CED
CAMBRIDGE ELECTRONIC DESIGN LIMITED
DATA ACQUISITION & ANALYSIS

Spike2 Signal eNewsletter

#90 November 2014

Contents

Future meetings and events

Society for Neuroscience 44th Annual Meeting - Booth #2423
Washington, DC
USA
November 15th - 19th 2014
Exhibit dates: November 16th – 19th 2014

Biophysical Society 59th Annual Meeting
Baltimore, MD
USA
February 7th - 11th 2015

Experimental Biology 2015
Boston, MA
USA
March 28th - April 1st 2015

Latest versions of Spike2 and Signal

Spike2	Released	Signal	Released
Spike2 version 8.02e	09/14	Signal version 6.02	08/14
Spike2 version 7.15	09/14	Signal version 5.11	09/14
Spike2 version 6.18	09/14	Signal version 4.11	02/14
Spike2 demo	08/14	Signal demo	08/14

Script spotlight

Many of our users contact us asking how they can transfer data from Spike2 or Signal to Matlab, and vice versa, during experiments. Both Spike2 and Signal can interact directly with a copy of Matlab that is installed on the same PC using the built-in `MatLabXXX()` family of script commands. These include functions to transfer script variables back and forth between a Matlab workspace, allowing you to use Matlab for additional data processing, before transferring the results back to Spike2 or Signal.

To access the `MatlabXXX()` script commands, you need to select the MATLAB script support option when installing Spike2 and Signal.

"How can I add notes and comments during an experiment and show them in the data file?"

The TextMark data channel allows the user to insert timed comments into a data file while sampling.The TextMark channel needs to be set-up in the `Channels` tab of the sampling configuration by adding a new channel and selecting `TextMark` from the `Type` drop-down list in the `Channel parameters` dialog.

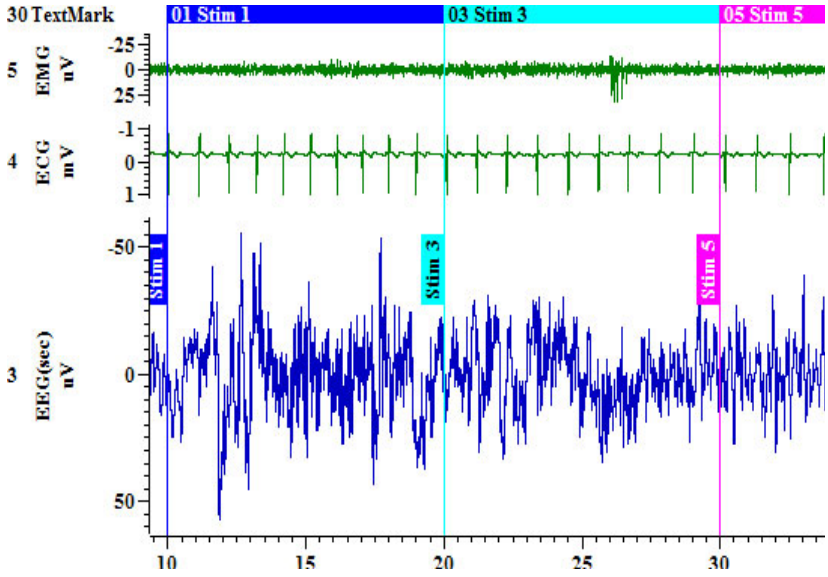
Channel 30 in the data file is always reserved for the TextMark channel during sampling and the `Source` field should be set to `Manual` to allow the user to enter notes and comments on-line.

When sampling, use the Ctrl+T keyboard shortcut to open the Create TextMark dialog. There are two modes for adding TextMark data to the file: clicking the Save button adds a TextMark to the file at the current time. You can edit the text and code of a TextMark at anytime by double-clicking on the TextMark in channel 30. The Set Time button records the time of the button press and allows the user to set the text string and code. Clicking the Save button after Set Time writes the TextMark at the recorded time.

Once a data file is sampling, or open ready to sample, the Create TextMark dialog can be opened by pressing `Ctrl+T`. There are two methods for adding TextMark data to the file: clicking the Save button adds a TextMark to the file at the current time. You can then go back and edit the text and code by double-clicking on the TextMark in channel 30.

The Set Time button records the time of the button press and allows the user to set the text string and code before adding the TextMark to the data file. Clicking the Save button after Set Time writes the TextMark at the recorded time.

You can edit TextMarks at any time by double-clicking them, view the associated comment by leaving the mouse pointer on the marker or change the Channel draw mode to show the Text or State with options to display the associated code. TextMarks can also be used to display Vertical markers, which extended over all of the channels in the file.



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Scripts: Spike2

The script, DoseMarks.s2s, can be used to set the text and code for up to 10 TextMarks. The user can then add TextMark data to the file at any time by clicking the button in the toolbar and selecting the required TextMark code from the dialog. You can use the Marker Filter to show/hide any combination of TextMark codes and double click on the TextMark channel to display a list of the channel contents.

