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News

Spike2 Version 7

We are pleased to announce the release of Spike2 version 7. A list of the new features is included in the Spike2 section below. We will be writing to all registered users of Spike2 with upgrade details in due course.

We support running version 7 under Windows NT2000, Windows XP, Windows Vista and Windows 7 or Intel Macintosh running Windows. We recommend that the PC has 2GB minimum of RAM.

The release of version 7 means that we will not be adding significant new features to version 6, but we will continue to fix bugs; there will be a 6.12 release in the next few weeks.

Micro1401-3



We are pleased to announce the release of the Micro1401-3, our latest high-performance laboratory interface, which replaces the Micro1401 mk II. Below is a comparison with the Micro1401 mk II:

Micro1401-3	Micro1401 mk II
Expandable to 64 waveform input channels	Expandable to 28 waveform input channels
+5V or +-10V operation switchable via software	+5V or +-10V operation specified at time of order
16-bit waveform output	12-bit waveform output
4MB memory	1-2MB memory

Meetings and events

3rd Annual Canadian Neuroscience Meeting

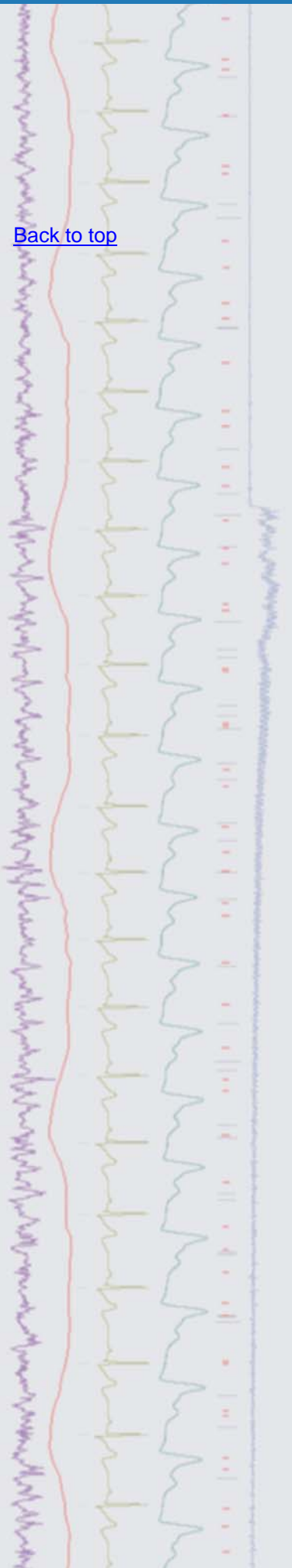
Westin Bayshore
Vancouver, Canada
May 24th – 27th 2009

Magstim TMS Summer School

Institute of Child Health, UCL
London, UK
May 29th – 30th 2009

11th Meeting of the Portuguese Society for Neuroscience

University of Minho
Braga, Portugal
June 4th – 6th 2009



Physiology 2009

University College Dublin
Dublin, Republic of Ireland
July 7th – 10th 2009



The 6th Congress of the International Society for Autonomic Neuroscience

ISAN09 is a joint meeting to be held with the European Federation of Autonomic Societies (EFAS) in Sydney, from September 1st-4th, 2009. Approx. 400 international and national delegates are expected, having clinical and/or basic scientific research interests in autonomic neuroscience.

Plenary speakers: Darwin Berg (UCSD), Hugo Critchley (University of Sussex), Max Hinz (University of Erlangen-Nuremberg) and Elspeth McLachlan (POWRI)

Further details of the meeting can be found at <http://www.iceaustralia.com/isan2009/>

Proudly supported by Cambridge Electronic Design and the Foundation for High Blood Pressure Research, Australia.

