Digital Lynx +

Neuralynx's Next Generation Neural Recording Data Acquisition System; High Performance, Multichannel, Low Noise

NeuraLynx
An FHC Company

Digital Lynx + Base

- Acts as a hub that links a front end interface between Digital and Analog headstage inputs.
- TTL I/O Ports - 32-bits, configurable for port size & direction
- Front Panel digital to analog outputs - two 1/8" stereo jacks (±1V output range), 4 channels total
- General purpose analog to digital Inputs (±5V input range) – 16x
- General purpose digital to analog outputs (±5V output range) – 16x
- Workstation interface – 4 SFP Data Links - Gigabit Ethernet over Fiber
- LED Indicators – Indicating general system's state
- Benchtop or standard 19" rack mount
- System size- 19.00 x 9.90 2.04 in

Digital Acquisition Interface Board

- 1024 channels real-time Data Acquisition
- Headstage connectivity – 16x with HDMI
- Sampling rates up to 30 KHz
- Noise-RMS 2.4-2.5μV (headstage dependent)
- AD Resolution – 16-20 bits (headstage dependent)
- Supports Stimulation Headstages

Analog Acquisition Interface Board (Coming Soon)

- 256 channels real-time Data Acquisition
- Headstage connectivity – 8x MDR-50 (isolated ports)
- Support existing Neuralynx analog headstages
- Differential Stimulation support
- Input Range ±262mV
- AD Resolution - 20 bits
- Noise - 2.5 μV

High-end HP Workstation

- Optimized for use with Neuralynx data acquisition software and hardware
- Application runs on 64 bit Windows® 11
- Connects to the base module via Gigabit ethernet over fiber
- Configured by Neuralynx with installed software applications

Caution - Device for investigational use in laboratory animals or other tests that do not involve human subjects.
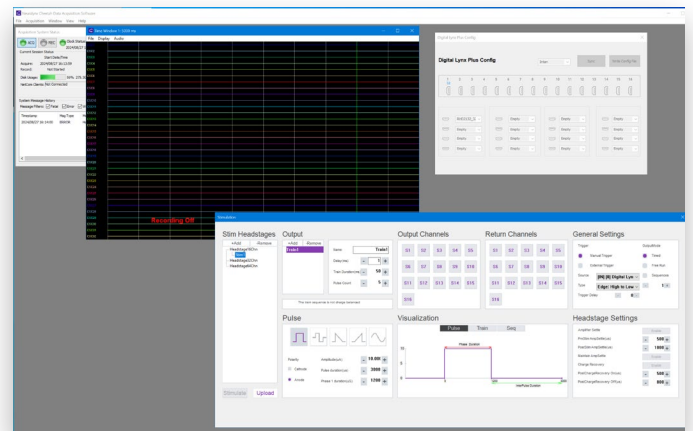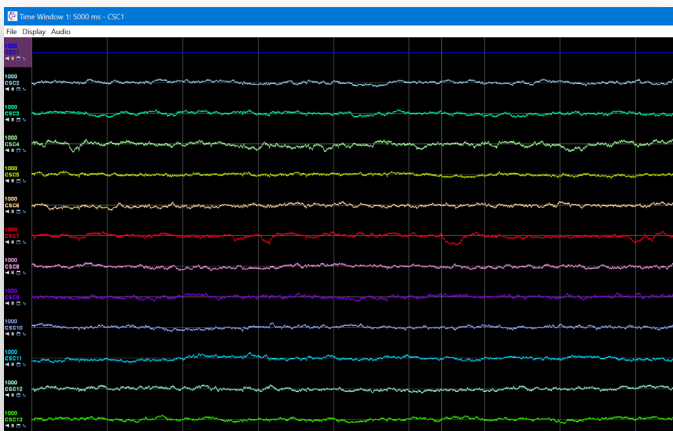
neuralynx.fh-co.com

Cheetah Data Acquisition Software

Cheetah Software provides the ultimate, high performance electrophysiology recording and experiment control software available for neural signal processing, display, recording and network data distribution for customized, online experiment analysis and control. Through excellent software design and efficient CPU usage, Cheetah is able to process 1024 input electrode channels.

Features:

- Auto thresholding for spike channels

- Signal processing - LFP, EMG & spikes, filtering & noise reduction

- Stimulation Control

- Reference selection

- CSC sub-sampling signal processing to reduce noise

- Single electrode, stereotrode & tetrode spike acquisition

- Channel cloning – process microwire inputs as spike & EEG channels

- Efficient CPU usage to process large number of channels

- Audio monitoring of input signals

- High performance displays for spikes & EEG

- Online FFT plots improve signal evaluation

- Unfiltered, raw data file records – full 24 bit resolution

- Improved file playback function

- Pre-defined configuration files for easy start-up

- Modifiable configuration files to meet specific needs

- Multi-threaded for full use of computer resources

- Free access to extensive library of software utilities & development packages, including NetCom & MATLAB Functions

Saturn Commutator

The Saturn Commutator features a geometrical reconfiguration from traditional stacked slip rings to concentric tracks, resulting in a drastically shorter, lighter and more compact design – simplifying overhead mounting.

Even the smallest rodents exhibit more natural behavior and unencumbered movement as a result of Saturn's micro-torque tether rotation sensor and smooth motor drive.
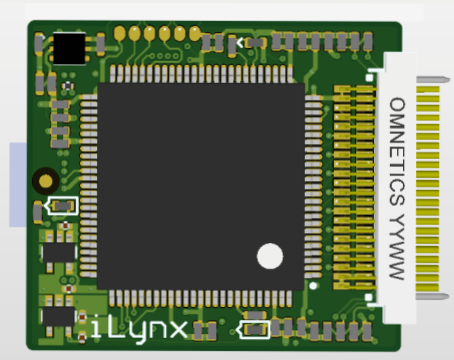
Features:

- 16-160 Analog Channels, 16-320 Digital Channels
- Low Profile Ceiling Mount
- Through-bore cannula for optical fiber or fluid delivery
- Sealed against dirt and dust
- Output - MDR-50

- Input – Flex Tether
- Motorized with micro-torque tether rotation sensor
- Easy to install

Video Tracker

Video tracking data is synchronized with neural signals to precisely synchronize video with neural and other recorded data. Integrated video tracking supports many modes, including multiple "targets" for position, navigation, head direction & grid cell studies.

