Using LabChart to visualise SNA patterns

These instructions show how to use the ADInstruments software, LabChart, to determine if bursts in SNA are occurring in synchrony with the arterial blood pressure pulse. This can help determine if you have a good SNA signal (Guild *et al.* 2010). An example LabChart data file containing these settings is available to download from the Kaha website.

https://www.kahasciences.com/download/sna-analysis/

Guild *et al*. "*Quantifying sympathetic nerve activity: problems, pitfalls and the need for standardization.*" Experimental Physiology 95(1), 41-50, 2010.

https://doi.org/10.1113/expphysiol.2008.046300

These instructions assume you have a LabChart file set up with the following channels:
> 1: BP
> 2: SNA original
> 3: Temperature
> 4: SNA filtered
> 5: SNA integrated
> 6: HR

1. Add new channel (ch 7)

2. Duplicate the BP channel in the new channel using the Arithmetic function (Ch1 as below)

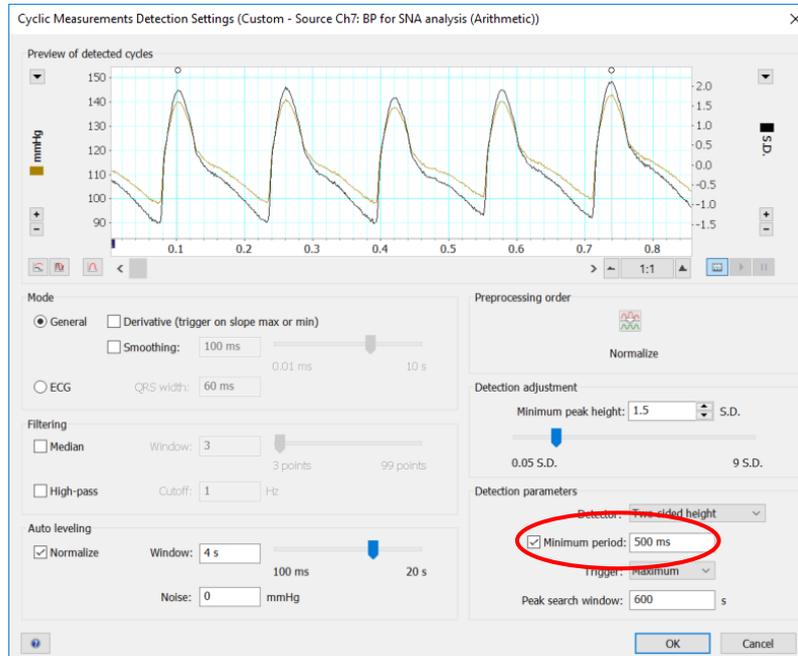3. Add new Channel (ch 8)

4. Use Cyclic Measurements to make ch 8 detect systolic peak from ch 7 every 0.5 seconds

   a. Make sure to set the output to event markers.

