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#   Trellis Suite Release Notes  
#   contact: support@rppl.com  
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[1.8.0] - 2016/12/16

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Feature: Trellis - TCP network connection to Grapevine and xippmex
Feature: Trellis - Wireless connection to Nomad Grapevine
Feature: Xippmex - TCP network connection to Grapevine and Trellis
Feature: Xippmex - all functions block untill the change is confirmed (or
timeout is reached)

[1.7.4] - 2016/09/15

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Feature: Trellis - Support for v2 EMG front end with 7.5 kHz sample rate

[1.7.3] - 2016/04/29

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Bug Fix: Trellis - Fixed how Trellis handles remote control recording
requests with invalid start time

[1.7.2] - 2016/04/08

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Feature: Trellis - Support for micro2+stim front ends
Bug Fix: Trellis - Fixed error with unintuitive digital routing signal drop
down behavior

[1.7.1] - 2016/03/24

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Feature: Trellis - All File Save errors are reported with the same dialog
box (not one per error)
Bug Fix: Trellis - Loading configs caused spike filter settings to change
unexpectedly
Bug Fix: Trellis - (Mac) Shared memory not deleted correctly causing
problems on Trellis launch

Bug Fix: Stimulation - nano2+stim HC front ends (R02014) were not enabled in hardware browser

[1.7.0] - 2016/03/14

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*** NOTE: REQUIRES Grapevine Software Version 1.7.x ***
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Feature: Trellis - Added warning when front end error is reported by NIP (i.e. when port light turns red)
Feature: Trellis - Support for micro2 front end
Feature: Trellis - Support for global channel labeling (i.e. to reflect electrode map)
Feature: Trellis - Support for synchronizaton of data and recording with 2 NIPs
Feature: Trellis - Support for loading nano2+stim calibration data
Feature: Trellis - Support for echoing stimulation output to digital output
Feature: Raster - Support for showing Digital Output events (when UDP loopback is enabled)
Feature: Stimulation - Stimulation interface is disabled (and all stimulation terminated) if astimulation front end reports a hardware error
Bug Fix: File Save - The last 2 Digital Input events were being truncated from NEV file
Bug Fix: File Save - Playing a tone on recording start and stop was not working
Bug Fix: Raster - Spike event display erroneously showed colored ticks, and ticks of varying heights
Bug Fix: Raster - Does not show both 30K and 1K continuous Analog I/O signals at same time
Bug Fix: xippmin - Example program to control Trellis recording fails to stop recording

[1.6.0] - 2015/10/27

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*** NOTE: REQUIRES Grapevine Software Version 1.6.x ***
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Feature: Trellis - Support for nano2 front end
Feature: Trellis - Support for nano2 HV front end
Feature: Trellis - Support for nano2+stim front end
Feature: Trellis - Support for configuring nano2 hardware filter low-corner (0.1 Hz - 100 Hz)
Feature: Trellis - Support for configuring nano2 and nano2+stim ADC resolution (0.125 uV/bit, 0.25 uV/bit, 0.5 uV/bit)
Feature: Trellis - New "Front End Settings" section in Instrument Network tree
Feature: Trellis - Enhanced logging (logs saved in ~\Trellis\logFiles directory)
Feature: Trellis - Changed gain for EMG front end signals routed through analog i/o.
Bug Fix: Trellis - Digital input triggers File Save even when triggering is not enabled
Feature: xippmin - Compiles on Windows (with MinGW GCC)
Feature: xippmex - Can now be run on same machine as Trellis

Feature: xippmex - Support for changing nano2 and nano2+stim ADC resolution
Feature: xippmex - Support for changing nano2 hardware filter low-corner
Bug Fix: xippmex - Occasionally the 'trial' command crashed MATLAB
Bug Fix: neuroshare - large data sets had overflow of a pointer in nsGetXXData
Bug Fix: mksort - Added support for MATLAB 2015a and 2015b

[1.5.0] - 2015/03/13

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*** NOTE: REQUIRES Grapevine Software Version 1.5.x ***
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Feature: File Save - Support for auto file segmentation (by size or time) during a recording
Feature: File Save - Low disk warning and recording auto-stop (when free space < 100MB)
Feature: Impedance - Support for impedance measurement with nano front ends (version 2.2 or greater)
Feature: Spike Scope - Event waveforms are drawn in a continuous fifo manner (i.e. not cleared when persistence level is reached)
Feature: Spike Grid - Event waveforms are drawn in a continuous fifo manner (i.e. not cleared when persistence level is reached)
Feature: Spike Grid - An expansion icon is shown on the toolbar whenever toolbar elements are hidden
Feature: Trellis - Support for new 24-bit EMG front end in Trellis and all applications
Bug Fix: Raster - Second Micro HV does not show up in hardware browser
Feature: xippmex - Control of fast-settle added
Feature: xippmex - Control of digital i/o 'capture on digital bit change' added
Feature: xippmex - Can modify stim sequence 'action' property in 'stimseq' command
Bug Fix: xippmex - 'time' command could return less than zero with long running NIP
Bug Fix: xippmex - digital parallel inputs were returned as signed integer
Bug Fix: xippmex - rare failures when bad streams were requested with 'signal' command

