NIRX
OPTICAL NEUROIMAGING


# NIRSport 2

***Portable, Whole-Head, High-Density fNIRS***

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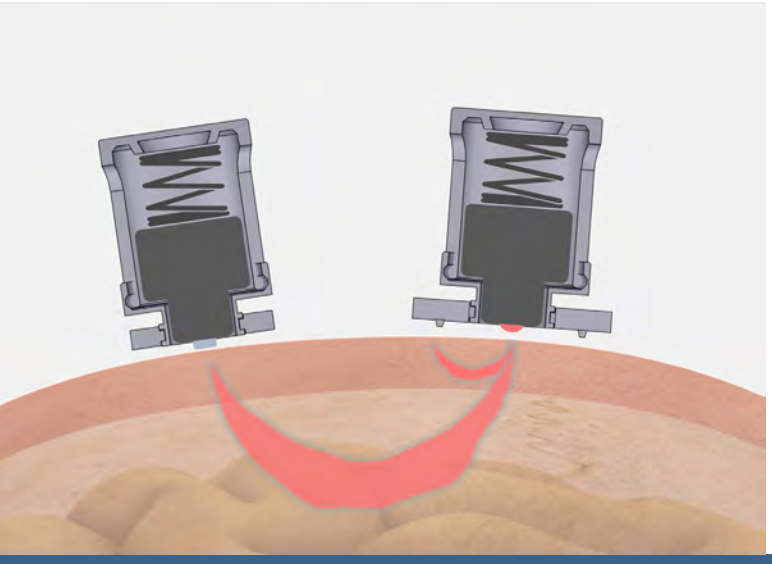
*Utilizing unique properties of light, Functional Near-Infrared Spectroscopy (fNIRS) forms a non-invasive neuroimaging technique that allows real-time assessment of hemodynamic neuroactivation in almost any environment. Specialized optical sources and high-sensitivity detectors create user-definable measurement channels over any cortical area. Changes in oxy-, deoxy- and total hemoglobin levels are computed and plotted on a cortex model during measurement.*

## Unleash the full potential of fNIRS

Enhance your research with the NIRSport 2: The result of decades of experience and continuous development. This portable, wireless and truly whole-head, high-density instrument is here to unleash the full potential of fNIRS. The NIRSport 2 is suitable with the widest range of subject demographics: Any population can be investigated with expedited setup time and maximum comfort. NIRx development experts and technical support consultants are aware of obstacles and how to overcome them. Whether your experimental setup includes movement, natural light, or sensitive subjects, the NIRx platform offers a solution that allows you to make an impact with your research.



## Data quality that is second to none

Fast setup time and reliable, high-quality data are crucial for the positive outcome of any experiment. NIRx provides dedicated solutions for faster setup time, even from densily haired regions, and delivers data quality that is second to none by using only the best components and offering extensive data-validation before every single measurement.

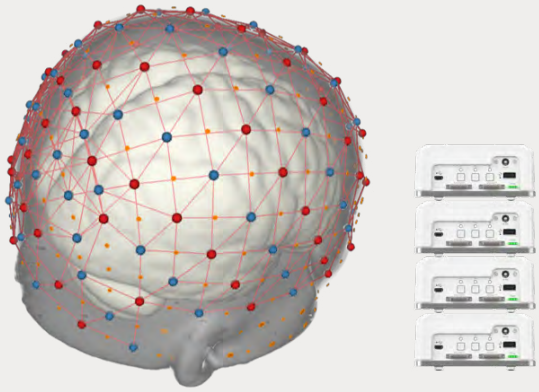
To further ensure uncontamined signals, integrate our state-of-the-art short-distance detectors in your NIRSport 2 setup. Creating short channels allows to filter extracerebral components from the fNIRS signal, paving the way for more reliable and meaningful results.

## Highlights

- Studies of functional activation and connectivity during tasks and resting-state
- Simultaneous multi-subject measurements (hyperscanning)
- Real-time data processing, Brain Computer Interface and Neurofeedback
- Measurements on all subject types, ranging from neonates and infants to children, adults and elderly
- Seamless integration with other neuroimaging modailities

## Simple, intuitive, and exciting

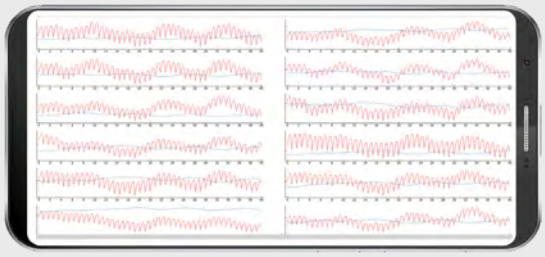
The powerful combination of our specialized software packages offers an MNI head-model for user-friendly montage design. Creating a high-density montage for one or multiple devices is now simple, intuitive, and exciting. During acquisition hemodynamic changes are visualized in real time on the head model.

