

ScanImage®

Don't let the microscope control you!



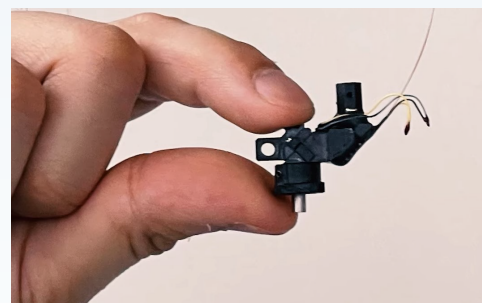
ScanImage is the most advanced software package for controlling laser scanning microscopes. Whether your lab uses custom-built microscopes or commercial systems from Sutter, Prospective Instruments, Labmaker or Thorlabs, ScanImage software paired with our vDAQ™ data acquisition card, helps you make the most of your microscope system. ScanImage is used by over 350 laboratories throughout the world and is cited in more than 1,200 research publications and counting. ScanImage also supports Mini2P systems—compact, head-mounted microscopes for imaging in freely moving animals—enabling advanced neuroscience research in naturalistic settings.

Benefits of ScanImage:

- Flexibility in configuring planar or volumetric imaging to suit your specific experimental needs and hardware - includes parameters for spatial resolution, size, contrast, speed, and to limit laser damage to samples
- Compatible with most commercial and custom built 2- and 3-photon microscopes, with support for a myriad of hardware devices and combinations
- Reliable synchronization of image acquisition to external events or vice-versa using acquisition start/stop inputs or line/frame/volume clock outputs
- ScanImage software is accessible and user customizable for development of new scan paradigms or to enable execution of user-defined scripts at key time points in image acquisition

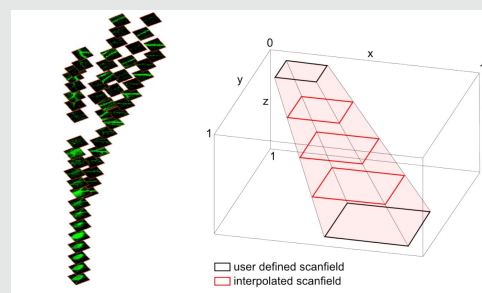
Mini2P Support

ScanImage is the preferred software for controlling Mini2P systems developed by Labmaker, Phenosys, and Thorlabs. The Mini2P is a groundbreaking head-mounted two-photon microscope designed to enable imaging in freely moving animals. Unlike traditional systems that require head restraint, the Mini2P allows animals to move naturally, opening the door to novel experimental paradigms that explore brain activity in ecologically valid environments.



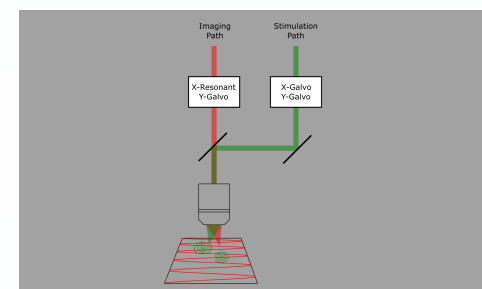
Multiple Region of Interest (mROI) Imaging

ScanImage enables you to subdivide the microscope's full field of view into multiple regions of interest (ROIs). By defining ROIs, the frame rate can be optimized and photobleaching reduced elsewhere in the field of view. With the ability to specify the number of lines scanned per ROI, ScanImage puts the decision to maximize frame rate or image resolution in your hands. ROIs can also be scaled, offset, and rotated through different depths in the sample to follow the structures that interest you.



Photostimulation Workflows

ScanImage features a powerful and flexible photostimulation workflow. It enables registration between an imaging and stimulation scanner for accurate targeting, with ample stimulation scan pattern design flexibility. In fact, for microscopes that employ a spatial light modulator (SLM) in the path, ScanImage includes workflows for aligning the SLM-augmented path and defining stimulations in 3D. Such stimulations can be synchronized with behavioral experiments using external triggers and, for microscopes with two or more independent beam paths, simultaneous imaging and photostimulation can be done.



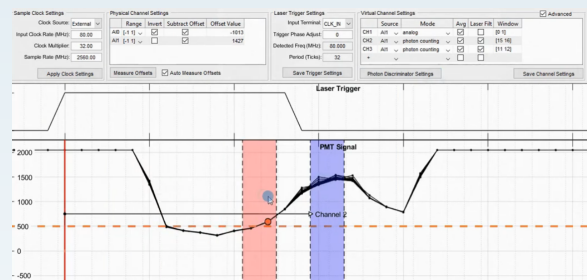
ScanImage®

Don't let the microscope control you!



Photon Counting

Using ScanImage in combination with the High-Speed vDAQ enables you to detect and count individual photons. In photon-limited acquisition scenarios, this approach increases the signal-to-noise ratio by separating the fluorescence signal from baseline signal and noise. Additionally, Time correlated single photon counting (TCSPC) can be achieved by sampling the signal at various windows defined relative to each laser pulse using the signal conditioning controls window.



Additional Features

Scanning Modalities:

- Resonant/Galvo scanning
- Galvo/galvo scanning
- Arbitrary line scanning
- Polygonal Scanning
- MEMS device scanning
- Simultaneous imaging and photostimulation

Signal Acquisition Controls:

- Synchronization of acquisition sampling to the laser repetition rate
- Acquisition gating for low rep-rate lasers to support 3-photon excitation
- Photon counting
- Temporal demultiplexing
- Timestamp behavior events with auxiliary triggers

Simple and Thoughtful Device Control:

- Stage control with live motor position update, 3D image-stack acquisition, and tiling
- Beam power control reducing photobleaching and automatically adjusting beam power with depth or even lateral position
- Faster stack acquisition or field curvature correction with fast and remote focus control
- SLM photostimulation support including 3D shot
- Camera previewing

Helpful Software Features:

- Online analysis of ROI image data
- Remote control through TCP/IP
- Oscilloscope mode
- 3D motion correction
- Command waveform optimization

Fully Supported and Maintained

ScanImage includes access to extensive online documentation, as well as our team of expert technical services personnel to assist you with system operation or help configure ScanImage to conform to the needs of the experiment. In addition, our staff scientists and engineers are ready to provide scientific support to help you address your research questions effectively and efficiently. MBF Bioscience is here to support your lab and help you achieve your research goals.

