

eeg systems

POWERFUL
SUPPORT TOOL
FOR BRAIN
DIAGNOSTICS
WORLDWIDE



Mitsar-EEG LTM system is the best solution for clinical epilepsy video-EEG monitoring applications.

Continuous patient video and audio capturing synchronized with EEG is available both for all models of Mitsar-EEG amplifiers and wearable SmartBCI wireless amplifier.



EEG cap

Wireless EEG amplifier

Wireless Pulse Oximeter

- Up to 2 network FullHD day/night cameras
- ZOOM and remote control the camera's position
- Automatic video and audio signal compression
- Dual monitor mode for technician/doctor comfort

Portable FullHD camera



Wall or tripod mount
Built-in microphone and IR backlight
Powered over Ethernet (PoE)
Digital ZOOM

Wall mounted FullHD camera



Night mode
PTZ remote control
Powered over Ethernet (PoE)
Optical ZOOM



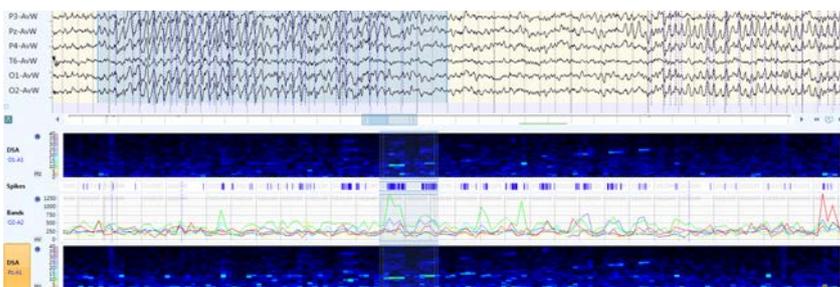


Software features

- Patient and recording management database
- EEG viewer software and data archiving solution
- Video clips creating for selected recording fragment
- Dual monitor mode for technician/doctor comfort
- Detailed event logging (event table)
- Trend graphs (aEEG, DSA, CSA, Power FFT, HRV, SpO2, ASD)

Compatible accessories

- waveguard™ electrode caps
- MCSCap electrode caps
- Cup electrodes with paste
- Subdural grid/strip electrodes
- Subdermal Needle Electrodes
- Wireless pulse oximeter



Spike Detection

The software performs automatic detection of spike, spike-wave, and bursts of fast or slow activity with quick navigation between seizure events.

Combination of DSA and spike trends allow easy determination of epileptiform-like activity.

