CED eNews
The eNewsletter from Cambridge Electronic Design

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News

Spike2 and Signal Training Courses

Our U.K. training days will take place on the 20th – 21st of March at St. John's Innovation Centre, Cambridge. This year the workshop thread will include sessions on using Signal for clamp-specific sampling applications, such as whole cell and single channel patch and voltage clamping experiments. Further details of the training days and a booking form are available from the training section of our website.

The latest update for Spike2, **5.14**, was released on Friday 27th January 2006 and is available from the CED downloads page for registered v5 users. This revision includes some new additions to the file importers.

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 **4.24** of Spike2 is downloadable for registered v4 users.

Version **3.06** of Signal is now available for registered v3 users. This revision includes display modes for logarithmic axes.

A demonstration version of Signal version 3 is available here.

Version **2.16** of Signal is downloadable for registered v2 users.

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Q.   Can Spike2 read data from data loggers such as acceleration sensors? There is no analogue output available but I do have a serial line feed from the sensor giving X, Y and Z co-ordinates.

A.   Spike2 can read data from the computers serial line (COM port) and display the information as a TextMark. This special type of channel is normally used to annotate the data record with text 'notes', which are more convenient and easier to read than entering lines of text using the keyboard channel. When recording these 'notes' from the serial line the incoming data is stored as a time stamp and 4 bytes of marker information, followed by a text string.

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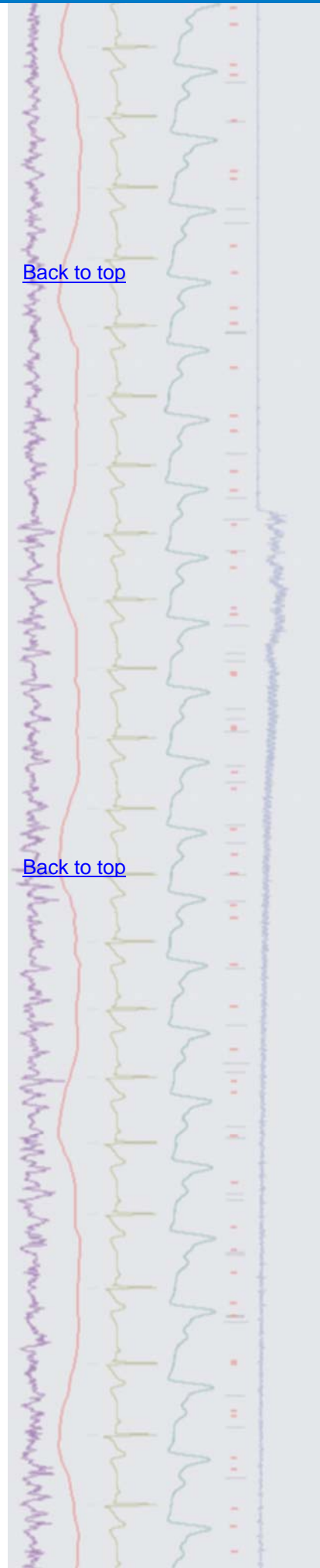
The Source field in the Channel parameters dialog can be set to Manual or to a serial port. You can set the terminator, baud rate, data bits and handshaking once a serial port has been selected from the Source list.

