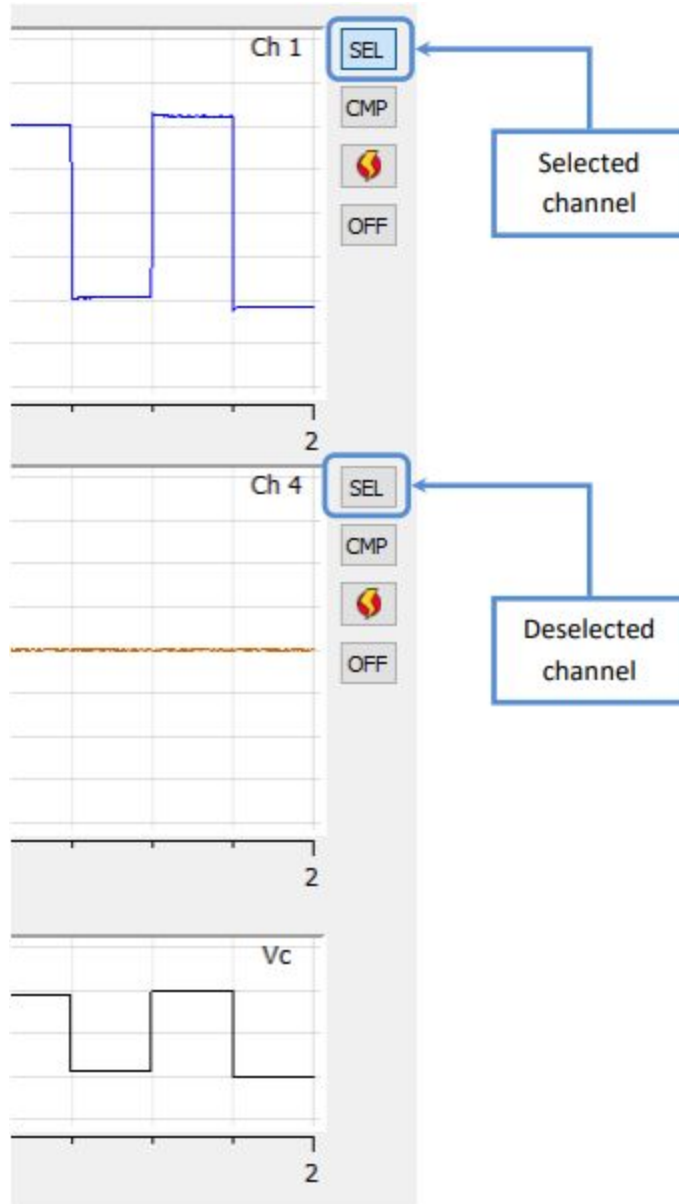
Notice that not all of these buttons are available for all devices. If one of these buttons is not available it means that the device being used does not implement the corresponding feature.

These buttons affect only the current channel they refer to, and they can be used to:

### Select channel for voltage protocol



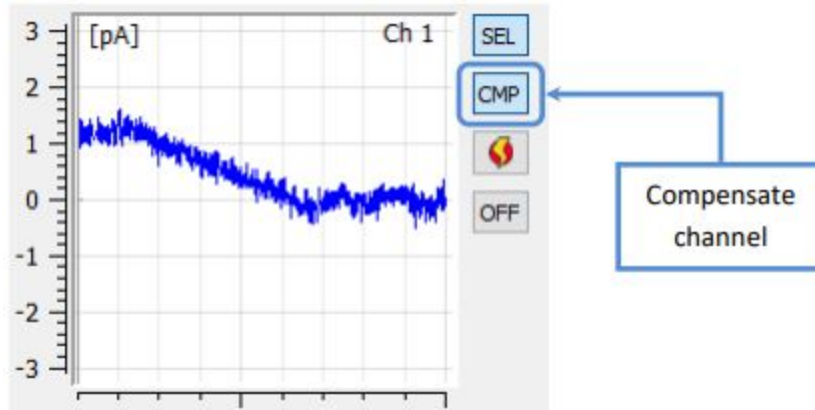
Pressing this button will select/deselect a channel for voltage protocols application (all channels are selected by default: button pressed). This feature allows the application of a voltage protocol on a subset of the available channels while leaving the other channels alone.



