

README

General Information

ScanImage 2018 is software for resonant and linear two-photon laser-scanning microscopy.

ScanImage supports numerous [microscope platforms](#) and is built on the same [flexible acquisition hardware](#) as our public release ScanImage 5.

ScanImage 2018 adds several premium features atop of ScanImage 5.4.0:

- [Photon Counting](#) using a fast digitizer
- [3D Motion Correction](#)
- [Acquisition Gating](#) for low rep rate Lasers
- [Offline Data Viewer](#)
- [Widefield Camera Support](#)
- [Targeted holographic photoactivation](#)

See [ScanImage Licensing](#) for pricing info.

Contact scanimage@vidriotech.com for a quotation or any questions.

Installing ScanImage

To install ScanImage, download and run the installer exe file. The installer will install ScanImage into the program files folder and update the MATLAB path for all releases that you select. If you have existing ScanImage installations, they will be left intact. You can easily revert back to a previous ScanImage installation by changing the MATLAB path to point back to the desired installation.



While using the installer is recommended, if you want more control over where ScanImage is installed, you can [manually install ScanImage](#) from the zip download.

For more information about initial setup see the [getting started page](#).

Upgrading Information

Unless specifically noted (as indicated by a **compatibility note**), upgrading from an older release of ScanImage 2018 to a newer build will not break compatibility with Machine Data Files, User files, Configuration files, or TIFF headers. After upgrading, the first time you run ScanImage you will need to browse to the location of your existing machine data file.

Version Notes

SI2018bR1 / SI5.5.1

December Hotfix Release (19 December 2018)

- SI 5.5.1 (Free version)
 - Features
 - Support for DAQmx 18.6.x
 - Fixes
 - Fix Matlab hard crash when using Thorlabs PMT2100 modules
 - Fix behavior of function hSI.hDisplay.getRoiDataArray when z series is not sorted
 - Calling sidataview with filename as parameter errors
 - Marius motion corrector throws errors if z-reference is a single slice
 - Motion correction is not working when using a FastZ actuator
- SI 2018b.1
 - Features
 - Camera View: allow to flip / rotate camera view port
 - Fixes
 - Camera View: retain view port when switching between camera and ROI coordinate spaces
 - Camera View: always allow to switch between camera and ROI coordinate spaces
 - Camera View: fix LUT scaling for ROIs when rolling frame average > 1

- Camera setup: fix initialization of Spinnaker interface

SI2018bR0 / SI5.5.0

November Release (1 November 2018)

- SI 5.5.0 (Free version)
 - Features
 - [3D Motion Correction](#)
 - [Oscilloscope Mode](#)
 - Fixes
 - Properly report PPI in Tiff files
 - Improved auto phase calibration for ResScan
 - fix scanimage.util.open.tif for SI2015 files
 - sidataviewer: improve performance
 - support for NI FlexRIO driver 18.x
 - support for NI DAQmx 18.1.x and 18.5.x
- SI 2018b
 - Features
 - [Widefield Camera Support](#)
 - Add support for Meadowlark Overdrive
 - Fixes
 - Arbitrary line scanning: save reference image with data
 - Photon counting using NI5771: fix digitizer saturation when channel is inverted
 - Meadowlark 1920 SLM: Add Machine Data File setting for hardware LUT

SI2018aR0 / SI5.4.0

November Release (30 May 2018)

- SI 5.4.0 (Free version)
- SI 2018a
 - [Photon Counting](#) using a fast digitizer
 - [3D Motion Correction](#)
 - [Acquisition Gating](#) for low rep rate Lasers
 - [Offline Data Viewer](#)

SI2017bR0 / SI5.3.1

November Release (10 November 2017)

- SI 5.3.1 (Free version. Features also in Premium)
- SI 2017bR0
 - [Z Motion Correction](#)
 - [Improved Galvo Waveforms](#)
 - [Eliminated FastZ Volume Period Adjustment](#)
 - [Custom Header Properties](#)
 - [Data Overwrite Warning](#)
 - [Improved acquisition start time for large volumes](#)
 - [ROI Display Fixes](#)

SI2017aR0 / SI5.3

August Release (30 August 2017)

- SI 2017aR0
 - [3D SLM targeting and imaging](#)
 - [3D pattern generation and alignment](#)
 - [Simultaneous imaging and holographic targeting](#)
 - [SLM as FastZ or Linear Scanning device](#)
 - [Wavefront generation with Zernike modes](#)
 - [Bessel-mode scanning](#)
 - [Z-Alignment between stage and focusing device](#)
 - [SLM LUT calibration](#)
 - [Triggered SLM photostimulation](#)

SI2016bR0 / SI5.2.3

November Release (23 November 2016)



Compatibility Note

ScanImage 2016b requires changes to the 'Motors' and 'FastZ' sections of the Machine Data File. Run the configuration editor tool to migrate the settings and verify that they are correct. A backup of the machine data file will automatically be created.

