Stellar Telemetry
The Freedom to move anywhere, anytime and still collect your data

- Pressure
- Temperature
- Heart Rate
- Activity
- ECG
- EEG
- EMG
- EOG

Mice to Large Animals

www.TSE-Systems.com  Info@TSE-Systems.com
Stellar Telemetry is the next generation of implantable telemetry technology -
The system allows monitoring of unlimited animals with just one receiver thus allowing group housing, social interaction studies AND monitoring of animals without the need for individual dedicated receiver platforms under each cage. Further, no other system on today’s market allows researchers the freedom to move your animals away from their home cage for the purpose of performing specific tests anywhere in your facility with no loss in data thanks to on-board controlled recording and storage. Animals are allowed to roam freely and interact in groups with no restriction in number. No large complicated, cumbersome set-ups required, just one receiver and transmitter(s) is all that is required to perform studies. The Stellar Telemetry system can be implanted into any animal from mice to swine with no additional items required. Finally an implantable telemetry system for research that performs with great efficiency, and ease without the large capital expense required with othersystems on the market

The Stellar Telemetry system allows researchers to measure and collect vital signs while performing phenotyping, physiological, pharmacological, behavioral, metabolic, inhalation in your facility.

Transmitters – Pressure, Heart-Rate, ECG, EEG, EMG, EOG, (Dual)Temperature and (3D)Activity
Stellar Telemetry transmitters allow measurement of activity, pressure (P), electrocardiogram (ECG), electro-encephalogram (EEG), electromyography (EMG), electrooculography (EOG), heart rate and temperature in a hermetically sealed implanted system. All leads feature solid state pressure tipped sensors, eliminating slow frequency response, head pressure and animal movement noise which are associated with fluid filled catheters. Transmitters can be ordered in any combination of the following: Pressure / ECG / EEG / EMG / EOG / Heart Rate. Temperature and Activity are included standard with any transmitter configuration.

Stellar Telemetry Receiver and Antenna
Monitor numerous animals with a single receiver. Receive your data from anywhere in the lab. Animals may also be removed from receiver range while the implant is still recording their parameters with Stellar’s unique built-in self-scheduling/data storage capabilities. Data transfer of the stored data is resumed once the animal is within range. Real-Time waveforms can be reviewed to guide implantation or provide acute feedback. The new analog output function can be used for real-time recording and synchronization with external devices and recordings. The antenna can be placed in a room, on the wall, ceiling, or even in another room by utilizing the 5m transmission range. The array feature may be used incorporating additional antennas to cover even larger areas.
BIOPAC AcqKnowledge Software – Stellar Module
Use the power of AcqKnowledge Software for seamless integration of animal scheduling, telemetry data recording, video monitoring, and fully automated signal analysis for a large variety of physiological signal types. Scripting options allow for fully automated and customized analysis routines and output (e.g. to EXCEL™).

Key features
• Easy-to-configure animal schedule with intuitive calendar interface
• Powerful display options—historic, real-time, processed: view data in multiple formats simultaneously
• Signal conditioning tools including filtering options and artifact removal
• Multi-Animal, Multi-Channel simultaneous automated data analysis
• Data and results are automatically exported to Excel for further statistical analysis

NOTOCORD-hem™ Evolution
NOTOCORD-hem™ Evolution is an advanced software platform designed to acquire, display and analyze physiological signals.

Key features
• Flexible and open software platform providing customized analysis
• Simultaneous acquisition possible from different sources and systems (e.g. physiological data and video)
• Multiple sessions to acquire data from different channels in each session
• Compatible with various experimental setups and animal species
• Extensive library of signal processors and analyzers
• Various displays with advanced capabilities (continuous, digital, 2D, 3D, video…)
• Real time review of data and results during acquisition
• Ultra fast access to data whatever the experiment file size
• Fast and customizable reporting in Excel® with the possibility to create customized data extraction templates
• Single and highly compressed generated file containing all data
• GLP / 21 CFR Part 11 compliant
Battery Life
Due to the flexibility in programming the Stellar battery life allows for unsurpassed lengths of recording time with the batteries lasting on average 4 times longer than current systems. The disposable Stellar transmitters can be resterilized and reused as many times as needed and will maintain flexibility and accuracy throughout.

<table>
<thead>
<tr>
<th>TRANSMITTER ANIMAL BODY WEIGHT</th>
<th>XS 17 g+</th>
<th>S 30 g+</th>
<th>M 170 g+</th>
<th>L 240 g+</th>
<th>XL 500 g+</th>
<th>XXL 2500 g+</th>
<th>XXXL 3500 g+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical range</td>
<td></td>
<td></td>
<td></td>
<td>5 meters / 16 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>1.5 cm³</td>
<td>2.2 cm³</td>
<td>6 cm³</td>
<td>8 cm³</td>
<td>13 cm³</td>
<td>26.2 cm³</td>
<td>48 cm³</td>
</tr>
<tr>
<td>Parameters</td>
<td></td>
<td></td>
<td></td>
<td>Pressure(s), Tidal Volume, Heart Rate, Temperature(s), Biopotentials, Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample rate / sec</td>
<td></td>
<td></td>
<td></td>
<td>100 / 200 / 500 / 1000 Hz (1 ... 5000 Hz optional)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto on / off</td>
<td></td>
<td></td>
<td></td>
<td>Unit is always in power saving mode until instructed by the computer to conduct a measurement session</td>
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</tr>
<tr>
<td>Battery life</td>
<td>up to 6 months</td>
<td>up to 6 months</td>
<td>up to 12 months</td>
<td>up to 24 months</td>
<td>up to 36 months</td>
<td>up to 48 months</td>
<td>up to 60 months</td>
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<tr>
<td>Housing</td>
<td>Silicone</td>
<td></td>
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<tr>
<td>CHANNEL PRESSURE</td>
<td></td>
<td></td>
<td></td>
<td>-20 to +300 mmHg</td>
<td></td>
<td></td>
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<tr>
<td>Pressure range</td>
<td></td>
<td></td>
<td></td>
<td>Solid State Pressure Sensor</td>
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<tr>
<td>Ambient barometric pressure</td>
<td></td>
<td></td>
<td></td>
<td>up to 7600 mmHg (10 atm.)</td>
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<tr>
<td>TEMPERATURE</td>
<td></td>
<td></td>
<td></td>
<td>15...45 °C</td>
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<tr>
<td>RECEIVER</td>
<td></td>
<td></td>
<td></td>
<td>Unlimited</td>
<td></td>
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<tr>
<td>Maximum number of transmitters per receiver</td>
<td></td>
<td></td>
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<tr>
<td>Barometric pressure reading</td>
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<td></td>
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<td>Built into Receiver Unit</td>
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<td>Computer connection</td>
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<td></td>
<td></td>
<td>USB</td>
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<tr>
<td>Power</td>
<td></td>
<td></td>
<td></td>
<td>from USB Port</td>
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