

Measuring and Modulating Brain Activity



neuroConn NEURO PRAX[®] MR

fmRI-compatible full-band DC-EEG biofeedback system

NEURO PRAX[®] MR systems measures physiological activity such as EEG, EMG, and EP signals simultaneously and synchronously for all channels. Unique amplifier technology captures EEG activities from infraslow (0 - 0.3 Hz) to ultrafast (80 - 1,200 Hz) frequencies. The high dynamic range of our amplifiers and the integrated online correction of gradient and pulse artifacts make the NEURO PRAX[®] MR particularly suitable for measuring EEG, ECG, EMG, or GSR during functional Magnetic Resonance Imaging (fMRI). Our full-band MR-compatible DC-EEG amplifiers are available with 8, 32 or 64 channels. They provide a wide range of optional software-based functions such as online correction of artifacts, topographical analyses, spectral and amplitude mapping, and online averaging. The NEURO PRAX[®] MR 8 allows to record the galvanic skin response (GSR) and the EMG.

Areas of Application/Treatments

Biofeedback clinic

Research in Neurology

Cognitive Neuroscience and Behavioral Science

EEG biofeedback research

- | DC-EEG biofeedback system, quantitative EEG, cognitive evoked potentials
- | fMRI and full-band DC-EEG, fMRI and EP/EMG
- | fMRI and EP, fMRI and GSR, facial EMG
- | fMRI and DC-EEG-feedback, 3D-EEG-feedback

Moving thought

neuroCare 

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NEURO PRAX® MR features

- 32-channel full-band DC-EEG biofeedback system (8, 64 channels)*
 - Channel type (EEG, EMG, ECG) selectable via software
 - Non-referential storage of raw data
 - Online correction of gradient artifacts during fMRI by means of soft- and hardware synchronization **
 - Real time correction of pulse artifacts
 - Suitable for polygraphy and polysomnography
 - Simple and intuitive user interface
 - EEG mountings and event markers freely selectable
 - Patient database with medication and examination calendar, complete documentation of readings
 - Topographical analyses, spectral and amplitude mapping
 - Display of averaged evoked responses during fMRI-scans
 - Connection to external trigger sources
 - Module ACTIVE SYNC MR for high end gradient artefact correction
- * optional, ** hardware synchronization optional

NEURO PRAX® MR specifications

full-band DC-EEG and BIOSIGNAL AMPLIFIER

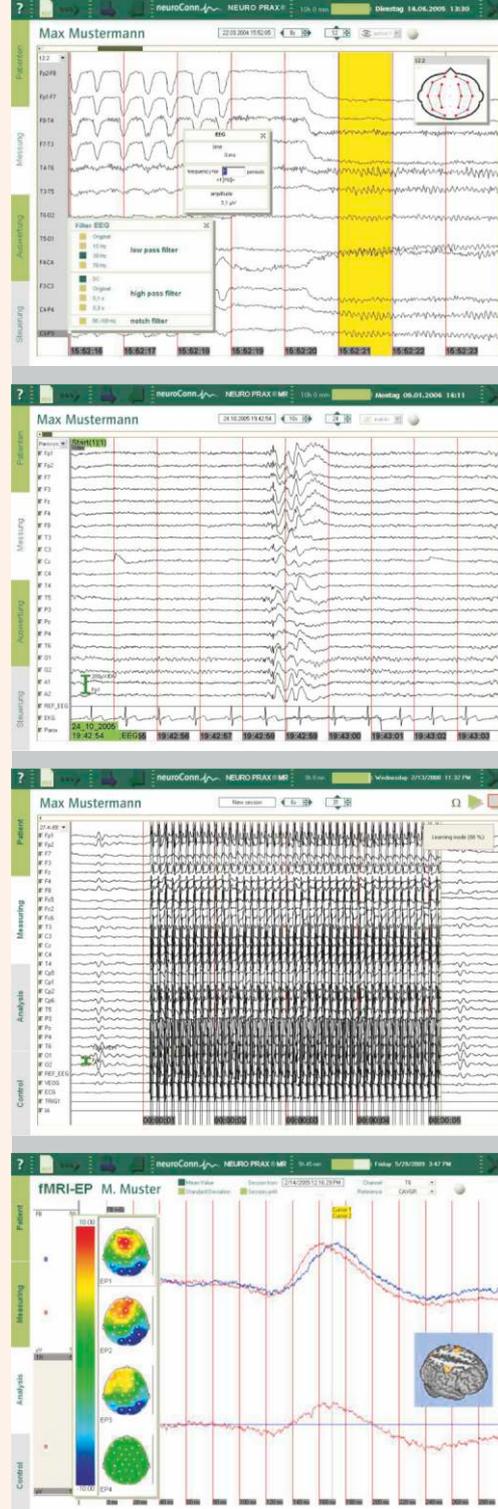
- 32 full-band DC-channels (8, 64 channels)*
 - Input impedance > 10 GΩ
 - 24-bit resolution per channel
 - Selectable sampling rates of 60 to 4,000 sps
 - Frequency range of 0 to 1,200 Hz @ 4,000 Hz sampling rate
 - Common mode rejection rate (CMRR) > 90 dB @ 50 Hz
 - Dynamic input range approx. ± 175 mV
 - Input noise < 0.9 µV (RMS) @ 0 - 110 Hz at 250 sps
 - Max. power consumption 1.5 W
 - Continuous operation time > 8h
 - Power supply via built-in rechargeable batteries
 - Applied part BF
 - Dimensions: 290 mm x 130 mm x 200 mm (W x D x H)
 - Weight: 4.2 kg (incl. batteries)
 - Data transmission via optical fiber
 - Electrode input box, incl. connector cable (32, 64 channels)
 - Measurement of Galvanic Skin Response (GSR) during functional MRI ***
- * optional, *** only available in NEURO PRAX® MR 8

PANEL-PC

- Powerful Intel® Core™ Duo processor, 2 GB RAM, min. 500 GB hard disc,
- USB 2.0, ethernet interface (LAN), min. 15" TFT color monitor, keyboard, mouse
- Operating system WINDOWS®7 (and later)
- Operating voltage 100-240 V @ 60/50 Hz AC
- Dimensions: 420 mm x 365 mm x 170 mm (W x D x H)
- Weight: 11.6 kg (incl. stand)

NEURO PRAX® MR options and system extensions

- Module for the online correction of artifacts
- Module for cognitive evoked potentials: CNV, CPT-OX, P300, ERN and BP (not inside MRI scanner)
- Feedback module system extension (additional monitor)
- NEURO PRAX® MR examination license from other PC
- Module for online data access via Ethernet by TCP/IP
- Export module for exporting measured data into other formats
- Module for data access within MATLAB®/Simulink®, LabVIEW®, C/C++
- Optical Trigger Module system extension for external trigger inputs
- Module for source localization of EEG and fMRI-EEG data
- Rechargeable battery pack (not inside MRI scanner)



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