



PopotoModem

Robust Communications at the Speed of Sound™

Features and **Benefits**

The Popoto**Modem** combines advanced undersea communications technology with high capacity data logging and single sideband voice in a compact 60x90x50mm package, ideal for shipbased, AUV or diver applications. With transmit powers of up to 100 watts, and high fidelity acoustic front end, Popoto**Modem** combines frequency hopping for robust long distance communications with high speed PSK communications for rapid data transfers.



Technical **Specifications**

- ✓ Data Receive at 80 bps, Data transmit from 80 bps to 10kbps
- ✓ NATO ANEP-87 Janus Interoperability
- ✓ PYTHON API
- ✓ Single Sideband Voice integrated with data modem
- ✓ High Capacity Data Logging (64 GB on uSD, or TB's on SATA)
- ✓ Flexible interfaces Ethernet, RS-422, RS-232 (ttl)
- ✓ Low Power Acoustic Wake up (25 mW)
- ✓ Real time Acoustic Data Streaming via Ethernet
- ✓ Dual and Quad Channel Data loggers available
- ✓ Band C transducer

Options **Available**

- ✓ Aluminum Housing good to 1000 m
- ✓ Deckbox or OEM Board set
- ✓ Full or Partial Source Code Available
- ✓ MATLAB™ API
- ✓ NMEA Interface (under development)



ADVANCED **Design**

- ✓ Compact, powerful & low cost
- ✓ Advanced high fidelity acoustic interface
- ✓ Modular, well designed software for robust operation
- ✓ API Driven for custom solutions



FLEXIBLE **Interfaces**

- ✓ Ethernet TCP Socket interfaces for Control, Status & Data
- ✓ DSHELL provides command line interface via Sockets or RS422/RS232
- ✓ PYTHON and MATLAB simple APIs



VOICE **Integration**

Popoto**Modem** easily switches between voice and data for diver monitoring or other voice telephone operation



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Dimensions	<ul style="list-style-type: none">• 90mm x 60mm x 50mm (OEM Boardset)
Power Draw <ul style="list-style-type: none">• Deep Sleep (Acoustic Wakeup < 20S)• Sleep (100 ms)• Active Receive	<ul style="list-style-type: none">• < 12 mW• < 150 mW• < 1 W
Modulation Rates <ul style="list-style-type: none">• Multi Carrier Frequency Hopping FSK• PSK	<ul style="list-style-type: none">• 80 Bits Per Second• 10240, 5120, 2560, 1280, 640 Bits/Second
Transmission Power	<ul style="list-style-type: none">• Up to 100W, Infinitely selectable.
Transmission Distances	<ul style="list-style-type: none">• 1-8Km Depending on conditions and modulation scheme selected.
Data Connections	<ul style="list-style-type: none">• 10/100 Ethernet• RS-422• RS-232
Voice Communications	<ul style="list-style-type: none">• Single Sideband Audio• Vox transmit control• Automatic Squelch• Selectable Carrier Frequency 20-35Khz
Carrier Frequency	<ul style="list-style-type: none">• 22-35 KHz Selectable
Transducer	<ul style="list-style-type: none">• 20-30KHz Omnidirectional Transducer
Data Logging	<ul style="list-style-type: none">• 64 Gigabytes on included uSD• Terabytes with optional SATA Drive
External Interfaces	<ul style="list-style-type: none">• SPI Bus• I2C Bus• GPIO• Analog (with optional software)
Voltage Range	<ul style="list-style-type: none">• 8.5-20V
Features	<ul style="list-style-type: none">• Fully programmable Python API for on board user programming• Acoustic Ranging (accurate to <.5 M)• Socket Based API for remote control.• MATLAB API for Data Analysis• Baseband and passband waveform playback and record.• Transmission power measurement
Options:	<ul style="list-style-type: none">• Aluminum Housing for 1000m Deployment• 14.8V Lithium Ion Battery Pack 129 WH• Deck Box
Export Classification	<ul style="list-style-type: none">• 5A991 Controlled for Anti Terrorism only