## Digital offset compensation



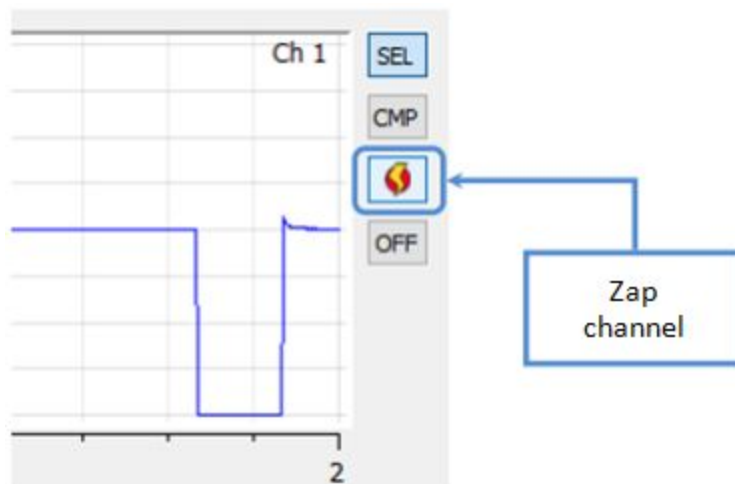
Pressing this button will activate/deactivate the digital offset compensation procedure on a channel (by default digital offset compensation procedures are deactivated: button released). The digital offset compensation modifies the voltage applied to the device under test in order to compensate for electrode voltage offset. This way, when the user applies 0 V the actual potential applied on the DUT is slightly different so that the net current flowing is as close as possible to 0.



## Zap



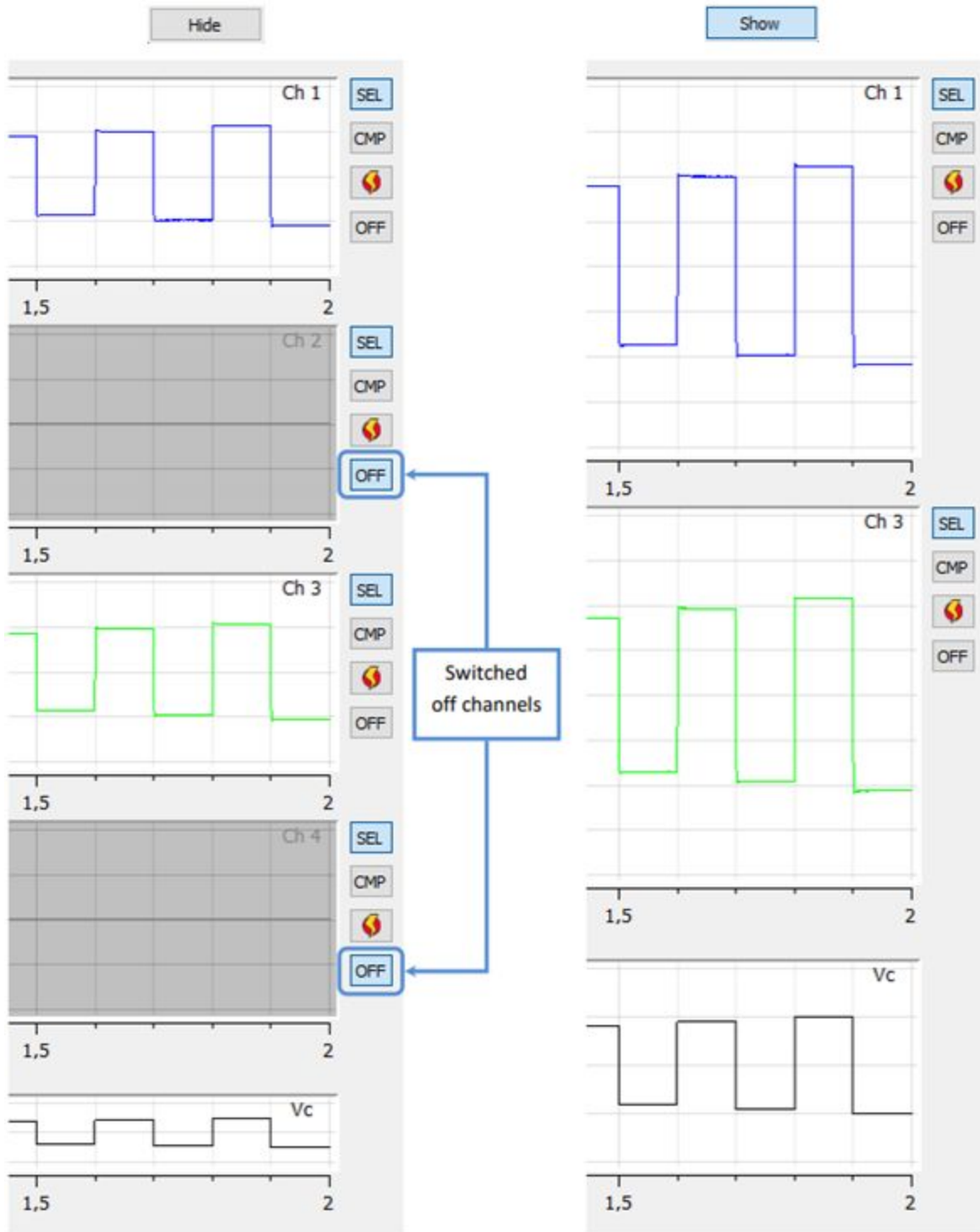
This button applies a zap to a channel. The zap applies -1V for 100ms and is typically used to break the lipid bi-layer when it is badly formed, e.g. because of a clog.



