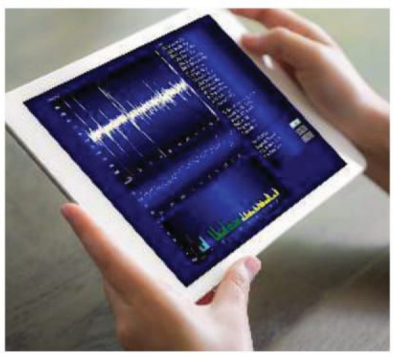
ScienceBeam is a forefront technology provider of system for clinics and research labs

Research, clinics and educational **products**



Research products

Research Products

eLab / ePulse

The fantastic data aquisition system for recording the single-unit action potentials (Spikes), Local Field Potential (LFP) and EEG. ePuls is a professional mixer in designing stimulus patterns.

eWave 2/4/8/16

Strong Neuro/Biofeedback System

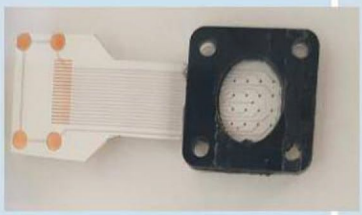
Up to 8 channels with 24-bit resolution

Precise Data Recording(ks/s)

Wireless transferring data

eWave + 24/32/64/128

Up to 128 channels EXG signals recording remarkable device for EEG/ERP recording and BCI researches Suitable for human and animal electrophysiology recording Coming with a flexible silicone cap.



Micro array electrodes

channels array electrode placed in less than 10 mm width

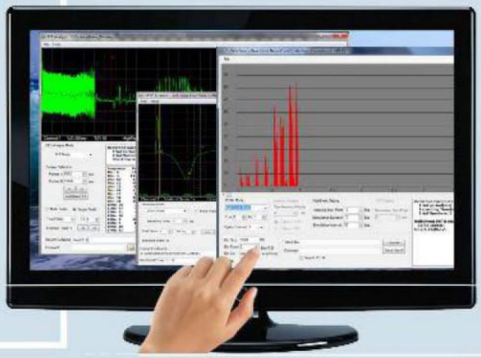
Suitable for ECG/ECoG signals recordings

Compatible with eWave and eLab

eProbe

A powerful and accurate software for recording, visualization and processing a variety of electro-physiology signals

Compatible with many games and videos for neurofeedback and biofeedback therapy.



