



Dedicated
Near-Infrared Spectroscopy



NIRSport

Wearable, Multi-Channel Neuroimaging Platform

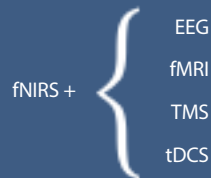
NIRSport System Description

NIRSport is a portable, multi-channel, modular functional near-infrared spectroscopy (fNIRS) platform which measures hemodynamic neuroactivation via oxy-, deoxy-, and total hemoglobin changes in the cerebral cortex.

NIRSport platform combines lightweight LED sources and active detectors with innovative strain-relief hardware to create a truly wearable brain imaging solution ready for use in any 'portable lab', or movement-related study.

Applications

- BCI/Neurofeedback
- Cognitive Disorders
- Developmental Disorders
- Hyperscanning (multi-subject measurements)
- Movement/Balance
- Infant Monitoring
- Neuropathology
- Neuropsychiatry
- Social Interaction
- Speech/Language
- Stroke and Rehabilitation
- Traumatic Brain Injury
- Visual Impairment/Stimulation
- Multi-modal Integration:



A Wearable System Solution

NIRSport comes in 8-source/8-detector (64 data channels) and 16-source/16-detector (128 data channels) configurations, with a diverse array of available headgear and probes to fit any subject and neuroscience application.

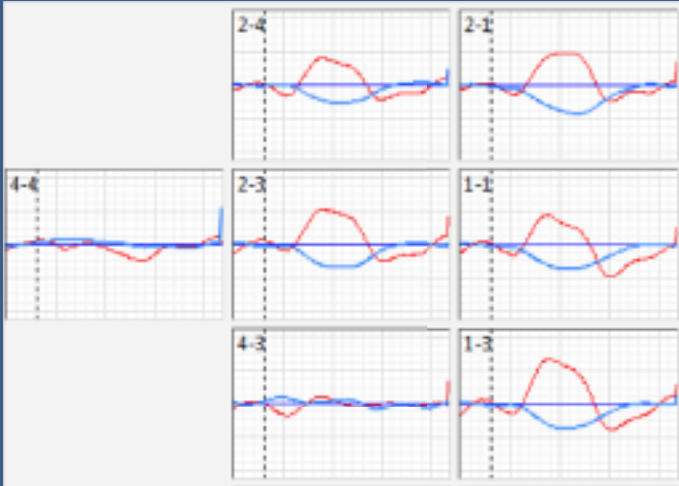
Freely-configurable probe arrays easily integrate with EEG and tDCS within a single NIRx NIRScap. Concurrent fNIRS + fMRI and fNIRS + TMS may be done with NIRSport's low-profile fiber-optic probes. NIRSport can measure both topographic and tomographic NIRS data from the entire cortex, yielding 3-D depth-discriminating neuroactivation.

This system uses precise event marker triggering. A real-time data streaming option is available for BCI/neurofeedback applications.



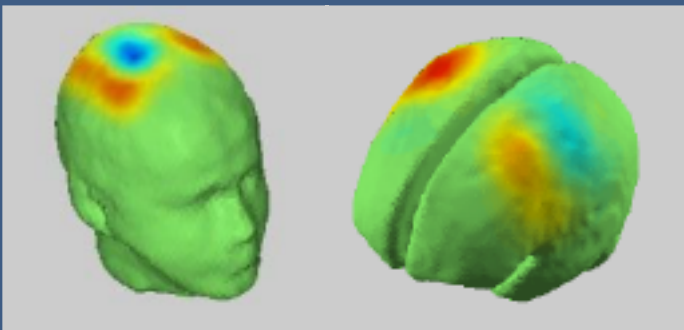
NIRx instrument systems and software are not FDA approved and not intended to support clinical diagnostic-treatment decisions. Instead, our products are designed to support scientific investigative studies that have been IRB approved.

