Triangle BioSystems International

Simplicity in Neuro-Solutions

16 Channel Wireless Neural Recording System

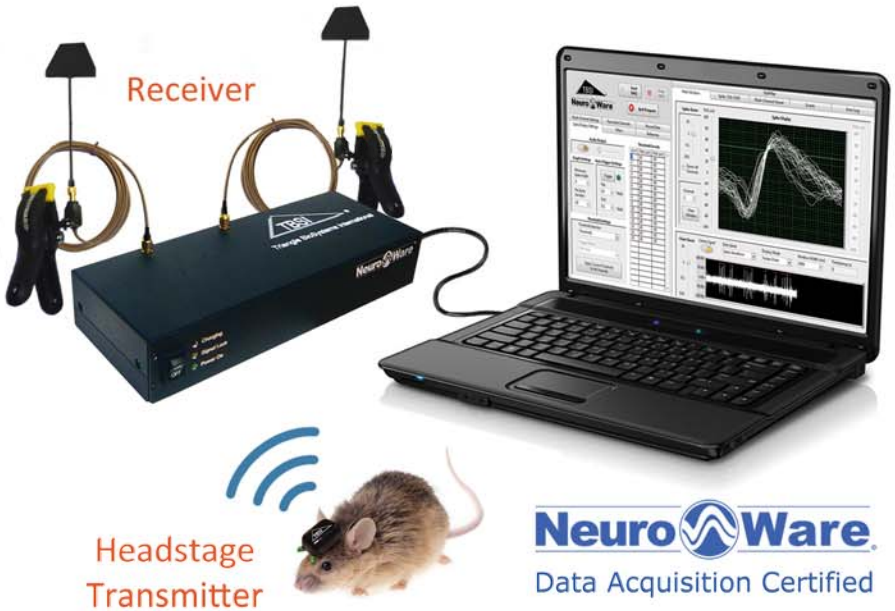
W-Series

» For Neuroscience Research Applications

FEATURES

- » Reliable wireless operations across 4 meters
- » Compatible with 1Mohm or lower electrode impedances
- » Factory configurable total system gain (800x standard)
- » DAQ integrated solutions available - NeuroWare© software certified
- » Rechargeable internal battery power up to 4.2 hours
- » Typical bandpass filtering per channel: .8Hz to 7kHz
- » 100kHz sampling rate per channel
- » Weight: 4.0 grams
- » Dual radio systems available
- » Magnetic on/off switch technology
- » Analog signal and TTL event inputs on receiver (requires internal DAQ)

W16 Headstages



PRODUCT DETAILS

Triangle BioSystems International has developed a high channel count wireless neural headstage system that allows researchers to continuously and simultaneously obtain biopotential data from up to 15 electrodes. No longer do experiments have to be constrained by wiring a test subject to the recording system. The complete system is comprised of a wireless headstage transmitter with integrated battery, RF signal receiver/baseband demodulator, power supply and all required cables. With an effective range of 4 meters, this system provides a wireless connection between the implanted electrodes and the data recording system.

In the development of this system, TBSI utilized custom ASIC technology and proprietary radio design techniques to provide high channel count functionality in a wireless headstage that is both small and light weight (4.0 grams). This design also incorporates neural preamplifier circuitry to create an extremely compact and powerful transmitter.

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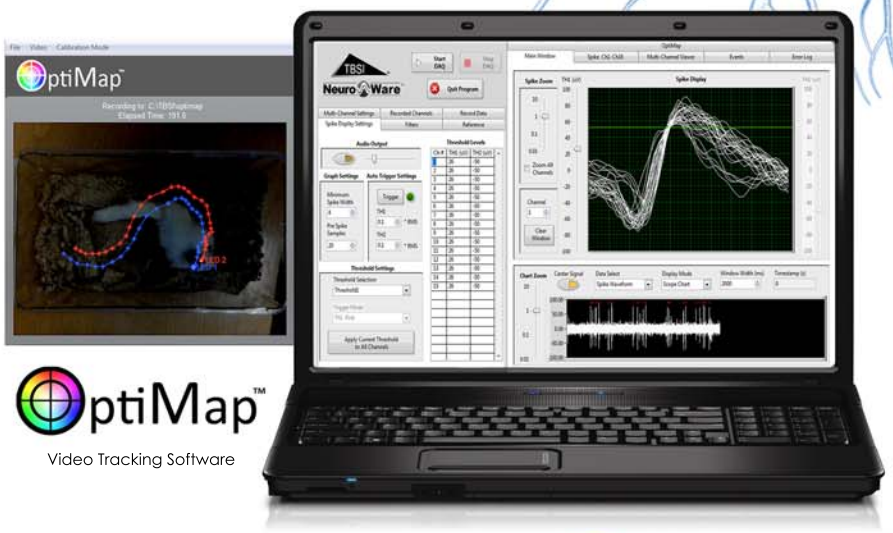
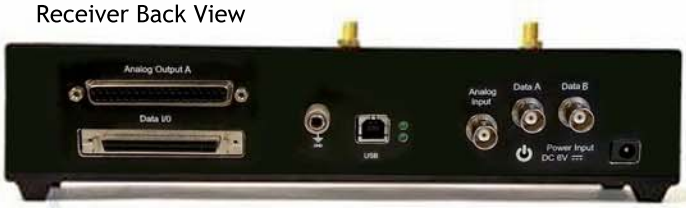
DATA ACQUISITION

- **NeuroWare©** provides user-customizable digital filtering & referencing, spike triggering & multiple data viewing options
- **OptiMap™** provides real-time & offline LED tracking, time-saving post-processing functionality and option for data synchronization with NeuroWare™ data sets
- Internal receiver DAQ provides up to 24 TTL event inputs & one analog data input, synchronizable to headstage data in NeuroWare™



Receiver Back View



NeuroWare®

Data Acquisition Software

Receiver output options include analog data to an ADC of your choice or digital data to NeuroWare™ or both modalities together.

W16 SYSTEM SPECIFICATIONS

PARAMETER	MIN	TYP	MAX	UNITS	NOTES
Power Supply					
Battery life	3.5		4.2	Hours	Re-chargeable battery with 20 minute recharge time
Analog Input Specs					
Input voltage range		4		mVolts	Maximum Input voltage Vp-p
Gain Selection	790	800	810		Factory selectable total system gain
Bandwidth	0.8		7000	Hz	-3dB input signal level BW
Input impedance		6.5M		ohms	At 1kHz
Input referred noise		8.5		µVrms	for DC 10kHz frequency, 30µV
Input referred noise		5.5		µVrms	for 500Hz - 5kHz frequency
Sampling Rates/Channel		100		kHz	At headstage (max 30kHz sampling rate/channel at ADC)
Mechanical Specs					
Length		22.2		mm	Edge to Edge (including connectors)
Width		16.5		mm	Edge to Edge
Height		14.2		mm	Edge to Edge
Weight		4.0	4.2	grams	With connector and dipped package
Input connector					18 Pin Omnetics, .025" or 2 x 10 Pin Omnetics, .050"
Radio Specs					
Center frequency		3.05		GHz	With +/- 100 Mhz bandwidth
Transmit power			300	µW @ 3 meters	FCC Sec. 15 109B(a)
Transmit antenna		3.05		GHz	Tuned chip antenna with circular diversity
Transmit range		4.0		Meters	With connector and dipped package

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