## Switch off channel



Pressing this button will switch on/off a channel (all channels are switched on by default: button released). Switching off a channel is useful to neglect irrelevant data, such as data coming from a broken bi-layer, and concentrate on more meaningful data. Switched off channels are easily recognizable since their plots are grayed out and their trace is identically 0. They can also be removed using the button "Hide" or brought back using the button "Show" located on top of the plots.



Note also that in order to minimize cross-talk with the switched off channels (recall that a common use case is for broken bi-layer, which means very low resistances and thus very high currents), voltage protocols are not applied on switched off channels and their current offset is continuously digitally compensated.

Moreover, data from switched off channels is not recorded during data saving.

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## Switch on channel



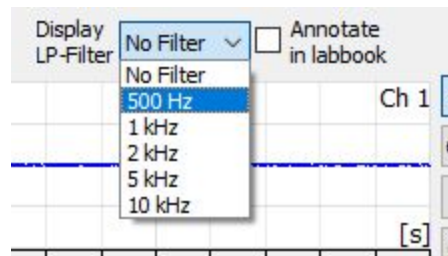
Pressing this button will switch on/off a channel (all channels are switched on by default: button pressed). Switching on a channel does exactly the opposite of the “switch off channel” feature described in the previous paragraph.

## All channels buttons



Multichannel devices now provide the option to apply the controls described above to all of the channels at once. This can be done by using the buttons that can be found on top of the plots.

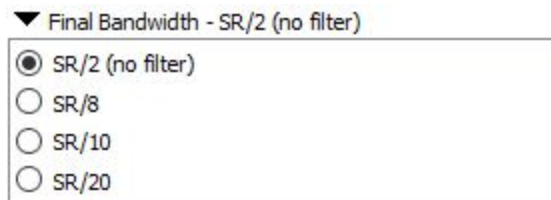
## Low pass filtering of displayed data



It is now possible to filter displayed data in order to remove some high frequency noise and enhance low frequency activity.

Notice that these filters only affect current data visualization: analyses and data recording are applied to raw data even if one of these filters is selected. Checking the “Annotating to labbook” checkbox allows to automatically take note of all filters selections on the lab book.

