CED eNews
The eNewsletter from Cambridge Electronic Design

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NEW!
Spike2 version 6

News

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Spike2 version 6

Today we announced the release of Spike2 version 6. A list of the new features is included in the Spike2 section below. We are writing to all registered users of Spike2 with upgrade details; the letters went in the mail today (July 17) so please contact us if you do not hear from us in the next week or so.

We support running version 6 under Windows 98SE, ME, NT2000 and XP. It will run on Windows 95, but we do not support this as we no longer maintain a Windows 95 system. If you have a choice of operating system, we would recommend that you use Windows XP.

The release of version 6 means that we will not be adding significant new features to version 5, but we will continue to fix bugs; there will be a 5.16 release in the next few weeks. There will be one more release of version 4 to fix a couple of bugs, but after that we do not expect to make changes.

Meetings and events

Thank you to all those who visited our booths during the annual Physiological Society meeting at UCL from the 5th – 7th July, and the FENS meeting in Austria from 9th – 12th of July.

Society for Neuroscience Annual Meeting 2006
Atlanta
October 14th – 18th

We will be running our annual US training days prior to the meeting on the 12th – 13th of October. An announcement will be made in due course regarding the venue for training days.

Latest versions of Spike2 and Signal

The latest updates for Spike2 and Signal are available from the CED downloads page, or by clicking on the links in the table below. Demonstration versions of the latest software are also available.

Spike2 downloads	Signal downloads
Spike2 version 5.15	Signal version 3.07
Spike2 version 4.24	Signal version 2.16
Spike2 demo	Signal demo

A full list of the new features and changes in the latest software versions is available from the website.
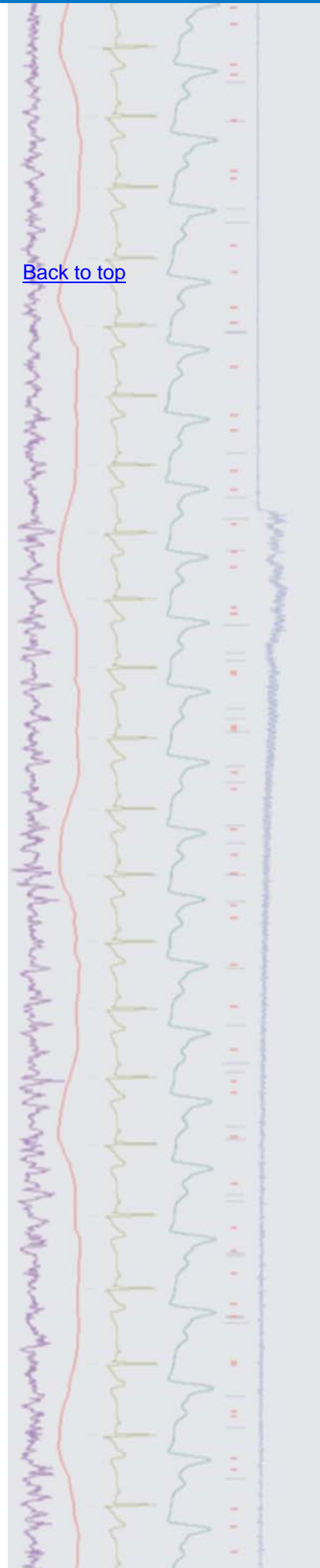
Spike2

Q.   I was told recently that Spike2 version 6 was nearing release. Can you give me a description of some of the new features that will be available?

A.   Version 6 is the latest release of Spike2 and includes many new and improved features, with continuous development planned through the course of the version.

New features include:

- Interactive IIR filtering and improvements to the FIR filtering dialog

- Density plot option in cluster views using preset and user-defined colour palettes

- Visual identification of clustered spikes that occur within a specified interval

- Coloured sonograms using preset and user-defined colour palettes

- Additions to the virtual channel functions including:

  Interactive building of expressions from drop-down menus

  Waveform generation using sine, square, triangle, sawtooth and envelope

  Trigonometry calculations: sin, cos, tan, arc tan, cube

  Conversion of instantaneous frequency to waveform

  Interpolation of unevenly sampled data to waveform

  Half wave rectification

- New script editor with code folding, auto formatting, auto complete and call tips

- Script language now supports arrays with up to 5 dimensions

- Supports up to 400 channels in a data file

Files created by previous versions of Spike2 are fully compatible with version 6. As with previous versions, future revisions of version 6 will be freely available to download from our website for all registered version 6 users. For more information, please visit our website to view the Spike2 version 6 brochure.

