

# GLP TSS-1 TELEMETRY SIGNAL SIMULATOR

Provides simulated telemetry signals for system setup and test



## FEATURES:

- Calibrated test signals
- Simulates various transmitter models
- Simulates various physiologic signals
- Radio-frequency output similar to D70 transmitter models
- Calibration mode available to ensure simulator accuracy
- Use to test cage setup for noise, signal dropout, crosstalk, etc.
- Multiple models available for system validation

## PRODUCT OVERVIEW

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The telemetry signal simulator simulates the output of select PhysioTel™ transmitter models from Data Sciences. Physiologic signals have been selected that are typical of the most common animal models monitored with the various transmitter models. The TSS-1 is an invaluable tool for initial system setup and system testing. It also provides a convenient way to learn and demonstrate the use of the Dataquest system without the need for an implanted transmitter.

### INITIAL SYSTEM SETUP

It is often difficult to test initial system functionality without using transmitters. The TSS-1 simulator provides radio-frequency output which can simulate a wide range of Data Sciences' transmitter models. The Dataquest system is configured the same as if an actual transmitter was being used. Each simulator has up to 15 different output modes. The simulator is simply placed into the most appropriate mode as configured in the Dataquest system and placed on or near a telemetry receiver.

Since the TSS-1 is battery powered, it is very convenient to use this in your actual animal environment. The transmission range and characteristics are designed to be identical to a D70 transmitter. This is particularly valuable when setting up systems for large animals such as dogs or primates. The TSS-1 can be used to test your receiver setup to ensure that you are getting adequate signal reception from all areas of the cage. This can be a powerful tool to assist in placement of receivers, assess the need for shielding or separation between cages, and selection of the number of receivers to use in each cage.

### USER TRAINING

With the availability of a "live" telemetry source, it is easy for new users to become familiar with the system prior to implanting animals with telemetry transmitters. A mock study can even be run by setting up the system hardware and placing the TSS-1 near one or more telemetry receivers. The TSS-1 provides actual physiologic signals for blood pressure, ECG, temperature, and EEG, thus allowing true simulation of a study.

### SYSTEM VALIDATION

Perhaps the most valuable use of the TSS-1 is for validation of the Dataquest system. Whether you are using Dataquest A.R.T., Dataquest A.R.T. Analog, or Dataquest OpenART, the TSS-1 will greatly simplify the task. System components and software algorithms can be tested without the need for actual animals. In addition, the TSS-1 provides physiologic signals with known values.

The TSS-1 is available in several models in order to provide a variety of physiologic signals paired with the transmitter model you are using in your studies.

### HIGH LEVEL ACCURACY

The TSS-1 is based on a highly accurate 5MHz crystal. This provides long-term accuracy over a wide range of environmental conditions. Each simulator includes a calibration mode which can be used to check both the accuracy of the simulator and the Dataquest system as a whole.

## EASY TO USE

The simulator output is exactly the same as a telemetry transmitter. Each simulator includes an on/off switch to allow the conservation of battery life. An LED lights for one second when the simulator is turned on and goes off when the simulator configures itself. An AM radio can also be used to verify that the simulator is properly functioning. The TSS-1 also includes a push-button switch to select from one of the 15 available simulations.

## DEVICE CALIBRATION

Since each simulator includes a calibration mode, it is very easy to check the calibration on-site without the need to send the device to Data Sciences. Data Sciences can also provide a calibration service if this is required by your internal policies.

## TELEMETRY SIGNAL SIMULATOR

### Specifications

#### Models available:

- Large animal (TA, CTA, PA, PCT, PCP, CCP)
- Small Animal (TA, CTA, PA, PXT)
- Mouse (TA, ETA, PA)
- Demonstration (various transmitter models)

#### Simulations:

- Each simulator is capable of up to 15 pre-programmed data simulations.

#### Accuracy:

- At 1000Hz output: +/- .5Hz (crystal controlled)

#### Output:

- Capable of simulation of any transmitter/signal combination
- RF output range of approximately 1 meter. Output approximates that of a standard D70 transmitter.

#### Power:

- Requires 2 AAA batteries
- Continuous battery life of ~ 8 days
- On/off switch provided

#### Dimensions:

- 2.5cm x 6cm x 9.5cm

#### Ordering Information

##### Part Number Description

- 275-0022-001 Large Animal Simulator
- 275-0022-002 Small Animal Simulator
- 275-0022-003 Mouse Simulator
- 275-0022-005 Demonstration Simulator