BIOPAC® Systems, Inc.
Registered to ISO 9001:2015

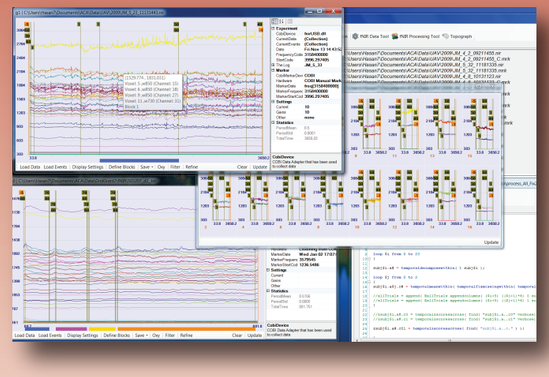
fNIR DEVICES

fNIRSoft STAND-ALONE SOFTWARE

Use fNIRSoft (fS) to record, process, analyze and visualize functional near infrared (fNIR) spectroscopy signals. Easy to use GUI and wizard style tools for…

Temporal Visualization
Time Series Analysis
Topography

Data Management
Scripting Engine
Signal Analysis



fS Viewer: Temporal Visualization and Time Series Analysis Tools

- *Temporal visualization of fNIR Data*
- *Customizable display graphs by data type (voxel/channel/wavelength), sensor geometry, time period and multiple color palettes*
- *User interface for time series data analysis*
- *Inspect and manage optodes/channels/time periods visually*
- *Automated and user-selectable co-registration of all event marker information*
- *Event related and epoch analysis with customizable block definitions*
- *Customizable hemodynamic response calculation applying Modified Beer Lambert Law (MBLL) for oxy-Hb, deoxy-Hb, oxy and total Hb*
- *Basic Noise reduction, pre-processing (FIR Filter Design and application)*
- *Pro Automated signal quality inspection—eliminate saturated and problematic channels*
- *Pro Advanced signal processing algorithms for feature extraction*
- *Pro Motion artifact removal algorithms*

fS Viewer: Topograph Tool

- *Spatial visualization of fNIR Data*
- *Pro Brain mapping and visualization over brain surface image*
- *Pro Left/right/dorsal view with thresholding, animation (temporal changes) or group/subject/condition average*
- *Pro Export visualization: time-based for animation, threshold-based for evaluation*

fS Data Management: Export and Import Data Tools

- *Select and export time-series data in various formats through a wizard style tool*
- *Easily customizable template, import various types of text data through a wizard*
- *Save/Send or Load/share data in native binary format*

fS Scripting Engine: Built-in Command Line Interface

- *fS Scripting Language (functional and data-oriented)*
- *Editor with syntax highlighting and quick access tools for command list and run toolbar*
- *History of commands and log operations in command pane (save for future reference)*
- *Store procedures in script files and re-apply procedures to previously saved data blocks*

fS Signal Analysis: Data Processing Tools

- *Pro Apply Temporal Processing actions (Averaging/Feature Extraction/Signal Conditioning)*
- *Pro Apply Spatial Processing actions (Averaging/Feature Extraction/Signal Conditioning)*
- *Pro Apply Cell-by-cell Processing actions (Averaging/Signal Conditioning)*
- *Pro Apply common statistical comparison and correlation*
- *Pro Apply advanced Modified Beer Lambert Law*

REVIEW fNIR CITATIONS ONLINE

BIOPAC® Systems, Inc.

fNIR IMAGING

Affordable, Portable Cognitive Assessment

Continuous Wave fNIR Spectroscopy

Wired & Wireless Solutions

Easy Setup ... Comfortable ... Noninvasive

Request a demo!

WWW.BIOPAC.COM

BIOPAC Systems, Inc.

ASSESS COGNITIVE ACTIVITY IN REAL-LIFE SITUATIONS

Complete fNIR Systems for Functional Brain Imaging

fNIR optical imaging eliminates many of the drawbacks of fMRI

Cognitive Function Assessment

- Safe & Noninvasive
- Comfortable sensors—adult, pediatric, or split placement
- Record simultaneous EEG
- Affordable
- Fast & Efficient Setup
- Real-time display
- Portable—use in lab or field studies
- Avoids claustrophobia issues
- No special MR considerations
- Synchronize with other data or video

fNIR technology measures hemodynamic response and neural activity of human subjects by providing researchers greater flexibility for study design, including working within complex lab environments and operating in non-traditional lab locations for field studies.