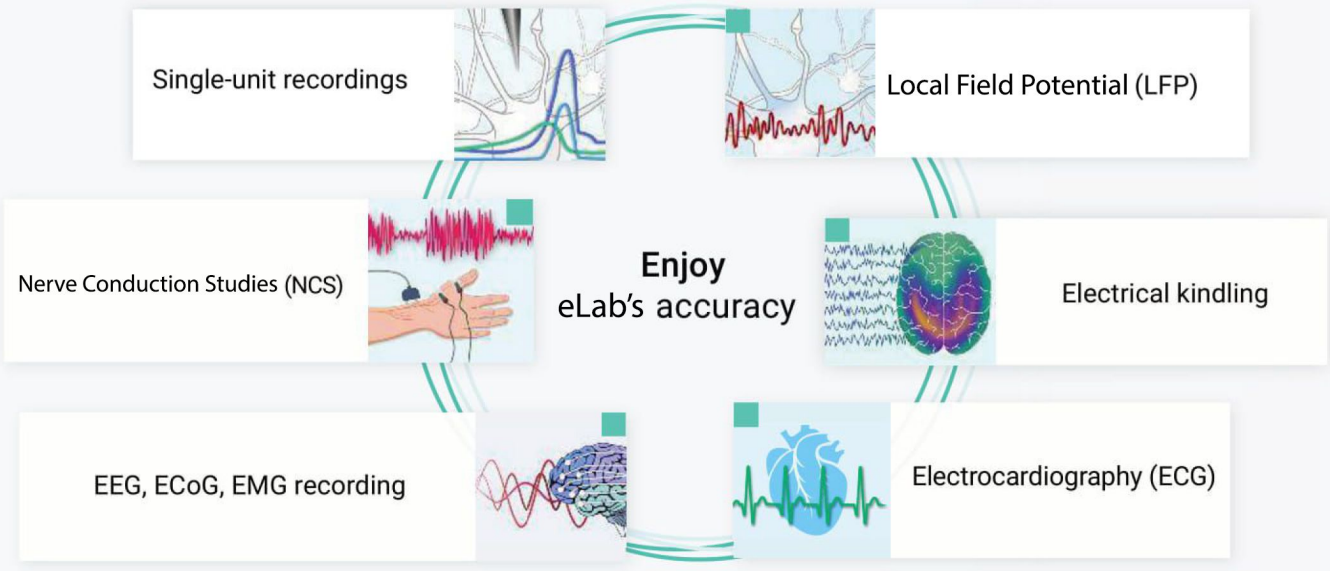
eLab

Recording of singl-unit, LFP
and EXG (EEG/ECG/ECoG/EMG) signals

More than **25** devices in **one** portable system

Features :

- Digital data acquisition
- Online and offline spike sorting for spike clustering
- 2/4/8 analog input channels (24bits, 50KS/S)
- 8 digital Input and outputs channels
- 4 channels pulse generator
- Isolated constant current simulator (4mA/20mA)
- Optional mechanical stimulus controller
- Operating voltage: 5V DC
- Dimensions (w x h x d): 56 x 125 x 20 mm
- Weight 80 gr

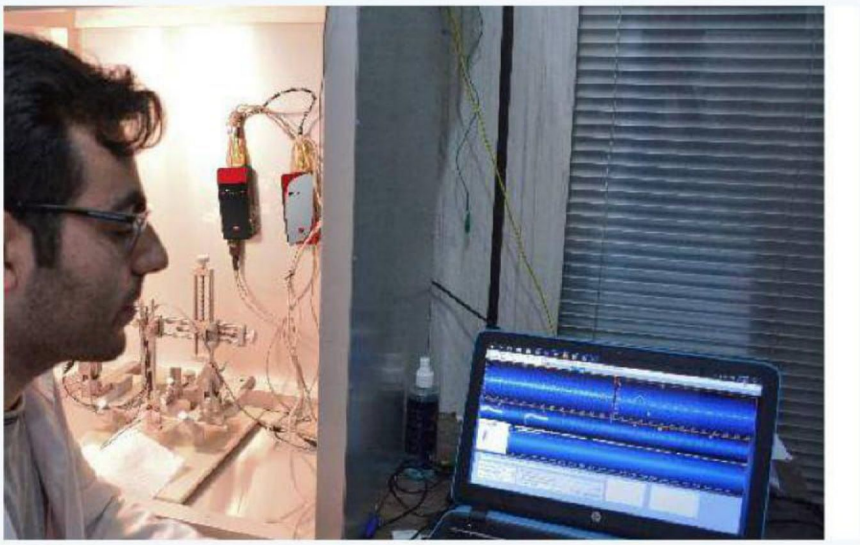


All in one

A complete electrophysiology lab

Empowered with the Innovative and precise amplifier

Applicable to varietyof animal subjects



Simultaneously LFP, EEG and spike recording

The wondeful system for simultaneously recording EEG/LFP and single-unit signals from stream of only electrode.

eWave+

Fantastic EEG/ERPs recording system

Specification:

- A fantastic system for recording a wide range of physiological signals
- With 24/32/64/128 EXG(EEG/EMG/EOG) recording channels
- Suitable for research purposes
- High precision and very low noise differential amplifiers
- bits resolution Analog to Digital Converter (ADC) with 1ks/s sampling rate
- Online and offline data visualization and analysis software
- Precise visual stimulus presentation module, suitable for ERP researches
- Experimental paradigm managment module
- wireless technology
- Rechargeable battery
- low weight

What is ERP ?

Event-Related Potentials (ERP) are described as changes in electrocortical activity recorded from the scalp and are evoked by an external or internal event.