[1.4.3] - 2014/08/28

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*** NOTE: REQUIRES Grapevine Software Version 1.4.x ***
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Bug Fix: Raster - Upper 4 channels of analog parallel inputs not showing up correctly
Bug Fix: Raster - Shift+Click channel selection not working for more than 16 channels
Bug Fix: Trellis - Added default signal for analog output routing
Bug Fix: Trellis - Digital parallel port file save triggering not restoring from config file correctly
Feature: Spike Grid - Adjusted the window width at which toolbar controls are hidden/shown

[1.4.2] - 2014/08/08

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*** NOTE: REQUIRES Grapevine Software Version 1.4.x ***
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Bug Fix: Trellis - Fixing digital triggering (which broke in the previous release)

[1.4.1] - 2014/08/03

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*** NOTE: REQUIRES Grapevine Software Version 1.4.x ***
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Feature: SpikeGrid - Heat Map
Feature: Stimulation - Stim score play launches a separate window with a button that is a safety switch for stopping stimulation at any time.
Feature: Trellis - Major performance improvements
Feature: Trellis Apps - Major performance improvements
Feature: File Save - Added NIP time at file start to NEV, NSx, and NFX file header
Feature: neuroshare - Added function to retrieve NIP time at file start
Bug Fix: Stimulation - App crashes when loading a second stimulation configuration file
Bug Fix: Stimulation - Some frequencies (such as 30 Hz) cause errors when playing score stimulation
Bug Fix: xippmex - Major memory leak
Bug Fix: xippmex - 'signal' command returns empty strings
Bug Fix: xippmex - Can't close xippmex after error
Bug Fix: xippmex - global stim disable occurs at wrong time
Bug Fix: xippmex - signal can cause seg fault
Bug Fix: xippmex - cannot enable/disable 'stim' data stream on per-channel basis
Bug Fix: xippmex - filter 'custom' elec off by one
Bug Fix: xippmex - surf D v1.3 hi-res stream producing all 0s when using 'cont' function
Bug Fix: xippmex - 'stim' command doesn't handle spaces in string
Bug Fix: xippmex - fails to initialize for NIP with no headstages

[1.4.0] - 2014/04/08

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*** NOTE: REQUIRES Grapevine Software Version 1.4.x ***
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Feature: Trellis - Interface to link front end fast settle behavior to digital inputs, stimulation, signal saturation, and user input
Feature: Trellis - Configuration save/load now supports restoring tracking settings in Analog/Digital output tracking interface
Feature: Trellis - New interface to select signal filters in instrument details panel
Feature: Trellis - Support for color schemes (light-on-dark and dark-on-light)
Feature: xippmex - Support for MATLAB-based interaction with Grapevine and Trellis
Feature: File Save - Support for new "hi-res" float-32 streams
Bug Fix: File Save - Some form fields were overwriting user input
Bug Fix: Stimulation - NIP clock and Trellis CPU clock were not synchronized

Bug Fix: Stimulation - Stimulation trains stopped unexpectedly after 4095 (0xFFFF) pulses

[1.3.0] - 2013/07/01 (BETA)

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*** NOTE: REQUIRES Grapevine Software Version 1.3 ***
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New App: Stimulation - Provides an interface for controlling stimulation on Ripple's micro+stim front ends

New App: Impedance - Supports measuring and recording of impedance on micro and surfS front ends

Feature: Apps - State persistence (i.e. When opened Apps restore themselves to the last used settings)

Feature: Spike Scope - New electrode map file format.

Feature: Spike Scope - Ability to set display scale at a per view level

Feature: Trellis - Input-to-output Network latency test (requires wrap-around SMA cable)

Feature: Trellis - NIP status monitoring. User is notified if Trellis restarts with new/different hardware configuration

Feature: File Save - NIP status monitoring. User is notified if interruption in network connection is detected

Feature: File Save - NIP status monitoring. Recording is stopped if NIP restart is detected

Bug Fix: Raster - Changed spike rendering code to ensure proper alignment with respect to continuous channels

New Doc: Trellis - Trellis user manual

([trellis_install_dir]/Trellis/Documentation/Grapevine/GrapevineNIP.pdf)

New Tool: Wisteria - Matlab-based application for viewing files recorded in the NEV/NSx2.2 file format ([trellis_install_dir]/Trellis/Tools/wisteria)

New Tool: MKsort - Open source Matlab-based spike sorter. Supports NEV and NS5 data file format ([trellis_install_dir]/Trellis/Tools/mksort)

[1.2.1] - 2013/02/22

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Bug Fix: FileSave - Fixed bug that occasionally caused recordings to become very large

