KAHA SCIENCES

ADINSTRUMENTS
making science easier

Optogenetics Telemetry

Optogenetic stimulation and recording without the restriction of battery life

The Kaha Sciences Optogenetics Telemeter from ADInstruments is the first fully implantable, wireless optogenetic solution to offer both optogenetic stimulation and recording (EEG, ECG, and EMG) within the same device.

Designed for use in rats, the optogenetics telemeter is an ideal solution for chronic and therapeutic research applications including cognition, neurodegenerative treatment, behavioural changes and seizure suppression, without the restrictions of battery power and tethers.

Wireless - power and data recording

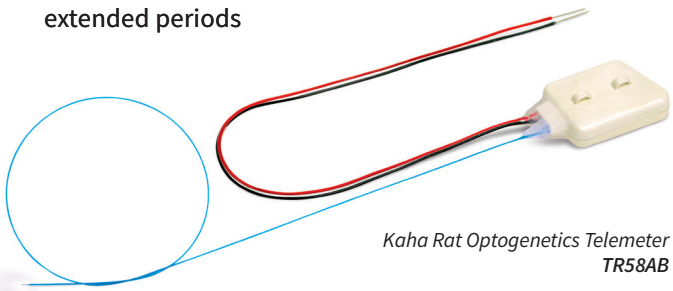
High fidelity signals

Simultaneous stimulation and recording

24/7 continuous recording

Key Features

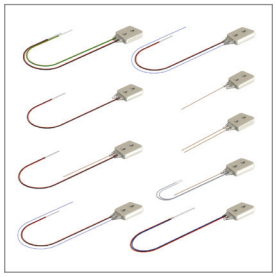
- Suitable for use in rats >175g
- Fully implantable - No tethers or large headstages
- Reusable telemeters encased in durable, biocompatible hard-shell
- Simultaneous blue LED (460nm) light stimulation and biopotential recording (e.g. ECG, EEG or EMG)
- Completely software controled, user-defined stimulation parameters
- Cohousing feature enables two rats in the same cage for interactive behavioural studies, or a single rat (>350g) implanted with two telemeters for increased range of recording options.
- Data transmission range up to 5 meters using battery backup
- Powered by the SmartPad using patented wireless inductive technology, supporting continuous recording at high sampling rates (2kHz) for extended periods



Kaha Rat Optogenetics Telemeter
TR58AB

System Configuration

Configure a system to meet your exact needs



Telemeter of your choice

One SmartPad per animal

One configurator per lab

PowerLab options with LabChart or LabChart Lightning

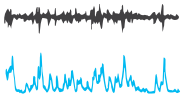
A typical telemetry setup requires one telemeter of your choice and one SmartPad per animal. Each laboratory requires just one Configurator to configure all your Kaha equipment.

Pair with PowerLab and LabChart/LabChart Lightning, and you have a complete solution for recording and analyzing a range of physiological signals over extended periods of time.

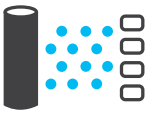
Other signal options available in rat telemeter range

Pressure

Biopotentials (ie., ECG, EMG, EEG)



Sympathetic nerve activity (SNA)



Tissue Oxygen

Temperature (output in all telemeters)

Advantages of Telemetry Based Optogenetics

Conscious	Collect data from conscious animals and perform cognitive and behavioral studies not possible under anesthesia.
Unrestrained	Perform studies on animals in their home cage without the stress of handling or tethers.
Long-term	Offers truly chronic recording over days, weeks, or months. Develop stimulation protocols while studying biological rhythms and follow the development of pathology as it occurs.
Fully Implantable	Full surgical implantation of telemeters ensures there are no exposed wounds or sites for possible infections, improving animal welfare.

Want to learn more?

Get in touch with your local ADInstruments representative, or visit adinstruments.com/kaha to learn more about our wireless telemetry solutions.

Visit our website or contact your local ADInstruments representative for more information

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