

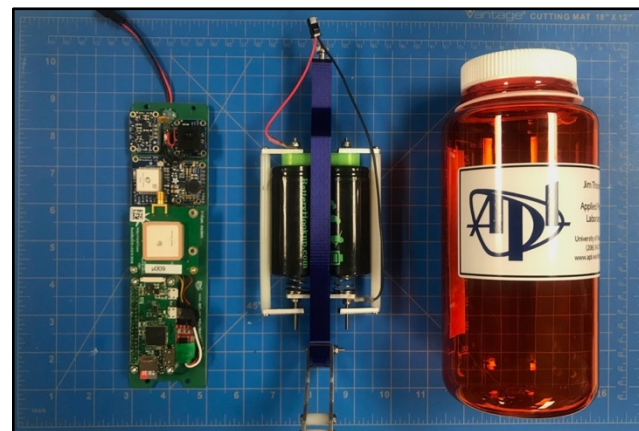
MICROSWIFT EXPENDABLE WAVE BUOY

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Specifications

Enclosure	1 L Naglene bottle
Dimensions	9.2 cm (3.6 in) diameter, 21.4 cm (8.4 in) length
Weight	0.9 Kg (2.0 lbs)
Batteries	Rechargeable LiFePO ₄ , 2 cells at 19.2 Wh and 141 g each
Telemetry	Satellite (Iridium SBD)
Connectivity	WiFi
Processor	Raspberry Pi Zero
GPS	GlobalTop FGPMOPA6H
IMU	FXOS8700CQ (9 dof)
Water temperature	Adafruit TMP36
On-board storage	microSD card
Onboard software	Python, https://github.com/alexdeklerk/microSWIFT
Sampling rates	4 Hz (GPS), 12 Hz (IMU)
Air drop parachute	61 cm (24 in) diameter with 63.5 (25 in) bridle
Endurance	2 days



Hourly telemetry products and accuracy



Position (lat, lon)	± 5 m
Significant wave height, Hs	± 0.1 m
Peak wave period, Tp	± 1 s
Dominant wave direction, Dp	± 15 deg
Scalar wave energy spectrum, E(f)	$\pm 10^{-2}$ m ² /Hz, $0.05 < f < 0.5$ Hz
Directional moments of the spectrum (a1,a2,b1,b2)	± 0.1 , $0.05 < f < 0.5$ Hz

Public server for telemetry products (data tab): <http://www.apl.uw.edu/SWIFT>

Live map for active buoys (rolling 3 hr window): <http://swiftserver.apl.washington.edu/map/>

GitHub repository for fetching telemetry and post-processing (inc. raw wave displacements): <https://github.com/jthomson-apluw/SWIFT-codes>