Trend Graphs

- aEEG
- DSA
- CSA
- FFT
- HRV
- SpO2
- ASD

Export to



ambulatory eeg

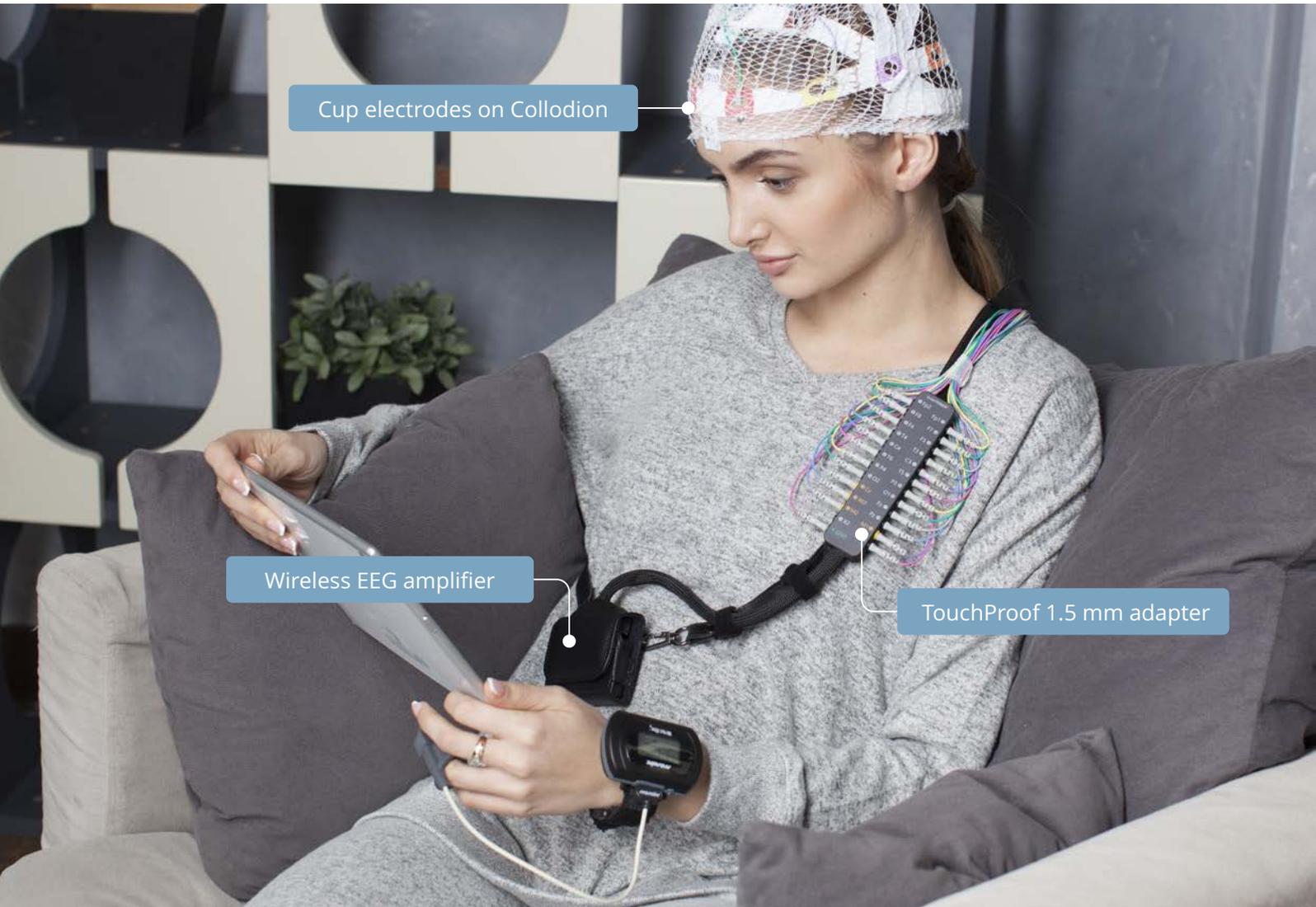
Ultra-small SmartBCI ambulatory EEG system provides accurate noise-free EEG collection, flexibility for the doctor, and better patient comfort both in the hospital and home environment.

Ambulatory EEG system includes wearable wireless Bluetooth SmartBCI amplifier ready for continuous EEG recordings.

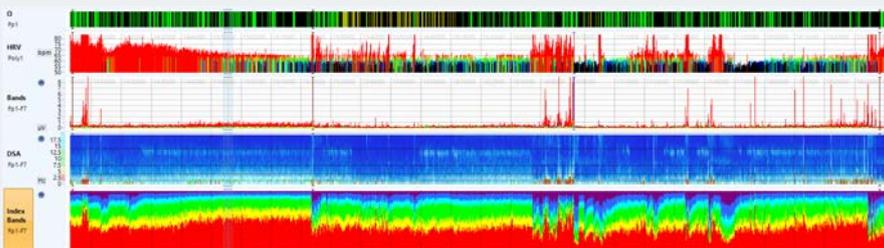
Acquisition on internal storage as well as remote monitoring and recording to the desktop or laptop of:

- EEG and ECG* signals
- Electrodes Impedances
- Patient body position
- Pulse oximetry* data

* - depends on system configuration. Changes may apply.



