



PopotoModem

Enabling the underwater IOT revolution™

Popoto SeaSignal

Product Overview:

Popoto SeaSignal is a calibrated, wide-band underwater acoustic recording platform engineered for high-fidelity measurement and analysis. Housed in a rugged Delrin and titanium enclosure depth rated to 900 m, the SeaSignal is suitable for long-term deployments in demanding marine environments. Designed for researchers, integrators, and subsea platform developers, SeaSignal pairs precision instrumentation with modern, AI-enabled software tools, allowing for truly next-generation underwater acoustic recording and analysis.

Features:

Accurate & Precise Acoustic Front End

- Factory-calibrated Teledyne Reson hydrophone
- Low-noise analog signal chain with 160 kHz analog bandwidth (upgradeable to 400 kHz)

Storage & Power

- Base 1 TB internal storage, upgradeable to 4 TB
- Optional redundant recording mode (mirrored storage; halves available capacity)
- Internal rechargeable battery for >24 hours continuous recording (settings dependent)
- Fast recharge: 5% to 100% in approximately 3 hours

Advanced Data Interface

- Integrated Gigabit Ethernet for rapid data offload
- Remote configuration, monitoring, and data review via a modern web-based user interface
- AI integration via MCP server for accelerated data analysis workflows
- Optional upgrade enabling live decoding of underwater acoustic communications signals



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Recording	
Sample Rates	8 kSPS to 374 kSPS (upgradeable to 1,496 kSPS)
Bandwidth	Up to 160 kHz (upgradeable to 400kHz)
Bit Depth	24 bits
Storage	1 TB, 2 TB, or 4 TB internal, depending on SKU
Minimum Self Noise	33 dB re $\mu\text{Pa}^2/\text{Hz}$
Peak Input Level	182 dB re 1 μPa @ low-gain 176 dB re 1 μPa @ high-gain
Digital Sensitivity, 24-bit	-46 dB count/ μPa @ low-gain -40 dB count/ μPa @ high-gain
Dynamic Range, 1 Hz Bandwidth	149 dB @ low-gain 143 dB @ high-gain
Power	
Charging Supply Voltage	10-42 V
Internal Battery Capacity	36 Wh, Lithium-ion
Internal Battery Life (8 kSPS recording, Ethernet disconnected)	> 24 Hours
Internal Battery Recharging Time	3 Hours
Interface	
Data Connection	10/100/1000 Mbps Ethernet
APIs	Restful, MCP, Python, C++, MATLAB®, JSON
Hardware	
Overall Length (Including connector)	396 mm
Diameter	55 mm
Weight	Dry: 1055 g In Sea Water: 645 g
Depth Rating	900 m
Operating Temperature	-5°C to 35°C

