Readme for SpikeGadgets Datalogger

The cube_config_linux directory contains five executable programs, along with the source files (in the src folder) in case you want to modify them. These programs are used to load configuration files, and read off data from the SpikeGadgets datalogging headstage from a terminal. **You must run the executables with sudo privileges in order to get low-level access to the SD card**. Once the terminal is open, change the working directory to the folder with the extraction programs (i.e. the cube_config_linux root directory). Here is a list of the programs and their purpose:

write_config [DEVICE_FILENAME] [CONFIG_FILENAME]

This function is used to write a new configuration to the SD card. This configuration defines the operating parameters of the headstage when it is untethered from the computer and logging to the SD card. The config file has 32 line entries (referring to the 32 channels of each input module), where each entry is a sequence of 8 numbers (0's or 1's, referring to up to the 8 possible input modules). A line entry on row 3 of 00000011 means that the 3rd channel of input modules 1 and 2 are on. In most cases, all 32 entry lines will be the same, unless you want to ignore some channels that you do not want to log. Some example configuration files for 32, 64, 96, and 128 channels are included for convenience. THIS STEP IS ONLY REQUIRED FOR NEW SD CARDS OR FOR WHEN THE HEADSTAGE CHANNEL COUNT HAS CHANGED.

read_config [DEVICE_FILENAME]

This program is used to read the configuration on the SD card after it has been written. Use this to ensure that the configuration got written correctly. You can specify an output file (optional) that will show the config file used to set the configuration on the SD card e.g. read_config [device_filename] [config_filename]

card_enable [DEVICE_FILENAME]

This function is used to enable the SD card for recording once placed into the headstage. This step is added for safety to make sure that the headstage does not erase data on the SD card before it has been transferred to a computer.

THIS STEP IS REQUIRED AFTER EVERY RECORDING TO BE ABLE TO RECORD AGAIN.

pcheck [DEVICE_FILENAME]

Used after data has been recorded to the disk. It will tell you how much data was recorded on the card and how many packets were dropped.

sd_card_extract [DEVICE_FILENAME] [EXTRACTED_DATA_FILENAME]

This program is used to extract recorded data from the SD card to a file. EXTRACTED_DATA_FILENAME is whatever you want to call the raw data file, like recording.dat for example. Do not use the .rec extension—converting the file to a Trodes compatible form will be done later.