

# Measuring and Modulating Brain Activity



**neuroConn**  **THERA PRAX<sup>®</sup> Q-EEG**

## DC-EEG – Bio- and Neurofeedback System

The THERA PRAX<sup>®</sup> Q-EEG is a portable DC-EEG neurofeedback and biofeedback system.

Biofeedback is a treatment method, based on operant conditioning. In this method the patients receive feedback about their physiological states and changes in these states, which mostly cannot be perceived by the patient. Slow Cortical Potential Neurofeedback (SCP-NFB) is a kind of biofeedback and therefore a method in instrument-based behavioral therapy. It allows the patient to perceive and self-regulate their brain activity. SCP-NFB is probably effective in the treatment of ADHD.

In addition, the THERA PRAX<sup>®</sup> Q-EEG reliably records multi-channel EEG, ECG, and EMG signals as well as peripheral bio-signals. To individually control the progress of therapy, cognitive evoked potentials can be recorded.

### Advantages of the THERA PRAX<sup>®</sup> Q-EEG

- Neurofeedback of the slow cortical potentials (SCP) with automatic online correction of artifacts caused by muscle and eye movements
- Neurofeedback with frequencies (Delta, Theta, Alpha, Beta, SMR, Gamma and any desired band) and ratios (e.g. beta/theta)
- Biofeedback training with breathing, temperature, GSR, pulse curve
- Recording of a quantitative EEG in combination with peripheral signals

**Moving thought**

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### THERA PRAX<sup>®</sup> Q-EEG Features

- 22-channel full-band Q-EEG, DC-EEG neurofeedback and biofeedback (optional) system
- DC-EEG feedback of slow cortical potentials (SCPs)
- Generation of Q-EEG, spectral analysis with interface to "NeuroGuide" software
- Neurofeedback with frequencies (alpha, theta, beta, delta, SMR and any desired bands) and ratios (e.g. beta/theta)
- Free choice of frequency band, algorithm and combinations of the two (ratio, correlation, coherence, bicoherence etc.)
- Free choice of feedback channel (unipolar, bipolar, source, multi-channel)
- Biofeedback with EMG, ECG, HR
- Audio-visual feedback and animation
- Patient database with medication and examination calendar, complete documentation of readings
- Analysis of single session and comparison of multiple sessions
- Suitable for polygraphy and polysomnography

### THERA PRAX<sup>®</sup> Q-EEG Specifications

#### Full-band DC-EEG and BIOSIGNAL AMPLIFIER

- 22 full-band DC channels, referential
- Input impedance > 10 GΩ
- 24 bit resolution per channel
- Selectable sample rate of 32 to 4,096 sps
- Frequency range of 0 to 1,200 Hz depending on sampling rate
- Common mode rejection rate (CMRR) > 90 dB @ 50 Hz
- Dynamic input range ± 175 mV
- Input noise < 0.9 μV (RMS) @ 0-110Hz at 256 sps
- Power consumption approx. 1.5 W
- Power supply via replaceable, rechargeable batteries
- Continuous operation time > 8 h
- Applied part type BF
- Dimensions: 13.5 cm x 23.5 cm x 6.5 cm (W x D x H), weight: 0.8 kg
- Data transmission using optical cable

#### PANEL PC

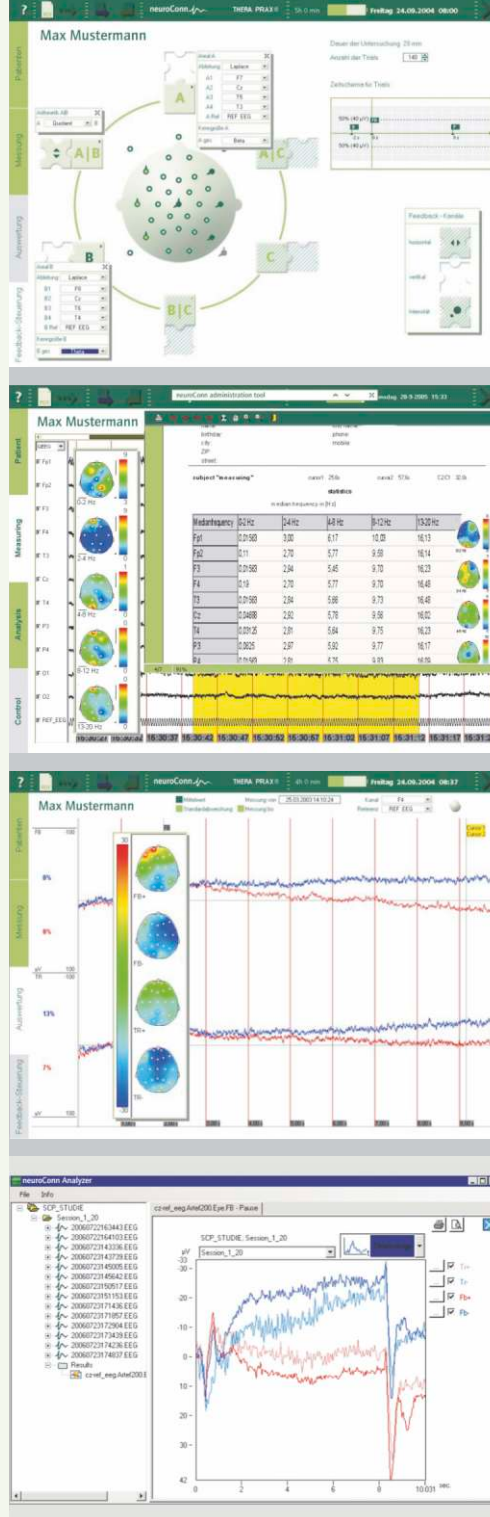
- Intel CPU, min. 2 GHz, min. 2 GB RAM, min. 250 GB hard disk, USB 2.0, network connection
- WINDOWS<sup>®</sup>7 (and later) operating system, min. 15" TFT color monitor, keyboard, mouse
- Dimensions: 42.0 cm x 36.5 cm x 17.0 cm (W x H x D), weight: 6.8 kg

### THERA PRAX<sup>®</sup> Q-EEG Options

- Module to correct EEG artifacts (blinking, eye movement, body movement) in real time
- Module for cognitive evoked potentials: CNV, P300, ERN, and readiness potential
- Multimedia module
- Export module for data export
- Secondary monitor for the patient
- Biofeedback with breathing, temperature, GSR, pulse curve
- four additional polygraphy channels for respiration, temperature, GSR and pulse curve
- Equipment trolley

### Particular Advantages of our equipment

- Complete systems – not just individual components – are CE-approved
- Our equipment can be used for many applications including combined bio- and neurofeedback.
- neuroConn feedback equipment uses clinically evaluated protocols.



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