## SPECIFICATIONS - M25M Series

| Edition | Platinum Edition | | Silver Edition | | Research Edition |
|---|---|---|---|---|---|
| **Configuration** | Standalone | Embedded | Standalone | Embedded | Standalone |
| **Model number** | WNC-M25MPS3 | WNC-M25MPE3 | WNC-M25MSS3 | WNC-M25MSE3 | WNC-M25MRS3 |
| **Data rate** | Up to 15 kbps (depending on channel conditions and reliability requirements) | | | | |
| **Operating range** | 3-5 km (nominal, depending on channel conditions) | | | | 1 km (nominal, depending on channel conditions) |
| **Ranging precision** | 0.1 m | | | | |
| **Doppler resilience** | ±4 knots or better | | | | |
| **Modulation (software defined)** | PSK-OFDM, FH-BFSK | | | | |
| **FEC (Forward Error Correction)** | LDPC, up to $^1/_6$ rate code; Convolution code, $^1/_2$ rate code (JANUS) | | | | |
| **Software framework** | UnetStack3 (www.unetstack.net) | | | | |
| **Software interface** | UnetStack3 (Java, Groovy, Python, C, Javascript, Julia, Matlab), interactive web UI, JSON/TCP | | | | |
| **Hardware interface** | Ethernet (10/100 Mbps), RS232 (up to 115200 bps), power | | Ethernet (10/100 Mbps), power | | |
| **Beam pattern** | Omnidirectional | | | | |
| **Carrier frequency** | 24 kHz | | | | |
| **Bandwidth** | 12 kHz (20 - 32 kHz) | | | | |
| **Source level** | 185 dB re 1 µPa (rms) @ 1 m (nominal) | | | | 175 dB re 1 µPa (rms) @ 1 m (nominal) |
| **Power consumption** | < 4 W (receive mode, nominal)<br>< 60 W (transmit mode, avg.)<br>< 80 W (transmit mode, max.)<br><1.5 W (sleep mode) | | < 4 W (receive mode, nominal)<br>< 60 W (transmit mode, avg.)<br>< 80 W (transmit mode, max.) | | < 4 W (receive mode, nominal)<br>< 25 W (transmit mode, avg.) |
| **Power source** | External power: 22 – 28 V DC (24 V DC recommended) | | | | |
| **Operating depth** | 300 m (Aluminium hull) | 2000 m (Transducer depth rating) | 100 m (Aluminium hull) | 2000 m (Transducer depth rating) | 100 m (Acrylic hull) |
| **Dimensions** | ø 127 ✕ 400 mm | 90 ✕ 90 ✕ 180 mm | ø 127 ✕ 280 mm | ø 105 ✕ 150 mm | ø 130 ✕ 290 mm |
| **Weight (in air / water)** | 6.0 / 2.5 kg | 1.0 / n/a kg | 4.0 / 1.0 kg | 1.0 / n/a kg | 3.0 / 0.5 kg |
| **JANUS compatibility** | Yes, subject to operating frequency band | | | | |
| **Wake up support** | Included (acoustic, Ethernet, RS232) | | Included (Ethernet) | | |
| **Onboard storage** | Not available | | 32 GB | | 32 GB |
| **Arbitrary waveform transmission** | Included (Passband & baseband) | | | | |
| **Arbitrary waveform recording** | Included (Passband & baseband) | | | | |
| **Qualification testing** | MIL-STD-810G, MIL-STD-810E, MIL-STD-461E | | Not available | | |
| **Operating Temperature** | 0 to 50 °C | 0 to 70 °C (Electronics)<br>0 to 50 °C (Transducer) | 0 to 40 °C | 0 to 70 °C (Electronics)<br>0 to 40 °C (Transducer) | 0 to 40 °C |
| **Optional upgrades** | | | | | |
| **Hull options** | n/a | n/a | Stainless steel (2000 m), Aluminum (300m) | n/a | Aluminium (100 m) |
| **Depth rating** | up to 2000 m | | | | Not available |
| **Additional storage** | Not available | | 256 GB, 1 TB | | Not available |
| **Additional coprocessor** | Not available | | nVidia Jetson TX2 based SBC | | Not available |
| **Additional interface support** | Not available | | RS232 (up to 115200 bps) | | Not available |
| **Additional sensors\*** | Not available | | GPS, compass, low drift clock (OCXO - 25 ppb) | | Not available |
| **Optional software upgrades** | Unity\*\* (Distributed spatial diversity framework for improved performance) | | | | Not available |
| **Accessories & Support** | | | | | |
| **Data & power cable** | 25 m underwater cable | 1 m Ethernet, power & transducer | 25 m underwater cable | 1 m Ethernet, power, 5 m transducer | 25 m underwater cable |
| **Mounting clamps** | Optional | n/a | Optional | n/a | Optional |
| **Customer support** | Phone/Email/Chat | | Email/Chat/Online forums | | Online forums |

\* Contact Subnero for details of listed sensors and support for additional sensors
\*\* Patent pending