

# Mobile biosignal acquisition with Pocket PC or notebook / PC

## g.MOBILab<sup>+</sup>

MOBILE & WIRELESS BIOSIGNAL ACQUISITION



- Highlights**
- acquire EEG, ECG, EOG, EMG and other signals even outside your lab
  - on-line visualization and storage of up to 16 channels on a Pocket PC or notebook / PC
  - various software solutions available (driver/API, recording software, MATLAB/SIMULINK/LabVIEW ...)
  - transmit online biosignal data wirelessly via Bluetooth 2.0 to a Pocket PC or notebook / PC
  - log data directly on an internal flash card memory (Mini-SD card)
  - integrate the device into your real-time system under SIMULINK (BCI, neuro-, biofeedback)

**g.MOBILab<sup>+</sup>** - g.tec's mobile and wireless biosignal acquisition system - is the perfect tool for recording multimodal biosignal data on a standard Pocket PC or notebook / PC . It allows to investigate brain-, heart-, muscle-activity, eye movements, respiration, galvanic skin response and other body signals. Various sensors and electrodes are available. Ask for complete packages or customized solutions!

The system is available as an 8-channel "EEG-version" and a "multi-purpose version" with 6 amplifier inputs (4 channels for EEG/EOG and 2 channels for ECG/EMG) and 2 analog input channels for external sensors. 8 digital channels can be used for trigger signals. The device is battery-supplied and designed for long-term operation. 16-Bit technology and 256 Hz sampling rate guarantee high-quality biosignal recordings.

### Technical details and specifications

g.MOBILab+ (8-channel EEG version)	EEG Channels: 8, Filters: 0.5 - 100 Hz, Sensitivity: 500 $\mu$ V (monopolar), no additional analog inputs		
g.MOBILab+ (multi-purpose version)	EEG Channels: 2 Filters: 0.5 - 100 Hz Sensitivity: 500 $\mu$ V (bipolar)	EEG/EOG Channels: 2 Filters: 0.01 - 100 Hz Sensitivity: 2 mV (bipolar)	ECG/EMG Channels: 2 Filters: 0.5 - 100 Hz Sensitivity: 5mV (bipolar)
Analog inputs (multi-purpose)	Channels: 2, Filters: DC-100 Hz, Sensitivity: +/- 250 mV (monopolar)		
Additional inputs/outputs	4 digital inputs/outputs, 4 digital inputs (TTL), +5V		
Power supply	4 standard AA batteries or accumulators (25 - 100 hours operation time, depending on mode)		
Data acquisition	ADC with 16 Bit and 256 Hz/channel, serial interface (RS232), Bluetooth 2.0 / class 1 (+)		
Standard	Manufactured according to IEC 60601-1, for research application, no medical device		
Internal storage card	Micro-SD flash memory card (up to 2 GB), accessible via the battery compartment		
Weight	360 gram (including batteries)		
Dimension	155 mm x 100 mm x 40 mm		

8-channel EEG version

multi-purpose version



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### Get rid of the cable ...

Bluetooth 2.0 technology enables a wireless online-transmission of biosignal data to the Pocket PC or notebook/PC with g.MOBILab<sup>+</sup>.

Transmission works well for distances of 30 meters (indoor) and up to 200 meters (outdoor).



### Log data ...

An integrated flash memory (Micro-SD card) enables data logging even after the device is disconnected from the computer.

With up to 2 GB space on the flash card a total recording time of 120 hours is provided.



### Start quickly ...

The easy handling of hardware and software combined with highest signal quality makes the g.MOBILab<sup>+</sup> a favoured tool for scientists, teachers and system developers.

A large variety of available accessories and sensors enable the user to investigate even unusual scientific questions.

### Good connections ...

Various connector boxes for the different versions of the device assure a safe and easy connection of electrodes and sensors.

Shielded cables reduce artifacts. Touch-proof safety connectors are the standard. Ask for customized connectors and adapters if required!



### Colorful solutions ...

For ECG and EMG recordings a patient cable for use with adhesive disposal Ag/AgCl electrodes is provided.

Acquire biosignals reliably even in sportsmen, vehicle drivers, pilots or small children.



### Perfect timing ...

With up to 8 digital I/O signals even tricky experimental paradigms can be realized. All triggers are recorded synchronously with the biosignals.

Simple pushbuttons allow the subject to respond to experimental stimulation or to mark events during recording.



Look up our website or contact us at any time to find out more about available software solutions and how to use g.MOBILab<sup>+</sup> in MATLAB/SIMULINK or LabVIEW!

### 8-channel active EEG system

Instead of the standard EEG electrode connector box g.tec's active electrode system "g.GAMMASys" can be used. No skin preparation and no abrasive gel is required any longer. High quality EEG recording with a fully wearable active system!



### Application example: Navigation in the virtual reality with a BCI

A Brain-Computer Interface (BCI) is used to navigate in a VR environment and to control simulated installations. EEG data are sent wirelessly to the computer so the subject can freely move around. See also g.tec's virtual reality system "g.VRsys"!