Latest versions of Spike2 and Signal

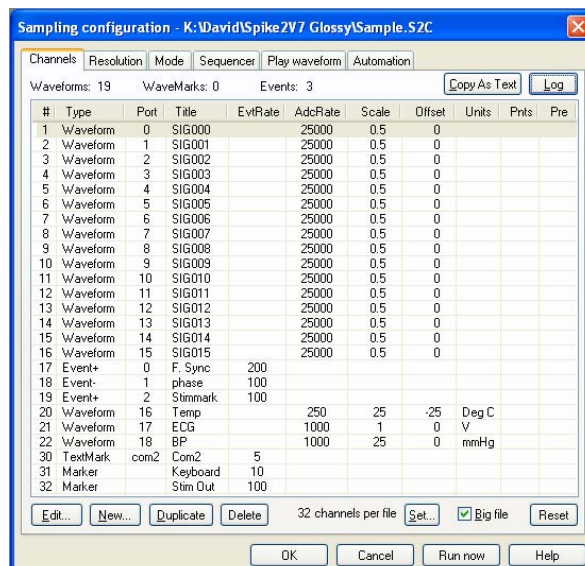
Updates for Spike2 and Signal are available from the [CED downloads](#) page, or by clicking on the links in the table below. Demonstration versions of the latest software are also available.

Spike2 downloads	Signal downloads
Spike2 version 6.11	Signal version 4.05
Spike2 version 5.21	Signal version 3.11
Spike2 demo	Signal demo

Version 7 is the latest release of Spike2 and includes many new and improved features, with continuous development planned through the course of the version.

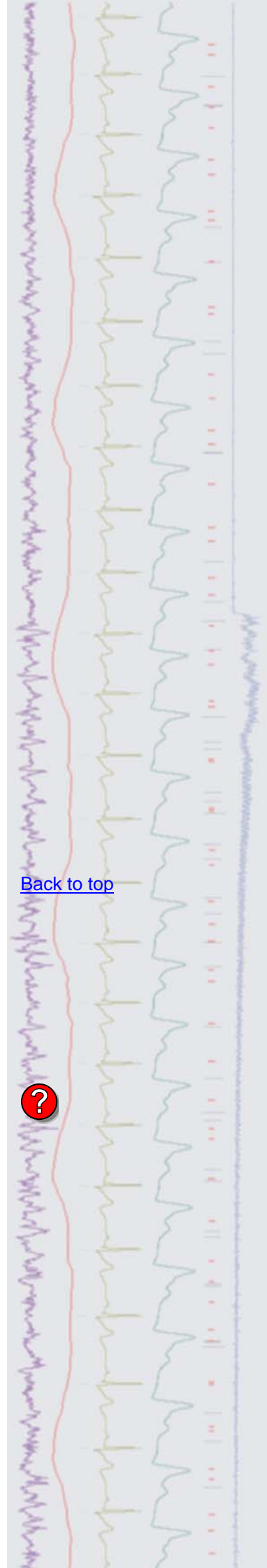
New features include:

- Big file format allows sampling of data file sizes up to 1TB
- Vertical marker display option extending across entire data view
- Copy sampling configuration as text to clipboard or Log file



New sampling configuration dialog

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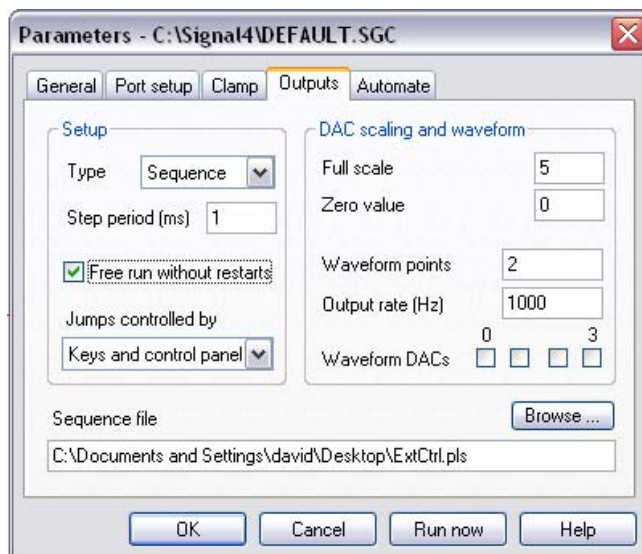


