

# Wireless Neural Recording

## Wireless neural headstage systems for small animal research



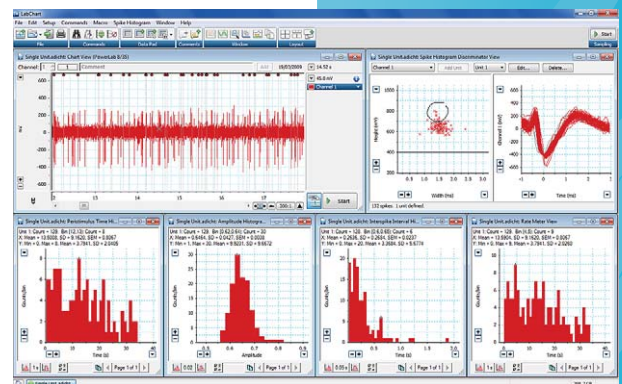
The complete TBSI Wireless Neural Recording Systems feature the PowerLab data acquisition unit, industry-leading TBSI Headstage Transmitter and Headstage Receiver, as well as powerful and flexible LabChart software.

ADInstruments and Triangle BioSystems Inc. (TBSI) give researchers a way to fast track their behavioral-electrophysiological studies with industry-leading systems for wireless acquisition of neural data. The systems are ideal for rodent studies that require high degrees of movement freedom as well as accurate and precise multichannel spike data.

TBSI provide small, lightweight headstages with 3.5 and 5.5 hour battery life (integrated), high sampling rates and a transmission range of up to 4 meters. In combination with a PowerLab unit, and LabChart Pro software, researchers can acquire and analyze action potential signals (spikes) from individual neurons, as well as local and low frequency field potentials from freely moving small animals.

### Flexible and easy to use systems:

- Record extracellular action potentials from individual neurons
- Record local and low frequency field potentials
- Suited to use in small animals such as rats and mice (4 m transmitter/receiver range)
- Ideal for studies including learning & memory, emotion & pathophysiology
- Simultaneously test two subjects with dual recording systems (i.e. social interaction test)
- Automatically detect & analyze multiple waveforms
- Discriminate and analyze extracellular neural spike activity
- Connect subject behavior with neural activity using the Video Capture Module
- Wireless Receiver Sets for researchers already using a PowerLab system with LabChart.



The Spike Histogram Module (above) is ideal for analyzing extracellular action potentials.

### Features & Benefits

- Monitor neural activity of freely moving rodents
- Record extracellular action potentials or field potentials
- Unparalleled sampling rates for high resolution signal acquisition
- Transmitters incorporate convenient rechargeable battery
- Lightweight Headstage Receiver for easy portability
- Powerful data acquisition and analysis with PowerLab and LabChart Pro software
- Specialized software modules for advanced spike and waveform analysis.

### ■ Data Acquisition and Analysis

# Wireless Neural Recording Systems

These premier Wireless Neural Recording Systems are convenient to use, with the only wires running between the headstage Receiver and PowerLab data acquisition unit. With a transmission range up to 4 m, the systems are ideal for rodent models.

Choose from a system with 5 or 15 channels, that includes a Wireless Neural Headstage and Receiver, 35 series PowerLab unit, LabChart Pro software with specialized analysis modules, and interface and testing cables. Researchers already using PowerLab can extend the capability of their current system with a **TBSI Wireless Neural Headstage Receiver Set** (details below). All system hardware and software can be purchased individually.

## Neural Headstage

- Compact and powerful with neural preamplifier circuitry
- Integrated rechargeable battery
- Transmitter battery life:  
15 Channel = 5.5 hrs  
5 Channel = 3.5 hrs.



TBSI 5 Ch Wireless Neural Headstage Transmitter


## Neural Receiver

- Small, lightweight and portable
- Supplied with: RF signal receiver/baseband demodulator & power supply.



TBSI 15 Ch Wireless Neural Headstage Receiver

## Ordering Information

PL3508B82/F* 5 Channel Wireless Neural Recording System	PL3516B83/F* 15 Channel Wireless Neural Recording System
1 x PL3508/P PowerLab 8/35 with LabChart (Win & Mac) includes LabChart Pro software	1 x PL3516/P PowerLab 16/35 with LabChart (Win & Mac) includes LabChart Pro software
1 x TB5469/F TBSI 5 Ch Wireless Neural Headstage Receiver Set Includes 1 x each: TB5663/F TBSI 5 Channel Wireless Neural Receiver TB5653/F TBSI 5 Channel Wireless Neural Headstage** Power supply Accessories.	1 x TB5470/F TBSI 15 Channel Wireless Neural Headstage Receiver Set Includes 1 x each: TB5664/F TBSI 15 Channel Wireless Neural Receiver TB5656/F TBSI 15 Channel Wireless Neural Headstage** Power supply Accessories.
1 x MLAC55 TBSI Receiver to PowerLab Interface Cable (5 Ch)	1 x MLAC56 TBSI Receiver to PowerLab Interface Cable (15 Ch)
1 x MLAC51 TBSI 5 Ch Headstage Testing Cable	1 x MLAC52 TBSI 15 Ch Headstage Testing Cable
<b>TB5469/F*</b> <b>TBSI 5 Channel Wireless Neural Headstage Receiver Set</b>	<b>*Ordering Notes:</b> When ordering a complete system or headstage receiver set, please specify Frequency (F) = 3 for 3GHz (standard) or 3.4 for 3.4GHz (alternate). <b>**Headstage options:</b> The wireless headstage is supplied standard as dipped but a covered option is available and must be specified at the time of purchase. The <b>TBSI Headstage LED Option</b> adds two LEDs to the headstage for video tracking (reduces battery life by 30%). The LEDs are placed superior to the headstage in an upward facing position and will operate in tandem with the headstage. Headstage LEDs and external batteries are available separately and must be specified at the time of headstage purchase.
1 x TB5663/F TBSI 5 Channel Wireless Neural Receiver	 <b>Share your data with colleagues.</b> <b>Free LabChart Reader – download to view and analyze LabChart data.</b>
1 x TB5653/F TBSI 5 Channel Wireless Neural Headstage**	
1 x Power supply and accessories	
<b>TB5470/F*</b> <b>TBSI 15 Channel Wireless Neural Headstage Receiver Set</b>	
1 x TB5664/F TBSI 15 Channel Wireless Neural Receiver	
1 x TB5656/F TBSI 15 Channel Wireless Neural Headstage**	
1 x Power supply and accessories	

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PowerLab systems and signal conditioners meet the European EMC directive. ADInstruments signal conditioners for human use are approved to the IEC60601-1 patient safety standard and meet the CSA C22.2 No. 601.1-M90 and UL Std No. 2601-1 safety of medical electrical equipment standards.



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