



# Testimonials, Publications, Price List

## Wireless Telemetry by Open Source Instruments

### 24/7 Recording with Cohabiting Animals

## Testimonials

Here is what our customers have said about working with us and using our equipment.

### Reliable

“I have used Open Source Instruments telemetry system since 2014, and I have never thought to change it. The transmitters are very reliable and the continuous updates and improvements in both hardware and software makes them always at the top range of the current technologies. The easy way of switching them on and off, as well as the open source file format, are fundamental for my research.”

Dr. Gabriele Lignani, 2021  
*Principal Research Fellow - Associate Professor*  
Clinical & Experimental Epilepsy  
Institute of Neurology, University College London

### Custom Applications

“It is thanks to OSI that I have been able to execute my cutting edge research. Their equipment is tailor-made for long term EEG recordings. Animals can be implanted and then recorded without having to manipulate them again. The recordings are reliable and of very high quality. What is the most understated element here is that the company, unlike others in Neuroscience, is heavily engaged in the science. I have collaborated time and again with the engineers at OSI to produce custom-made applications for specific experiments. The system comes with a cutting edge seizure detection algorithm that allows for fast scoring of data and also on-demand manipulation. This is truly a unique system that can really push your experiments forward.”

Alfredo Gonzales-Sulser, 2021  
*Research Fellow, Deanery of Biomedical Sciences*  
Center for Discovery Brain Sciences  
University of Edinburgh

### Open Source

“Our demonstration of successful gene therapy for focal neocortical epilepsy would not have been possible without the Open Source Instruments' wireless EEG system. It is a versatile and cost-effective solution. The fact that all the designs are open source gives the ability to integrate the system with other hardware and software”

Dr. Dimitri M Kullmann, 2015  
*Head of the Experimental Epilepsy Group*  
Institute of Neurology, University College London

## High Quality Recordings

"In 20 years of recording rodent EEG, I have found that the wireless telemetry equipment from Open Source Instruments enables unparalleled quality EEG recordings in real time in many animals with high sampling over extended periods of time, and importantly, the programs and equipment are easily adaptable for purpose"

Dr. Matthew Walker, 2013  
Department of Clinical and Experimental Epilepsy  
Institute of Neurology, University College London

## Practical

"Documentation on the OSI website covers both basic mechanisms (e.g. the source of EEG signals) and in-depth technical information about hardware and software. This information is exceptionally detailed and thus very helpful for comprehension of scientific background and practical use of their products"

Dr. Sebastian Bauer, 2014  
*Head of Translational Epileptology*  
*Epilepsy Center Frankfurt Rhein-Main*  
Goethe University Frankfurt

## Easy to Use

"In general, the Open Source Instruments' wireless telemetry system is very friendly, and installation of the system is uncomplicated especially with the full support of OSI team.

The transmitter's body is implanted subcutaneously, beneath the skin of the animals, thus permitting recordings from animals housed together or separately. When co-housing of animals is possible, one system may allow recording from tens of animals.

A battery-operated system, i.e. sensor implanted within an animal's body can avoid the electrical noise of a tethered system. Switching transmitter (and hence recording) on and off is quite simple, only by 'approaching' the device with a magnet. This enables us to perform several sessions of recording from the same animal, therefore recording over very long periods.

The system is also provided with a very friendly event-detection software which allows the analysis of a huge amount of recording in a very short time."

Dr. Tawfeeq Shekh-Ahmad, 2021  
*Assistant Professor*  
Department of Pharmaceutics

## Continuous Operation

"As well as allowing us to monitor the power of oscillations across all frequency bands, the EEG traces from these devices were of sufficient quality to allow us to identify specific behavioral events. Recordings were consistently reliable 24/7 over the full three weeks of our experiments"

Dr. Louise Upton, 2014  
*Senior Research Scientist*  
Department of Physiology, Anatomy and Genetics  
University of Oxford

## Collaborative Approach

"I can only highly recommend the Open Source Instruments Subcutaneous Transmitter System. It is a reliable and cost-effective solution for acquiring rodent EEG telemetry. Moreover, the technical support provided by Open Source Instruments has been exceptional. From honest advice prior to acquiring the system, through to assistance with system setup and creative solutions for system customization, Open Source Instruments has always responded quickly and efficiently"

Dr. Iris Oren, 2014  
*Principal Investigator and Chancellor's Fellow*  
Centre for Cognitive and Neural Systems  
The University of Edinburgh

## Publications

Below is a sample of recent published studies which used OSI's telemetry system to collect data. A complete list of [publications](#) is on our website.