- Improvements to the output sequencer:
 - Load/swap output sequence files during sampling
 - Supports the use of `#include`
 - Sequences of up to 8191 instructions (not original micro1401 or 1401plus) with 256 variables (not 1401plus)
 - 11 new instructions including an indirect JUMP for state machines
- Script language improvements including `break` and `continue` and ability to resize global arrays.
- Virtual channels now support comparison operators
- New linear prediction script command to predict data and generate power spectra using the maximum entropy method

Files created by previous versions of Spike2 are fully compatible with version 7. As with previous versions, future revisions of version 7 will be freely available to download from our website for all registered version 7 users.

Signal

- Q. I am trying to control Signal sampling from an external device to set the frame state and trigger outputs based on a visual stimulus. The External digital states mode in Signal seems to be what I want to use as it will set the frame state in response to a given pattern on the 1401 digital inputs, but this mode does not give any control over the pulse outputs. Is there another way to achieve this?
- A. The text sequencer can be used to give greater control of the inputs and outputs of the 1401. The attached sequence file, `ExtCtrl.pls`, is an example text sequence that monitors the digital inputs and triggers one of three pulse output protocols for a set input pattern. Each of the pulse protocols is also used to set the corresponding frame state. This example sequence could easily be extended or modified to include additional pulse outputs or respond to different bit patterns on the digital inputs.



Using a text sequence in Signal outputs tab

Scripts: Spike2

- Q. I am using a TextMark channel to mark episodes of EEG activity in response to certain stimuli. I would then like to generate power spectra of these marked sections only, much like using the gated analysis option found in the PSTH result view analysis. Is there any way to do this in Spike2?
- A. The attached script, `GatedPower.s2s`, allows the user to generate a 'gated' power spectrum where the sections of data included in the result are defined by a TextMark channel. The script also gives the option of overlapping the FFT blocks within each time range.

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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. I am exporting data files to Matlab for further analysis and was hoping that there was a script available that would let me export batches of files, from a given directory for example.
- A. The attached script, `BatchExportMatlab.sgs`, is an example batch processing script that will export all data files from a selected directory to Matlab compatible format. The script could be modified to export to any supported file type in Signal.

Did you know...?

The CED forum includes a search option allowing the user to find posts and answers to specific questions and topics.

Recent questions

- Q. I am currently writing a script to automate control of my experiment and on-line analysis. The script is linked to a sequencer file and triggers three different pulse protocols. I would like to apply these randomly but I am having some difficulty in randomising the order of the stimulus types in the script. Can you give me any examples of how to do this?
- A. The following script section is an example of using the `ArrSort()` function to randomise an array containing stimulus types.

```
var stims[60];           `Array for stimulus types
var randoms[60];        `Array for random numbers

ArrConst(stims[:20],1); `Fill first 20 elements with type 1
ArrConst(stims[20:20],2); `..next 20 with type 2..
ArrConst(stims[40:20],3); `..last 20 with type 3

Rand(randoms[]);        `Fill randoms with random numbers
ArrSort(randoms[],0,stims[]); `Sort arrays
```

This example uses three stimulus types (1,2 and 3) and sets them to be used 20 times each. The first array is filled with 20 each of the stimulus types and a second array is filled with random numbers using the `Rand()` command. The `ArrSort()` function is then used to sort the arrays so that the corresponding elements of the `randoms` and `stims` arrays are in the same order. The end result is that the `randoms` array is sorted in ascending order while the `stims` array holding the stimuli types is now in a random order.

User group

Try the new [CED Forums](#) bulletin board for software and hardware support

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

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