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## MINIPAT PRODUCT SHEET

The MiniPAT is a pop-up archival transmitting tag (PAT tag, also known as a PSAT). It is a sophisticated combination of archival and Argos satellite technology. PAT tags are designed to track the large-scale movements and behavior of fish and other animals which do not spend enough time at the surface to allow the use of real-time Argos satellite tags.

Depth, temperature, and light-level data, among others, are collected and summarized for transmission and archived in onboard memory. Then on a preset date set by the researcher, the tag releases from its host animal, surfaces, and uploads a summary of the archived data to Argos satellites.

Developed with a focus on reliability, ruggedness, and ease of use, the MiniPAT features a stable low-drag shape, a strong urethane nose, and pinger for radio tracking recovery.

### Key Benefits of MiniPAT:

- A complete record of depth, temperature, and light-level readings are stored. Should the MiniPAT be recovered, the full archive is available for download.
- Flexible programming allows researchers to customize and prioritize data transmissions and release parameters.
- A corrodible pin allows the release of the MiniPAT from the fish on a pre-programmed date or when certain conditions indicating the tag is no longer on the fish (conditional release) are met.
- Once released, the tag floats to the surface so data can be transmitted.
- The pinger allows for radio tracking recovery.

Data Products	
Depth Archive (Pressure)	X
Temperature Archive	X
Light Archive	X
Acceleration Z-Axis Archive	X
Acceleration 3-Axis Archive	X
Upright and Knockdowns (Orientation) Archive	X
Activity (ATS) Archive	X
Dry Archive	X
Light-Level Geolocation (GPE3)	X
Argos Locations	X
Daily Data—Depth, Temperature, and Light	X
Orientation	X
Activity Time Series (ATS)	X
Depth Time Series	X
Temperature Time Series	X
Mixed Layer	X
PDT	X
Time-At-Temperature Histogram (TAT)	X
Time-At-Depth Histogram (TAD)	X



MiniPAT-430  
118 x 41 mm (LxØ) and  
68 g (in air)

# MINIPAT PRODUCT SHEET – CONTINUED

## OTHER KEY FEATURES AVAILABLE IN THE MINIPAT

**Auto-Detect Mortality and Tag Detachment**— the MiniPAT monitors for constant depth, a state which implies the tag is floating at the surface or sitting on the sea floor. If constant-depth conditions are met, release is activated. The MiniPAT will transmit even in the event of attachment failure, animal mortality or unexpected animal behavior. This feature minimizes the chance that something will damage the tag between the conditional release event and the programmed pop-up date.

**Auto-Crush-Depth Prevention**— a release is triggered if the tag ventures below 1400 meters. This helps maximize the probability of data recovery in the case of animal mortality.

**Adaptive Transmission Schedule**—unlike other pop-up tags, the MiniPAT message creation and transmission schedule is adaptive. Intelligent, responsive software waits until after pop-up to package data messages for transmission. This allows the tag to send as much data as possible given the release date and helps determine the cause of conditional release events.

**The Portal Advantage**—MiniPAT tags are supported by the Wildlife Computers Data Portal, a collection of data management tools and services. Developed specifically for the display and investigation of data from Wildlife Computers tags, the data portal streamlines the processes of acquiring, preserving, and sharing data services. The portal helps collect, prepare, and analyze the data returned from the tag—via Argos or the archive. Data are easily sorted, filtered, searched, uploaded, and shared. You can see a Google Earth display of your deployment track, color-coded to show the relative age of each location. You can also set up a live KMZ to get data into your own monitoring system.

## TECHNICAL SPECIFICATIONS

Attachment Type	Towed
Sensors	Wet/Dry, Depth, Temperature, Light, Accelerometer
Depth Sensor Range	0-1700 m
Depth Sensor Resolution	0.5 m
Depth Sensor Accuracy	±1% of reading
Temperature Sensor Range	-40° C to 60°C
Temperature Sensor Resolution	0.05° C
Temperature Sensor Accuracy	±0.1° C
Conductivity Operational Limits	0.1 to 5 S/m
Light Sensor	$5 \times 10^{-12} \text{ W cm}^{-2}$ to $5 \times 10^{-2} \text{ W cm}^{-2}$
Operating Temperature Rating (°C)	-20° C to 50° C
Optimal Storage Temperature Range (°C)	0° C to 5° C
Memory	64 Megabytes (MB)
Dimensions	118 mm (length) x 41 mm (diameter)
Weight in Air	68 g
Pressure Rating	2000 m
Maximum Deployment Length	730 days

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