[Encephalitis patient-derived monoclonal GABAA receptor antibodies cause epileptic seizures](#) (Nov 2021) Kreye et al, J Exp Med, doi: 10.1038/s42003-021-02635-8.

[Multimodal electrophysiological analyses reveal that reduced synaptic excitatory neurotransmission underlies seizures in a model of NMDAR antibody-mediated encephalitis](#) (Sep 2021) Wright et al, Commun Biol, doi: 10.1038/s42003-021-02635-8.

[Medial septal GABAergic neurons reduce seizure duration upon optogenetic closed-loop stimulation](#) (Mar 2021) Gonzalez-Sulzer et al, Brain, doi:10.1093/brain/awab051.

[The matrix metalloproteinase inhibitor IPR-179 has antiseizure and antiepileptogenic effects](#) (Nov 2020) Broekaart et al, J Clin Invest, doi: 10.1172/JCI138332.

[Altered Hippocampal-Prefrontal Neural Dynamics in Mouse Models of Down Syndrome](#) (Jan 2020) Chang et al, Cell Rep, doi: 10.1016/j.celrep.2019.12.065.

[Combination antioxidant therapy prevents epileptogenesis and modifies chronic epilepsy](#) (Sep 2019) Shekh-Ahmad et al, Redox Biol, doi: 10.1016/j.redox.2019.101278.

## Price List

Below are two samples for setting up a fully capable telemetry system to record from 40 animals with single channel 256 SPS transmitters. The 40 x transmitters cost is the same for both options (40 x \$500 = \$20,000). Included in any system set-up:

1. two sample transmitters for testing
2. 10 hours of technical support
3. free, open source software

**Sample 1** - Using the The [Octal Data Receiver](#) model with external, cabled antennas and a full IVC rack with a Faraday Canopy. The sample cost of such a set-up is:

- 1 x ODR \$5000
- 1 x Driver \$3000
- 1 x Faraday Canopy (FE5A)\$5000

**Total \$13000**

### 2021 Price List Select Items

|   |        |
|---|--------|
| Octal Data Receiver (A3027) and 8 antennas            | \$5000 |
| LWDAQ Driver (A2071)                                  | \$3000 |
| Faraday Canopy (FE5A)                                 | \$5000 |
| Subcutaneous Transmitters (A3028-single channel) each | \$500  |
| Animal Cage Camera (ACC)                              | \$1000 |
| Animal Location Tracker (ALT)                         | \$5000 |

**Sample 2** - Using the [Animal Location Tracker](#) model with integrated antennas and using with desk-top Faraday enclosures. In addition to recording EEG, the ALT can monitor social interactions. The cost of such a set-up is:

$$8 \times \text{ALT} = 8 \times \$5000 = \$40000$$

$$4 \times \text{Faraday Enclosure (FE3AS)} = 4 \times \$3000 = \$12000$$

**Total \$52000**

A [Faraday Enclosure](#) is required to guarantee robust telemetry signals. Our Faraday Enclosures use transparent metal mesh fabric to block interference from radio station and cell phone signals. OSI sells Faraday enclosures for bench top or IVC racks use.

| Version | Volume (mL) | Operating Life (days)* | Sample Rate (SPS) | Number of Channels | Bandwidth (Hz) | Cost  |
|---------|-------------|------------------------|-------------------|--------------------|----------------|-------|
| A3028P1 | 0.6         | 33                     | 128               | 1                  | 0.3-40 Hz      | \$500 |
| A3028A  | 1.2         | 14                     | 512               | 2                  | 0.3-160 Hz     | \$600 |
| A3028C  | 1.2         | 38                     | 256               | 1                  | 0.3-80 Hz      | \$500 |
| A3028E  | 2.8         | 132                    | 512               | 1                  | 0.3-160 Hz     | \$500 |
| A3028Q3 | 4.5         | 155                    | 512               | 2                  | 0.3-160 Hz     | \$600 |