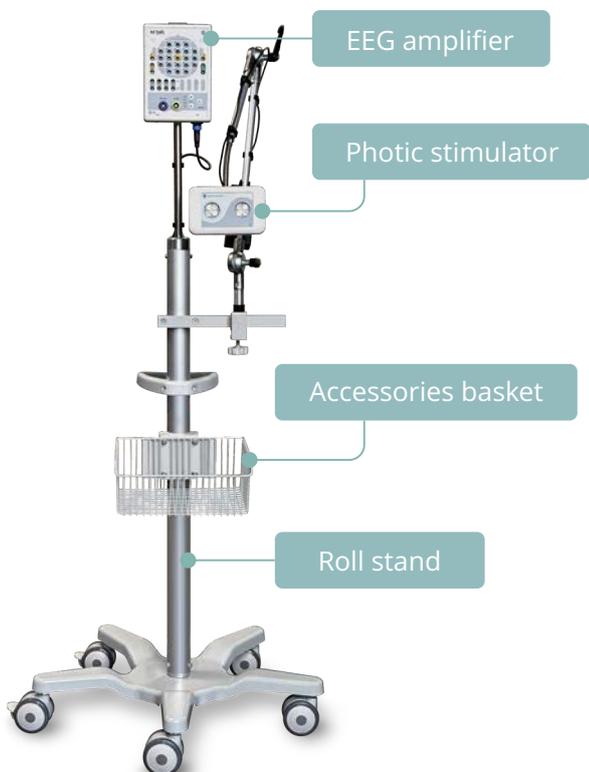
Trend Graphs



Highlights

- 24 or 32 EEG channels version
- Storage memory up to 32 Gb
- Operation on full charge up to 24 h
- Built in accelerometer





MITSAR-EEG IS MOBILE EEG SOLUTION
READY FOR CLINICAL ROUTINES

Mitsar-EEG Routine

Mitsar-EEG system for routine EEG procedures. EEG system is supplied on a rolling stand with EEG accessories basket and flexible gooseneck for photic stimulator.

- Mobile rolling stand for EEG system
- LED bright photic stimulator
- USB or wireless EEG amplifier
- Touch-proof electrodes comparable
- Connector for "10-20" EEG caps

EEG system by Mitsar is compatible with any type of modern laptop and allows you to be mobile and perform EEG investigations anywhere the need arises. All accessories and electrodes are supplied together with EEG system.

Compatible caps

MCSCap

waveguard™

Electro-Cap

Mitsar-EEG Workstation

Mobile trolley cart with adjustable high supports of dual monitors. It comes with video camera mounting and accessories basket.

It is compatible with any all-in-one PC with VESA mounting and also could be upgraded for standard CPU installation.

- Trolley cart with adjustable height
- Arms for amplifier and photic (option)
- VESA dual monitor holder
- IP camera pole mount
- CPU mount (option)
- Accessories basket



EEGStudio

Applications for EEG acquisition and post-hoc processing. EEGStudio includes patient management system, acquisition and processing modules that fit all requirements of clinical routines.

Export

EDF+/LORETA/BESA®/PERSYST®.

Patient management

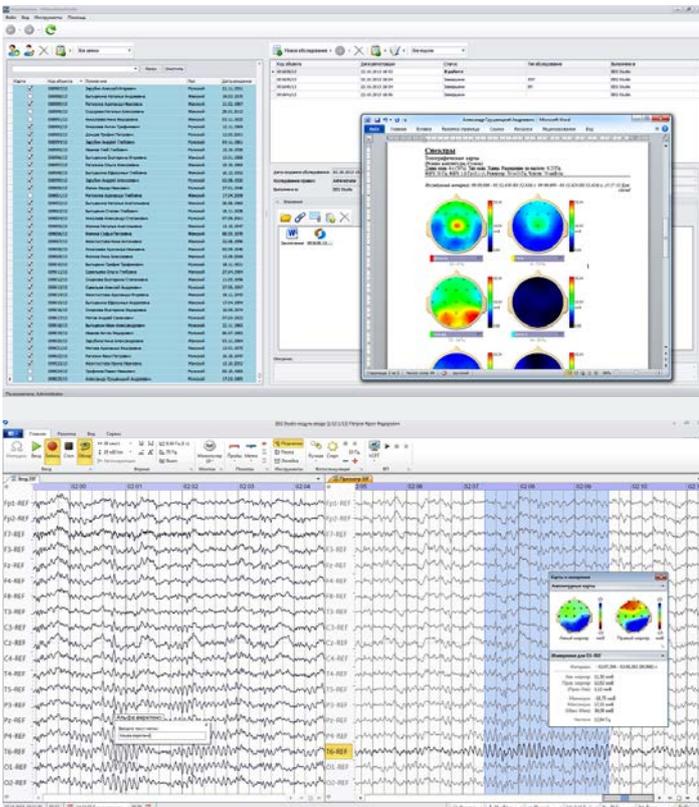
Database of patients information and recordings

