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News

Our pre-Neuroscience training days this year will take place on Thursday 10th and Friday 11th of November at the Washington Plaza Hotel, Washington DC. Details of the training day sessions and a booking form can be found at www.ced.co.uk/training.

The latest update for Spike2 is **5.13**, which is available from the [CED downloads](#) page for registered v5 users. This revision includes new commands to fit sinusoids and sigmoids to data.

A full list of new features is available from the updates section of the website.

A demonstration version of the current software is also available [here](#).

Version **4.23** of Spike2 is downloadable for registered v4 users.

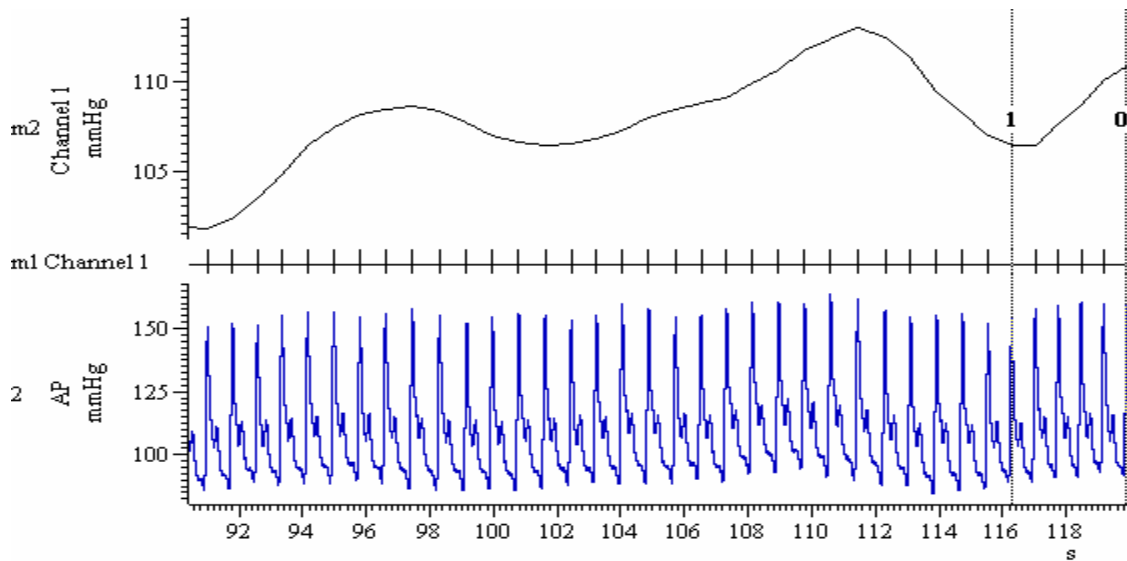
Version **3.04** of Signal is now available for registered v3 users. This revision includes extended telegraph support and logging of digital markers.

A demonstration version of Signal version 3 is available [here](#).

Version **2.15** of Signal is downloadable for registered v2 users.

Spike2

- Q. I would like to plot the mean blood pressure over the last 5 beats as a moving average. Is there a way to achieve this with Spike2?
- A. Using the Active Cursors, it is possible to take a wide range of measurements from channel data. These measurements can be plotted to a separate XY view or can be placed in a new channel within the data file. One benefit of plotting values directly to a data channel is the provision to take additional measurements based on this derived data to further channels in the same file.
- Using this example we can generate a measurement channel to mark each BP peak, and then generate a second channel to give mean blood pressure over the last n beats. The result of this is shown below using the example Blood Pressure Waveform file available in the Spike5 data folder. Channel m1 shows the marked peaks, and channel m2 shows the Mean Blood Pressure value over the last 5 beats.