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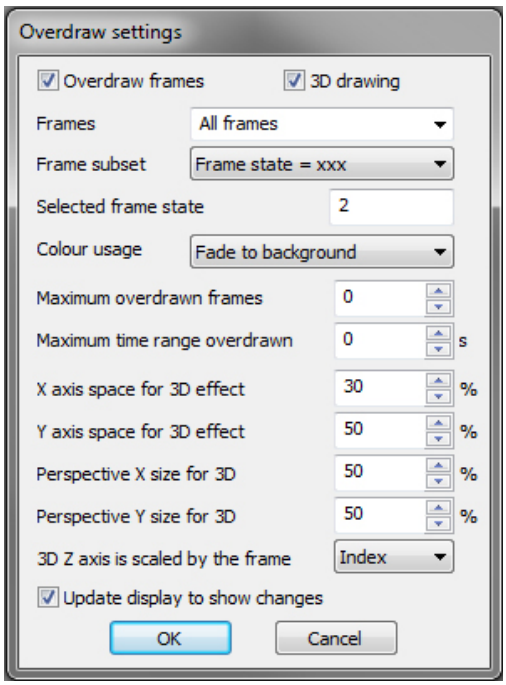
Signal

"I would like to be able to take data from multiple average results and display them overdrawn in a single view."

It is possible to add 'blank' frames onto the end of Signal data files and memory views by using the `Append frame` command from the `Analysis` menu. Data can then be copied from any file that includes the same number of channels and same sample rate using the standard `Ctrl+C` keyboard shortcut, and pasted into the new 'blank' frame by clicking on the view and using the `Ctrl+V` shortcut (or the `Edit` menu `Copy` and `Paste` commands).

Once you have added the frames from all average result files into the original result view, select the frames you want to include in the overdraw using the `Overdraw settings` dialog from the `View` menu. You can then use the `Overdraw frames` command (again available from the `View` menu) to apply these to the current file.



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Scripts: Signal

"I record long sweeps of 100 seconds in Signal and would like to display the last 10 seconds during recording with the data scrolling"

The script, ScrollLongFrames.sgs, uses an idle routine to update the view as often as possible to create this effect. If the displayed x axis range is shorter than the frame length it will update the displayed x axis range to show the current time range up to the last available sampled data point. You can toggle the scrolling function on and off using a toolbar button created by the script.

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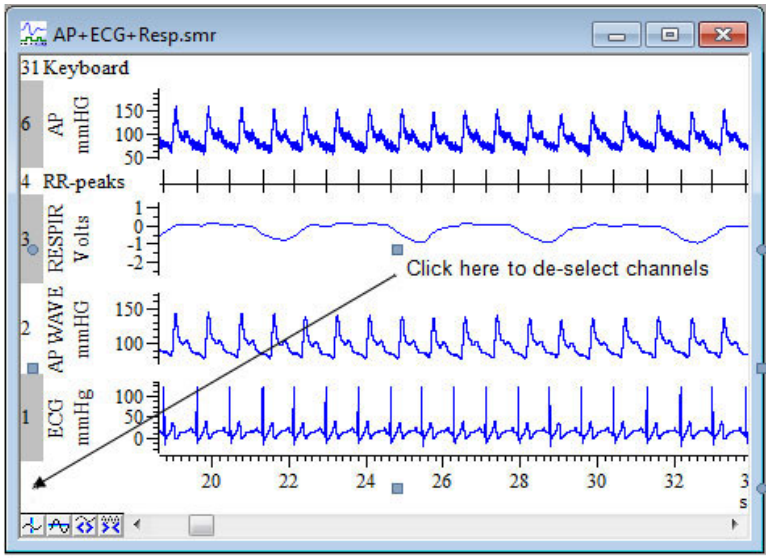
Did you know...?

You can select channels by clicking within the area around the channel number. Multiple channels can be selected by holding `Ctrl` and clicking individual channels or by using `Shift` to select all channels within a range. If channels are selected they will appear together as an option in any appropriate channel selection dialog (e.g. waveform average settings or Y axis range dialog).

To de-select channels either click again on individual channel numbers or click the rectangular area immediately below the bottom channel number to de-select all.



Recent Questions

"Our lab currently uses a Power1401-3 for our recordings, but we are hoping to employ multi-electrode recordings of up to 64 channels in the future. I see that top-boxes can be fitted to the Power1401 to give a maximum of 48 channels, but is there any way to expand beyond this?"

Multiple 1401 units can be synchronised together to give many channels of recording at high sample rates. In this example, two Power1401-3 units with an ADC-16 top-box each (giving 32 channels per 1401) could be synchronised together to give 64 channels capable of sampling at 30kHz per channel.

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CED User forums

Try the CED Forums bulletin board for software and hardware support

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