- Storage and management of patient's data
- Easy search for any variables of data
- Support of different user accounts
- Access rights for doctor and technician

EEG Acquisition

Recording of EEG and other biosignal signals

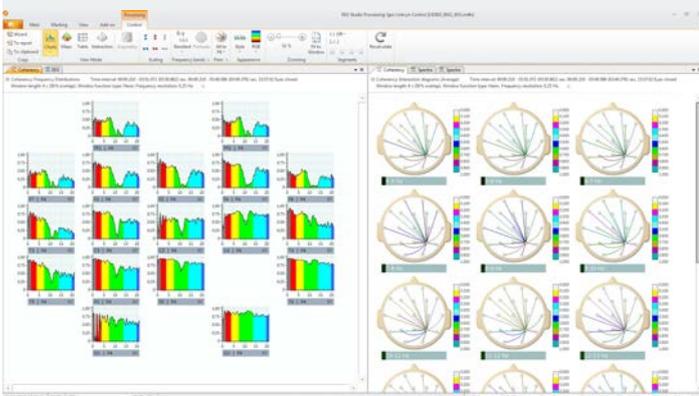
- Automatic recording scenarios
- Real time EEG re-montaging
- Doctor labels and comments
- Programs for photic stimulation
- Automatic EEG storage
- Scroll back while recording
- Acoustic stimulation programs



Montage library

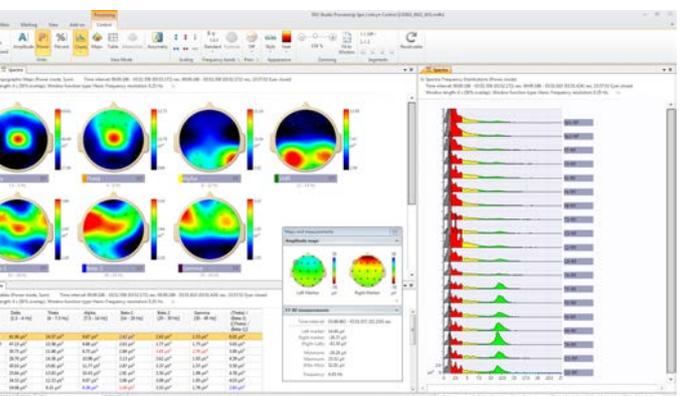
Contains number of editable world-recognized montages

- Add new or edit library montages
- Graphical preview of created montage
- Set individual parameters for any channel
- Rename and color any channel



Report creation

Make your final reports in MS Word using templates



- Doctor report creation in MS Word
- Unlimited templates for final reports
- Copying of any data into the report
- Easy printing out of EEG screen