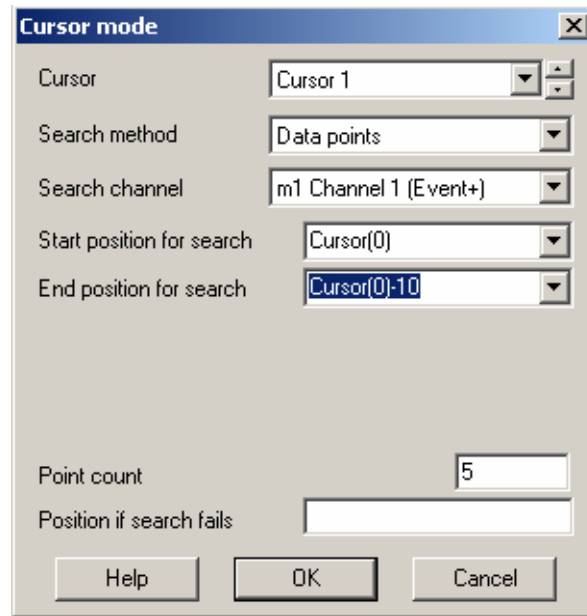


The first step is to generate the channel to mark the BP peaks. From the Analysis menu, select Measurements and then Data channel. In the new measure to channel dialog set the channel type to Event and set the Cursor 0 stepping mode to find the BP peaks. Remember that the setting for amplitude is the level that the waveform must fall by (in Y-axis units) *after* the peak to be marked.

Settings to create a peak marker channel

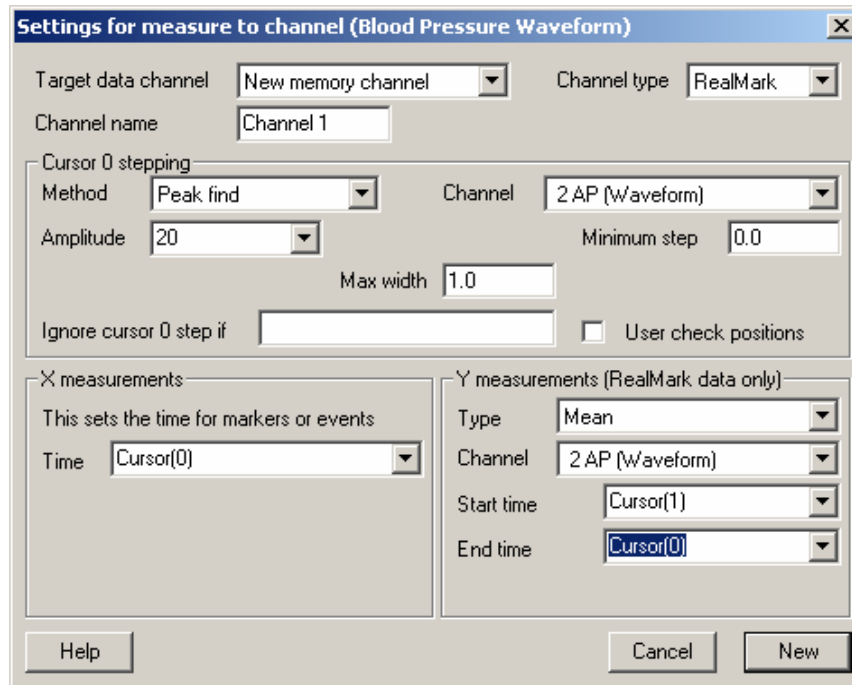
Click New and then Process in the dialog. A new measurement channel is created to mark the pressure peaks as events.

To get the value of mean pressure over the last 5 beats, we need to set-up a second Active Cursor. Create a new cursor from the Cursor menu or click on the data file and press **Ctrl+1**. Select **Active Modes...** from the Cursor menu and set the Search method for Cursor(1) to Data Points, and the Search channel to be our event channel containing the marked peaks. Set the End position for search to be at least the equivalent time of 5 beats *before* Cursor (0), which will be a negative time. The Point count field is used to set the number of peak counts required. Using the settings detailed below, Cursor(1) will count back to find the 5th preceding peak marker within a 10 second time range.



