



Triangle BioSystems, Int'l.

Dual Wireless Neural Headstage Systems

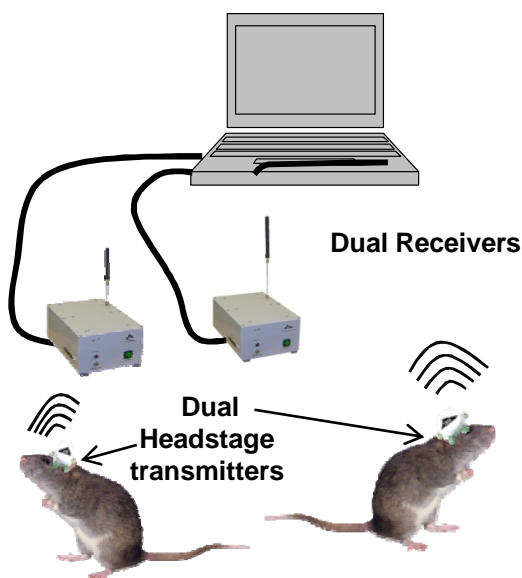


Headstage Features

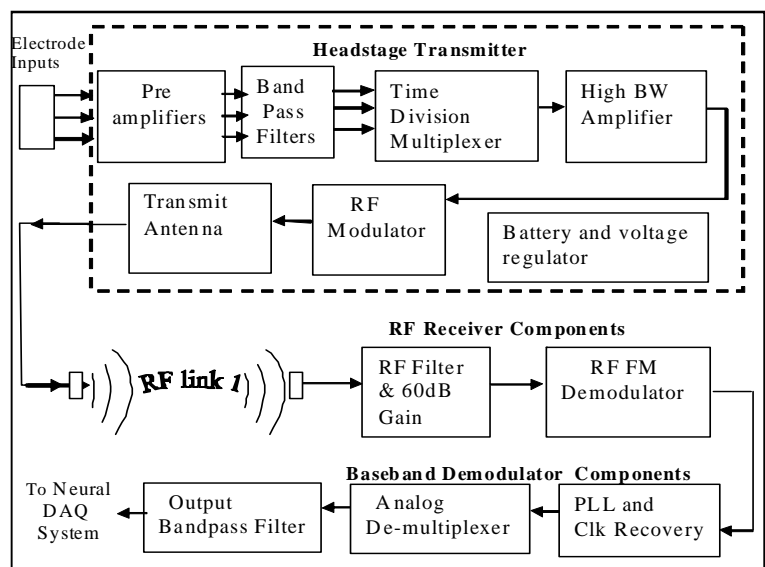
- Wireless operations across 3 meters
- Operates in unlicensed radio band below FCC limits
- Available with 5, 16, 32 and 64 radio channel systems
- Rechargeable battery power
- Bandpass filtering per channel .8Hz to 7kHz typical
- 50kHz sampling rate per channel
- Same cage or adjacent cage location proximity

Triangle BioSystems, Int'l. has developed a dual wireless neural headstage system that allows researchers to continuously and simultaneously monitor two freely moving animals in the same or adjacent cage. Each of the headstage systems have different RF carrier frequencies and radio components that allow any combination of 5, 16, 32 and 64 channel wireless systems to work side by side within the same transmit range of 3 meters. For example, two 32 channel systems, or one 16 channel and one 5 channel, or two 5 channel systems can operate together in the same cage without interfering with each other. For the first time 2 animals can be simultaneously monitored in the same cage without having to worry about tangled tethered or commutator connections.

System Overview



System Block Diagram Radio system



Headstage Specifications

Electrical

Parameter	Min	Typ	Max	Units	Notes
Power Supply					
3 volt supply	2.75	2.8	2.85	Volts	Power consumption 11.0ma (typical)
Battery life		5.5		Hours	Same as single radio specification
Analog Input Specs					
Input voltage range		4		mVolts	Same as single radio specification
Common mode center		.9		Volts	“
Gain selection		600			“
Bandwidth	.8		8000	Hz	“
Input impedance		22M		ohms	“
Input referred noise		10		μVrms	“
Sampling Rates		50		kHz	“
Radio Specs					
Center frequency1		3.0		GHz	With +/- 100 MHz bandwidth
Center frequency2		3.4		GHz	With +/- 100 MHz bandwidth
Transmit power			300	μV @ 3 meters	FCC Sec.15.109B(a)
Transmit range		2.0		Meters	With receiver on top of cage

Mechanical Specifications

All headstage and receiver mechanical specifications of the dual radio system are the same as the single radio system specification. In other words, there is no weight, height, length or width difference between the dual radio headstages and single radio headstage.

Please refer to the specifications of the appropriate headstage for detail mechanical information of the each of the headstages.

Ordering Information

Wireless Headstages			
Part No.	Battery Operating Time	Battery Type	Connector Pins
5RadioHS_025_36_dual	2.5 hour	Internal	10
5RadioHS_025_36_dual24H	24 hour	External	10
16RadioHS_025_36_dual	6 hour	Internal	20
16RadioHS_025_36_dual24H	24 hour	External	20
32RadioHS_025_36_dual	6 hour	Internal	36
32RadioHS_025_36_dual24H	24 hour	External	36
64RadioHS_025_36_dual	6 hour	Internal	36
64RadioHS_025_36_dual24H	24 hour	External	36
5NeuroRadioRX dual	Wireless Receiver/Demodulator		
16NeuroRadioRX dual	Wireless Receiver/Demodulator		
32NeuroRadioRX dual	Wireless Receiver/Demodulator		
64NeuroRadioRX dual	Wireless Receiver/Demodulator		