eeg research

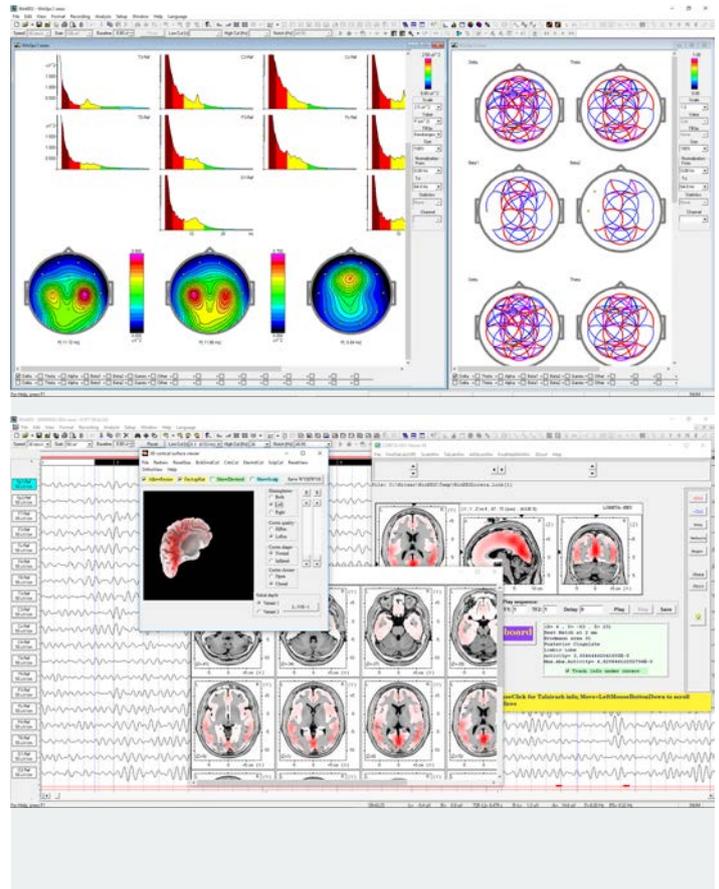
Quantitative EEG • QEEG

Research software for advanced QEEG processing provides a lot of options for post-hoc EEG processing including FFT Power Spectra with asymmetry and band rations mapping, Coherence with interaction diagrams, Independent Components Analysis and more.

Rapid re-montaging and pre-processing of raw data including artifact correction based on IC decomposition for suppression of eye blink, horizontal eye movements and cardiobalistic artifacts as well automatic search and marking of other type of events based on its amplitude frequency characteristics.

- Group analysis and grand average files
- Automatic processing of EEG files batches
- Import of EDF or EDF+ files from other systems
- Export of raw/processed data to ASCII or EDF(+)
- Full compatibility with NeuroGuide software

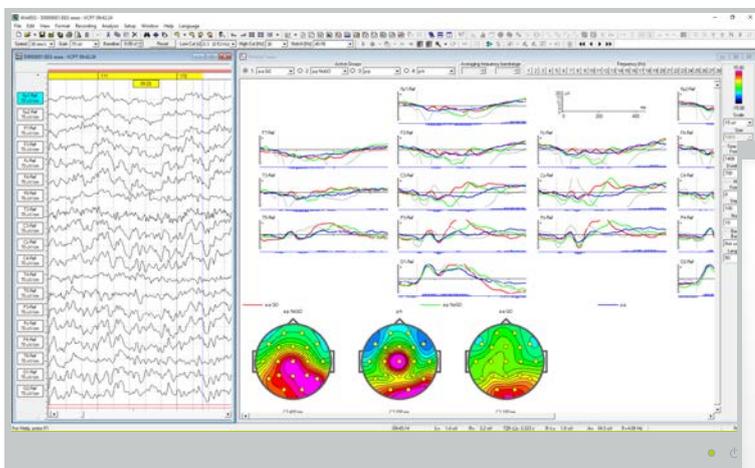
FFT Power Spectra, Coherence / interaction diagrams
LORETA and sLORETA source localization



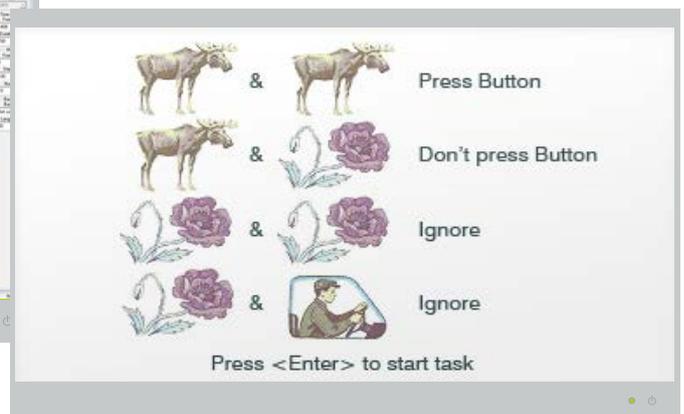
Event related potentials (ERP)

Long-latency Event-Related Potential option allows to perform a wide range of cognitive and auditory ERP tests. Our test library includes several world-recognized tests like P300, MMN, Oddball, Stroop, Emotional and other. Clinicians can create their own tests in built-in editor.

