

Aquacomm Spread Spectrum Acoustic Modems Packaged and OEM

General Description



The Aquacomm range of acoustic modems present a quantum leap in reliability and ease of use. Modems are available as OEM board sets for incorporation into end users systems, or as stand alone units in ABS plastic pressure cases with internal batteries. With the ever increasing demand for real time Met-Ocean data and choices available for reliable and secure surface telemetry; Aquacomm provides the missing link from seabed to desk.

A need for reliable cost effective underwater communications...

There has been rapid growth in underwater activity in recent times both in recreational and commercial pursuits. Communications is a fundamental requirement particularly in an unpredictable and difficult environment such as in the ocean.

The use of communications underwater has been slow though the need is there, particularly due to the cost and unreliability of communications systems. Aquacomm changes this by offering a highly reliable modem at an affordable cost. DSPComm has developed an underwater acoustic modem that provides a highly reliable communications link in adverse underwater environments at a fraction of the cost of underwater modems currently available. DSPComm have incorporated the latest in Digital Signal Processing technology and Digital Communications technology to compensate for Doppler and severe reverberations in the underwater channel. Aquacomm is truly omni directional, and suitable for use along rivers as well as from surface to seabed.

Applications:

- Underwater telemetry, wireless command and control
- ROV and AUV command and control
- Monitoring and control of valuable underwater resources
- Oil and Gas industry
- Aquaculture and fishing
- Diving
- Underwater Monitoring and data logging
- Other applications requiring underwater wireless communications

Aquacomm specifications and features:

- Highly reliable communications— 10^{-6} bit error rate or better
- Use of latest DSP and broad band communications technology
- Confirmed message delivery with automatic retry
- 100 bps and 480 bps data rate. 1kbps and 4kbps modems under development
- Modems can be addressed uniquely or in broad cast mode. Underwater communications network can be easily set up
- High immunity to noise and to multi-path fading. Acoustic Doppler tolerance of +/- 5ms-1
- Broad band operation -16Khz to 30Khz
- Digital automatic gain control (AGC) for the receiver front end for large dynamic range operation - 4dB to 80dB gain range
- 3km range. Longer ranges possible
- Can be used in vertical through to horizontal underwater communications configurations.
- Low power consumption for extended operation underwater
- 43mA normal operation mode (not transmitting) - 4.3mA in power save receive mode - Less than 150uA in Sleep mode
- Small size to fit in tight spaces (3.1" x 2.75" x 0.75" for the OEM module)
- Can be used with most broad band transducers
- Can be supplied as an OEM module or in pressure housing with integrated transducer and batteries

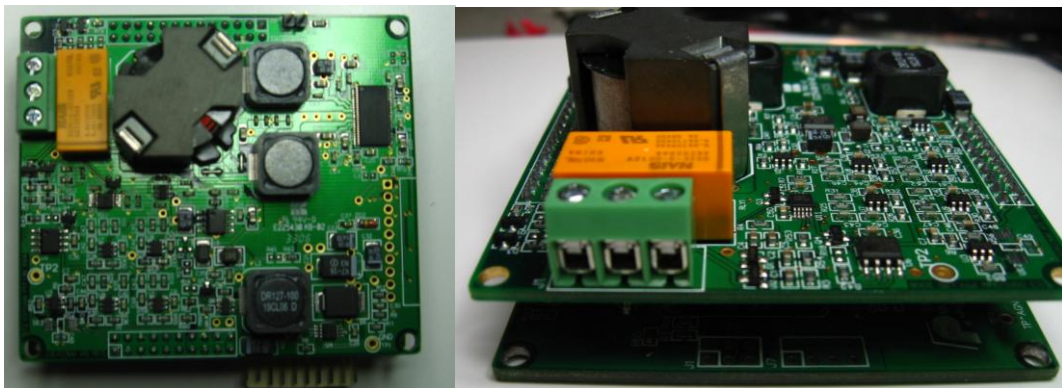
Low cost underwater acoustic transducers:

- 70mm Diameter and 35 mm diameter cylindrical transducers available to complement the Aquacomm modems
- Operation depth in excess of 100 meters (plastic) or to 2km stainless steel or aluminum

Low cost pressure housing:

- Made with high strength ABS plastic
- Tested to 120 meter depth
- Integrated with transducer, underwater bulkhead connector, batteries and anchor bolt
- Light weight, ideal for divers

OEM BOARD SET



REF – Aquacomm iss B MAR 2010