

CATS –SATag

Multi-sensor satellite transmitter

Data sheet

Highlights:

- Global coverage
- Manual download of (raw) data
- Extended deployment period (solar)
- Reciprocal sensor control
- Multi-mode
- Extensive CATS-web portal
- On-board statistics



CATS-SATag with optional solar re-charge

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Document status explanation

<i>Objective Specification</i>	Document contains target values. Revised and supplementary data will be published later.
<i>Advance Information</i>	Document contains data based on early testing. Revised and supplementary data will be published later.
<i>Early Production Information</i>	Document contains data from product verification. Revised and supplementary data may be published later.
<i>Production Information</i>	Document contains the final product specification.

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1. Overview

The CATS-SATag provides excellent global coverage using the Iridium® satellite system. It comes with a flexible set of sensors, depending to how it is utilized, its main focus, however, is on accurate positioning via GPS. Whether the device is being used as a pop-off tag or to track an animal, the associated web portal allows the user to view the data as soon as it is sent by the device. The on-board algorithms make sure that the user-defined statistical analysis provide the reduced data stream needed to transfer the data per satellite.

The CATS-SATag can be customized for terrestrial and marine environments and even gives the user the option to send commands in order to change/trigger certain events if necessary. It can be fitted with a large set of sensors depending to the users requirements. The optional solar re-charge allows long-term deployments.

2. Product features

Model	Sensors	Supply	Interfaces	Features	User level
CATS - SATag v1.0.r0.	Pressure (Depth, 300m, 500, 1000m, 2000m) Barometer Accelerometer Gyroscope Magnetometer (compass) Pitot (Air pressure) Temperature Light Speed (speed wheel) Conductivity Sound GPS (RAW) GPS NAVKA 3-D IMU analysis possible GSM Video	Primary cells Li-Ion Primary cell or Li-ion	USB Wireless USB and wireless (optional)	Choose your own sensors Pre-defined set of sensors Infrared (IR) capable IR LEDs (optional) Visible light LEDs (optional) Solar-recharge (optional)	Professional Advanced Beginner
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3. Pricing

The basic CATS-SATag with the use of the CATS-Web portal and standard sensors starts at a price of 2200 Euro. This does not include any customization or larger capacity devices (i.e. more battery). The optional solar re-charge version add another 250 Euro.

The satellite charges are charged on a per-usage basis with an approximate 80 cents per message (for example, 11 GPS points can be stored in one message) plus the one-time activation charge of 50 Euro.

4. Detailed description

The biggest advantage of the CATS-SATag is its global coverage. Using the Iridium® satellite system it is superior to other systems used in animal tracking. In addition, it can be customized heavily due to its flexible sensor platform. Whether it is utilized purely as a location-tracking device or as a very sophisticated time-depth recorder the CATS-SATag will provide, as close to real-time as the programming allows, quick access to the pre-processed data from anywhere in the world onto your laptop, provided internet access is available.


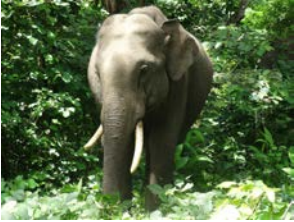
If the solar-charged option has been chosen, long-term deployments for many months are possible. The CATS-SATag starts with its minimum configuration at about 40g and if a certain number of units are being ordered, CATS will offer a user-defined firmware adjustment for reduced cost.

Further is it possible to download the stored data manually in case the tag is retrieved. As all data is being stored in its raw format, detailed analysis can be applied.

5. Sensor performance

Sensor type	Max. sampling rate (Hz)	Range	Resolution	Resolution (bit)	Comments
Accelerometer	800 (3-axis)	2 g - 16 g	0.0000061 g	16	
GPS	10	-	NavSol +/- 5-20cm	-	
Pressure (depth)	100	0-2000 m	+/- 20 cm	24	Various sensors
Conductivity	50				
Temperature	100	[-45°C - (+85°C)	+/- 0.8°C	24	
Light	10	500 lux	-	16	Not calibrated, relative values

6. Application examples

Application (mode)	Deployment duration	Example
Dugong	3 months	
Elephant	18 months	
Whale shark	6 months	