

HYDRO ACOUSTIC REMOTE CONTROLLER

PRODUCT DESCRIPTION

Remote control of a wide range of underwater host packages is easily and effectively achieved with the L-3 Oceania Hydro Acoustic Remote Controller (HARC). HARC provides reliable remote control of multiple, uniquely addressed underwater devices in support of specific operational scenarios.

HARC consists of two main subsystems, the surface deployed Transmitter system and the Underwater Transceiver system.

The Transmitter equipment is lightweight, portable and designed for ease of deployment and operation from small surface vessels such as a RHIB. This equipment consists of a Control Unit, a Battery Supply Unit and a Hydroacoustic Dunking Transducer. The intuitive operator interface consists of a single front panel with embedded membrane switches, alphanumeric display and status LED that can be customised to meet specific operator requirements.

The Underwater Transceiver equipment consists of a Digital Signal Processor based hydroacoustic modem with transmit circuitry provided in a miniaturised low power stack, and a small hydrophone designed for installation in and integration with an underwater host package.

HARC has been extensively proven in the field with range reliability in excess of 10 km, subject to environmental conditions. With the addition of Acoustic Repeater Beacons more complex geometries and greater ranges can be achieved.

Future development planned for the HARC system includes a through-air communications option, enabling RF control of the Underwater Transceiver via a Floating Gateway Buoy.



KEY FEATURES

- Reliable underwater remote control
- Man portable and rugged surface Transmitter unit
- Miniature low power embedded Underwater Transceiver unit
- Selective addressing and control of multiple underwater devices
- Programmable command set to suit host requirements
- Flexible interface to underwater host packages
- Operational ranges in excess of 10 km
- Status Feedback to surface operator from underwater host package



L-3 Oceania

HARC

HYDRO ACOUSTIC REMOTE CONTROLLER

HARC employs well proven L-3 Oceania Direct Sequence Spread Spectrum (DSSS) signaling technology to ensure secure and reliable long range operation in the harshest of underwater environments.

The HARC Transmitter employs unique address codes for selective addressing of multiple packages with a set of control commands such as System [ARM], [ACTIVATE] or [DEACTIVATE] tailored to suit application requirements.

After signal reception and demodulation of a valid coded signal, the HARC Underwater Transceiver will output one or more trigger signals to its host package. For example; Trigger 1 [ARM] or Trigger 2 [ACTIVATE]. Extra commands and signal Input / Output can be provided to meet specific application and operational requirements.

HARC TRANSMITTER

| | |
|---------------|---|
| Description | IP68 rated deck box with flat membrane panel operator interface |
| Function | Selection and Transmission of HARC acoustic control signals |
| Voltage Input | 24 Vdc (nominal) 3 A to 40 A |
| Power Output | Hydroacoustic power 25 W to 1000 W |
| Dimension | W 177.8 x L 228.7 x H 235.0 mm |
| Weight | 4.5 kg |
| Environment | Sunlight, water, oil, shock and weather resistant |
| Temperature | Operational -30 °C to + 50 °C |

HARC HYDROACOUSTIC PROJECTOR

| | |
|--------------|--|
| Description | Broadband piezoelectric hydroacoustic projector |
| Function | Underwater transmission of the HARC acoustic control signals |
| Beam Pattern | Omni-directional ± 1 dB |
| Signal Type | Hydroacoustic Spread Spectrum centered at selectable carrier |
| Power Input | Up to 1000 W |
| Dimension | Spherical 165 mm diameter |
| Weight | 6.3 kg in air |
| Environment | Sunlight, water, oil, shock and weather resistant |

HARC UNDERWATER TRANSCIVER

| | |
|---------------|---|
| Description | Embedded low power DSP Modem |
| Function | Receives, decodes and transmits HARC acoustic control signals |
| Voltage Input | 7 to 24 Vdc (12 V nominal) |
| Current Input | 110 mA at 12 V |
| Dimension | D 100mm x H 43 mm |
| Weight | 170 g |
| Temperature | Operational -30°C to + 50°C |

HARC RECEIVER HYDROPHONE

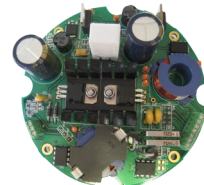
| | |
|--------------|---|
| Description | Broad-band piezoelectric hydroacoustic receiver |
| Function | Receives HARC acoustic signals |
| Beam Pattern | Omni-directional ± 1 dB |
| Dimension | Spherical 34 mm diameter |
| Weight | 300 g in air |
| Environment | Sunlight, water, oil, shock and weather resistant |



HARC Transmitter and Projector



HARC Repeater Beacon



HARC Underwater Transceiver



HARC Receiver Hydrophone

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