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g.[®] MOBilab⁺
MOBILE LABORATORY

g.MOBilab+ Data File Format V3.14.01

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General

This document contains the specification of the binary data file format for g.MOBllab+ V3.00 used to store data on the SDcard in g.MOBllab+ (as well as the demo application stores it on the computer). All channels are sampled at 256 Hz.

Header

The header consists of ASCII lines. Each line is ending with CR/LF. The header ends with the line: EOH.

Position	Meaning	Contents
1. line	producer	g.tec
2. line	product	g.MOBllab
3. line	file format version	3.0
4. line	sampling frequency	256
5. line	channel coding The first eight bits show the ID's of the analog channels which are recorded in the data file. Hereby the bit at the very right is channel 1, the bit at the very left is channel 8. In the example below channels 1 to 6 are recorded. The next eight bits show the ID's of the digital inputs/outputs which are recorded. The pins from right to left are assigned to the digital ports as follows: DI 1 DI 2 DI 3 DIO 4 DIO 5 DIO 6 DIO 7 DI 8 In the example DI 1 to DI 3 and DIO 4 are recorded. The last eight bits show the direction of the digital channels. Hereby 1 stands for input and 0 for output. Those settings only show effect for channels which are in use according to the previous byte. In the example DIO 4 is used as output. Note that the direction is always 1 for digital inputs (DI 1-3 and 8).	00111111000011110000111 (00111111 00001111 10000111)
6. line	displayed channels	3
7. line	displayed time [s]	2
8. line	hardware version	100
9. line	serial number	MP-200x.xx.xx
10. line to 17.line	Highpass [Hz] / Lowpass [Hz] / Sensitivity [μ V] / Samplerate [Hz] / Polarity (U...Unipolar, B...Bipolar) Analog Channel 1 to Analog Channel 8	5.000e-1/1.000e2/5.000e2/2.560e2/B
18. line	end of header	EOH

Data

Data are stored in int16 format:

<int16 channel 1>	if EEG/EOG1 is scanned
<int16 channel 2>	if EEG/EOG2 is scanned
<int16 channel 3>	if EEG/EOG3 is scanned
<int16 channel 4>	if EEG/EOG4 is scanned
<int16 channel 5>	if ECG/EMG1 is scanned
<int16 channel 6>	if ECGEMG2 is scanned
<int16 channel 7>	if AIN1 is scanned
<int16 channel 8>	if AIN2 is scanned
<int16 DIOs >	if any of the digital channels is scanned
<int16 channel 1>	if EEG/EOG1 is scanned
<int16 channel 2>	if EEG/EOG2 is scanned
.	
.	

All digital I/Os are coded in a single int16 value:

bit 0: Digital Channel 1	Digital Input 1
bit 1: Digital Channel 3	Digital Input 3
bit 2: Digital Channel 4	DIO1
bit 3: Digital Channel 2	Digital Input 2
bit 4: Digital Channel 5	DIO2
bit 5: Digital Channel 6	DIO3
bit 6: Digital Channel 7	DIO4
bit 7: Digital Channel 8	Digital Input 4

Data have to be scaled with factors due to the channels input sensitivities in order to get values in μV :

$$\text{data} = (\text{int16 value}) * (2^5 / (2^{16*4})) * (\text{Channel Sensitivity in } \mu\text{V}) [\mu\text{V}]$$

Channel sensitivities depend on the device type of g.MOBILab+ (EEG or multi-purpose version) and can be found in “gMOBILabInstructionsForUse.pdf”.

Contact



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