When reading the serial line, the marker time is set when the first character arrives, and the serial data for the current TextMark is read until a terminator character is received or the serial string reaches 80 characters. TextMark data is displayed as a small rectangle, the colours of which are determined by the first marker code. Double click a TextMark to view and edit the text and codes. A list of all TextMarks in the file and their associated data can be shown by clicking the >> button in the Edit TextMark dialog. The data read from the accelerator sensor gives X, Y and Z values as text as shown in the example below.
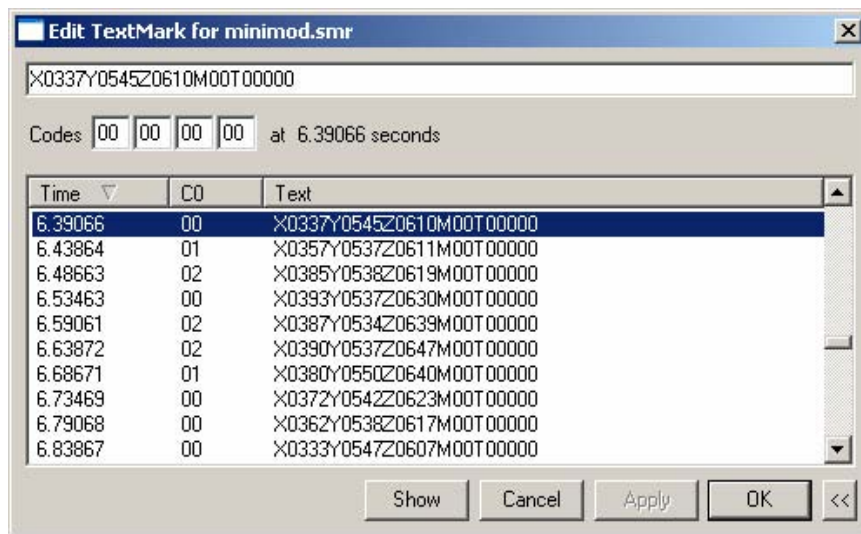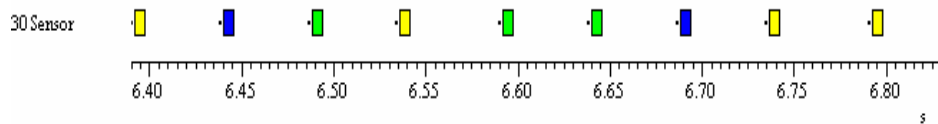
Edit TextMark dialog showing a list of available markers

TextMark data can also be viewed by changing the channel draw mode to State. This displays the time between markers as a continuous 'block' with the option of showing the associated text and marker codes as below.
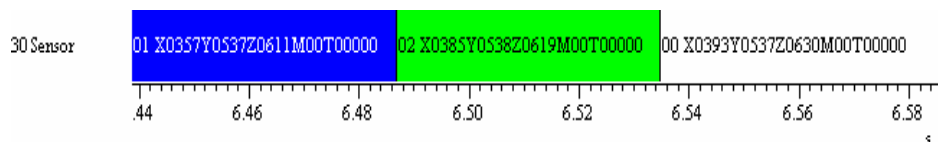

It is quite easy to write a script to extract the X, Y and Z values. The attached script, XYZval.s2s is an example script that you could use as a template for your requirements.
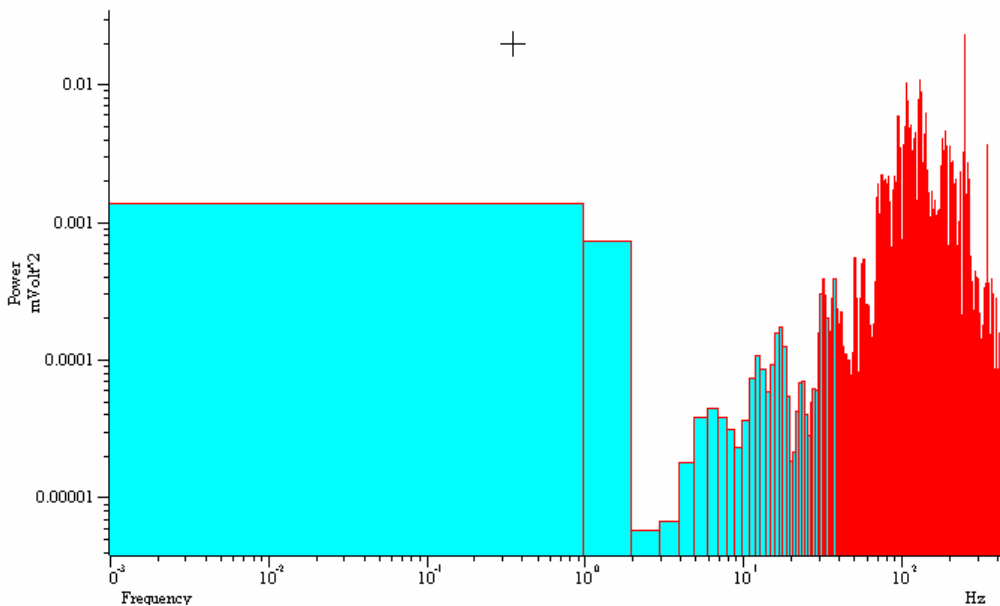
Signal