- Event-Related Potentials and Event-related De/Synchronization
- Wavelet band power and coherence computation
- Independent components analysis (ICA) of ERP's
- ERP components localization in LORETA and sLORETA
- Mapping of event-related dynamics
- Task performance calculation



Clinician's computer



Stimuli presentation computer



neurointerfaces



Neuromarketing



Peak Performance

Brain-Computer
Interface

Neurorehabilitation

EEG cap

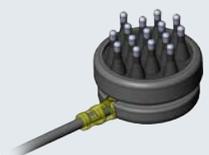
Eye tracker

SmartBCI body harness

- 24/32/64 channel wireless EEG amplifiers
- Wireless and wired synchronization options
- Public SDK for software developers
- Active DRY electrodes support
- LSL outlet and inlet
- Raw data export

Wireless EEG amplifier

SmartDRY



Active dry sensor



eeg neurofeedback

● BRAIN FITNESS

● RELAXATION

● THERAPY

EEG-based biofeedback or Neurofeedback is a technique of a self-regulation in which current parameters of brain activity (EEG) recorded from the subject's head are presented to a subject through visual, auditory, or game mode modality, while the subject is supposed voluntary or involuntary alter these parameters to reach a more efficient mode of brain functioning.

Neurofeedback has been used since the early 1970s in the treatment of developmental-behavioral and psychiatric disorders, including following diseases:

- ADHD
- Bipolar disorder
- Anxiety
- Depression
- Mood disorders
- Mental retardation
- Headaches and tinnitus
- Tics and more...

In 2012 Neurofeedback was recognized as the most effective method of treating of ADHD in children by American Pediatric Academy.

Mitsar-BFB trainer with EEGStudio software is intended to provide a visual or auditory signal corresponding to the status of a patient's physiological parameters so that the patient can control voluntarily these physiological parameters.

Mitsar-BFB could be used in the clinic, private medical practice, psychological correction rooms at schools and by scientific research institutes. It can also be used at home under the supervision of a doctor.

Feedback options



Simple bar reflecting training parameter value and reward threshold



Audio files or audio stream from any source



Any video or movie from patient favourite source

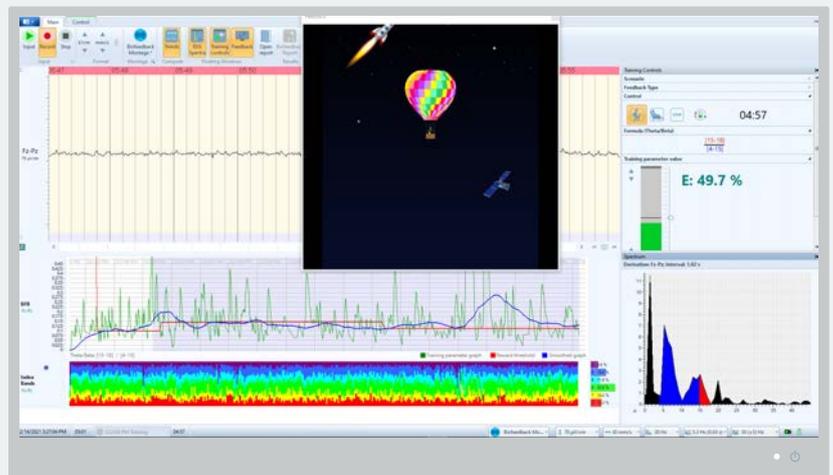


Various of simple tactical games



Mitsar-BFB Trainer

EEGStudio Neurofeedback Module



Mitsar-BFB

- 2 bipolar channels
- Bluetooth wireless interface
- Real-time impedance
- 24+ hours on single charge
- Low noise DC amplifier
- Less than 100 gram

Software highlights

- Custom protocol design
- Visual/audio/games feedback
- Training parameter curve
- DSA trend graphs
- Online EEG Spectra
- Session and course reports



