



Marine Acoustic Rapid Innovation Architecture (MARIA)

Product Overview:

MARIA (Marine Acoustic Rapid Innovation Architecture) is a flexible and extensible software framework enabling custom algorithms on Popoto Modem COTS hardware. MARIA allows users to easily incorporate custom acoustic processing algorithms such as modulation schemes, detection algorithms, or classified processing. It provides complete user control over Popoto systems, including hardware-level management like powering down systems and controlling power amplifiers through simple APIs. Users implement their custom acoustic processing through a straightforward callback routine, which receives input PCM data and returns processed PCM output.

Features:

- **Algorithm Integration:** Seamless integration of user-defined acoustic algorithms into Popoto modems with modular APIs.
- **Multiple Sampling Rates:** Supports sampling rates from 8000 Samples per second to 384000 Samples per second at user defined algorithm frame rates
- **Integration with the Popoto Modem Messaging:** Algorithms can be controlled with Pshell, and/or Popoto Python, MATLAB®, Socket. or C++ APIs.
- **Simple Callback Interface:** Users code a simple callback routine, where PCM input data is provided for processing, and processed PCM data is returned.
- **Complete System Control:** Full access to Popoto hardware functionality including power management and amplifier control through intuitive interfaces.
- **JSON Encoding and Processing:** Easy-to-use JSON interfaces for clear and reliable system communication, command exchange, and configuration.
- **CPU Load Monitoring:** Built-in capabilities for monitoring, analyzing, and optimizing system CPU usage.
- **Robust PCM Data Management:** Advanced PCM manipulation features such as FIFO-based buffering and latency management.
- **Example Implementations:** Comprehensive examples provided to accelerate integration and application development.

[Inquire about Licensing Costs](#)