Signal

Q.   I use Signal for recording the response from transcranial magnetic stimulation and would like to know if there is any way to control stimulus intensities directly from Signal?

A.   The next release of Signal will include support for the MagStim range of transcranial magnetic stimulators. All three types of MagStim (200/220, BiStim and Rapid) are supported as long as they provide serial-line control. The MagStim is controlled as an auxiliary states device enabling % power output, pulse intervals and frequency of stimulation to be controlled directly from the setup dialog, depending on the MagStim model in use. The stimulation parameters are automatically saved in the sampled frame as variables which can then be read by the script language.

Future versions of Signal will make use of the auxiliary states device system to directly control other devices, such as our own 3304 current stimulator, as well as models from other manufacturers.
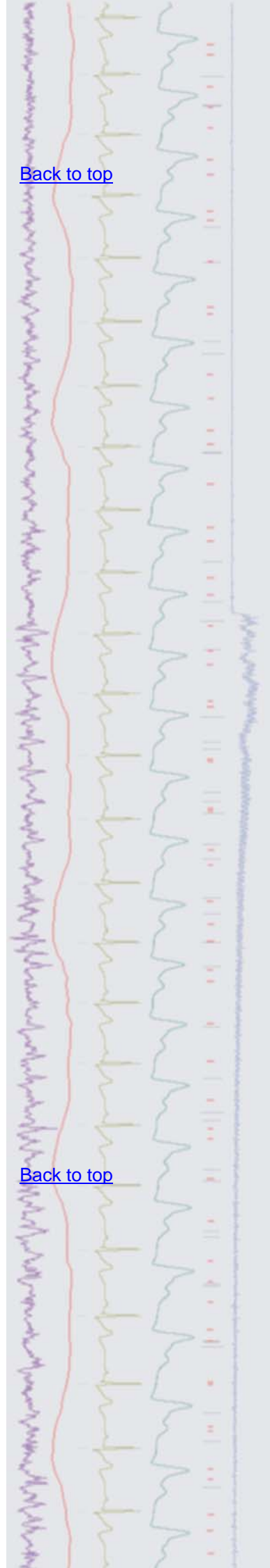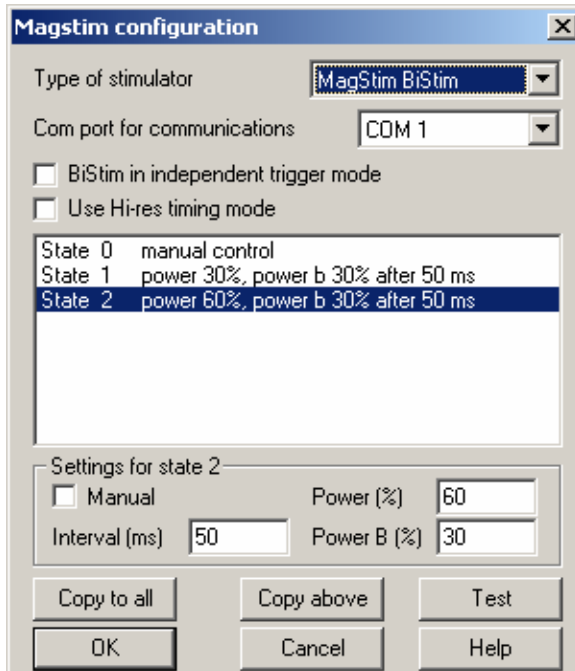
Configuration dialog showing setup for a MagStim BiStim model

Scripts: Spike2

Q. I have a number of result files that I would like to export as images for presentation purposes. Is there a script available that will export multiple files quickly and easily?

A. The attached script, `SaveAsImage.s2s` is an example script to save multiple result files in either bitmap or metafile format. The user can specify a directory containing result files and the script opens them one by one. You can set the window size of the first result file for the image and this is used to set the default size of the subsequent files. The created image files are saved in the same directory and with the same names as the result files.

