g.RECORDER
BIOSIGNAL RECORDING SOFTWARE

g.Recorder supports all g.tec biosignal acquisition devices and provides tools for easy configuration and setup, data visualization, storage, and review. Signals and parameters can be checked in the display mode, stored to disk, and later reviewed in the offline/replay mode. With the extended version of g.Recorder, video data can also be stored simultaneously with the biosignals, and the following parameters can be computed online:

- CSA: Compressed Spectral Array (explorative analysis of signal properties and data quality for long-term recordings)
- HR: Heart Rate (based on automatic R-peak detection from the ECG raw signal)
- HRV: Heart Rate Variability (HR and HRV parameters reflect the state of the autonomous nervous system)
- EP: Online EP calculation with statistical analysis

The extended version adds monitoring Cerebral Function/aEEG (amplitude integrated EEG) with automatic pattern classification. This is used to monitor the ongoing brain functions of premature infants in the neonatal intensive care unit. This additional plug-in to g.Recorder is called g.FEATUREmonitor. In addition to the online classification, there is also an offline CFM-toolbox available, as a part of g.BSanalyze (g.tec's biosignal analysis software package). The generated data format supports analysis with EMSE® and BESA® Software.
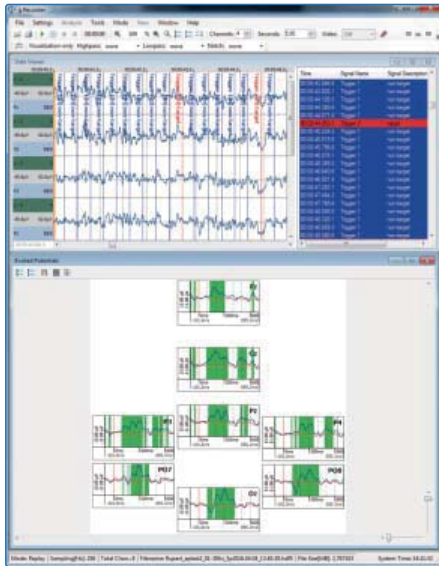
PRODUCT HIGHLIGHTS

- Support for various g.tec biosignal amplifiers
- Multi-modal biosignal visualization and recording
- Synchronized storage of biosignal data, triggers and video
- Configuration and setup of hardware parameters
- Storage of header information and subject/patient data
- User/Admin mode for save operation
- Intelligent file management and search functions
- Stand-alone program
- Data format supported by EMSE® and BESA®
- Real-time EP calculation with statistical analysis
- Online filters for visualization
- Load topographic information for result presentation

EVOKED POTENTIAL VIEWER

The Evoked Potentials viewer provides a convenient way to display evoked potentials. The viewer displays averaged data frames for each acquired analog input channel. An evoked potentials plot is created for each acquired channel. The time frame represents a defined time period, consisting of a pre-trigger period, a post-trigger offset and a post trigger period. The viewer can display the trigger appearance and an averaged time frame for target and non-target evoked potentials. Significant differences between target and non-target evoked potentials can be calculated and highlighted.

COMPATIBILITY WITH G.NAUTILUS WIRELESS EEG SYSTEMS

g.Recorder now supports data acquisition from the variety of available g.Nautilus wireless EEG amplifiers. This includes display, processing, recording and review (depending on the purchased g.Recorder extensions) of EEG signals measured by the wireless headset and the additional channels provided, like acceleration data. Impedance measurement can be performed for the analogue EEG channels, and the base station's digital inputs can be fed in as trigger channels.

Application Example

EEG AND TMS

An important application is the recording of EEG activity while a patient receives TMS (transcranial magnetic stimulation) pulses. For example, the TMS coil may positioned over the motor cortex to generate a finger movement, which leads to an SEP in the EEG. g.Recorder allows you to select a high sampling frequency of all the EEG channels and acquire the data without filtering. Furthermore, the exact timing of the TMS pulse can be read in via the TTL inputs of the amplifier. After the recording, ERPs can be calculated and artifact removal algorithms can be applied to get clean EEG data and study the effect of the TMS stimulation.