Camera kit Includes: Basler GigE camera, Power Over Ethernet Injector, 50 ft Cat6 Cable, 3 ft Cat5 Cable, Adjustable Universal Pan Tilt CCTV Camera Mounting Bracket with Ceiling Clip. Cameras available with 4mm lens. 3.3V omnidirectional LEDs for use with HS-16/32/64-MUX headstages.

iLynx (Coming Soon)

- Can stimulate and record on 32 channels and 3 references with a stimulation compliance voltage of ±8.5V.
- One of the 32 available channels can be selected as a hardware reference.
- Each channel and reference can be independently stimulated with programmed waveforms in either a ±50nA or ±200µA range with 16-bit resolution.
- All channels and references have a DC coupled input range of ±262mV with 20-bit resolution.

Commutator Adapter

Connects a 32 or 64 channel multiplexing (MUX) headstage to the flex circuit cable of Saturn Commutator or Slip Ring (PSR) Commutator.

Signal Test Devices

Simulates a live subject by sending a 1000:1 reduced signal to all input channels of a headstage for testing purposes.

Tether Adapters

For connecting headstage pre-amplifier output tethers to Digital Lynx + input ports.

Digital Multiplexing (MUX) Headstages

Digitize analog neural signals on the headstage. Reduce tether wire count, weight, size and cost.

- Connects to the Digital Acquisition Interface Board

- Digitize analog neural signals on the headstage.

- Reduce tether wire count, weight and size.

- 30 KHz sampling rate / 16 bit resolution.

- Length options 1, 2, and 3 meter.

- LEDs for behavioral tracking

- Omnetics input (Standard 44 position connector or PTB 36 position connector)

Digital Lynx +
Digital Lynx + Base: 31-0605-0165
Digital Acquisition Interface Board: 31-0605-0166
Analog Acquisition Interface Board: 31-0605-0167 *(Coming Soon)*

Cheetah Data Acquisition Software
Cheetah 128 channel license: 36-0301-0015
Cheetah 256 channel license: 36-0301-0021
Cheetah 512 channel license: 36-0301-0027
Cheetah 1024 channel license: 36-0301-0014
Cheetah Video Tracker License: 36-0301-0053

High-end HP Workstation: 31-0605-0110

Saturn Commutator

Saturn Mini: 31-0606-0001-F

Saturn 1: 31-0606-0001-A

Saturn 2: 31-0606-0001-B

Saturn 3: 31-0606-0001-C

Saturn 4: 31-0606-0001-D

Saturn 5: 31-0606-0001-E

Video Tracker

GIGE Camera Kit Color Camera: 31-0604-0125

GIGE Camera Kit Monochrome (IR) Camera: 31-0604-0126

LENS, C Mount, 4mm: 31-0000-0003

Ethernet Server adapter PCI-e: 34-0418-0026

HS-LED-Blue-3.3V: 31-0604-0018 (MUX headstage)

HS-LED-Green-3.3V: 31-0604-0017 (MUX headstage)

HS-LED-Red-3.3V: 31-0604-0016 (MUX headstage)

HS-LED-IR-3.3V: 31-0604-0032 (MUX headstage)

Tether Adapters

ADPT-HDMI-uDB25: 31-0602-0042 (MUX)

ADPT, ADPT-HDMI-PZN-16: 31-0602-0043

ADPT-HDMI-PZN-12: 31-0602-0044

Commutator Adapter

ADPT-HS-MUX-FLEX: 31-0602-0020

MUX Headstages:

HS-32-MUX-LED-1M, 1 METER: 31-0601-0026

HS-32-MUX-2M, 2 METER: 31-0601-0027

HS-32-MUX-LED-2M, 2 METER: 31-0601-0028

HS-32-MUX-3M, 3 METER: 31-0601-0029

HS-32-MUX-LED-3M, 3 METER: 31-0601-0030

HS-32-MUX-PTB-1M, 1 METER: 31-0601-0031

HS-32-MUX-PTB-LED-1M, 1 METER: 31-0601-0032

HS-32-MUX-PTB-2M, 2 METER: 31-0601-0033

HS-32-MUX-PTB-LED-2M, 2 METER: 31-0601-0034

HS-32-MUX-PTB-3M, 3 METER: 31-0601-0035

HS-32-MUX-PTB-LED-3M, 3 METER: 31-0601-0036

HS-64-MUX-1M, 1 METER: 31-0601-0037

HS-64-MUX-LED-1M, 1 METER: 31-0601-0038

HS-64-MUX-2M, 2 METER: 31-0601-0039

HS-64-MUX-LED-2M, 2 METER: 31-0601-0040

HS-64-MUX-3M, 3 METER: 31-0601-0041

HS-64-MUX-LED-3M, 3 METER: 31-0601-0042

HS-64-MUX-PTB-1M, 1 METER: 31-0601-0043

HS-64-MUX-PTB-LED-1M, 1 METER: 31-0601-0044

HS-64-MUX-PTB-2M, 2 METER: 31-0601-0045

Signal Test Devices

SM-64: 31-0608-0003 (Omnetics 44 position)

SM-64-PTB: 31-0608-0009 (Omnetics 36 position)