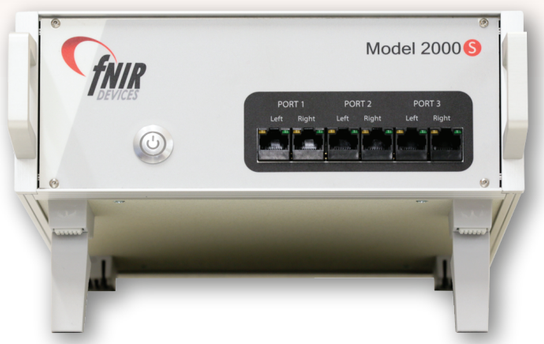
Subjects wear an fNIR sensor on the forehead that detects oxygen levels and provides real-time values for oxy-hemoglobin and deoxygenated hemoglobin. It provides a continuous and real-time display of the oxygen changes as the subject performs different tasks. Subjects can sit in front of a computer and take tests, perform tasks, or receive stimulation allowing researchers to quantitatively assess brain functions such as attention, memory, planning, and problem solving.

fNIR DEVICES

New!

fNIR 2000 Functional Brain Imaging Systems

- ***Up to 54 channels***
- ***Lightweight & Comfortable***
- ***Short prep time***
- ***Up to 3 Simultaneous Subjects***
- ***New lower price***



Interface the fNIR hardware with a BIOPAC MP System to simultaneously record physiological data and synchronize to a variety of stimulus presentation systems including virtual reality, eye trackers, video, and observational data.

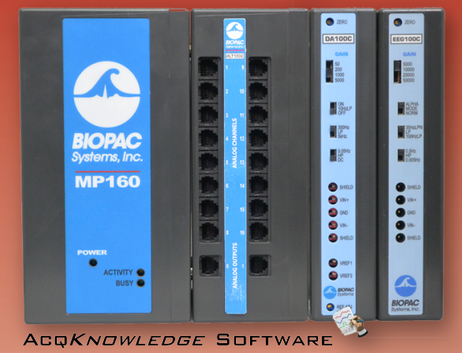
Use the MP160 System with a wide array of amplifiers and transducers, including wireless BioNomadix. AcqKnowledge provides automated analysis tools for ERP, ensemble averaging, and more!

fNIR studies have been published for a wide range of applications, including Brain Computer Interface, Human Performance Assessment, Neuro-rehabilitation, and Pediatric Pain Assessment.

For a detailed subject assessment, combine fNIR data with other physiological signals such as ECG, EEG, respiration, cardiac output, blood pressure, electrodermal activity and stimulus response markers.

Complete Optical Brain Imaging Solutions

- *Hemodynamic response & neural activity in the prefrontal cortex*
- *New 2000 Imager Series provides up to 54 channels and improved features.*
- *Real-time oxy-Hb and deoxy-HB values*
- *Comfortable sensors — adult or pediatric*
- *Synchronize with physiological variables with a BIOPAC Research System — ECG, EEG, RESP, dZ/dt, BP, EDA, etc.*
- *Trigger Acquisition & Record Digital Triggers*



ACQKNOWLEDGE SOFTWARE

Synchronize with other systems for a complete assessment!

- BIOPAC Research Systems for physiology monitoring
- B-Alert X10 Wireless EEG
- Subject Monitoring — frame-by-frame video
- Stimulus Presentation — E-Prime, SuperLab, etc
- Eye Tracking
- Observational Behavioral Data

The fNIR device provides relative change in hemoglobin levels, calculated using a modified Beer-Lambert law. The powerful fNIR spectroscopy imaging tool measures NIR light absorbance in blood of hemoglobin with and without oxygen and provides information about ongoing brain activity similar to functional MRI studies—without the expense or hassle!

WATCH VIDEOS ONLINE **WWW.BIOPAC.COM**