Datasheet
Micro-Ranger 2

Micro-Ranger 2 has been designed as a true one box battery powered USBL solution, small enough to be carried as hand luggage on commercial flights and mobilised at short notice.

Micro-Ranger 2 uses a positioning technique known as Ultra-Short BaseLine (USBL) to calculate the position of underwater targets. A transceiver at the surface transmits an acoustic signal to transponders attached to each of the targets you wish to track. Using the return signal from each transponder, Micro-Ranger 2 determines its range (distance), bearing (heading) and depth, displaying the results on a radar-style software display.

If you're a first-time user of USBL technology, you'll find Micro-Ranger 2 incredibly easy to use. Connect your laptop to the inbuilt Wi-Fi, then attach a transponder to each target you want to monitor the position of. With the transceiver lowered into the water, you're ready to start tracking up to 10 divers, underwater vehicles or any other underwater equipment.

To deliver the best possible positioning performance and operator experience, Micro-Ranger 2 uses the same market-leading 6G® hardware and Wideband®2 digital acoustic technology you'll find in Sonardyne's family of deepwater USBL systems, but with significantly less cost and complexity

Built around Sonardyne's Micro-Ranger Transceiver the USBL system can be deployed from the quayside or a vessel and is optimised for omni-directional tracking.

Each system is supplied with two of Sonardyne's Nano transponders, in either NFC or cabled configurations.

Note: The PC is not included.

Key features

- One box tracking solution for AUVs, ROVs and instruments

- Wide input voltage range for powering + charging on the job

- Optimised for shallow water high elevation tracking

- Track and actuate Sonardyne releases

- Internal rechargeable battery with external on/off switch

- Industry standard IP68 external connectors

- Global database of sound velocity profiles for ease of use and accuracy

- Available as an integrator kit with Marine Robotics Pack for AUV communication

- Export license free

Specifications
Micro-Ranger 2

Feature	Type 8241 - Micro-Ranger 2	
Dimensions	524 x 428 x 206 mm	
Weight	13.5 kg	
External power + charge	12/24 V dc, 115–230 V ac, 30 W maximum, 3.5 W typical	
Internal battery	Li-ion 33 Wh[1]	
Battery life	>10 hours at 1 Hz ping rate	
Connection type	Ethernet or Wi-Fi (DHCP) to PC	
User connection ports[2]	1x RJ45 Ethernet port, 2x USB charging ports, RS232 via PC	
Operating temperature	-15 to 45°C	
Storage temperature	-20 to 45°C	
IP rating	IP67[3]	
Performance & Acoustics		
Accuracy[4]	Array	<3.5% of slant range 1DRMS
	System	<5% of slant range 1DRMS
Repeatability	0.3% of slant range 1DRMS	
Range	<995 m	
Update Rate	Up to 3 Hz	
Beam Shape	Omni-directional	
Frequency	20–34 kHz	
Included in System Kit		
Software	Micro-Ranger 2	
Transponder	2x NFC Nano or 2x cabled Nano	
Transceiver	Micro-Ranger USBL Transceiver (MRT) USBL	
Internal GNSS	Single frequency GNSS	
Cabling	10 m USBL cable/5 m GNSS cable	
Charger	Portable topside charger/Nano charger	
Documentation	Manual and quick start guide	

[1] UN 38.3 certified with electronic disconnect for transport.
[2] Additional user connections possible to Micro-Ranger 2 software via UDP.
[3] IP67 when operating with a closed box.
[4] System accuracy includes internal Heading, Pitch, Roll and GNSS. Array accuracy excludes GNSS error and incorrect Heading, Pitch and Roll.

Specifications subject to change without notice – 01/2025