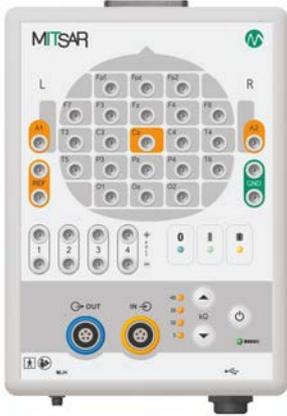
Mitsar-EEG-BT

USB

Bluetooth

24 bit

580 g



Wireless version

Bluetooth and USB interfaces

Battery or USB powered

Lite version

USB interface

USB powered

EEG channels	21
Poly channels	4
Interfaces	Bluetooth or USB
Input range	± 750 mV
Frequency band	DC(0) – 70 Hz · Bluetooth DC(0) – 500 Hz · USB
Input noise	$< 1,5$ μ V peak to peak
Sampling rate	2000 Hz
Impedance measurement	Synchronously with EEG
Power supply	USB or battery powered

Mitsar-EEG-202

USB

24 bit

550 g



Up to 41 EEG channels

USB powered

Electro-Cap compatible

EEG channels	up to 41
Poly channels	8
Interfaces	USB
Input range	± 500 mV
Frequency band	DC(0) – 500 Hz
Input noise	$< 1,5$ μ V peak to peak
Sampling rate	2000 Hz
Impedance check	Yes
Power supply	USB

SmartBCI

Bluetooth 5.0

Memory inside

70 g



Active DRY sensors

Optical trigger

Holter mode

EEG channels	24 or 32
Interfaces	Bluetooth 5.0, USB
Input range	± 700 mV
Frequency band	DC(0) – 140 Hz
Input noise	$\leq 1,5$ μ V peak to peak
Impedance measurement	1–255 k Ω
Memory inside	up to 32 Gb
Battery life	24+ h
Power supply	Rechargeable battery

SmartBCIx64

Bluetooth 5.0

Memory inside

180 g



Holter mode

Optical trigger

Wearable

EEG channels	64
Interfaces	Bluetooth 5.0, USB 3.0
Input range	± 700 mV
Frequency band	DC(0) – 140 Hz · in wireless mode DC(0) – 500 Hz · in holter mode
Input noise	$\leq 1,5$ μ V peak to peak
Impedance measurement	1–255 k Ω
Memory inside	up to 512 Gb
Battery life	24+ h
Power supply	Rechargeable battery



Our story

Founded in 1996 by four Russian engineers MITSAR Co. Ltd. has developed a number of medical grade devices and software for EEG diagnostics and neuroscience research. We offer both clinical EEG systems for all your routine needs including ambulatory EEG and video EEG monitoring as well multichannel wearable and wireless professional grade biosignal amplifiers and related advanced software for signal processing and analysis.

Since 2004 we are involved in international trade and at the moment successfully exports Mitsar-EEG and SmartBCI products to different countries in America, Europe, Middle East and Asia. Due to the great quality, flexible distributor pricing and excellent performance of hardware and software Mitsar has merited authority among its customers.

Mitsar quality management system is certified to be in compliance with the European standard for medical devices ISO 13485. Mitsar products have been classified as Class IIa devices and are in conformity with requirements of Annex I of the European council directive 93/42/EEC and are CE marked. Also Mitsar-EEG has been issued the 510K (K143233) from the US FDA to be marketed and distributed on the territory of US.

Our main products

- Mitsar-EEG clinical electroencephalographs
- Long-term Video EEG monitoring systems
- Ambulatory EEG solutions
- Electrocorticography (ECoG)
- Wearable wireless EEG system for research
- Systems for Event Related potential studies
- Neurofeedback / Neurorehabilitation

Great combination of modern technology and world recognized approach for EEG data acquisition and processing.

Our wearable and wireless EEG products is perfect solution for clinical routines as well as research grade application. They provide excellent signal quality both with classic electrodes and active dry sensors and give freedom for the patient and doctor with its wireless technology.

Combined with full advanced functioning software package SmartBCI and Mitsar-EEG systems will meet all your EEG lab needs.

We are looking for

- Medical equipment distributors worldwide
- Healthcare professionals (neurologists)
- Universities and research labs



Mitsar Co. Ltd.

Optikov str. 4-2A BC "LAHTA"
St. Petersburg
Russian Federation 197374

Tel +7 812 297 7274
export@mitsar-eeg.ru
www.mitsar-eeg.com