User Guide

elements
enabling technologies for Life Science

Details of the Low Noise and Ultra Low Noise configurations and how to set in EDR3 and EDR4 softwares

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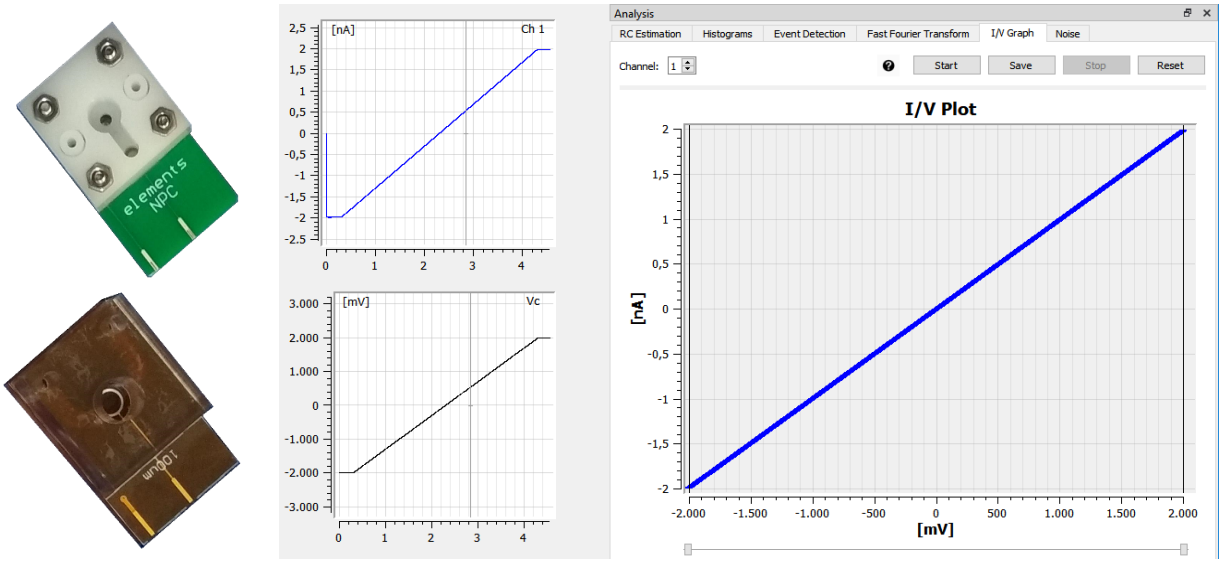
Low Noise modality

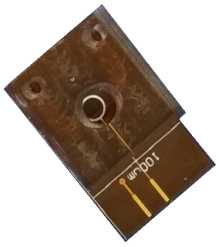
This modality allows the recording of low noise current traces while applying voltage stimuli in the range ±2000 mV, as shown in the oscilloscope snapshot below. When using this modality, the corresponding flowcells must be used (please note the distance between the two gold pads in the two flowcells shown below).

