

SUBNERO L12L SERIES MODEMS

Long-range acoustic communication for persistent presence



Up to 10 km communication range



Up to 8 kbps data rate in challenging conditions



Deep sleep state with < 5 mW power consumption



Localization & ranging with 0.1 m precision



Arbitrary waveform transmission and recordings



Enhanced performance with additional receiving channels

APPLICATIONS

Long-range operations in shallow, mid-range and deep waters

Long-term seabed or sensor node deployments

Communication and tracking of AUVs and subsea vehicles

Coastal area monitoring networks

FEATURES

✓ **Long-Range Communication**
Reliable acoustic links beyond 10 km in challenging littoral waters.

✓ **Software-Defined Design**
Configure waveforms and protocols in the field with UnetStack.

✓ **AUVs & Subsea Nodes**
Dependable communication and tracking for AUVs and seabed nodes.

✓ **Persistent, Low-Power Presence**
Deep sleep below 5 mW for long-endurance seabed deployments.

✓ **Long-Range Acoustic Ranging**
Acoustic ranging to 0.1 m precision over extended distances.

✓ **Networked & Interoperable**
Built-in multi-hop networking with NATO JANUS interoperability.

L12L SERIES MODEMS



Designed for reliable long-range communication in shallow waters, Subnero's L12L series modem addresses one of the toughest challenges in underwater acoustics, maintaining robust links over extended distances in complex environments.

FLEXIBLE CONFIGURATIONS

Available in standalone and open configurations to suit a range of deployment needs, from self-contained setups to integrated systems.



STANDALONE CONFIGURATION WNC-L12LSS4X

Self-contained modem powered by an external battery or supply.



OPEN CONFIGURATION WNC-L12LSO4X

Integration-ready design for AUVs, ROVs, and sensor platforms.

TECHNICAL SPECIFICATION

COMMUNICATION

Modulation (software defined)
FH-BFSK, PSK-OFDM

FEC (Forward Error Correction)
LDPC, BCH, Convolution code

JANUS support
Yes

Bandwidth
7 kHz (9 - 16 kHz)

Ranging Precision
0.1 m

Doppler Resilience
±4 knots or better

SOFTWARE

Framework
UnetStack

User Interface
Interactive web UI

Software Interfaces
Java, Groovy, Python, C,
JavaScript, Julia, JSON/TCP

Waveform Player

Transmission and reception,
passband and baseband

ELECTRICAL

Power source
18 - 30 VDC (24 VDC recommended)

Power consumption
< 4 W (receive mode, nominal)
< 45 W (transmit mode, avg.)
< 200 mW (sleep mode)
< 5 mW (deep sleep mode)

Wake up modes

Acoustic wake up
External electrical interrupt
Scheduled wake up

External interface

Ethernet (10/100 Mbps), RS232

On-board storage

32 GB, 256 GB, 1 TB

Receive channels

1, 2, 4 (configurable at the time of
purchase)

MECHANICAL

Hull material
Aluminum

Depth rating
300m

Dimensions (Gold Edition)
SC: ø 100 x 390 mm
OC: ø 100 x 210 mm

Dimensions (Silver Edition)
SC: ø 100 x 313 mm
OC: ø 90 x 134 mm

Operating Temperature

SC: 0 to 40 °C
OC: 0 to 70 °C (electronics)
0 to 40 °C (transducer)

Available Editions

Gold, Silver

Available Configurations

Standalone Configuration (SC)
Open Configuration (OC)

Specifications are for base models only and are subject to change without notice. Please consult your sales representative for the latest information.

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The future of underwater wireless