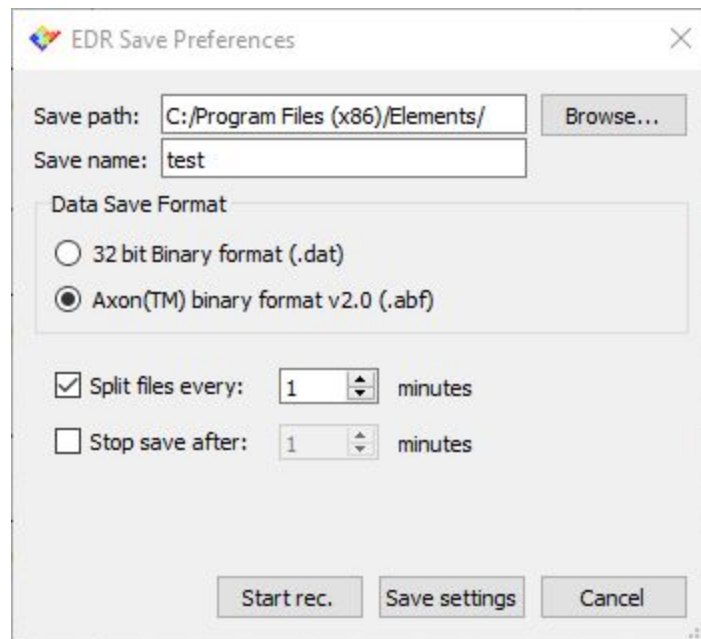
Notice that these filters are fundamentally different from the “Final Bandwidth” control



“Final Bandwidth” can be used to apply a low pass filter too, but in this case the filtering is applied on the digitized data, so it affects data visualization, but also analyses and data recording.

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## Split of abf files



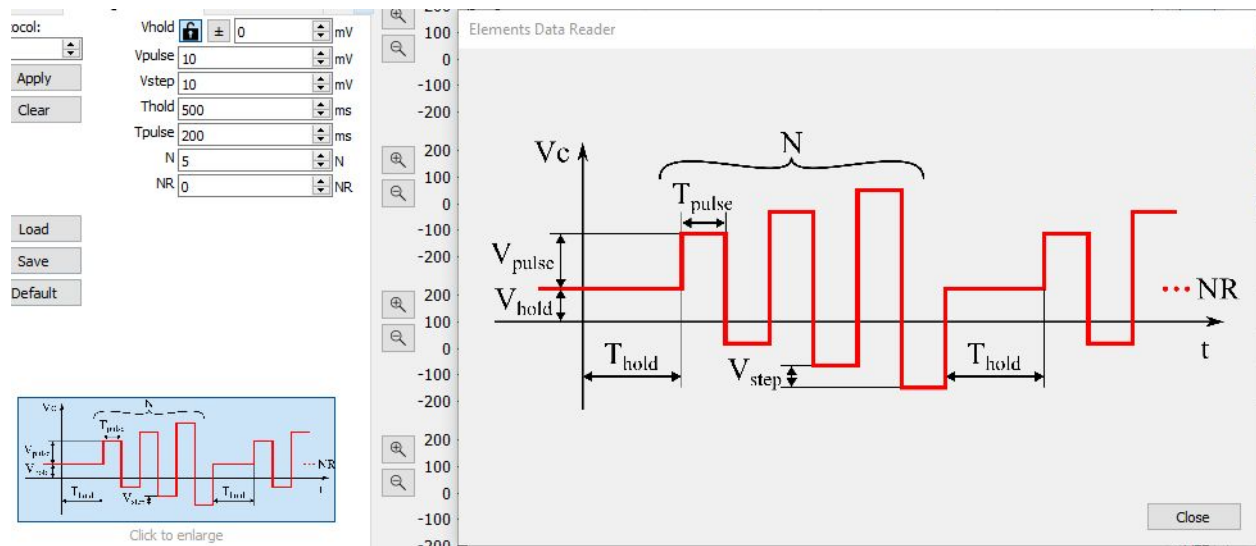
Now also .abf files can be split in small chunks during data recording. This feature can be selected from the “Save Preferences” dialog and can be useful during long recording, in order to obtain smaller files, easier to load in offline analysis tools.

