SUBNERO UNDERWATER MODEMS

Software-defined wireless networking, designed for extensibility

Extensively Tested

The Subnero Advantage

- Robust communication performance
- Tested in harsh channel conditions (shallow, warm, high noise channels)
- Meets stringent quality standards
- Software defined design, ability to customize all layers, including PHY
- Advanced implementation of UnetStack
- Ability to support multiple, parallel PHY (e.g. separate data & control links)
- Raw recordings, arbitrary waveform transmission, channel diagnostics

Available in different configurations

FLEXIBLE PLATFORM

Substantial computing power packed into a compact form factor. Optimized for high-noise environments where marine creatures, proximity to shipping channels etc. can generate high levels of ambient noise.

NETWORK READY

The modems provide options for customization and extension at many levels, allowing network protocols as well as physical layer algorithms to be implemented and tested easily.

UNETSTACK ENABLED

Enabling a wide range of applications, UnetStack provides users with a comprehensive set of APIs and commands for maximizing innovation. This allows rapid prototyping of protocols under various water conditions.

PLATINUM & SILVER EDITIONS

Delivering performance under the toughest environmental conditions, Subnero's Platinum edition modems are designed to meet rigorous quality standards mandated by sectors such as defense, oil and gas and subsea engineering. The Silver edition modems are the workhorse communication nodes to be used in general commercial deployments.

Products: WNC-M25MPS3, WNC-M25MSS2, WNC-S300HRS3* (High-Speed)

RESEARCH EDITION

Aimed directly at academic researchers and underwater technology enthusiasts, our research edition underwater modems are designed to bridge the gap between developing applications using a simulator (e.g. UnetStack) and high-end commercial deployments.

Products: WNC-M25MRS3

SPECIFICATIONS - M25M Series

GENERAL	
Data rate	0.5 kbps (control link) up to15 kbps (data link)
Communication range	up to 3 km (nominal, depending on channel conditions)
Ranging precision	0.1 m
Doppler resillience	up to 4 knots
Software framework	UnetStack (software defined), www.unetstack.net
INTERFACE	
Connectivity	RS232, Ethernet, acoustic commands
Software interface	UnetStack agents (Java, Groovy, Python), interactive web UI, Linux sockets, JSON/TCP
ACOUSTIC	
Carrier frequency	25 kHz (typical)
Bandwidth	up to $^2/_3$ carrier frequency
Source level	max. 185 dB re 1 µPa @ 1m rms
Modulation (software defined)	PSK-OFDM, incoherent OFDM, FH-BFSK, JANUS (subject to operating frequency band)
ADDITIONAL INFORMATION	
Available editions	Platinum edition, Silver edition and Research edition
Available configurations	surface, standalone and embedded configurations

*The S300H series is our high-speed underwater modem product line.