

# Measuring and Modulating Brain Activity



## Brand-new and Unique EEG measurement during tACS and tRNS with the new DC-STIMULATOR PLUS and the NEURO PRAX® TMS/tES

neuroConn's full-band EEG system NEURO PRAX® TMS/tES measures EEG-signals during TMS (transcranial magnet stimulation) or tDCS (transcranial direct current stimulation). This system now also measures undisturbed EEG signals during an oscillating neuro-stimulation with small alternating currents, known as tACS (transcranial alternating current stimulation) or tRNS (transcranial random noise stimulation). This is realized with an innovative and unique hard- and software that removes stimulation-induced noise from the EEG signal online and in real time.

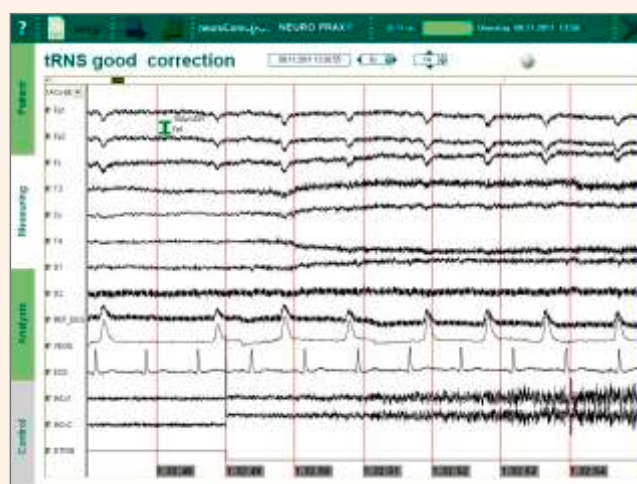
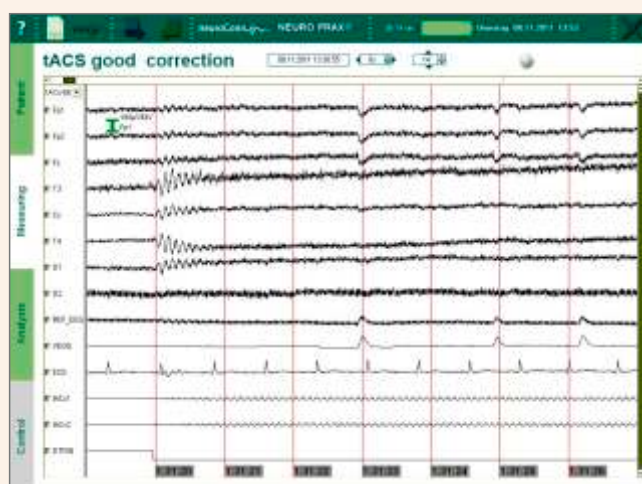
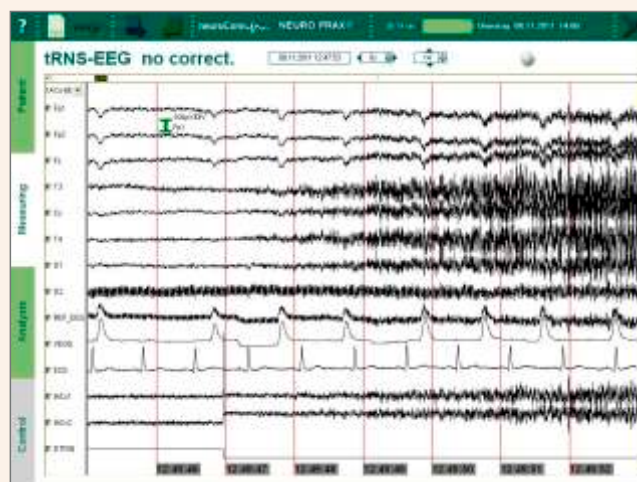
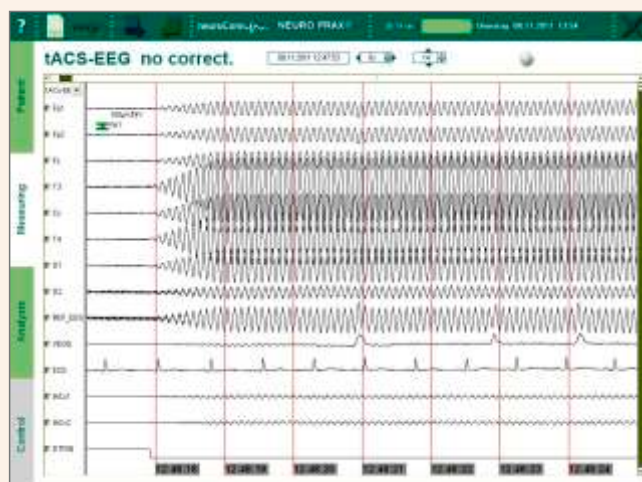
### About tACS-EEG

tACS-EEG is a non-invasive and painless method to evaluate the modulation of cortical oscillatory brain activity and cerebral plasticity simultaneously with stimulation. Latest investigations in neuroscience provide a wide area of research topics for tACS-EEG like:

- the modulation of oscillatory brain activity at a specific frequency,
- studying interactions between EEG rhythms of different frequencies,
- frequency tuning of cortical areas for optimal TMS,
- gaining knowledge on brain oscillations for basic science and for therapeutic application.

Moving thought

neuroCare 



Top: tACS-EEG (left) and tRNS-EEG (right) without correction. The stimulation signal overlays the EEG.  
Bottom: Corrected tACS-EEG (left) and tRNS-EEG (right) after online elimination of stimulation-induced noise.

## neuroConn technology for tACS-EEG

The new generation of neuroConn's DC-STIMULATOR PLUS can be delivered with the optional SIGNAL OUT module, which provides a galvanically isolated reference signal.

A cable transfers the reference signal from the signal output of the DC-STIMULATOR PLUS to the EEG amplifier of the NEURO PRAX® TMS/ tES.

NEURO PRAX® TMS/ tES records the incoming reference signal. Its innovative ONLINE Correction software uses the reference signal to remove the artefacts induced by the stimulation from all EEG channels in real time.

Both, the new DC-STIMULATOR PLUS with optional SIGNAL OUT and the ONLINE Correction software for the NEURO PRAX® TMS/ tES are available NOW.

For further information please contact us at [info@neuroconn.de](mailto:info@neuroconn.de)

### Important:

tACS-EEG is not possible with older versions of the neuroConn DC-STIMULATOR PLUS with a serial number < 1000. Please contact your local dealer for an upgrade of your DC-STIMULATOR PLUS to the functionalities of the new generation and for the additional hardware module „SIGNAL OUT“. If you have already purchased a neuroConn NEURO PRAX® TMS/ tES, the software update for tACS-EEG correction is free. Please check [www.neuroconn.de/distributors/](http://www.neuroconn.de/distributors/) for the list of our distributors worldwide.



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Publicly funded multi-center studies into neurofeedback and non-invasive brain stimulation are equipped with neuroConn technology. We are also a member of the "National Bernstein Network for Computational Neuroscience"

