

**MEDELOPT® FUNCTIONAL NEUROIMAGING SYSTEMS—FNIRS WITH EEG SYSTEMS**

**MOBILITY**

- MOBIL 8-8
- MOBIL 8-8 EEG
- MOBIL 8-16 EEG

**INFINITY**

- INFIN 16-16
- INFIN 16-16 EEG
- INFIN 16-32 EEG

**TANDEM**

- TAND 8-8
- TAND 8-16

**VR**

- VR 8-8
- VR 8-8 EEG

**ACCESSORIES (ADAPTER KITS & TRIGGERS)**

- MEDEL MOBIL PK
- MOBIL TRIG
- TRIG BOX USB
- VR ACC QUEST 2



MedelOpt® research devices provide full integration of functional nearinfrared spectrography (fNIRS) and electroencephalogram (EEG) modalities in a wearable, self-contained headset. The unique design, developed by researchers for researchers, blends bimodality and flexi-modularity in an adaptable and self-contained system that supports a wide range of research possibilities.

**The MedelOpt® line consists of four product categories: Mobility, Infinity, Tandem, and VR.**

All four categories support the following features:

- Continuous wave fNIRS technology
- Emitter/detector distances adjust from 20 to 55 mm—choose the distances and depth of channels
- Emitters/detectors can be added to headset to increase channel count
- Headset adapts to a range of head sizes (no need to purchase additional headsets)
- Sampling frequencies of 128 Hz on detectors and up to 32 Hz for emitters
- Fully integrated 8 electrode EEG with 512 Hz sampling frequency

**fNIRS + EEG Advantage**

fNIRS technology measures changes in oxygenation and hemodynamic response while EEG signals measure electrical neural activity. While fNIRS offers a higher degree of spatial resolution than EEG, EEG provides superior temporal resolution over fNIRS. MedelOpt® combines the advantages of both signals. The simultaneous analysis of various neural and vascular components by EEG in tandem with fNIRS makes it possible to see the mechanisms involved and their interactions by a multimodal, multidimensional approach. Additionally, this simultaneous approach combines EEG’s high temporal resolution with the high spatial resolution of fNIRS.

## PRODUCT CATEGORIES:

### MedelOpt® Mobility

MedelOpt® Mobility headsets allow high-density mapping of EEG and fNIRS signals while study participants move freely and participate in physical exercise. Mobility wireless headset units can record up to 128 channels with unlimited range through WiFi connectivity. The Mobility line includes the following three models, all of which are designed for applications that require the study participant to have freedom of movement:

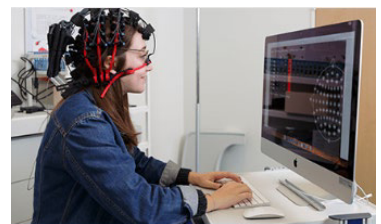
- MOBIL 8-8
- MOBIL 8-8 EEG
- MOBIL 8-16 EEG



### MedelOpt® Infinity

MedelOpt® Infinity headsets provide whole-brain mapping with up to 512 channels recording from up to 16 emitters and 32 detectors, allowing custom advanced montages at variable depths. Infinity line includes the following:

- INFIN 16-16
- INFIN 16-16 EEG
- INFIN 16-32 EEG



### MedelOpt® Tandem

MedelOpt® Tandem Systems provide two (2) headsets for synchronized acquisitions, hyperscanning, and social interactions. MedelOpt® Tandem's dual-headset design and high-density hyperscanning from 256 to 1024 channels make it ideal for brain synchronization studies. Tandem can be used for research applications with regions of interest from prefrontal to the cerebellum and through the parietal and lateral cortex. The Tandem line includes the following models:

- TAND 8-8 (64 theoretical channels with each headset)
- TAND 8-16 (128 theoretical channels with each headset)



### MedelOpt® VR

MedelOpt® VR Systems offer an integrated solution for Virtual Reality with NIRS or NIRS+EEG. Combining VR with fNIRS allows researchers to measure brain activity in response to simulated environments, providing insights into how the brain processes and reacts to different stimuli. Researchers can study the effects of VR on attention, memory, decision-making, and emotional response. The flexible, adaptable headset supports acquisition for up to 8 hours. Use for research applications with regions of interest from prefrontal to the cerebellum and through parietal, and lateral cortex. Integrate MedelOpt® with other physiological data from BIOPAC devices for multimodal data acquisition. VR Systems include the following models:

- VR 8-8
- VR 8-8 EEG

VR Systems include the following features:

- Virtual reality headset: Meta Quest2 + Elite Strap
- 8 emitters / 8 receivers
- 2 short channels
- If purchased: EEG
- Control ebox unit
- EIOpt Software
- Mobility Pack (MiniPC + Battery)
- Integration accessories



**MedelOpt® Mobility Pack — MEDEL MOBIL PK**

This pack provides Mini PC + Battery + USB cable to create a mobile system from an existing MedelOpt Infinity or MedelOpt Tandem system to increase the mobility range and protocol options for experiments.

The Mini PC connects to the MedelOpt electronics box and can be used with remote wireless connection (Wi-Fi) or connected to an external screen (not provided) and keyboard (not provided).

Mini PC includes the following:

- Power LED
- USB for the electronic box
- USB for optional trigger
- Micro USB for power supply
- Power button
- HDMI for screen (not included)



**MedelOpt® Triggers — TRIG BOX USB & MOBIL TRIG**

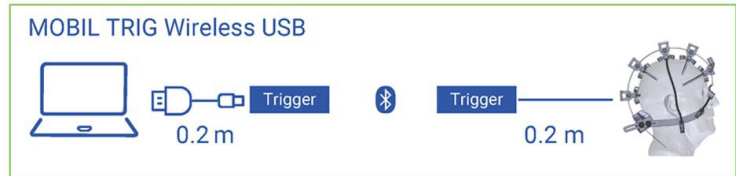
Use these optional trigger accessories to add event marking to a MedelOpt System.

**MOBIL TRIG**

Wireless USB for mobile MedelOpt systems: Mobility or MedelOpt VR.

Includes the following:

- Wireless trigger Emitter
- Wireless trigger Receiver
- 2 x USB-A to micro USB-B cable (short)

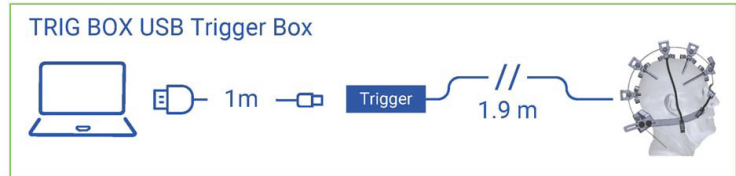


**TRIG BOX USB**

USB Trigger Box for tethered MedelOpt systems: Infinity or Tandem

Includes the following:

- MedelOpt Trigger Box Mini USB
- USB-A to mini USB-B cable



**Adapter Kit — MedelOpt® to QUEST2 HMD**

Use this kit to adapt an existing MedelOpt® Mobility 8/8 System to an existing Meta Quest 2 HMD. Remove some parts on the exoskeleton headset to fit the Meta Quest 2 HMD using the accessories.

Kit includes the following:

- VR Arch x1
- Holder 3 footprints
- Control ebox unit + HMD Holder
- Wire Protection Sleeve

Adapters also available for other HMD models—contact BIOPAC for specific need.

