Q: Why do one of the channels appear to be fluctuating and not following the trend of other channels?

A: This most likely means that the electrode attached to this channel is not configured properly. Try reseating the electrode onto your scalp, and making sure it is connected to the positive rail not the negative one.

Q: My data doesn't look good, why?

A: Make sure that unused channels have their switch pointed towards the headers. Make sure the electrodes are properly seated. Try to wet your hair with water or the electrode paste to decrease contact resistance between your scalp and the electrode. Changing environments to ensure that 50/60hz AC line noise does not muddy the signal is another tactic that we recommend to produce a cleaner signal.

Q: How do I obtain data without using the visualizer?

A: The NeuroPawn Knight Board is designed to work with BrainFlow, an open-source EEG library. Follow instructions found in their documentation for setting up and extracting board data or refer to our website for code examples.

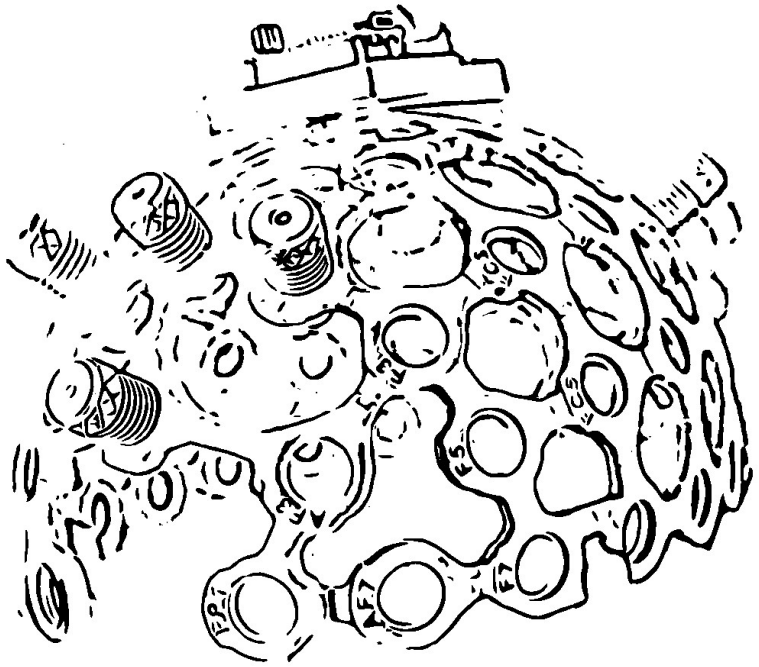
Q: What if I need more than 8-channels?

A: The Knight Board has the ability to be daisy-chained to other Knight Boards, but we have not implemented this functionality yet as we don't believe it is necessary for the applications we anticipate our kit will be used for.

For further information please visit our website https://neuropawn.tech or contact support@neuropawn.tech

NeuroPawn Biopotential Kit

Quick Start Guide

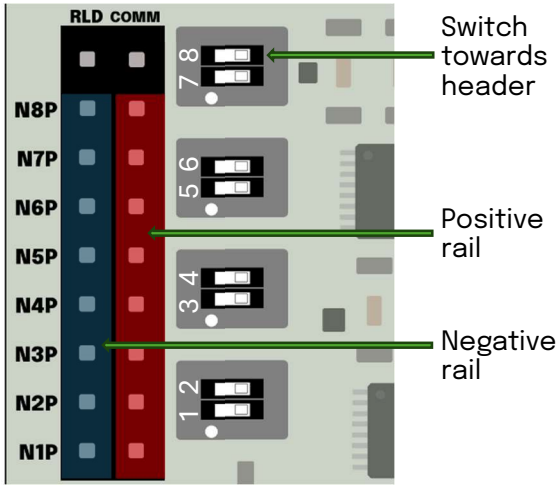


NeuroPawn Biotechnologies Inc.

The NeuroPawn Biopotential Kit comes with everything you need to get started with EEG data acquisition. The Knight Board that comes with your kit can also be used as a general purpose biosignal amplifier. For project ideas and tutorials please visit our website https://www.neuropawn.tech.

Board Setup:

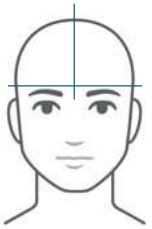
1. Download the NeuroPawn EXG Visualizer Software from our website. Connect the Knight Board to your computer using the included USB-C cable.
2. Select the connected device using the drop-down menu (If your board does not show up here, please see the trouble shooting section).
3. Activate channels by clicking the checkbox, waiting in between each channel for the visualizer graph to display data. Toggle all of the RLD checkboxes.
4. Turn unused channels off and flick the switch that corresponds to the channel down. **NOTE: Unused channels must always have their switch flicked towards the headers**. See example below where channels 1-7 are on, and channel 8 is off.



5. Connect electrodes to the positive rail of channels which have been toggled on.
6. Connect the ear-clip to the headers labeled “RLD” and “COMM”.
7. Screw the board case into the headset.

Headset Setup:

1. Choose which location you will place the dry spike electrodes.
2. Place comfort electrodes (dummy electrodes) opposite to where you placed the signal electrodes, as to balance the headset.
3. Screw in electrodes 5% of the way or to the point where the screw housing is flush with the headset frame.
4. Wear the headset and ensure that midline of the headset is lined up between your eyebrows. Once this is complete, tilt the headset so that Fp1 and Fp2 node locations are just above your eyebrows.



5. Fasten the chin strap and tighten it until it is snug.
6. Screw in all of the comfort electrodes in a star pattern, such that the headset is balanced.
7. Screw in the dry spike electrodes in a star pattern making sure the spikes go through your hair and touch your scalp. **It is recommended to get someone to help you with this step.**
8. Apply some conductive paste on the earlobe that is closest to the Knight Board and then wear the ear clip.

One way to check if all the electrodes are seated properly is by clenching your jaw and seeing if the activated channels spike in unison. Closing your eyes should also elicit alpha waves (slower frequency waves) to show up in the activated channels.

FAQs / Troubleshooting:

Q: Why does the Knight Board not show up in the visualizer software?

A: Some OS distributions come with USB device protection enabled, meaning that the Knight Board won’t be detected in the device manager. To fix this, disable COM port protection.