Q. Is it possible to display logarithmic axes in Signal?

A. New additions to the X and Y range dialogs in Signal 3.06 allow the display of logarithmic axis for data, memory and XY views. Checking the Logarithmic option in the dialog switches the axis display from linear to logarithmic.
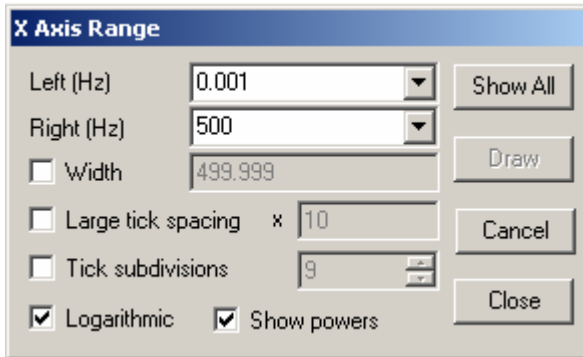
X-Axis range dialog with new options for logarithmic axis display

If the logarithmic display mode is selected, this enables a second checkbox option to Show powers. Select this to display the powers of the large tick spacing unit on the axes, as shown on the X-axis below.

Power spectrum displayed with logarithmic axes

The commands XAxisAttrib() and YAxisAttrib() are available to give script writers control over logarithmic axes display in Signal.

Scripts: Spike2

Q. Is there any way to create an average of multiple result views, such as PSTH's or waveform averages?

A. The attached script, `Grand Average.s2s`, can be used to 'build' an average of multiple result views in Spike2 including waveform averages, PSTH's and interval histograms. You add result views into the Grand Average by opening a saved result view or creating a new result view and making it the current or 'top' window. Then simply click the ADD button in the script toolbar to add it to the Grand Average.

Right-click the script icon and save to disk.

If you have any problems opening the embedded scripts in this newsletter please let us know.

Scripts: Signal

Q.   Is it possible to 'down-sample' a Signal data file to a lower sampling rate?

A.   The attached script, `Downsample.sgs`, can be used to create a downsampled duplicate view of a Signal data file. This creates a new view displaying one data point in *n* of the original file.

Did you know…?

The Copy Spreadsheet command used in a time view now allows you to set any time interval for the copied data; previously it was constrained to integer multiples of the file time resolution.

Recent questions

Q.   I'm getting myself very confused because of the channel view differences between Signal and Spike2. Is there anyway to alter the channel display in Spike so that channel 0 is at the top (as in Signal)

A.   You can access the Edit: Preferences dialog in Spike2 and Signal to control the settings for general preferences, display and sampling options among others. These preferences are stored in the Windows registry and are specific to each

       user login on the host PC. The display tab contains options for data display, printing and image export. One of the options in the display tab in both   Spike2 and Signal is a checkbox to change the standard display to show the lowest numbered channels at the top of a data file. You can also change the order of channels in a view simply by clicking and dragging the channel numbers.
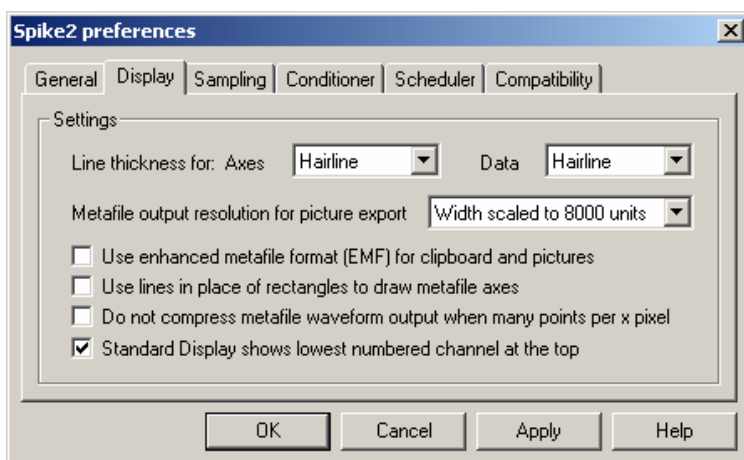
Spike2 Edit preferences dialog

User Group

If you have any comments about the newsletter format and content, or wish to un-subscribe from the mailing list for this newsletter, please notify sales@ced.co.uk.

Right-click the script icon and save to disk.

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