Realtime Block Averages



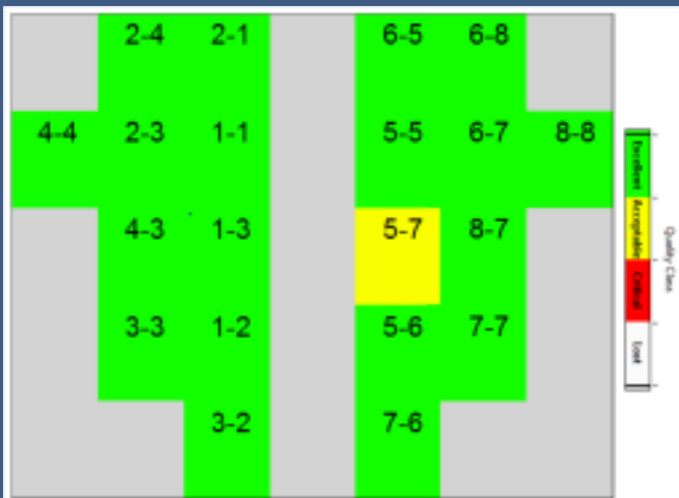
Compare events while recording

Realtime Activation Views



2D, 3D (shown) and MNI (shown)

Signal Quality-Indicator



Similar to EEG "impedance check"

NIRStar

NIRS Acquisition Software by NIRx

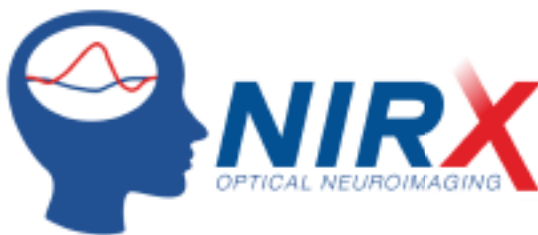
NIRScout includes the NIRStar software package, which provides a user-friendly GUI for system control including: quick automated calibration and diagnostics; signal quality checks (similar to EEG 'impedance check'); clear subject monitoring; and real-time data streams, block averages, and 2D, 3D and MNI activation displays.

NIRStar

Software Features

- Real-time multi-event block average views
- Activation shown in 2D, 3D, and MNI displays
- Includes built-in presentation software: NIRStim
- Automated hardware diagnostics
- BCI/Neurofeedback - real-time processing
- Create and load flexible sensor configurations
- Online signal-quality monitoring
- 3D optode position registration
- Programmable source-illumination pattern
- Hyperscanning: Multi-subject experiments
- Easy export to nirsLAB
- Open data format

NIRStar
nirs acquisition software by nirx



Enhancing
New Dimensions in Neuroimaging

NIRSport Technical Specifications

Maximum Sources	8 (up to 16 in tandem configuration)
Maximum Detectors	8 (up to 16 in tandem configuration)
Maximum Data Channel Streams	64 (up to 128 in tandem configuration)
Sampling Rate	2.5Hz - 62.5Hz
Source Illumination Type	LED
Source Wavelengths	760nm & 850nm
Key Measurement Features	Time multiplexing and 10^5 dynamic gain state switching
Detector Dynamic Range & Sensitivity	60 dBopt; <1 pW
Detection Sensor	Si Photodiode
Trigger/Event Connection	4-bit TTL Input
Data Acquisition Software	NIRStar (Included)
Topography Software	nirsLAB (Included)
Tomography Software	NAVI (Included)
Headgear	NIRScaps: Fully-customizable, fits all age ranges. Multi-modal (Included)
BCI/Neurofeedback	Optional Module for NIRStar
Multi-modal Compatibility	EEG, tDCS, Eye-tracking, Motion-tracking w/ module: fMRI, TMS
Included Accessories	NIRScaps, Backpack, Carrying Case, Trigger Cable, Tablet PC, System/Tablet Baseplate
Optional Accessories	Remote-Control Trigger, Active Trigger Splitter, fMRI/TMS Modules, Flat-Tipped Probes, Blunt-Tipped Probes, Animal NIRS Module, BCI/Neurofeedback Module
Hyperscanning Configuration	Up to 2 separate bi-lateral 8-source/8-detector arrays for two subjects
Multi-distance/Short-distance Probe Arrays	Yes
3D Depth Discrimination?	Yes
Phase and Spectroscopic Technique	Single Phase, Continuous Wave
Temperature Range	10C to 40C (Operating), -15C to 70C (Storage)
Humidity	20% - 80% Relative Humidity Non-condensing
Power Voltage and Consumption	15 - 21 VAC (50 - 60Hz); 39VA Max Consumption
Dimensions (WxHxL) and Weight	105mm x 170mm x 40mm; 660g