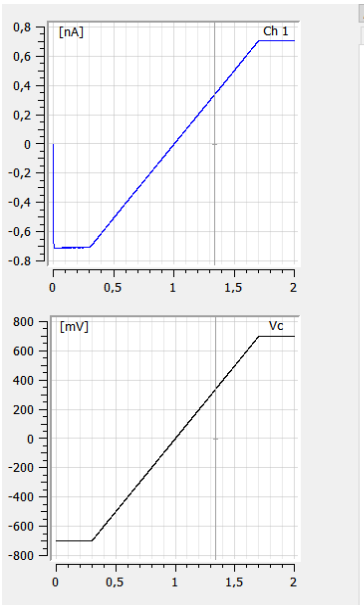


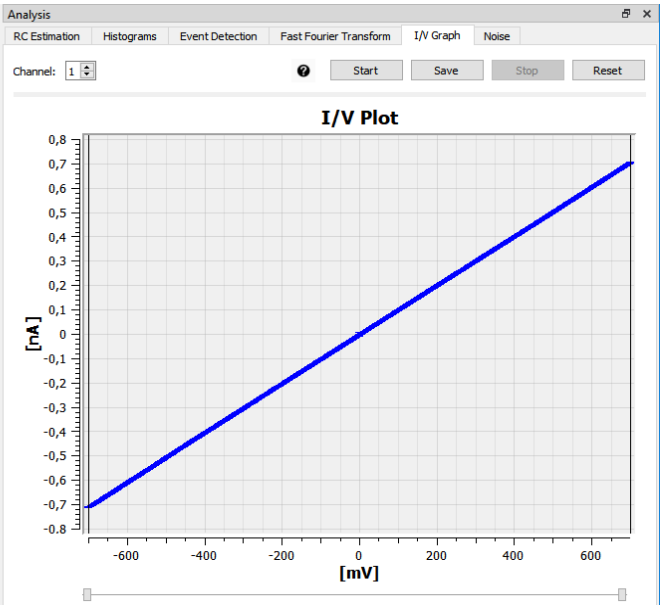
Example noise: 1GΩ @ 20ksps □ noise = 720fA RMS

Ultra Low Noise modality

This modality allows for the recording of current traces with 30% less noise (RMS). The voltage stimulus range is limited to ±700 mV. When using this modality the following flow cells must be used (please note that the two gold pads on the PCB are closer compared to the previous flowcells).