Scripts: **Signal**

Q. I would like to be able to find the transition point between two slope phases, an initial fall and then a gradual lengthening of tension recorded as a waveform. This transition point could be effectively found from the intersection point of two straight lines fitted to the two slope sections of data. Is there any way to do this in Signal?

A. The attached script, `FitIntersect.sgs` calculates the intersection point of straight lines fitted to two parts of a trace. In this example, the script finds the intersection point between the initial and later stages of the slope. Only one fit at a time can be applied to a waveform, so the data is duplicated and overdrawn to allow the display of both fitted lines. The user then positions cursors around the areas to apply the fit and the script positions cursors at the intersection point and prints the values to the Log file.
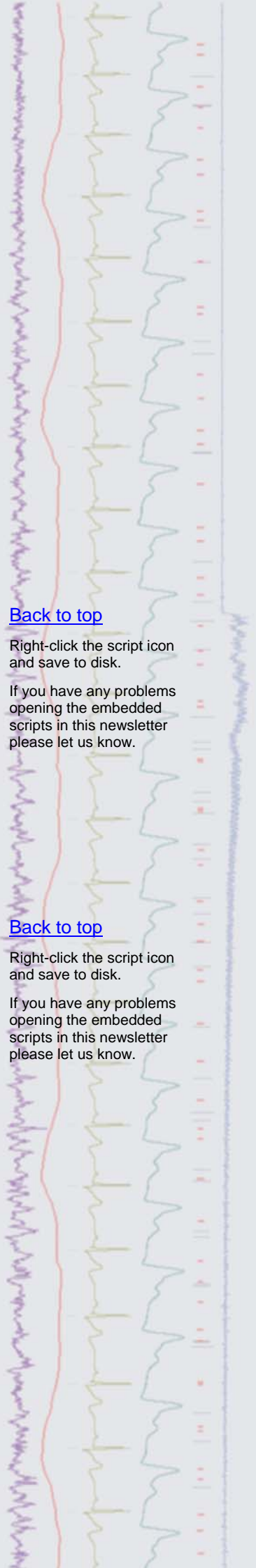
Right-click the script icon and save to disk.

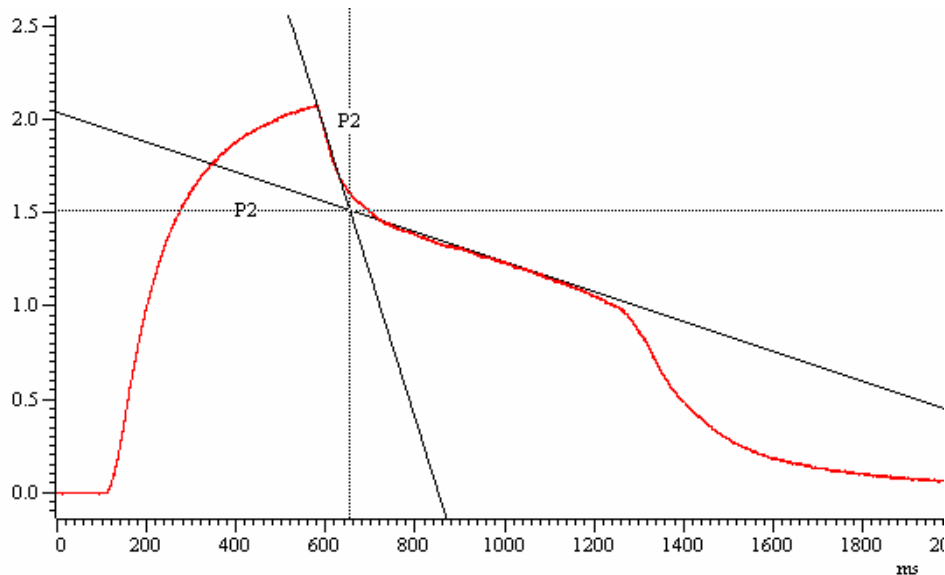If you have any problems opening the embedded scripts in this newsletter please let us know.

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.

Tension trace duplicated and overdrawn to show intersection point (P2) of two straight line fits

Did you know…?