   b. Make sure to set the source to the copy of BP (ch 7) and not the original BP (ch 1) otherwise it will affect your HR channel.
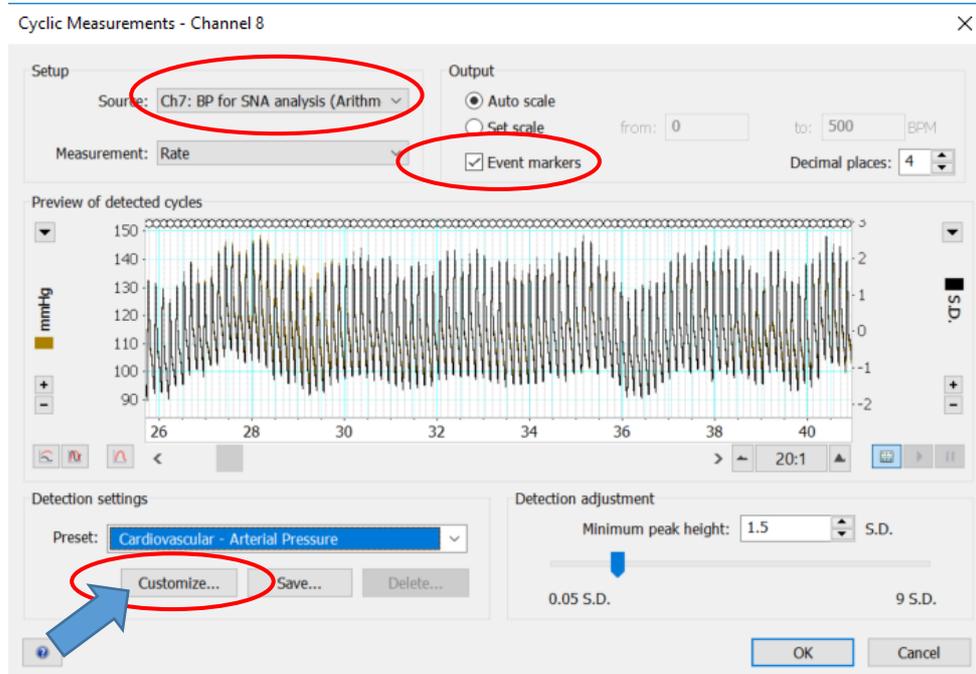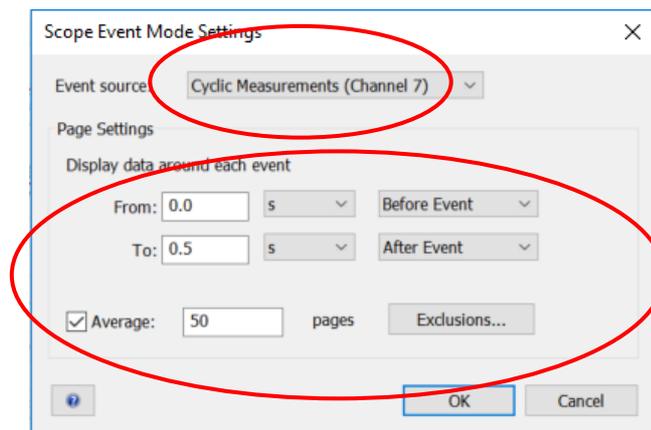

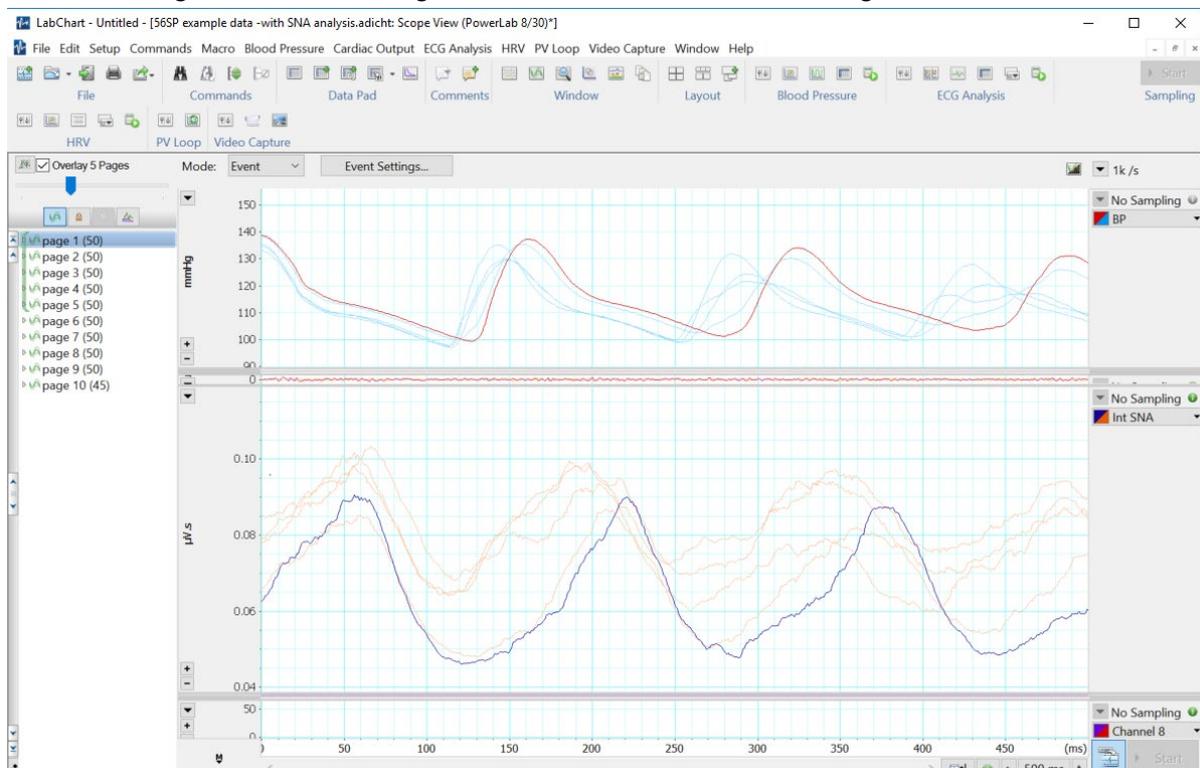   c. Choose Customize and then set the minimum period to 0.5s (500ms).

