Subsonus is a miniature underwater acoustic positioning system that provides high accuracy position, velocity and heading at ranges of up to 1000 metres.

The USBL provides highly reliable tracking, even in high multipath, challenging acoustic environments, thanks to its advanced signal processing and unique hydrophone design.

Subsonus also seamlessly operates as a modem capable of transmitting user data underwater.

**PERFORMANCE**

- 0.1 m Positioning Accuracy
- 0.1 ° Roll and Pitch
- 0.3 ° Acoustic Heading
- 1000 m Range and Depth

**KEY FEATURES**

- Integrated INS
- Multipath Rejection
- Acoustic Modem
- Very low Size, Weight and Power
- Speed of Sound Sensor

**APPLICATIONS**

- AUV & ROV Navigation
- Diver Tracking
- Subsea Surveying
FEATURES

**INDUSTRY LEADING HYDROPHONE ARRAY**

Subsonus features an industry leading eight channel factory calibrated hydrophone array. With the innovative hydrophone array Subsonus is able to perform beam forming, offering exceptional multipath rejection in poor environments and higher accuracy measurements.

**DYNAMIC POWER AND SIGNAL ENCODING**

Subsonus dynamically adjusts its acoustic transmit power and signal encoding based upon its operating environment. This results in highly improved performance and reliability in difficult conditions.

**ACOUSTIC HEADING**

Subsonus features acoustic heading transfer technology that allows it to transfer high accuracy GNSS heading from the surface to a unit underwater. This allows underwater units to achieve high accuracy heading without a gyrocompass and with no susceptibility to magnetic interference.

**INTERNAL SPEED OF SOUND**

Subsonus has the ability to measure the speed of sound through water using a revolutionary new technique. This means that the system is self tuning and no extra equipment or user intervention is required to setup the system for optimal performance.

**FULLY INTEGRATED MINIATURE ENCLOSURE**

Subsonus does away with the typical reliance on external equipment such as rack mount units, interface boxes or PCs. All processing is done internally inside the miniature titanium enclosure and the system connects through a single ethernet connection for data output. It features a web browser based user interface.
## SPECIFICATIONS

### NAVIGATION
- **Position Accuracy (5 m range)**: 0.1 m
- **Position Accuracy (100 m range)**: 0.5 m
- **Position Accuracy (1000 m range)**: 5.0 m
- **Velocity Accuracy**: 0.01 m/s
- **Roll and Pitch Accuracy**: 0.1°
- **Heading Accuracy**: 0.3°
- **Heave Accuracy (whichever is greater)**: 5% or 0.05 m
- **Internal Filter Rate**: 1000 Hz
- **Output Data Rate**: Up to 1000 Hz
- **Latency**: 0.6 ms

### SENSORS
- **Integrated GNSS/INS**: Yes
- **Integrated GNSS Antenna**: In top of hydrophone array
- **Pressure Sensor Range**: 1000 m
- **Pressure Sensor Accuracy**: 1.5 m

### ACOUSTICS
- **Hydrophones**: 8
- **Frequency**: 30 kHz
  - (broadband)
- **Range**: 1000 m
- **Acoustic Coverage**: 300° hemispherical
- **Range Accuracy**: 0.1% of slant range
- **Angular Accuracy**: 0.1°
- **Update Rate**: Up to 10 Hz
- **Data Transfer Rate**: Up to 10 kbit

### HARDWARE
- **Operating Voltage**: 9 to 60 V or Power over Ethernet
- **Power Consumption (Average)**: 10 W
- **Power Consumption (Peak)**: 25 W
- **Interface**: Ethernet
  - (RS232 / RS422 through ILU)
- **Timing Synchronisation**: PTP and NTP support
- **Depth Rating**: 1000 m
- **Operating Temperature**: -20 °C to 40 °C
- **Storage Temperature**: -40 °C to 85 °C
- **Shock Limit**: 25 g
- **Dimensions**: 106 x 106 x 93 mm
- **Weight in Air**: 1170 g
- **Weight in Water**: 650 g