# CED eNews

## The eNewsletter from Cambridge Electronic Design

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## US Training Days

Our US training days will take place on the 13th and 14th of November at the Doubletree Hotel, Washington DC, prior to the Society for Neuroscience annual meeting. The training days are suitable for both existing and prospective users of Spike2 and Signal and include introductions to the software along with sessions on script writing, stimulus generation and on-line control. Our popular workshop thread, where you can discuss your questions and requirements with a CED engineer or programmer in a small group, will also be available.

If you or any of your colleagues are interested in attending, please follow the links to view the training day program and complete the registration form.

## Meetings and events

**Society for Neuroscience**
Washington Convention Center
Washington, DC, USA
November 15th – 19th 2008

**British Pharmacological Society Winter Meeting**
Hilton Brighton Metropole
Brighton, UK
December 16th – 18th 2008

**Australian Neuroscience Society**
National Convention Centre
Canberra, Australia
January 27th – 30th 2009

## Latest versions of Spike2 and Signal

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 6.10 | Signal version 4.02 |
| Spike2 version 5.20 | Signal version 3.10 |
| Spike2 demo | Signal demo |

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Q.    How do I go about running multiple synchronised 1401's on a single PC with Spike2?

A.    Multiple synchronised 1401 interfaces can be run on a single PC to record many channels at high sampling rates. Each 1401 is controlled by a separate running
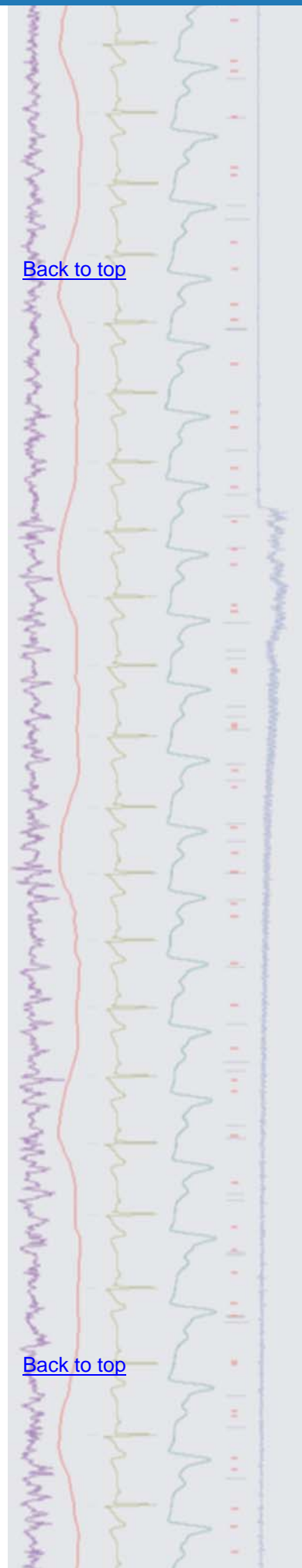
copy of Spike2 and the data is saved to a separate data file per copy of Spike2. You should set the sampled data to save to different locations in the Automation tab of each sampling configuration. Files recorded with separate 1401's can be combined off-line (up to a maximum single file size of 2GB) using the `FileMerge.s2s` script. This is included in the Scripts folder, which can be found in the Spike2 directory on your PC.