Settings for Cursor(1) to find 5th preceding beat

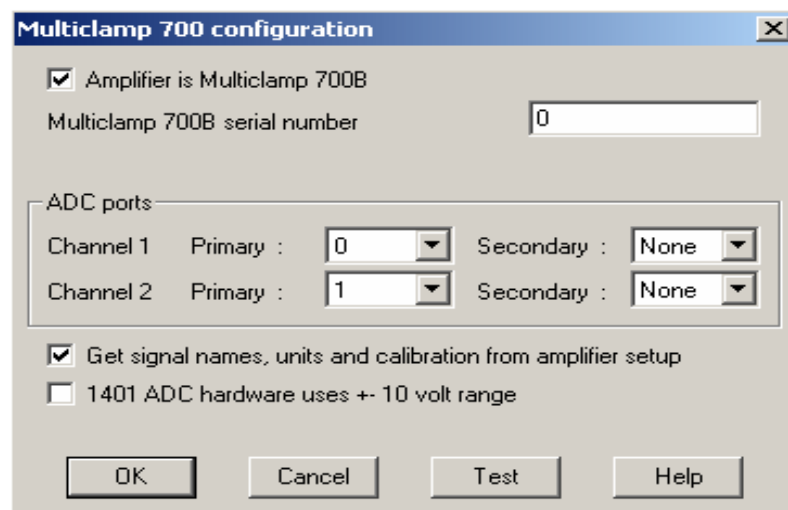
Finally from the Analysis menu, select Measurements and then Data channel. Because this final plot will be a measurement with a Y-value, set the Channel type to RealMark to enable the Y measurements field and set its Type to Mean. The Start time should be set to Cursor (1) and the End time to Cursor (0), as below.



Signal

- Q. Is there provision in Signal to read telegraph data directly from the Axon MultiClamp 700 computer controlled patch-clamp amplifier?
- A. The latest version of Signal includes additional telegraph support for this amplifier. It allows Signal to read information such as changes to the amplifier gain settings, low-pass filter settings, membrane capacitance and series resistance from the MultiClamp command software.


During the installation, Signal gives you the option of installing telegraph support for the MultiClamp 700. Once installed, the Port Setup page of the sampling configuration will then enable the configuration dialog. This is then used to configure Signal so that it can communicate with the amplifier command software.




You select the type of amplifier and the ADC ports on the 1401 that are reading data. Below is a checkbox that tells Signal how to automatically scale and calibrate the data. The channel names,

units and calibration values are read directly from the amplifier. This is the easiest way to use the telegraph data as it will automatically apply the settings from the amplifier setup. If you disable this option then Signal will use the specified channel name, units and calibration from the Port Setup page of the sampling configuration.

Scripts: Spike2

- Q. I am recording ECG data and I would like to get Spike2 to emit a 'beep' for every R-wave event on-line, much like a standard ECG monitor would do. Is this possible?
- A. The attached script, `ThresholdBeep.s2s` emits a 'beep' in response to a threshold crossing on a nominated channel. It opens a new file ready to sample and prompts the user to specify the channel to monitor and set a threshold using a horizontal cursor. This threshold can be adjusted at any time during sampling. 

Scripts: Signal

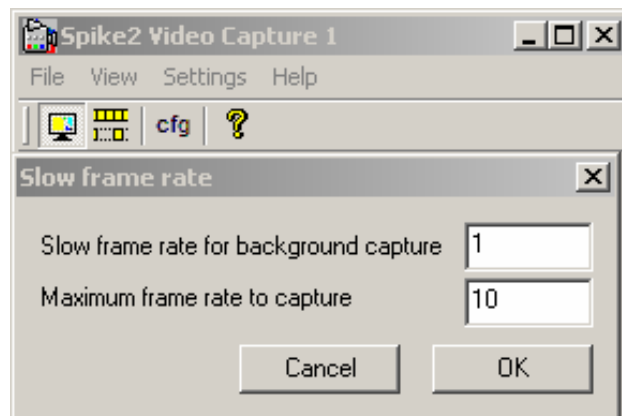
- Q. It would be useful when recording to have an auditory signal for each sampled frame. It would be even better if you could have separate tones to signify different frame states during sampling.
- A. The attached script, `SampleBeep.sgs` plays a short tone for each sampled frame. The tone pitch changes depending on the frame state. 

Did you know...?

You can set individual channel background colours in Spike2 and Signal data files, as well as specific view colours for data and XY views. You can also set independent background colours for result windows, the cluster background and WaveMark dialogs in Spike2.

Recent questions

- Q. I am using the Spike2 video application to capture multimedia files alongside my data files. Because I record for up to 6 hours the multimedia files generated are rather large. To keep the size down, is there a way of pausing or stopping video capture during sampling, or a function that allows adjustment of the frame capture rate during periods of inactivity?
- A. There is an option in the Spike2 video application for the user to set a Slow Frame Rate that can be used during periods of inactivity to help minimise file size. Set up the slow and maximum frame rate to capture from the Set Slow Frame Rate option in the Settings menu of the Spike2 video window. You can then enable and disable the Slow Frame Rate mode using the associated toolbar button.



User Group

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