Sanity Check 6 - App

L. Krieger, T. Neugarth, P. Samimi

August 2020

1 Test

2 Introduction

Two Traumschreiber (external and internal reference) are tested with a sine generated by a function generator, induced to the channel in question. Here, Sinus signals with 5 Hz and 40 Hz and 50 and 100 mV are tested.
!Important!: There is a difference in channel naming between the board and the app, whereas the board starts with channel 0 and the app with channel 1. In this document the Board naming is used (Ch-0 to Ch-5). The recordings are received via EEGDroid (Honor 9)

3 Setup

Function Generator:
Traumschreiber: Internal Reference
Bluetooth Receiver: Honor 9 and EEGDroid (app)

4 Experiment Overview

All recordings can be found at the project's GitHub.

Table 1: Board 02 with External Reference has been used. Charged while recordings via Powerbank. No VCM, switch 3 is on (which is the ground).

Experiment Number	**Frequency**	**Voltage**	**Connected to Signal Generator's Ground**	**Active Channel**
1	5 Hz	50 mV	AR and SG	0
2	5 Hz	50 mV	SG and 0	1
3	5 Hz	50 mV	SG and 1	2
4	5 Hz	50 mV	SG and 2	3
5	5 Hz	50 mV	SG and 3	4
6	5 Hz	50 mV	SG and 4	5
7	40 Hz	100 mV	AR and SG	0
8	40 Hz	100 mV	SG and 0	1
9	40 Hz	100 mV	SG and 1	2
10	40 Hz	100 mV	SG and 2	3
11	40 Hz	100 mV	SG and 3	4
12	40 Hz	100 mV	SG and 4	5
13	5 Hz	100 mV	AR and SG	0
14	5 Hz	100 mV	SG and 0	1
15	5 Hz	100 mV	SG and 1	2
16	5 Hz	100 mV	SG and 2	3
17	5 Hz	100 mV	SG and 3	4
18	5 Hz	100 mV	SG and 4	5
19	40 Hz	50 mV	AR and SG	0
20	40 Hz	50 mV	SG and 0	1
21	40 Hz	50 mV	SG and 1	2
22	40 Hz	50 mV	SG and 2	3
23	40 Hz	50 mV	SG and 3	4
24	40 Hz	50 mV	SG and 4	5

Table 2: Board 03 with Internal Reference has been used. Charged while recordings via Powerbank. No VCM, switch 3 is on (which is the ground).

Experiment Number	**Frequency**	**Voltage**	**Connected to Signal Generator's Ground**	**Active Channel**
25	5 Hz	50 mV	AR and SG	0
26	5 Hz	50 mV	SG and 0	1
27	5 Hz	50 mV	SG and 1	2
28	5 Hz	50 mV	SG and 2	3
29	5 Hz	50 mV	SG and 3	4
30	5 Hz	50 mV	SG and 4	5
31	40 Hz	100 mV	AR and SG	0
32	40 Hz	100 mV	SG and 0	1
33	40 Hz	100 mV	SG and 1	2
34	40 Hz	100 mV	SG and 2	3
35	40 Hz	100 mV	SG and 3	4
36	40 Hz	100 mV	SG and 4	5
37	5 Hz	100 mV	AR and SG	0
38	5 Hz	100 mV	SG and 0	1
39	5 Hz	100 mV	SG and 1	2
40	5 Hz	100 mV	SG and 2	3
41	5 Hz	100 mV	SG and 3	4
42	5 Hz	100 mV	SG and 4	5
43	40 Hz	50 mV	AR and SG	0
44	40 Hz	50 mV	SG and 0	1
45	40 Hz	50 mV	SG and 1	2
46	40 Hz	50 mV	SG and 2	3
47	40 Hz	50 mV	SG and 3	4
48	40 Hz	50 mV	SG and 4	5

5 Results

All plots are collected in the project's GitHub.

5.1 External reference

Signal is not clean.

5.2 Internal reference

Using the internal reference results in clear recordings in the active channel and leakage to neighbouring channel. Signal is mostly fine.