Researches based on ERP are established tools to address various questions in psychology, psychiatry and neuroscience

The best solution for BCI researches

The Harmony of Science and Precision

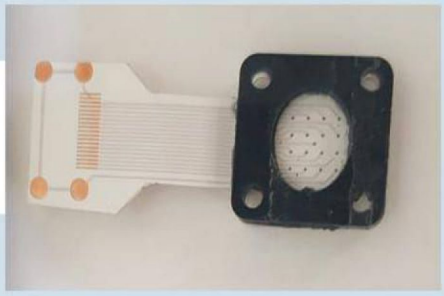
Say hello to the future

Brain Machine Interface (BMI) & Brain computer Interface (BCI)

Brain-machine interface

BCI uses brain activity to command, control, actuate and communicate with the world directly through brain integration with peripheral devices and systems. BCIs are often directed at researching, mapping, assisting, augmenting, or repairing human cognitive or sensory-motor functions. You can use the EEG or EMG signals recorded by eWave to control remote devices. Those can be guided by several parameters relating to some online bio-signals features.

Micro array electrode



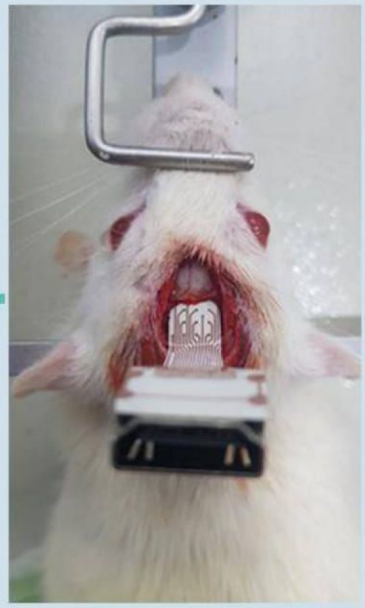
Features :

16 channels signal recording
1 selectable channel for stimulation
Small size array (less than 10 mm)
Suitable for ECG/ECoG signals recording
Compatible with eWave and eLab

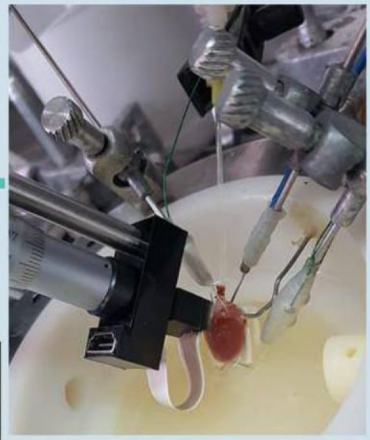
Applications

Neuronal studies
Cardiac tissue studies
Muscular tissue studies
Tissue engineering studies
Brain slice field potential recording
Bio-chamber recordings

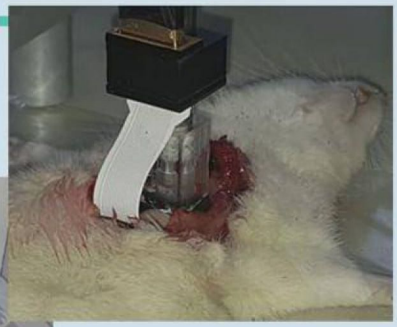
16 channels ECOG recording



16 channels In-vitro ECG recording



16 channels In-vivo ECG recording



eProbe

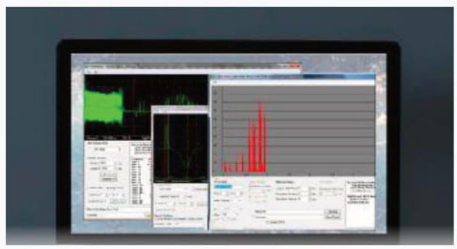
ePrope software provides all you need to analyze the neu-ro-electrophysiological signals

Adjustable scopes and tools

- Monitoring signals in time and frequency domains simultaneously.
- Many independent scopes corresponing to visualization and analysis.

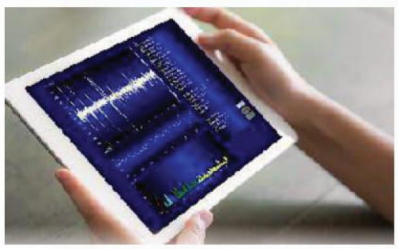
Single unit (Spike) analysis

- 8 channels PSTH, frequency and phase domain analysis
- Measurement of delay and frequency response, maximum, minimum, average standard deviation and neuronal responses



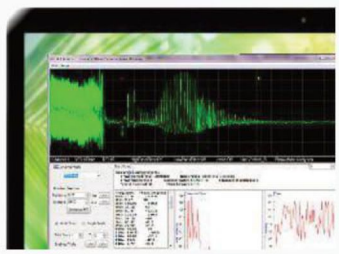
EEG signal analysis

- The online fast fourier transform (FFT) of the desired frequency bands
- Adjustable panel showing the raw signals of each channel and their corresponding FFT power.



