

NEURO PRAX[®] EEG

Measuring and Modulating Brain Activity

for neuroscience applications



Full-band DC-EEG biofeedback system

NEURO PRAX[®] EEG systems measure physiological activity, such as EEG, EMG, and EP signals simultaneously and synchronously for all channels. The unique amplifier technology captures EEG activities from infraslow (0 - 0.3 Hz) to ultrafast (80 - 1,200 Hz) frequencies. Our full-band DC-EEG amplifiers are available with 32, 64 or 128 channels. The system provides a wide range of optional software-based functions, such as online correction of artifacts caused by muscle and eye movements, topographical analyses, spectral and amplitude mapping as well as online averaging. Thanks to the high-level dynamic range of the amplifiers, the NEURO PRAX[®] EEG system can be upgraded for use during transcranial electrical stimulation (tES) with direct current (tDCS), alternating current (tACS) and random noise current (tRNS), or during transcranial magnetic stimulation (TMS). In addition, it can also be used to take measurements during functional magnetic resonance imaging (fMRI).

The NEURO PRAX[®] EEG is a biofeedback device according to the FDA Regulation Number 882.5050. It supports clients to learn to self-regulate their brain activity (EEG biofeedback). It is intended to be used for EEG biofeedback with the slow cortical potentials (SCP) protocol.

Areas of application/treatments

Biofeedback clinic	DC-EEG biofeedback system, quantitative EEG, cognitive evoked potentials
Outpatient department	clinical EEG and diagnosing, cognitive evoked potentials
Long term monitoring	recording of full-band DC-EEG over several days
Research	recording of full-band DC-EEG/EP and polygraphic signals
EEG biofeedback research	3D EEG feedback system

NEURO PRAX® EEG Features:

- 32-channel full-band DC-EEG biofeedback system (64, 128 channels)*
- channel type (EEG, EMG, ECG) selectable via software
- non referential storage of raw data
- simple and intuitive user interface
- EEG mountings and event markers freely selectable
- patient database with medication and examination calendar, complete documentation of readings
- suitable for polygraphy and polysomnography
- topographical analyses, spectral and amplitude mapping

* optional

NEURO PRAX® EEG Options and System Extensions

- module to correct EEG artifacts (blinking, eye movement, body movement)
- module for cognitive evoked potentials: CNV, CPT-OX, P300, ERN, and BP
- NEURO PRAX® examination license from other PC
- export module for exporting measured data into other formats
- module for data access within MATLAB®/Simulink®, LabVIEW®, C/C++
- module for online data access via Ethernet by TCP/IP
- rechargeable battery pack
- feedback module system extension (additional monitor)
- biofeedback system extension (GSR and breathing)
- optical trigger input module system extension
- equipment trolley

NEURO PRAX® EEG Specifications

Full-band DC-EEG and biosignal amplifier

- 32 full-band DC-channels (64, 128 channels)*
- input impedance > 10 G
- 24-bit resolution per channel
- selectable sampling rates of 64 to 4,096 sps
- frequency range of 0 to 1,200 Hz @ 4,096 Hz sampling rate
- common mode rejection rate (CMRR) > 90 dB @ 50 Hz
- dynamic input range approx. ± 175 mV
- input noise < 0.9 μ V (RMS) @ 0 - 110 Hz at 256 sps
- max. power consumption 1.5 W
- power supply via built-in rechargeable batteries
- continuous operation time > 8 h
- applied part BF
- dimensions in mm: 290 x 130 x 200 (W x D x H)
- weight: 4.2 kg (incl. batteries)
- data transmission via optical fiber
- electrode input box, incl. connector cable (32, 64, 128 channels)

* optional

Panel-PC

- powerfull Intel™ Core Duo processor, min. 1 GB RAM, 160 GB hard disc, USB 2.0, ethernet interface (LAN), min. 15" TFT color monitor, keyboard, mouse
- operating system WINDOWS® 10 (and later)
- operating voltage 100-240 V @ 60/50 Hz AC
- dimensions in mm: 420 x 365 x 170 (W x D x H)
- weight: 11.6 kg (incl. stand)

