

MicronNav 200

USBL Tracking System



Applications

- ROV navigation
- Diver tracking system
- AUV tracking
- ROV location beacon

The MicronNav 200 system is the latest generation of UltraShort Base Line (USBL) positioning system from Trittech. Designed for small vehicles and diver supporting applications, the system benefits from a number of new features including data transfer interleaved with USBL positioning, software integration into Google Maps™, smaller, more accurate USBL head and compatibility with the new Micron Battery Modem.

Benefits

- Quick and easy to mobilise
- Integration into Google Maps™
- More robust MicronNav 200 hub
- Seamless integration into Genesis software
- Easy to calibrate

Features

- Integrated motion sensor
- 1° improved magnetic compass
- Connect via sonar Aux port
- Low power consumption
- Compact and easy to install

The system comprises a subsea Micron Modem or Battery Micron Modem, a surface USBL transducer with integral magnetic compass and pitch/roll sensors, a surface MicronNav 200 interface hub and bespoke operating software under control of a topside PC/laptop.

The MicronNav 200 uses spread spectrum acoustic technology. This provides a robust method for communication between the dunking transducers and the vehicle Micron Modem/Micron Battery Modem. The USBL transducer can provide 180 degree hemispherical coverage below the transducer, which allows vehicle tracking in very shallow water. Omni-directional coverage is provided by the Micron Modem and Micron Battery Modem.

The Micron Modem is a stand-alone device which either responds to acoustic interrogation from the USBL head (transponder mode), or is triggered by RS232 / RS485 (responder mode) through the main port. The responder trigger can come either from the auxiliary port on a Trittech Micron Sonar, or directly from the MicronNav 200 interface hub.

Key Specification

Positioning Technology	Ultra Short Baseline (USBL)
Tracking range	500m Horizontal, 150m Vertical
Targets tracked	1 Responder or up to 254 Transponders
Range accuracy	±0.2m
Hub power requirement	90-264 VAC (47-63Hz) or 15-36 VDC
Modem depth rating	750m

System	
Positioning technology	Ultra Short Baseline (USBL)
Frequency band	20 - 28kHz
Data rate	40bits/s or 100bits/s (spread spectrum)
Tracking range ^{*1}	500m Horizontal, 150m Vertical
Range accuracy ^{*2}	±0.2m
Bearing accuracy	1° RMS (determined by USBL integrated heading sensor)
Pitch & Roll accuracy	0.2° Static / 0.5° Dynamic (typical)
Targets tracked	1 Responder or up to 254 Transponders
Doppler tolerance	±5m/s

MicronNav 200 Surface Hub	
Power requirement (AC or DC)	90-264 VAC (47-63Hz) or 15-36 VDC
Power consumption	8.5W from either source (with no external load)
Output voltage	33V (when on AC Supply), 31.5V (when on DC supply)
Dimensions	232 x 185 x 52mm (width, depth, height)
Weight	1.4kg
Material	Stainless Steel housing with Anodised Aluminium front fascia
Temperature rating	5° to 35°C (operational), -20° to 50°C (storage)

USBL Transducer	
Transmit source level	173dB re. 1µPa at 1m
Deck cable length	10m standard (20m, 50m options)
Depth rating	30m
Dimensions	75 x 250mm (diameter, length)
Weight in air	1.0kg
Weight in water	0.1kg
Temperature rating	-10° to 35°C (operational), -20° to 50°C (storage)

Modem/Transponder/Responder	Micron Modem	Micron Battery Modem
Beam pattern	+/-90°, Omni-directional	
Transmitter source	169dB re 1µPa at 1m	
Communications protocol	RS232 or RS485 (internally set)	
Depth rating	750m	
Power consumption	3.5W transmitting 0.28W receiving	3.5W transmitting 0.05W receiving
Dimensions	56 x 77mm (depth, height)	56 x 206mm (depth, height)
Weight in air	0.24kg	0.89kg
Weight in water	0.08kg	0.45kg
AC Charger	N/A	90 -264VAC 47- 63Hz , 18W charging
Temperature rating ^{*3}	-10° to 35°C (operational), -20° to 50°C (storage)	

Specification subject to change in line with Trittech's policy of continual product development

^{*1} Range is dependent on operating conditions.

^{*2} ±2% of 10m slant, ±0.2% of 100m slant, ±0.04% of 500m slant - assumes correct speed of sound.

^{*3} Battery Modem operational temperature limited to no less than 10° during charging or while on external power.

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