5. In the Window tool bar select Scope view
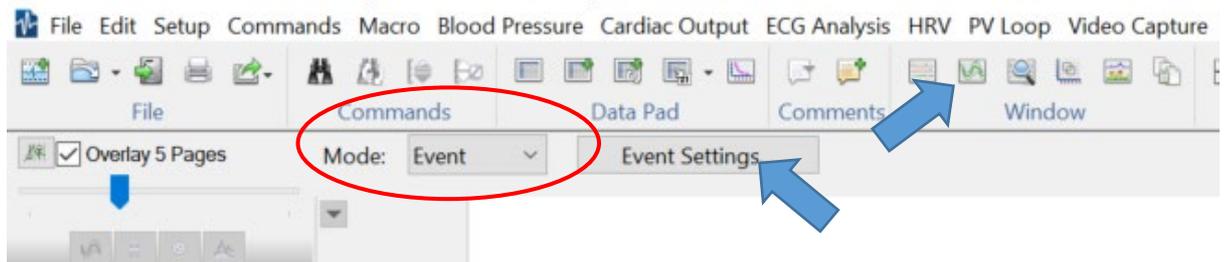
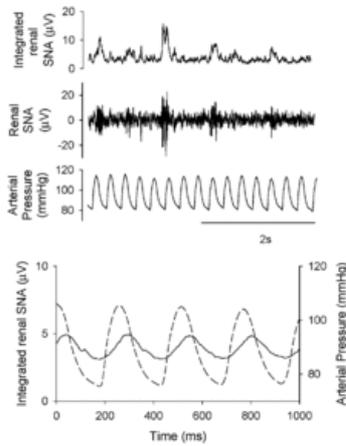6. Set the Mode to Event - and then in Event Settings... choose the following

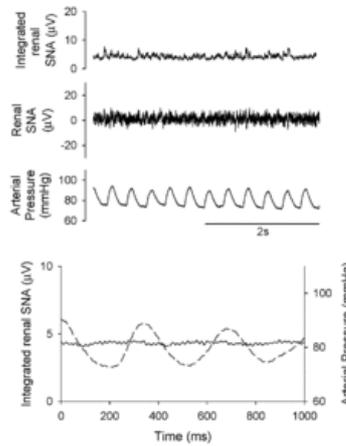7. Change the channel heights to show the BP and SNA integrated channels

If you have a good SNA signal, you should see a cyclic pattern in the SNA integrated channel that shows that the bursts are in time with the blood pressure signal (see figure below).
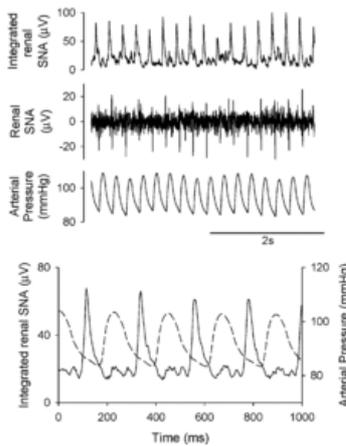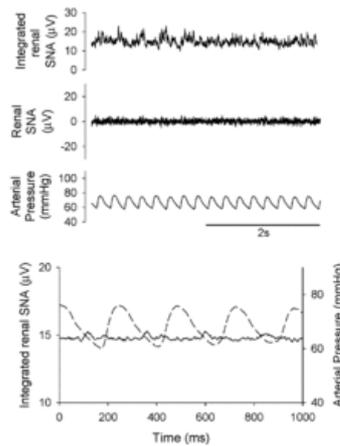

Short (4 s) recordings of integrated renal SNA, renal SNA (often termed raw SNA) and arterial pressure, along with (bottom plots) systolic pressure-triggered averaged records of arterial pressure (dashed lines) and renal SNA (continuous lines)

Examples are shown from four rabbits with 'good' SNA signal (*A*), poor SNA signal (*B*), ECG on the SNA signal (*C*) and during ganglionic blockade using pentolinium tartrate (25 mg kg^{-1} I.V.; *D*). Note that each recording was obtained from a different animal, hence the different scales.

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For any questions, please contact support@kahasciences.com