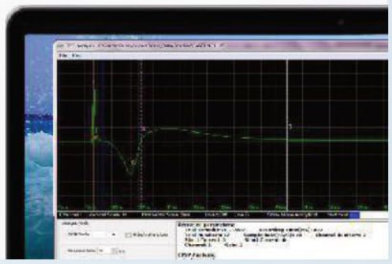
Kindling analysis

- Analysis of seizure EEG in kindled epileptic subjects
- Control panel for designing electrical stimulus pattern
- Experimental protocols including single and multi-trial.
- single and multi protocol.



Field potential signal analysis

- Displaying signals on high performance online and offline scopes
- Four LPF analysis modes (Standard, EPSP, Volley Potential (VP) + (EPSP,PS mode))
- Trial trimming and signal inverting
- Hyperpolarization, EPSP, PS, VP single and multi-trial Analysis



Clinical products

Train your brain, Clean Your mind

Enjoy your life

Clinical Products

eWave 2/4/8

- Strong Neurofeeback/Biofeedback System
- Up to 8 channels with 24-bit resolution
- Precise data recording (1ks/s)
- Wireless transferring data

eWave 24/32/64/128

- A fantastic device for QEEG and Brain Mapping
- Up to 128 channels , 24 bit analog to digital converters
- Precise data recording (1ks/s)
- Wireless transferring data
- Lightweight, portable and easy to use

BioSense

- eCap (flexible and standard cap for EEG recording)
- Ideal Galvanic Skin Response (GSR) sensor
- Wearable respiration sensor
- Temperature sensor
- Blood Volume Pulse (BVP) sensor
- Flexible cable and connectors for EXG recording
- eJoy (toy model of Neurofeedback therapy)

eLife

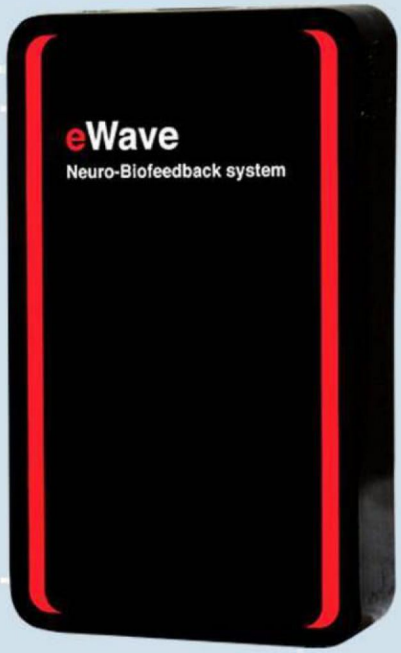
The accurate and flexible software for bio-signals recording and analyzing bio-signals for neuro/biofeedback therapy.

Compatible with many games and videos for neurofeedback and Biofeedback therapy.

The Harmony of Science and Precision

eWave Provides you a rich setup to train your brain in order to increase your brain power

eWave Specification :



Data Acquisition :

Technology: ARM Cortex 32

Processor: 160 MHz

Data Connection: USB & bluetooth wireless, 1 Mb/s, up to 10 meters

Analog to Digital Converter :

Number of channels: 2/4/8

ADC resolution : 24 bit

Linearity error : 7.6 ppm (maximum)

Sample rate : 1000 samples per second per channel

BioAmplifier :

Amplifier type: Differential; DC

Gain: 50

Common mode rejection ratio: 75 dB @ 500 Hz

Low cut filter: DC

High cut filter: 500 Hz

Input voltage range: 2.5 V

Maximum analog input voltage : 2.5 V

Input impedance : 1000 Giga ohm

Input leakage current : 60 pA (typical)

