SUBNERO

MULTI-RECEIVER MODEM

Acoustic smart modems with multiple receiving hydrophones for enhanced performance

APPLICATIONS

- ✓ Underwater positioning and tracking research
- ✓ High-performance subsea communications
- ✓ Rapid environmental assessment
- ✓ Underwater IoT networks

ENHANCED COMMUNICATION PERFORMANCE

Uses spatial diversity combining to maintain strong and reliable links in challenging acoustic environments.

RESEARCH-READY SIGNAL ACCESS

Provides access to raw acoustic data from all receivers, offering an ideal platform for researchers developing custom communication, navigation, tracking, and signal-processing algorithms for AUVs.

FLEXIBLE DEVICE ROLES

Supports use as a high-performance communication modem, a positioning aid, or a versatile acoustic recorder.

3D POSITIONING AND TRACKING

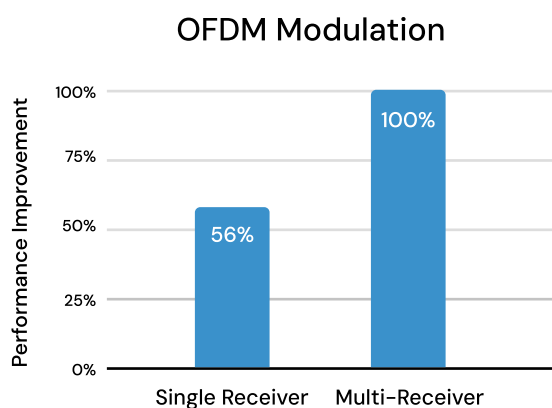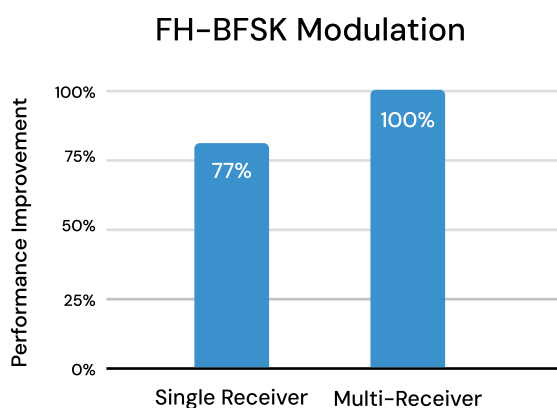Enables three-dimensional localization and tracking using multi-hydrophone signal processing.

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Upgrade the modem by adding additional receiving hydrophones to enhance performance through spatial diversity, improving reliability, extending range, and enabling advanced sensing capabilities. This configuration provides a stronger platform for demanding communication, localization, and research applications.

ENHANCED COMMUNICATION PERFORMANCE

FH-BFSK Modulation

Performance Improvement
- Single Receiver: 77%
- Multi-Receiver: 100%

OFDM Modulation

Performance Improvement
- Single Receiver: 56%
- Multi-Receiver: 100%

Example performance improvement for incoherent (FH-BFSK) and coherent (OFDM) modulation schemes.

TECHNICAL SPECIFICATION

Modem	Subnero WNC Series Smart Modems
Receive channels	Up to 4
Waveform streaming	Supported (all receivers)
Programmable gain	36 dB
Dimensions (M25M series)	⌀ 100 ✕ 303 mm (excluding hydrophone) ⌀ 100 ✕ 462 mm (including hydrophone)
Dimensions (L12L series)	⌀ 100 ✕ 313 mm (excluding hydrophone) ⌀ 100 ✕ 472 mm (including hydrophone)
Weight (in air / water)	2.2 / 0.9 kg
Power consumption	< 4 W (receive mode, nominal) < 45 W (transmit mode, average)