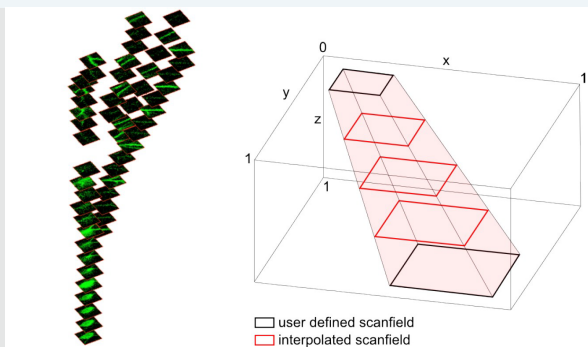# ScanImage®

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 Scientifica, Sutter, Prospective Instruments or Thorlabs, ScanImage software paired with our vDAQ™ data acquisition card, helps you make the most of your microscope system. ScanImage is used by more than 350 laboratories throughout the world and is cited in over 900 research papers.

Benefits of ScanImage:

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

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. User defined number of lines scanned per ROI 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 structures.

user defined scanfield
interpolated scanfield

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 done.
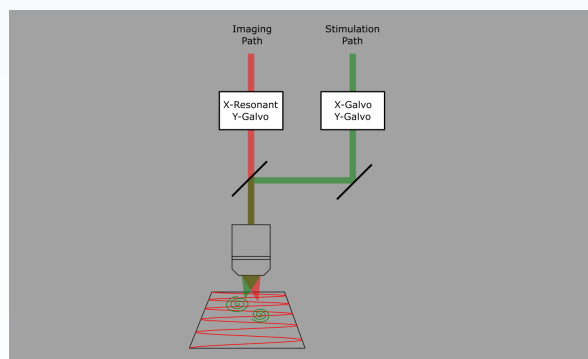
Photon Counting

ScanImage combined with the High-Speed vDAQ enables you to detect and count individual photons. In photon-limited acquisition, this approach increases the signal-to-noise ratio by separating the fluorescence signal from external sources such as a PMT power supply. Time correlated, single photon counting can be achieved by sampling the signal relative to each laser pulse, which can be configured by defining temporal windows in the ScanImage signal conditioning controls window.

ScanImage®

Don't let the microscope control you!
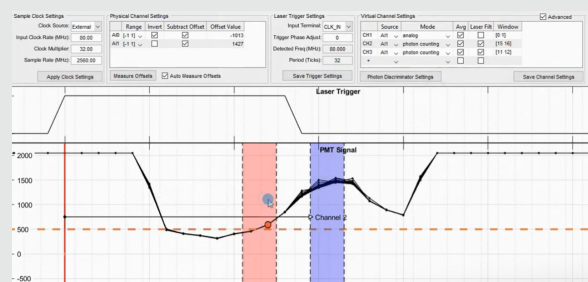
Additional features:

- Resonant/Galvo scanning
- Galvo/galvo scanning
- Synchronization of acquisition sampling to the laser repetition rate
- Stage and beam power control
- Control beam power laterally within a scanned plane using Power Boxes
- Stack acquisition using stage
- FastZ stack acquisition
- Arbitrary line scanning
- Independent Z-control for multiple scanners
- SLM photostimulation support including 3D shot
- Acquisition gating for low rep rate lasers to support 3-photon excitation
- Timestamp behavior events with auxiliary triggers

- Online analysis of ROI image data
- Photon counting
- Camera support
- Remote control through TCP
- Oscilloscope mode
- Big Tiff file creation
- FastZ actuator tuning
- Live histogram
- Custom power depth adjustment
- 3D motion correction
- Command waveform optimization
- Live motor position update in ScanImage
- Simultaneous imaging and photostimulation

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.

Learn more at : mbfbioscience.com/products/scanimage

About MBF Bioscience

A rich history of creating the future of neuroscience.

MBF Bioscience develops advanced tools for collecting and analyzing accurate, reproducible data from histological specimens, 2D and 3D microscope images, and freely moving *C. elegans* so that scientists can better understand brain diseases and processes at a cellular level.

Our products have helped researchers publish over 17,000 peer reviewed papers.

What our customers say

" ScanImage is extremely stable, allowing us to image for hours without bugs or crashes, and the user interface is intuitive but still provides detailed control over acquisition parameters.

Dan Wilson
Harvard Medical School

" MBF Bioscience is extremely responsive to the needs of scientists and is genuinely interested in helping all of us in science do the best job we can.

Sigrid Veasey, M.D.
University of Pennsylvania