Input capacitance: 8 pf

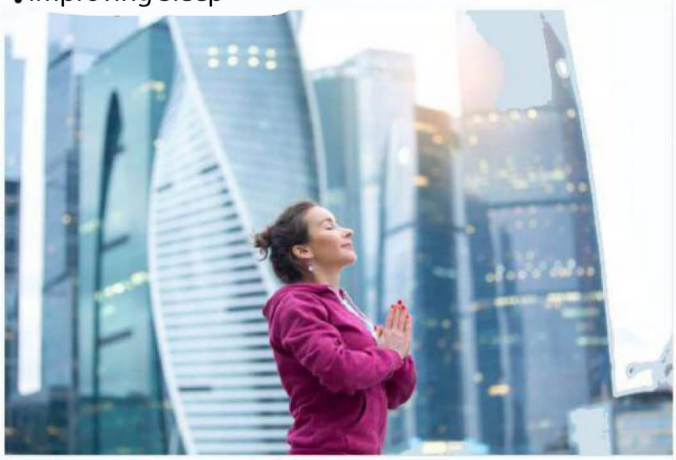
Neurofeedback & Biofeedback

What is Neurofeedback?

NeuroFeedBack is a safe training way for brain to self-regulate itself. It improves the functionality of the brain by decreasing the power of some undesirable frequency bands and increasing the desired ones. It gives feedback to clients by giving them a reward such as playing a movie or game. Receiving appropriate feedback, the automatic brain's self-regulating organ is trained to modify itself.

Neurofeedback is useful for :

- Learning improvement
- Memory Enhancement
- Language Improvement
- Focus enhancement
- Achieving peak levels of academic performance
- Maximizing work and sport performanes
- Attention deficits (ADD/ADHD)
- Improving Sleep
- Stress
- Anxiety
- Autism
- Depression
- Migraine
- Addiction
- Enuresis
- Obsession
- Phobia



eWave + 24/32/64/128

A fantastic device for QEEG and Brain Mapping

The best solution for neuroscience researches : EXG and ERP Recording

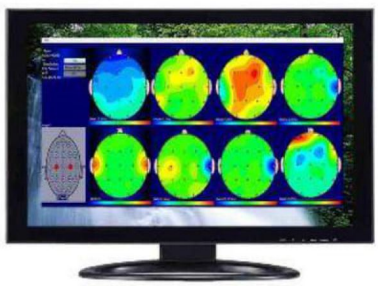
Specification

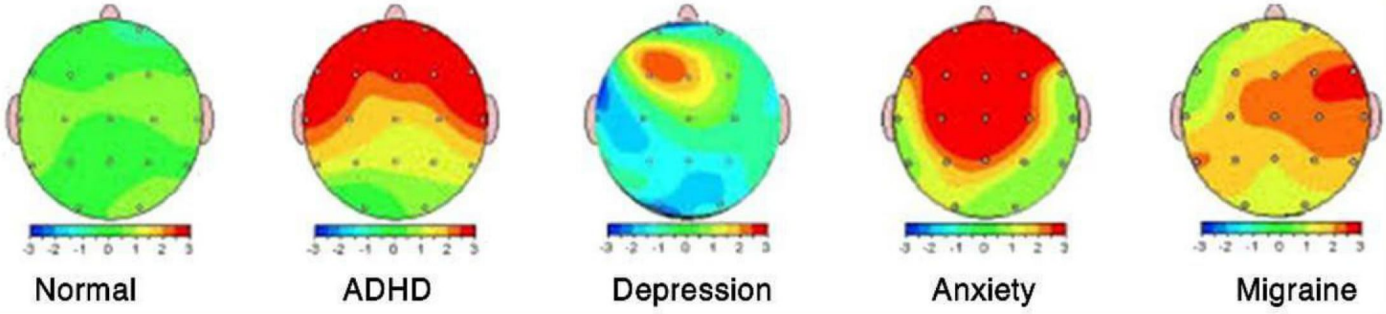
Up to 128 channels, 24-bit analog to digital converters
Precise data recording (1ks/s)
Wireless transferring data
Lightweight,portable and easy to use
Rechargeable battery, perfectly isolated
2 digital input channels, 2 digital output channels

What is QEEG?

Quantitative Electroencephalography (QEEG) is a diagnostic tool that measures electrical activity in the form of brain wave patterns. QEEG, which is sometimes referred to as brain mapping is a procedure that processes the recorded EEG activity from a multi-channel recording system using a computer.

