



## Popoto M6000

### Product Overview:

The Popoto M6000 is the rugged, full ocean depth version of our advanced underwater acoustic modem, delivering superb performance, unique features, and flexible interfacing, allowing for use in nearly any application. Featuring a machined aluminum casing which can withstand depths of up to 6000 meters and a transmitter capable of transmitting at up to 185-190 dB SPL (re 1  $\mu$ Pa @ 1m), the M6000 is both versatile and robust.

### Features:

- Rugged titanium enclosure allows for operation at full ocean depth
- Multiple modulation schemes from 80 BPS to 10240 BPS
- MARIA, Python, and MATLAB® APIs for on-board data processing and system automation
- Ethernet, RS422, and RS232 interfaces, including pShell, JSON, and a web interface
- Acoustic ranging (Accurate to <0.3m)
- High-capacity data logging (upgradeable with microSD)
- Baseband and passband waveform playback and recording during modem operation
- Options for JANUS (NATO ANEP-87), Phorcys Stheno, and Phorcys Euryale





<b>Data Transfer</b>	
Data Rates	80 bps with Frequency Hopping FSK 10240, 5120, 2560, 1280, 640 bps with PSK Phorcys Stheno & Euryale MS 0-31
Storage	64 GB (PMM5544) or 128 GB (PMM6081) internal Expandable with microSD (up to 1.5tb+)
Range	1-8 km (depending on conditions and modulation scheme selected)
Frequencies	20-35 kHz
Transducer Type	20-30 kHz Omnidirectional
<b>Power</b>	
Operating Voltage Range	8.5-36V
Power Draw	GPIO Enabled Sleep: < 10uW Acoustic Wake Up Deep Sleep: < 45 mW Acoustic Wake Up Sleep: 150 mW Active Receive: 1.5 W
Transmit Power	185-190 dB SPL re 1 µPa @ 1m
Battery	1 to 4 x 77Wh 22.2V Li-Ion
<b>Interface</b>	
Data Connections	Ethernet, RS-422, RS-232
External Interface Connections	SPI Bus, I2C Bus, GPIO, Analog
APIs	Python, C++, MATLAB®, JSON, JACK, and MARIA
Processor	Dual-Core (PMM5544) or Quad-Core (PMM6081) 1.4GHz Arm® Cortex®-A53
Operating System	Debian Linux for user applications
<b>Hardware</b>	
Size	430mm x 100mm x 100mm
Weight	Dry: 6.4 to 7.3Kg In Sea Water: 3.3 to 4.2Kg
Depth Rating	6000m
Export Classifications	5A991 Controlled for anti-terrorism only