To open multiple copies of Spike2 and assign them to individual 1401's the command line of Spike2 needs to be edited, which can be achieved easily via the Spike2 desktop shortcut icon. Whenever you double-click the Spike2 shortcut, it automatically checks to see if there is already a running copy open and, if so, the new one quits. You can remove this check for a running copy by adding the character `/M` to the end of the command line for the Spike2 program. The command line can be accessed by right-clicking on the Spike2 shortcut icon from the desktop and selecting the shortcut tab in the dialog.
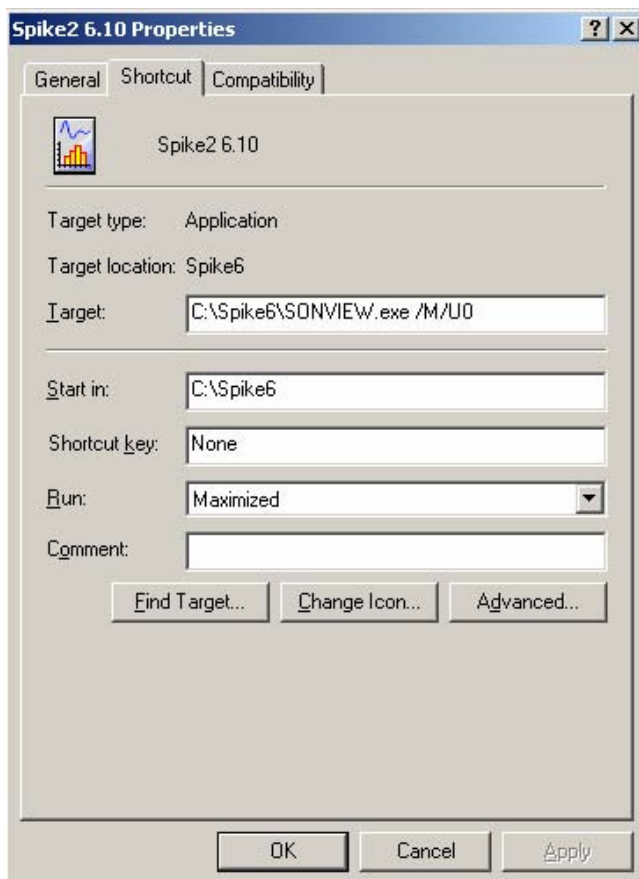


You can also specify which connected 1401 the new copy of Spike2 should control. This is done by adding `/Un` to the end of the command line, where $n$ is a number between 1 and 8. To make sure that the new Spike2 uses the lowest numbered available 1401 the default `/U0` is used. Each time Spike2 is run, a new copy is opened and assigned to the next available connected 1401.

# Signal

Q.   It would be very useful when running LTP experiments to be able to specify different sweep lengths for responses sampled under different stimulus conditions. Is this possible?

A.   Multiple states can be defined with variable sweep points when using Outputs frame and Fixed interval sampling mode. The option for variable sweep points can be enabled in the General tab of the Signal sampling configuration once the Multiple frame states checkbox is selected. The number of sampled points to use per state can then be set in the ADC points field of the Pulses configuration dialog.
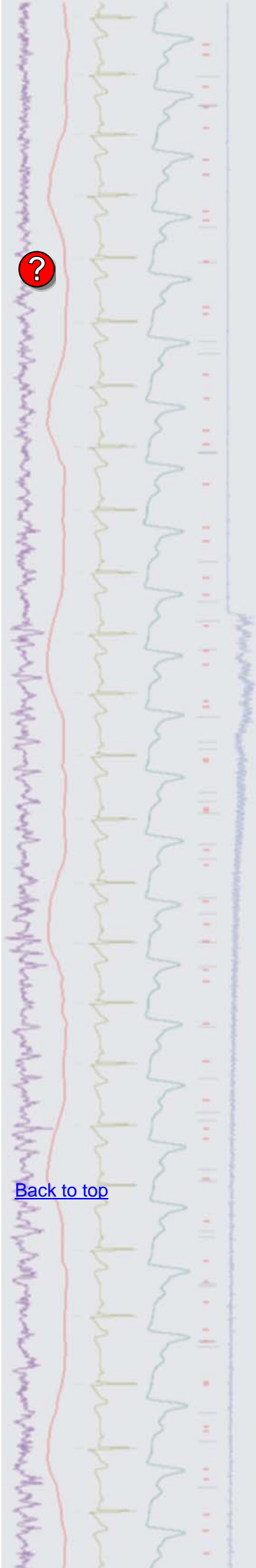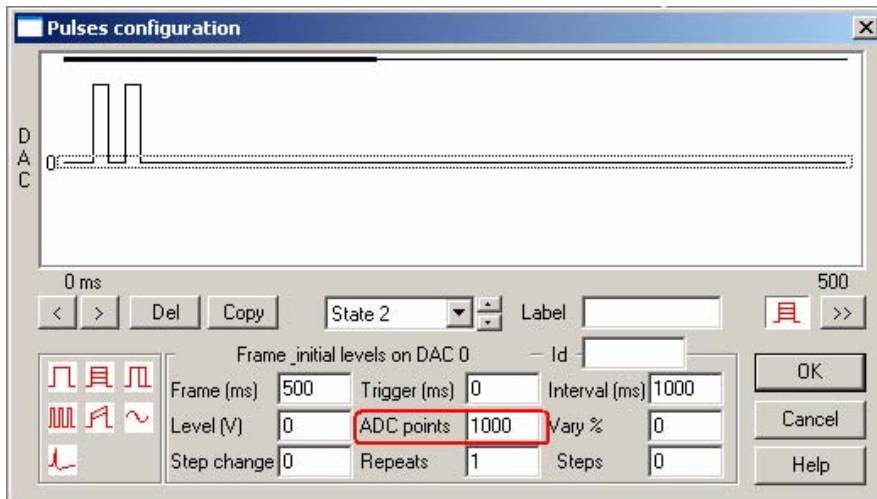
*Pulses configuration dialog with Variable sweep points enabled*