- SI 5.2.3 (Free version. Features also in Premium)
 - Bugfixes & Performance improvements
- SI 2016bR0
 - SLM support for targeted photostimulation
 - Independent Z-control for parallel scanners
 - Scanner command waveform optimization

SI2016.2 / SI5.2.2

October Release (24 October 2016)

- SI5.2.2 (Free version. Features also in Premium)
 - Display mode for current slice in stack
 - Custom power depth adjustment profiles
 - LinScan file logging and averaging updates
 - Support for NI-DAQmx 16.0
- SI2016.2 (Premium version)
 - Optimization and caching of waveform AO's

SI2016 / SI5.2

June Release (15 June 2016)

- SI2016 (Premium version)
 - Support for arbitrary line scanning
 - Motion correction for photostimulation
 - Online analysis (Roi integration)
 - Motor alignment
 - Full affine alignment between scanners
- SI5.2 (Free version)
 - Live histogram
 - FastZ-actuator tuning
 - Configuration GUI for microscope configuration

SI2015

March Release (10 March 2016)

- Support for NI-DAQmx 15.5
- Support for logging when imaging multiple ROIs in LinScan
- Several bugfixes and performance improvements in LinScan
- Fixes for openTif

January Release (22 January 2016)

- **Compatibility Note for Thorlabs BScope 2 users**
 - The MDF entries for the BScope2 component changed. The following link has instructions to modify your configuration for the new version:
[ScanImage January 2016 Release Thorlabs BScope 2 Compatibility Information](#)
- Support for Thorlabs MCM3000, USB PMT2100, USB BCM
- Support for higher sampling rates on certain DAQs in LinScan
- Fix powerbox with P-Z adjustment
- Improve performance of opentif
- Improved automatic scan phase adjustment for ResScan
- Automatic scan phase adjustment for LinScan
- New NI VISA interface
- Fix several bugs in LinScan

November Release (18 November 2015)

- Powerbox

- Cycle mode
- Striped acquisition in LinScan (Galvo-Galvo scanning)
- Fixes to LinScan (Galvo-Galvo scanning) when using a PCI-6110
- Fixes to LinScan (Galvo-Galvo scanning) when performing a Z-stack acquisition
- Performance enhancement for openTiff

August Release (11 August 2015)

- Performance enhancements to acquisition starting and photostimulation starting
- Performance enhancements to loading of usr and cfg files
- Option to keep resonant scanner on when no acquisition is active
- Improved mapping of ROIs from cell picker interface
- Automatic sensor calibration and max/min position limits for pulse analog controller
- Support for multiple linear scan paths
- Support for photon counting modules
- Improved linear scanning waveform with settling within fill fraction
- Support for DAQmx 15.0.x
- Remove TIFF header and footer size limitations
- Fix centered z stack functionality with fastZ
- Fix errors in slow stacks with some motors
- Fix panning channel display in Matlab 2014b and newer
- Fix scroll wheel functionality in Matlab 2014b and newer
- Fix reference leaks with ROI group, ROI, and scanfield objects
- Fix issue where footer is only attached to last TIFF in acquisition
- Fix loading and storing of photostim monitor calibration
- **Compatibility Note:** A new section for photostim will be created in the MDF. Analog input channels for monitoring are now stored here instead of in cfg file.

June Release (26 June 2015)

- Updated Thor B-Scope2 support for new stage controller firmware
- Panning, scroll wheel zoom, and point-to-point alignment in alignment gui
- Automatic photostim monitor calibration
- Improved stimulus editor functionality
- Fix issue causing acquisition to randomly stop with a data corruption error
- Fix for Thor ECU1 component trigger routing
- Fix photostim shuttering functionality
- Fix photostim monitoring display behavior during focus
- Fix to multiple issues after switching between imaging systems
- Fix to AO generation when resonant angular range is different from x galvo angular range
- Fix issue when importing cell picker rois in linear scanning mode
- Fix to stimulus roi constraints
- Fix loading of channels in opentiff

May Release (31 May 2015)

First release of ScanImage 2015! New features including:

- Multiple region of interest support
- Linear scanning
- Parallel scanning
- Photostim
- Improved stability
- Many more!