[1.2.0] - 2013/01/09

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*** NOTE: REQUIRES Grapevine Software Version 1.2 ***
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Feature: Support for new Scout NIP

Feature: FileSave - Added support for saving stimulation waveforms

Feature: Trellis - Checkbox for toggling whether nip captures digital input on parallel port bit change

Bug Fix: FileSave - (Mac/Linux) month and day in "Time Origin" field in NEV Neuralev header now 1-indexed

[1.1.1] - 2012/10/11

Bug Fix: File Save - Fixed *CRITICAL* error which had potential to cause data loss

[1.1.0] - 2012/09/28

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*** NOTE: REQUIRES Grapevine Software Version 1.1 ***
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Feature: NIP Config - Ability to configure fast settle/recovery of recording after stimulation
Feature: NIP Config - Minor UI changes
Feature: File Save - Ability to save individual channels from micro/nano/surf front ends
Feature: Simulator - Supports NIP Grapevine software version 1.1
Feature: Simulator - Ability to save simulation configurations
Bug Fix: NIP Config - Spike event triggered digital output not working
Bug Fix: NIP Config - Audio output tracking did not update when Trellis not displaying the "Instruments" tab
Bug Fix: File Save - Signal selection reverted to default when Digital or Analog signal routing UI changed
Bug Fix: File Save - Incorrect large timestamps at beginning of NEV files
Bug Fix: Matlab NS Γ ns_GetEventData returned wrong data
Bug Fix: Python NS Γ Import of large NEV files failed
Bug Fix: Python NS Γ Internal NEV cache data unnecessarily large

[1.0.0] - 2012/08/10

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*** NOTE: REQUIRES Grapevine Software Version 1.0 ***
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Feature: File Save - Trigger file save start/stop pause/unpause with digital input
Feature: File Save - Specify individual front ends(s) to save data for
Feature: File Save - Specify subset of analog input channels to save data for
Feature: File Save - Save NIP configuration with data files
Feature: File Save - Display of currently recording files
Feature: File Save - Display of previously recorded files
Feature: NIP Config - Ability to save/load Instrument configurations
Feature: NIP Config - Global auto thresholding (micro electrode front ends)
Feature: NIP Config - UDP-control of digital output
Feature: NIP Config - Digital output loopback
Feature: NIP Config - Turn on/off individual front end inputs
Feature: Trellis UI - Minor changes to layout and look of various components.
Feature: Spike Scope - Dual thresholding
Feature: Spike Scope - Spike sorting
Feature: Raster - User specified arrangement of signals
Feature: Raster - Signal coloring
Feature: Tools - pyns (Python-native implementation of neuroshare API for Nev/NSx files) see Trellis/Documentation/python/pyns/pyns.pdf
Feature: Tools - matlab-native implementation of neuroshare API for Nev/NSx files see Trellis/Tools/matlab/neuroshare
Feature: Tools - matlab example scripts see Trellis/Tools/matlab/scripts
Feature: General - Official Trellis install package for Linux

[0.9.9] - 2012/02/17

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Feature: File Save - Supports recording SurfD front end data

Feature: Trellis - Info and error logging
(<trellis_install_dir>\Apps\Trellis\bin\trellis.log)

Feature: Trellis UI - Minor layout changes

[0.9.8] - 2012/01/20

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Feature: File Save - Remote control over instrument network

Feature: File Save - Option to play tone when recording starts and stops
(for video synchronization)

Feature: Trellis UI - Several UI changes to improve usability

Feature: Trellis Tools - XippMin project for external Trellis integration
support (see: <install_dir>/Tools/XippMin)

Feature: Build - Release notes added to install package

[0.9.7] - 2011/12/23

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Feature: File Save - Analog signals can be saved at 1k (i.e. downsampled from
30k).

Feature: File Save - Trellis version information inserted into NEURALEV header
(*.NEV) file and prepended to comment field in NEURALCD header (*.NSx)

Bug Fix: Spike Scope - Threshold edit field not refreshing when focus is lost

Bug Fix: Spike Grid - Arrow key navigation causes crash.

Bug Fix: File Save - Erroneous timestamps on first few spikes.

[0.9.6] - 2011/12/05

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Internal Release

[0.9.5] - 2011/11/10

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Internal Release

[0.9.4] - 2011/10/28

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Feature: File Save - NEV/NSx 2.2 added support for saving raw microelectrode
signals

Feature: File Save - NEV/NSx 2.2 added support for saving digital packets

Bug Fix: File Save - NEV/NSx 2.2 header information corrected

[0.9.3]

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Bug Fix: File Save -synchronization of spike and continuous data

[0.9.2]

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Feature: Trellis - Digital output routing

Bug Fix: File Save - scale factors and filter settings now correctly saved in
NEV/NSx files

Bug Fix: Spike Grid - improved app load speed

Bug Fix: Spike Scope - preview pane now redraws itself instead of clearing
history on window resize