## Scripts: Spike2

Q. I have been using Spike2 and a Micro1401 to play short stimulus waveforms and record responses, but in our next series of experiments I need to play out a long (10-20 mins) continuous stimulus waveform. As the Micro1401 has the option of 1 or 2MB internal memory, is there any way to cut these long waveforms into sections and then cycle through the consecutive sections (loading each section as it's needed) to give the impression of continuous output?

A. The attached script OutputLongWave.s2s can be used to output long waveforms by loading sections of the source waveform into 1401 memory in-turn. The script generates a toolbar from where the user can select the Spike2 file to use for the source waveform. The script then uses the current sampling configuration to load in the sections of waveform, which is output from DAC 0 of the 1401.

## Scripts: Signal

Q. I would like to display a data file recorded in Signal as a continuous waveform for publication, rather than a series of frames. Is this possible?

A. The attached script, MergeToSingleFrame.sgs will produce a new data file of up to 2GB with all of the frames from the source file merged into a single frame of continuous data.

## Did you know…?

When you apply a digital filter to create a new channel in Spike2, the channel comment holds the source channel number and a description of the filter.

## Recent questions

Q. I have used the graphical editor in Spike2 to setup a sinewave output, but I would like this to be triggered in response to an event input during a recording. How can I do this?

A. The output sequencer has a number of commands that can be used to control how the sequence proceeds and how it reacts to incoming data or external triggers. The bottom row of icons in the graphical editor 'pulse palette' include wait and branch commands that can be dragged onto the control track in the main window. The wait command can be used to generate random wait times or monitor channel data until a certain condition is met. From the drop down list of the wait icon, select Next event and then set the Channel field to the event channel being used to record the trigger pulse.

Right-click the script icon and save to disk.

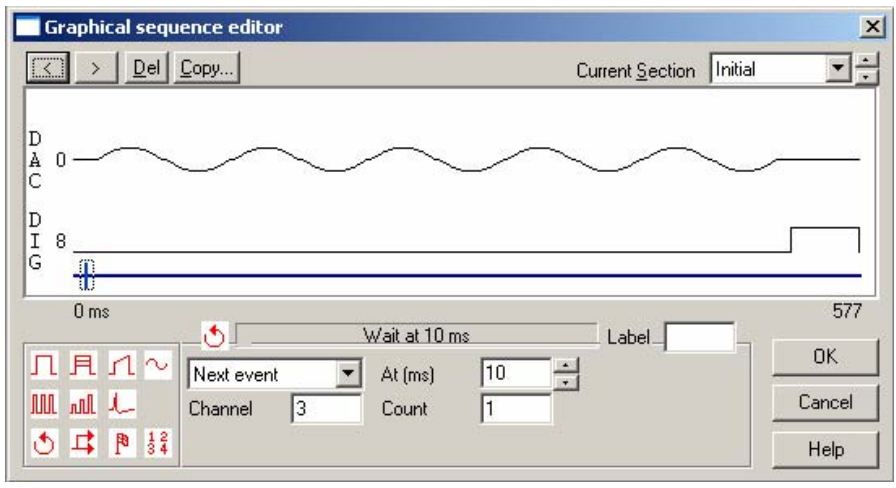If you have any problems opening the embedded scripts in this newsletter please let us know.

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.

*Graphical sequence editor Wait command settings*

## User group

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