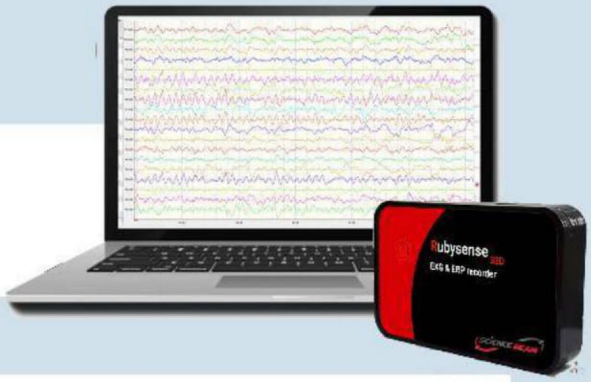
The EEG and the derived QEEG information can be interpreted and used by experts as a clinical tool to evaluate brain function and the changes in brain function due to various interventions such as neurofeedback or medication.





eWave + 24/32/64/128

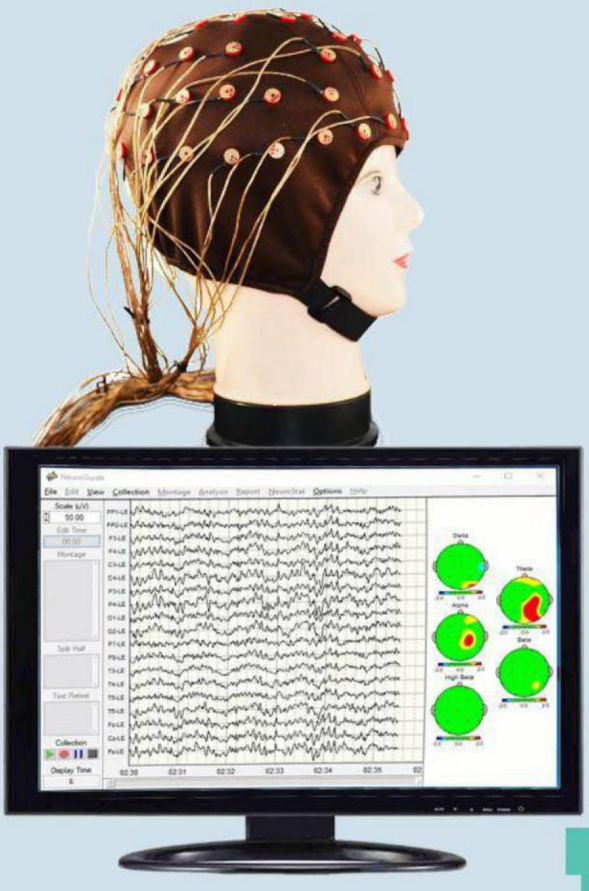
The best choice for EEG/ERP Recording



ewave+ is a strong multi-channel bio signal amplifire for simultaneously recording up to 128 EXG (ECG, EMG, EEG and ECoG) channels.

A data acquisition and recording system, specified to have 24-bit resolution, for ultra-precise, low noise signal recording.

The eWave+ offers up to 4 AUX channels for peripheral bio-signals such as skin temperature, Galvanic Skin Response (GSR), Respiration and Blood Volume Pulse/ Heart Rate Variability (BVP/HRV). It also offers extra digital trigger inputs for ERP research applications.



Features	Specifications
Number of channels	**24/32/64/128**
Amplifire type	Differential, DC
ADC Resolution	24 bit
Sampling Rate	1000 sample per second
Processor	32 bit, 168 MHz
Amplifier Bandwidth	0 - 500 Hz
Gain	1 - 8
Signal bandwidth	0 - 200 Hz.
Input Impedance	1000 G Ohm .
Digital Inputs	2
Digital Outputs	2
Signal type	EEG, ECG, ECoG, EMG
ERP input	Yes
Filter Band	DC – 400 Hz.
Applications	Clinics & Research
Data transfer modes	WIFI, USB
Battery life	15 hours, rechargeable
Dimensions (w x h x d)	120 x 98 x 30 mm
weight	305 gram
Portable, easy to use	Yes
Sensors	Skin temperature, HRV/BVP, GSR, respiration
Accessories	eCap(24,32,64,128 electrodes), chest leads, connectors, leather bag, ear clips, EEG conductive paste, EEG gel

