



AQUABAND

Explore Beyond

Robust Acoustic Modem

Underwater Acoustic Broadband Communications

www.aqua-band.com
www.marecomms.com

Product Information

Product Highlights

Transmission

Image and video in challenging horizontal shallow-water transmissions and deep-water environments.

Compression

Proprietary data compression technology.

Software defined

Graphical User Interface for easy mission configuration.

Frequency

12 KHz, 17 KHz, 27 KHz and 44 KHz operating frequencies.

Resilience

Corrected multipath, Doppler and spatial variability in triple-dispersive shallow-water channels.

Beam

Omnidirectional beam pattern.

Depth

Up to 10,000M depth rating available.

Range-Throughput

Throughput*

30 Kbits/s to 600 Kbits/s in horizontal shallow-water environments** (inversely proportional to range between 100 m to 2 Km).

Range

Can be adjusted on software to achieve longer communication distances.

Battery-mode

Transmission available to support missions between 2 to 8 hours between charges.

Transmission

Up to 60 high-quality sonar images or photographs per minute (inversely proportional to range between 100 m to 2 Km).

Signal-to-Noise Ratio

Minimum required baseband SNR: 4 dB.

Transmit power

Between 30 W to 225 W*** (depending on desired throughput-range).

Power

AC Power

Receiver top-end unit is AC powered****.

Form Factor

Transmitter can be affixed on the surface of an AUV in water-tight housing for self-contained operation or transmitter electronics can be placed inside of a pressure-chamber.

Water-tight housing dimensions are 32.2 cm (height) by 16.5 cm (diameter), large enough to accommodate two battery packs as well as the transmit electronics. Three different transducers supporting various carrier frequencies can be mounted on the end-plate of the housing.

* Throughput measured as a product of the acoustic link rate and image compression gain.

** In vertical or slant transmissions in deep-water environments, 2 to 4 times higher data rates are conjectured.

*** Long-range version of ROAM is currently under development where power consumption will approach 900W for a range of up to 15 Km.

**** Receiver system is comprised of a hydrophone array and a top-end platform on which all processing is executed. This platform is AC-powered in the present configuration intended for those applications where the receiver platform is accommodated in a support vessel. A separate version of the receiver that can be contained in a water-tight housing and battery-powered can be made available upon request.



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Marecomms was founded in 2017 in Halifax, NS, Canada to provide advanced wireless communication and remote sensing solutions for maritime environments.

Our AQUABAND technology, including our Robust Acoustic Modem (ROAM) changes the game in terms of underwater broadband capability.

In the most challenging environments, AQUABAND as a breakthrough technology, exhibits very high capacity and link fidelity for wireless transmission of images and large data under water.

AQUABAND solutions are designed to facilitate visual monitoring and inspection of subsea infrastructure for energy, aquaculture and commercial fisheries, as well as for defense applications.



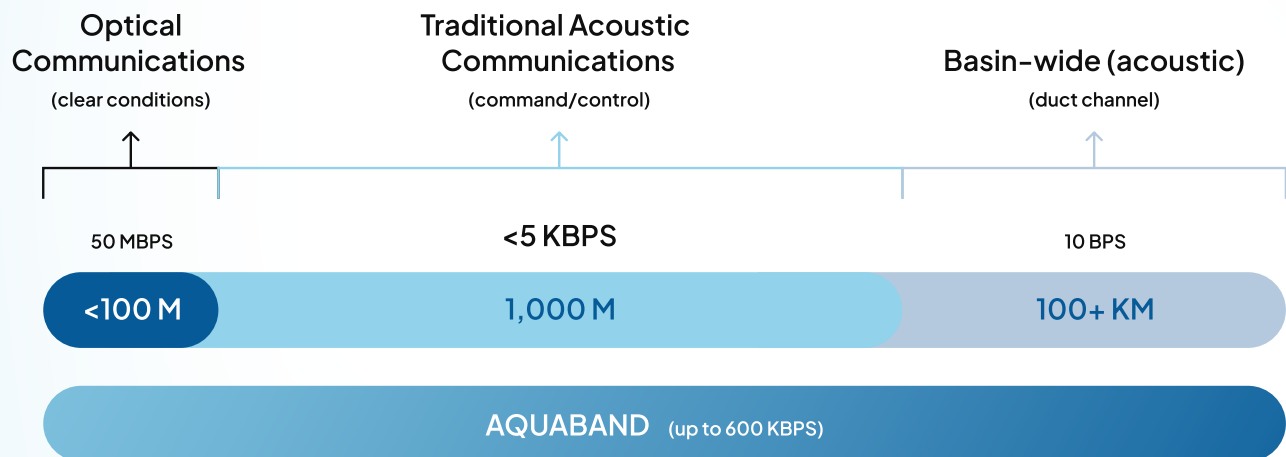
Receiver



Transmitter

Current Communications Capability

Shallow Water Horizontal Range by Technology



Advanced Adaptive Acoustic Technology
(100X improvement, enables real-time visual communications)

*Optical Comms highly dependent on visibility/conditions.

**Narrow use cases, ex Duct Channels.