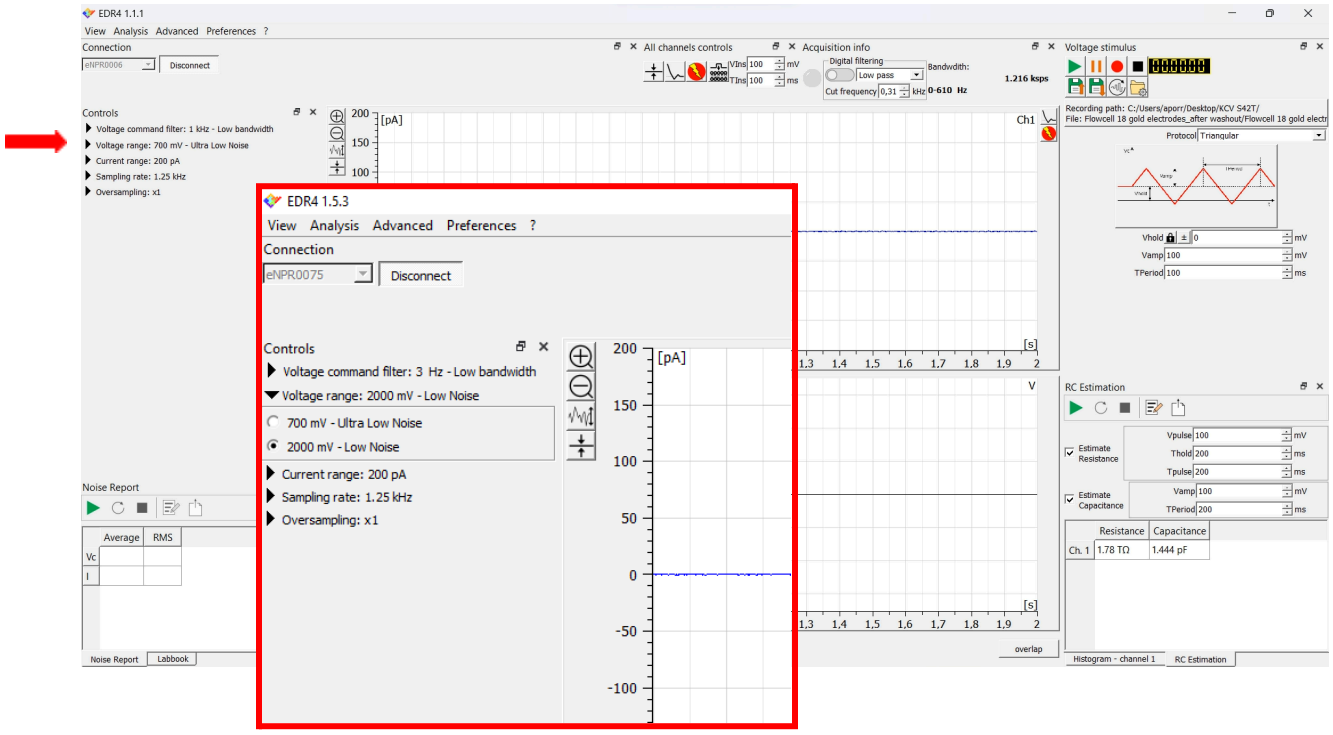




Example noise: 1GΩ @20ksps □ noise = 480fA RMS

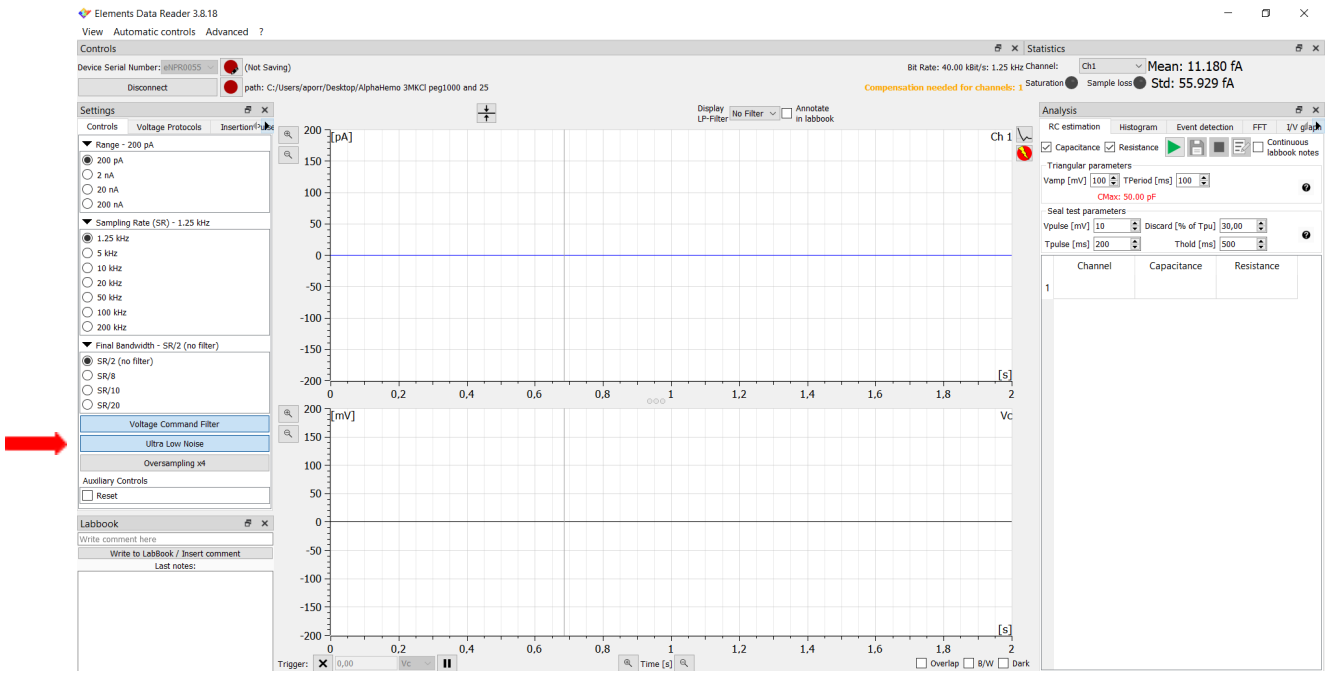
Setting in EDR4 Software

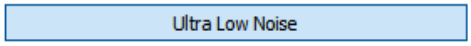
The proper option can be selected in EDR4 software from the menu found in the Controls widget and pointed by the red arrow in the picture below. In the red inset is shown a blow up of the interested area, with the two available options.



Setting in EDR3 Software

The two modalities can be set in EDR3 software by clicking the dedicated button located in the setting widget and pointed by the red arrow in the picture below.





When blue coloured the Ultra Low Noise mode is enabled

When gray coloured the Ultra Low Noise mode is disabled