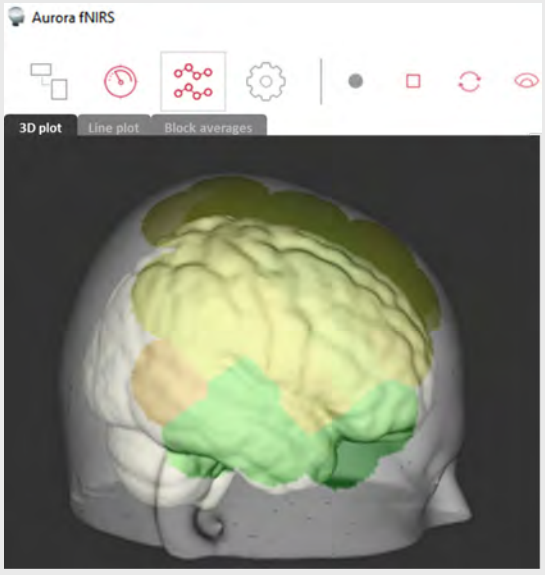


## The brand-new Aurora fNIRS software package complements the NIRSport 2

Aurora fNIRS is intuitive, easy-to-use, and compatible with any platform (Windows, OS X, Linux) and any device (Laptop, Tablet, Smartphone). Aurora fNIRS will connect with Wi-Fi or USB to your NIRSport 2 device(s) and a complete configuration takes only a few clicks.

Aurora fNIRS ensures signal quality is optimal with automated signal optimization and diagnostics. During data acquisition or real-time data streams, block averages and high-end whole-head visualizations are immediately available. With the integrated Lab Streaming Layer (LSL) protocol, Aurora fNIRS and the NIRSport 2 are ready for multi-modal measurements and real-time processing.






## Make an impact with the NIRSport 2

- Motor Execution, Rehabilitation, Pain Research and Movement-studies
- Cognition, Emotion, Social Interaction and Speech and Language Investigations
- Clinical Neurology, Patient Monitoring, Stroke and Trauma recovery
- Translational research, naturalistic environments, real-world applications

New to fNIRS? NIRx is proud to offer superior customer support. Besides extensive literature and video recordings exclusively available to our users, we offer remote support sessions, on-site visits and frequently organize workshops.

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.

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## NIRSport 2 Technical Specifications

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|---|---|
| Maximum Number of Sources | 16 (up to 64 in multi-device mode) |
| Maximum Number of Detectors | 16 (up to 64 in multi-device mode) |
| Source Wavelengths | 760 nm & 850 nm |
| Samping rate | Up to 70 - 240 Hz |
| Detection Sensor | Si Photodiode or APD |
| Operation mode | USB, Wi-Fi or stand-alone (no computer, tablet or smartphone required) |
| Maximum Number of Channels | 40-60 ( more than100 in multi-device mode) |
| Multi-device mode | Daisy chain up to 4 devices for a maximum of 64 sources and 64 detectors |
| Detector Dynamic Range & Sensitivity | Dynamic Range: 50 dBopt<br>Sensitivity: <1 pW / < 0.1 pW for APDs |
| Event Synchronization | Wireless (LSL), Cable (8 bit TTL input) |
| Key Measurement Features | Time multiplexing and/or frequency encoded<br>>80 dBopt measurement dynamic range<br>Includes 6 DOF accelerometer for each bundle of 8 detectors |
| Data Acquisition Software | Aurora fNIRS |
| Main Software Features | Aurora fNIRS is a new and easy to use cross-platform NIRSport2 acquisition software. Easily configure your instrument, design a montage, stream data over LSL if needed, visualize hemoglobin data on 3D MNI head models and export your data into the .nirs format. |
| Headgear | NIRScaps: Fully-customizable, fits all age ranges. Multi-modal, Spring-loaded |
| Included Accessories | NIRScaps, Dedicated Body-Pack , Carrying Case, Trigger Cable |
| Multi-modal Compatibility | EEG, tDCS, Eye-tracking, Motion-tracking<br>Data stream over LSL |
| Short-Channels Support | 8mm short channel module available, hardware and software support |
| Hyperscanning Configurations | Up to 2 separate bi-lateral 8-source/8-detector arrays for two subjects (32-source/32-detector arrays in multi-device mode) |
| Spectroscopic Technique | Continuous Wave |
| Temperature Range | 10° C to 40° C (Operating), -15° C to 70° C (Storage) |
| Battery capacity | 5-6 hours |
| Power Voltage and Consumption | Charger: 100-240 Vac 50/60 Hz Max. 1.7 A<br>Device: 18-24 Vdc Max. 35 W |
| Dimensions (WxHxL) and Weight | 162 mm x 125 mm x 60 mm; 900g |
| Support | NIRx provides extensive technical and scientific support, and access to our comprehensive support platform, the NIRx Help Center (nirx.net/nirx-help-center). |