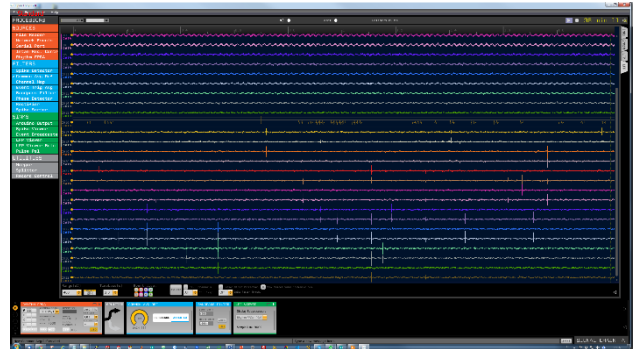


Open Ephys Acquisition Board



The **Open Ephys Acquisition Board** is part of the large Open Ephys¹ ecosystem, that aims to supply open source hardware and software tools for neuroscience research: the acquisition board is the heart of the neural data acquisition system. It provides a convenient USB 2.0 interface between up to eight head stages and a computer. There are a further up to 8 digital I/Os that can be used to measure other, non-neural signals, or to trigger optogenetic stimulation or behavioural feedback. CyNexo uses the open source acquisition board boxed in a rugged aluminium case and, on the software side, provides an open source block capable of controlling our **aoLED** device directly from the Open Ephys GUI, as a block draggable into the graphical environment. This feature allows fast and time synched experimental recordings including optical stimulation.



A complete data acquisition system will be completed with one of more of the following modules:

- At least one Intan RHD-series headstage, which you can order directly from Intan. Each headstage can handle 16 to 128 channels of neural input. You can connect up to 4 single headstages to each acquisition board.
- One SPI cable to connect each headstage to the acquisition board (up to 4), which you can order from Intan or build yourself. We recommend the "Ultra-Thin" variety for freely-moving applications.
- A computer to run the software and interface with the rest of the system.

The **Open Ephys Acquisition Board** can be perfectly integrated with CyNexo neural drives (**aoDrives**, **maDrives**, **maArrays**) to sample neural signals in free moving rats or mice experiments. Furthermore, using our **aoLED** products, all experiments can include optogenetics inhibition and stimulation.

¹ Open Ephys: an open-source, plugin-based platform for multichannel electrophysiology, Joshua H Siegle, Aarón Cuevas López, Yogi A Patel, Kirill Abramov, Shay Ohayon and Jakob Voigts

Main features



USB interface which powers the device and communicates to the host PC through a fast 2.0 data exchange



Optogenetics control module integrated with Open Ephys GUI



TTL compatible 8 Inputs + 8 Outputs



Starting from 1x16 channels version up to 4x64 neural sampling inputs through Intan RHD headstages

Open Ephys Acquisition Board SPECIFICATIONS	
OS support	<i>Windows®, MAC®, GNU/Linux</i>
Software compatibility	<i>Open Ephys GUI</i>
Communication	<i>USB 2.0/USB 3.0</i>
Neural sampling	<i>1-30 kHz sampling rate Low noise, down to 2.4 μV rms Large Input Range \pm 5 mV</i>
Digital sampling unit	<i>Opal Kelly FPGA module XEM6010-LX45/ XEM6310-LX45</i>
I/O	<i>Digital I/O for real-time triggering applications 8 Inputs (0-5V) 1 Outputs (0-5 V)</i>
Operating temperature range	<i>10-40°C</i>
Power	<i>5V 15W max medical grade power supply, EN60601-1/11 compliant (included)</i>
Dimensions	<i>220 x 165 x 32 mm</i>
Weight	<i>900 g</i>

RELATED PRODUCTS	
Neural drives	<i>aoDrive, maDrive, mArray</i>
Optogenetics	<i>aoLED</i>

OPTIONS / ADD-ONS
<ul style="list-style-type: none"> • <i>Custom channels versions (up to 4)</i> • <i>Custom length 12-pin micro-cable with polarized Omnetics nano connectors</i> • <i>Customized solutions to meet your specific research needs</i>