

DELPHIS - OEM KIT

SUCCORFISH

Data Sheet

Delphis OEM is a low-cost, low-power, miniature acoustic communication and ranging modem designed for integration into underwater vehicles, subsea instruments and custom acoustic systems. The OEM kit provides the Delphis modem PCB and matched piezo ring transducer, enabling developers and manufacturers to integrate acoustic communications directly into their own housings and products.

Data messages may be exchanged between units and an efficient “ping” protocol is implemented for range measurement by transponder operation. If multiple units are deployed in known locations, then long baseline positioning (LBL) operation is possible.

The Delphis OEM platform is intended for integrators requiring a compact and flexible underwater acoustic modem solution for embedded applications and product development.

BENEFITS

Flexible Integration - Delphis OEM provides developers with the freedom to integrate underwater acoustic communications directly into their own products, housings and subsea systems using the supplied modem PCB and piezo ring transducer.

Low Power Operation - Designed for battery-powered and long-duration deployments, Delphis OEM delivers reliable acoustic communications and ranging while maintaining extremely low power consumption.

Compact and Lightweight - The miniature PCB and transducer design enables simple integration into space-constrained underwater vehicles, sensors and subsea instrumentation where larger acoustic systems are impractical.

Reliable Underwater Communications - Using robust spread spectrum signalling and error correction techniques, Delphis OEM enables dependable underwater data transfer and ranging performance in challenging acoustic environments.

Scalable Subsea Networks - Supporting up to 256 uniquely addressable units, Delphis OEM enables the creation of scalable underwater communication networks for IoUT, monitoring and distributed sensing applications.

Minimal Ecological Impact - Delphis OEM uses low-intensity, short-burst acoustic transmissions engineered to minimise acoustic disturbance to marine wildlife while maintaining reliable subsea communications.

Developer Focused - Delphis OEM provides an adaptable development platform for OEMs, researchers and system integrators looking to rapidly prototype and deploy custom underwater acoustic communication solutions.



DIMENSIONS & WEIGHT

Piezo Ring: 33.70mm (outer ring) x 29.86mm (inner ring) x 13.31mm | 19.5g

Modem Board: 10.88mm x 46.41mm x 29.24mm | 23g

PHYSICAL LAYER

Spread spectrum (orthogonal signalling) with BPSK modulation and error correction code

SUPPLY CURRENT @5V

Listening: 2.5mA

Receiving: 5mA

Transmitting: max 300mA

SUPPLY VOLTAGE

3 – 6.5v dc (5V or 6V supply recommended)

ACOUSTIC FREQUENCY

24-32 kHz

ACOUSTIC SOURCE LEVEL

~168 dB re 1 μ Pa @ 1m

ACOUSTIC DIRECTIVITY

Near omnidirectional

ACOUSTIC DATA RATE (RAW)

640 bits/s, unicast and broadcast data messages up to 64 bytes in length.

ACOUSTIC THROUGHPUT (MAX)

463 bits/s

ADDRESSING

Up to 256 units (addresses 0-255)

RANGING INCREMENT

4.7cm (c=1500m/s)

RANGING VARIANCE

~10cm

MAXIMUM RANGE*

2 km in sea water

3.5 km in fresh water

RS232 interface

9600 Baud, 8-bit, no parity, 1 stop bit, no flow control

** Specifications subject to typical acoustic propagation and noise conditions.*