When displaying multiple overdrawn channels in a data file, you can select which channel is 'on top' by double clicking on the channel number to the left of the y-axis. Only the top channel is affected by changes to the y-axis range unless you have selected the Lock axes option in the Y-range dialog.

Recent questions

Q.   Is it possible to display a "time frequency spectrum" of waveform data in Spike2 with frequency on the y-axis and time on the x-axis?

A.   The channel draw modes in Spike2 enable you to display data types in a variety of ways. One of the options for displaying waveform data is as a sonogram. This shows how the frequency content of a waveform changes with time. The y-axis displays values in Hz from zero up to one half of the sample rate for the channel. By default the frequency intensity is indicated by a monochrome grey scale where the darker the image, the higher the frequency intensity of the signal. In version 6 of Spike2, you can select pre-set or user-defined colour scales for the sonogram display in the Display tab of the Edit Preferences dialog.
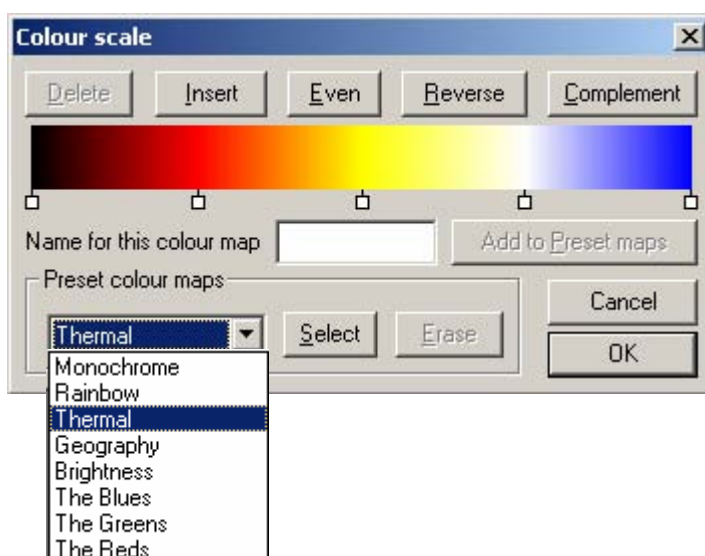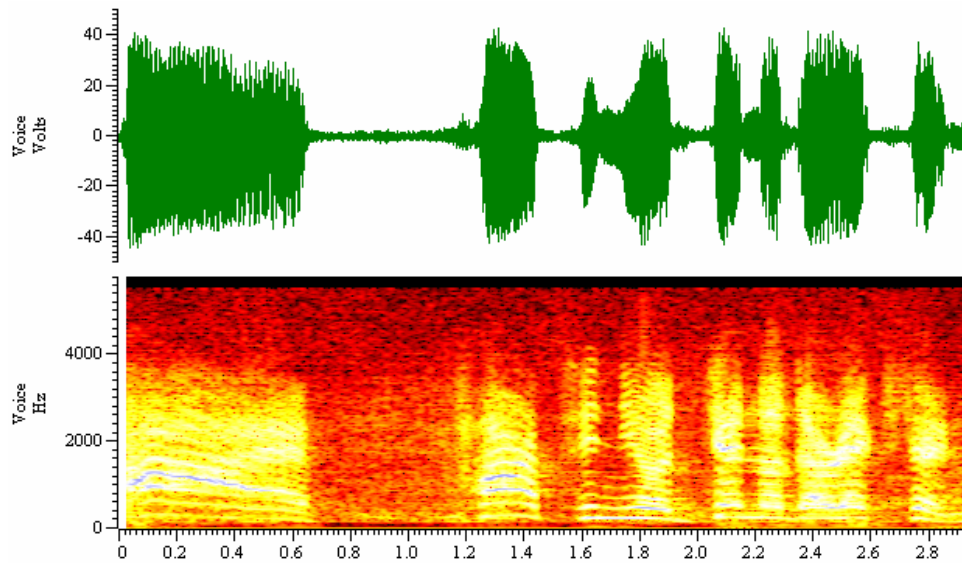
Sonogram display using the pre-set Thermal colour map selected from the colour scale dialog

User Group

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