Epilepsy Warning Bracelet - Task #15919

Task # 15903 (Resolved): Connections MATLAB-Arduino-Java Interface

Analog Interface Circuit

24/04/2021 14:04 - Ana Marta Dias

Status:	Resolved		**Start date:**	24/04/2021
Priority:	Normal		**Due date:**	
Assignee:	Ana Marta Dias		**% Done:**	0%
Category:			**Estimated time:**	0.00 hour
Target version:			**Spent time:**	0.00 hour

Description

HIGH-LEVEL SCHEME
1. Signal Acquisition + Amplification
Using an INA128 opamp, we are able to adjust its gain by changing Rg, and to acquire the signal, using two electrodes in a differential configuration + a reference.

2. Filtering
To remove further acquisition noise, we are going to implement a High-Pass 20Hz (seen in paper "Sampling, noise-reduction and amplitude estimation issues insurface electromyography"), 2nd order Butterworth, 0dB gain, and in a Sallen-Key configuration, with the help of the Filter Wizard.

3. Second Amplification
Non-inverting simple configuration, using LM358 opamp, with a 5V/V gain.

History

#1 - 19/06/2021 13:52 - Ana Marta Dias

- Status changed from New to Resolved

- Assignee set to Ana Marta Dias

Files

INA128 Datasheet.pdf	1.66 MB	24/04/2021		Ana Marta Dias
Sampling, noise-reduction and amplitude estimation issues in surface electromyography.pdf	228 KB	24/04/2021		Ana Marta Dias
LM358 Datasheet.pdf	3.78 MB	24/04/2021		Ana Marta Dias
Circuit Scheme.pdf	653 KB	24/04/2021		Ana Marta Dias