



APOLLO II

Apollo II is an affordable, high-performance data acquisition (DAQ) system for animal neurophysiology experiments using up to 64 electrodes. Its user-friendly software and plug & play hardware provide scientists and engineers with a sophisticated yet easy-to-use neural DAQ system. The *Apollo II* digital signal processor and software acquires, processing and analyzes neural signals (e.g., spikes, field potentials) together with non-neural analog signals and experimental events from third-party equipment including behavior, stimulation and video systems. Stereo audio output allows for real-time monitoring of neural signals using headphones or speaker. A battery-power mode eliminates inadvertent ground loops to ensure high signal-to-noise recordings even in the most demanding EMF noise environments.

Example Applications

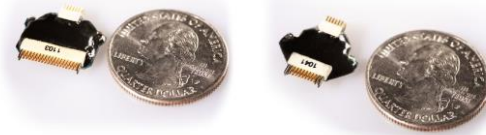
- Systems neuroscience
- Drug studies
- Neurophysiology training
- Surgery monitoring
- Advanced neurophysiology



Apollo II DAQ System

Miniature & Lightweight Headstages

(ideal for large & small animals such as non-human primates, birds & mice)



32 channels

16 channels

Apollo Digital Signal Processor

- 64 electrode channels for recording
- User-defined digital filters
- 4 auxiliary analog inputs (16 kHz, 24 bits)
- 16 digital inputs
 - ✓ TTL events or strobed words
- Stereo audio output
- Battery-power option (line-noise immunity)

Miniature Digital Headstage

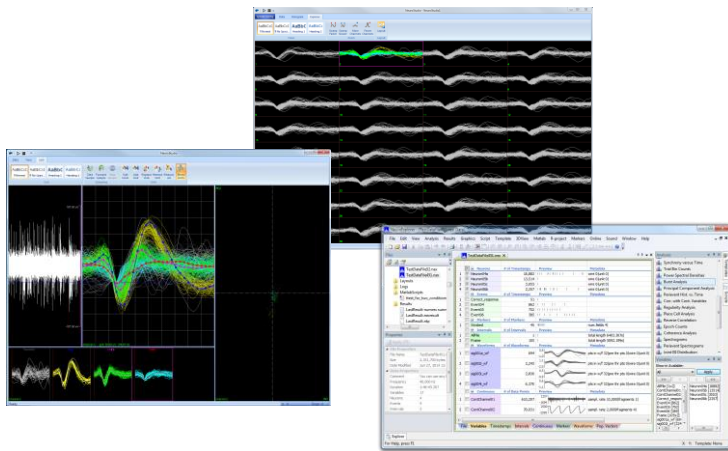
- 16/32/64 channels
- Onboard digitization (30 kHz, 16 bits)
- Wideband recording
 - ✓ Spikes
 - ✓ Field potentials
- Multiplexed, 12-wire LVDS cable
- Miniature size & ultra lightweight
- *In situ* impedance measurement
- Red & green LEDs for animal tracking
- 3-axis accelerometer for dynamical analysis

World's Smallest Digital Headstage!

Our digital headstage provides a miniature, high-fidelity neural link. The onboard analog filters and digital circuitry facilitate a stable and noise-immune link to the brain. The multiplexed output allows just a few wires to carry signals from up to 64 electrodes making it ideally suited whether recording from small animals such as freely-behaving mice or non-human primates (NHPs). The headstage front end is compatible with individual microelectrodes, microelectrode arrays, microwire / optrode arrays, silicon probes, and subdural cortical (iEEG/ECoG) grids. We offer a wide range of headstage cables with lengths up to 10 m and wraps optimized for biting protection and transmission of rotational torque to commutators for freely-behaving subjects.



APOLLO II



Software

- User-friendly GUI (interface)
- Multichannel signal displays
- 2D/3D PCA analysis
- Manual & auto spike sorting
- Stereotrode & tetrode support
- Multiple data format support
- MATLAB/C/C++ SDKs

Powerful & User-Friendly Software

Digital Headstage	Apollo II Digital Signal Processor
Input Channels: 16/32/64	Headstage Recording (R) Channels : 64
Input Connector: 18/36/36x2 pin, Female Omnetics	Headstage R Ports: 1 (aviation connector)
Size (L x W): 12 x 15 / 14 x 15 / 19 x 13 (all dimensions in mm)	Size (L x W x H): 400 mm x 240 mm x 44 mm
Thickness (H): 2 mm / 2 mm / 5 mm	Digital Input: 16 TTL or 16-bit strobed word
Weight: < 0.6g / < 0.8g / < 1.5 g	Analog Input: 4 (24 bits @ 30 kHz, BNC)
Noise: 2.4 μ V RMS (typical)	Audio Output: stereo line level (3.5mm jack)
Resolution: 0.25 μ V	Audio Output Filter: software-selectable DC or 300 Hz high pass
Input Impedance: 1.3 G Ω @ 10 Hz, 13 M Ω @ 1kHz	PC Interface: USB 2.0 (laptop), optical (desktop)
Input Range: \pm 5mV	Power Supply: switchable 5 VDC or 110-240 VAC
Sampling: 16 bits @ 30 kHz	
Bandwidth: 0.3 Hz (1p) – 7.5 kHz (4p)	
Output Cable (LVDS): 12 wires, length to 10 m	
Power Supply: 3.3 VDC	
Tracking LEDs: red & green, selectable on/off	