

CATS Mini Diary

User-defined mini multi-sensor data recorder

Data sheet

Highlights:

- 14-channel high-res recording
- Ultra low power consumption
- Very small footprint (from 6g)
- GPS (optional)
- CATS-Visualizer analysis software
- Up to 800Hz sampling rates
- User can choose sensor configuration



USB Mini-Diary (sample for small shark)

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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.
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1. Overview

The CATS Mini Diary is among the smallest and most flexible advanced data recorder in the world. It is capable of recording with up to 800Hz and can be fitted with a choice of sensors (e.g. depth, conductivity, GPS, IMU, etc.). It is extremely power-saving and another promising advancement has been in the post-processing and analysis of the recorded data: CATS has managed to develop the [CATS-Visualizer](#), which enables the user to recreate the entire three-dimensional movement of the animal.



2. Product features

Model	Sensors	Supply	Interfaces	Features	User level
CATS-Diary v3.4.r2.	Pressure [Depth, 300m, 500, 1000m, 2000m] [standard] Barometer [optional] Accelerometer [standard] Gyroscope [standard] Magnetometer (compass) [standard] Pitot (Air pressure) Temperature [standard] Light [standard] Speed [speed wheel] [optional] Conductivity [optional] Sound [optional] GPS [RAW] [optional] GPS [optional] CATS-Visualizer analysis possible GSM (see CATS GSM Tag) Video (see CATS Cam)	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
Available sensors	• • • • • • • • • •	•	•	• •	•

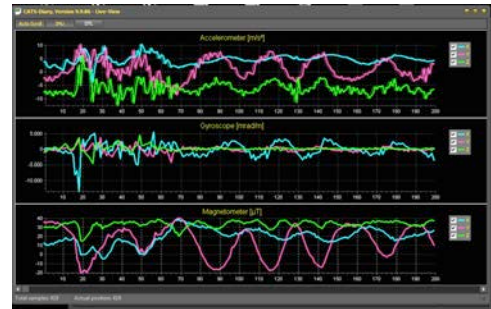
3. Pricing

The standard CATS-Diary (WiFi) with the standard sensors starts at a price of 1800 Euro. This does not include any customization (optional sensors, see above) or larger capacity devices (i.e. more battery). The optional solar re-charge version also adds a surcharge. Please contact us for more info on additional costs.

In order to analyse the obtained data with the CATS-Visualizer software please contact CATS for the stand-alone off-line software version.

4. Detailed description

Similar to the CATS Diary, the CATS Mini Diary is a high-resolution multi-sensor recorder, which is capable of resolving fine-scale movement, however, the Mini Diary is designed to be extremely power saving and very small. In addition, the customer can choose from a set of sensors to be included. So if the researcher would like to have a certain combination of sensors (e.g. depth, conductivity and GPS) CATS is able to equip the CATS Mini Diary with them.



In the past, IMU analysis has often been a very tedious, time-consuming and difficult procedure. As with the CATS-Flight-Diary and standard WiFi CATS Diary, CATS has managed to develop the [CATS Visualizer](#) software facilitating the graphic, 3-dimensional movements of the recorded animal/data.

Further is it possible to duty-cycle the device in many ways. The user has the choice to either record continuously or to duty-cycle the recordings or delay its start. It has a solid USB interface and the user interface includes a live view of selected sensors with a special option to visualize the 3-D IMU output live at 20Hz, enabling the user to verify its functioning and identify the correct orientation of the axis. In addition, no matter how you place the device on the animal, it is possible to choose the orientation in the UI.

5. Sensor performance

Sensor type	Max. sampling rate (Hz)	Range	Accuracy	Resolution (bit)	Comments
Accelerometer	800 (3-axis)	2 g - 16 g	0.0000061 g	16	
Gyroscope	800 (3-axis)	250 - 2000 dps	0.00763 mdps - 0.06 mdps	16	
Magnetometer	100 (3-axis)	±4800µT	0.15 µT /LSB	16	
GPS	5	-	NavSol +/- 5-20cm	-	
Barometer	100	10 - 2000 mbar	+/- 0.024 mbar (19 cm)	24	
Pressure (depth)	100	0-2000 m	+/- 20 cm	24	Various sensors
Conductivity	50				
Temperature	100	(-45°C) - (+85°C)	+/- 0.8°C	24	