## Lock/Unlock holding voltage



A small lock icon is now available on the left of the Vhold control. When this button is pressed (lock open) the Vhold value can be set separately for different voltage protocols, so changing the selected voltage protocol will recall the Vhold value memorized for the newly selected protocol. This can be useful in cases in which each protocol has a different working voltage, and the Vhold must change accordingly when changing the selected protocol. When the button is released (lock closed) the Vhold value is locked for all voltage protocols, so changing the selected voltage protocol does not change the Vhold value. This can be useful in cases in which it is most important to keep the Vhold stable throughout the experiment, independently of the selected protocol.

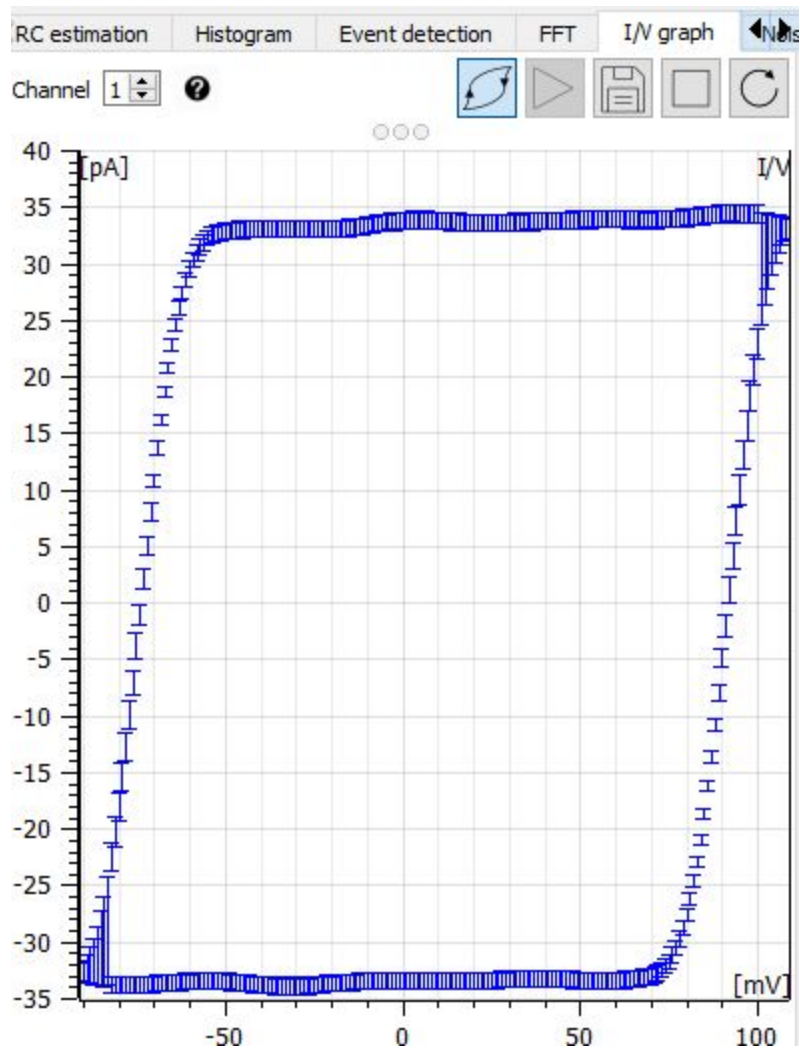
## Enlarged protocol image



When the mouse hovers over the small voltage protocol image on the bottom of the protocol's parameters a bigger image appears on the right. Now this image can be kept open by clicking on the small image. This way, it will be easier to set all the parameters while keeping the bigger image opened for reference.



## Hysteresis for I/V graph



A new “hysteresis” button has been added in I/V graph analysis that allows to perform separate I/V graphs for rising and falling potentials.