Brain mapping is an important tool used to evaluate brain waves in a quantitative way. with the help of brain maps. neurofeedback practitioners are able to see which areas of the brain aren't working the way they should. This information helps create more targeted training to address the types of brain issues that can benefit from neurofeedback.

qEEG can be utilized for the following clinical applications : evaluating effects of medications and predicting medication response, evaluating head traumas, assessment of cognitive and psychiatric changes, etc.

eProbe

The best software for neuro-biofeedback therapy

eProbe

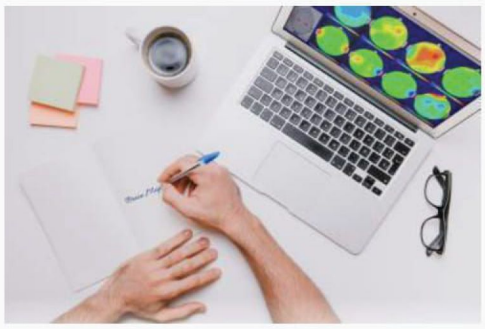
eProbe software is the core of all our Neuro-Biofeedback and QEEG products coming with various pre-designed protocols for evaluation and treatments.

Benefits of eProbe:

- Easy to learn ,easy to use
- Real-time signal visualization
- Easy to understand display
- In session adjustments
- Advanced filtering options
- Client engaging games, videos, animations

More about eProbe

- Designing desired protocols for treatment is possibl
- Automatic and manual adjustment of reward thresholds allows for specificity and flexibility
- Extensive and accessible clients data
- More than 30 game, video and movie for neurofeedback therapy
- Spectral analysis of EEG data (Fast Fourier Transform)

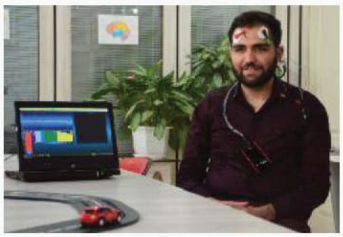


Bio-sensors

Our highly accurate sensors are compatible with eWave systems for research and neuro/biofeedback therapy

eJoy

- The novel toy model for neurofeedback & biofeedback therapy
- Controlled by EEG/ ECG/EMG signals



Ideal Galvanic Skin Response (GSR) sensor

A Galvanic Skin Response (GSR) or skin conductance allows you to measure sweat gland activity, wich is related to emotional arousal.

eCap & connectors

Standard and flexible cap for EEG recording and neurofeedbak therapy
19,32,64 and 128 recording channels

Temperature sensor

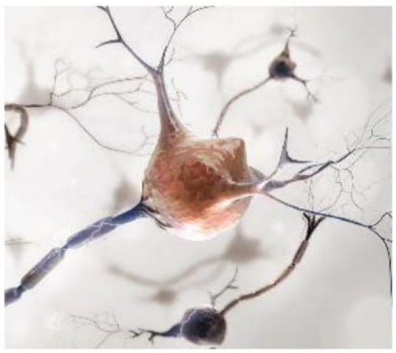
The precise skin temprature sensor, which determines stress level, provides you a rich setup for neurofeedback therapy.

Blood Volume Pulse (BVP) sensor

The BVP is widely used as a method of measuring the heart rate and as a basic for HRV biofeedback training with many applications, such as headaches and migraine.

Wearable respiration sensor

Respiration monitoring is a critical parameter for biofeedback training.
Our respiration sensor belt can be worn over clothing. It is also better to place it on the abdominal area.



China
Unit 4003, Building C1, Vanke Tianyu, International Building, Central City, Longgang District, Shenzen, China
Tel: +8614776054293

USA
50 Corsa St. , Dix Hills, New York, NY 11746, United States
Tel: +13474641199

United Arab Emirates
No. 201, Block A, Baniyas tower, Baniyas Sq. Dubai, UAE
Tel: +971 4 229 4649, +971 505 376 952
Fax: +971 4 229 4650

Pakistan
Flat#, C-14, Shalimar Avenue, Block-M, North Nazimabad, Karachi, Pakistan.
Tel: +92 21 36036369, 36036370
Cell: +92 3323467659

Iraq
5th Floor, Al-Rabaie Bldg, Abu Aqlam Petrol Staition, Karada, Baghdad, Iraq
Tel: +9647819026706 , +9647716810550