

# Datasheet

## HPT 2000 USBL HF Transceiver



**HPT 2000 Ultra-Short BaseLine (USBL) is a smaller, lighter, high performance Ethernet interfaced transceiver supporting Sonardyne's Transition Zone – Ocean Bottom Cable (TZ/OBC) and Lightweight Release Transponders (LRT).**

This smaller HPT offers significant improvements for seismic survey positioning in coastal and near shore operations where high elevation tracking is required in low noise environments.

Its multiple simultaneous channels enable robust tracking of up to nine TZ/OBC transponder targets.

The advanced multi-element processing enables transponders to be positioned more precisely, quickly and robustly due to improvements in signal processing algorithms. When used as part of a complete Mini-Ranger 2 USBL system, heading and inertial navigation sensor, class leading performance is achieved.

The integral MTi-30 Xsens sensor provides pitch, roll and heading data that automatically compensates for the dynamic motion of the vessel, removing the need for an external sensor and pre-use calibration.

Manufactured in aluminium bronze, the HPT 2000 is intended to be fitted temporarily or permanently to a vessel's through-hull or over-the-side pole.

The full hemispherical coverage optimises performance in shallow water environments boosting transmissions and receive sensitivity in the horizontal axis.

Ethernet connectivity enables the system to function over existing ship network wiring for rapid installation.

### Key features

- Easy to install and set up
- High performance USBL transceiver offers improved precision and robustness
- Tracking of up to 9 TZ/OBC transponder targets
- Enhanced USBL array design for shallow water high elevation tracking.
- Internal "Xsens" sensor magnetic compass for instantaneous and calibration free motion compensation.
- True simultaneous tracking of multiple transponders providing high position update rates
- Built in health checks including array and electronics diagnostics
- Waterfall plot for enhanced ambient noise monitoring.
- Audio codec for live streaming. Allows listening to in-water signals and ambient noise.
- Ethernet connectivity using an Ethernet Serial Hub (ESH)

# Specifications

## HPT 2000 USBL HF Transceiver



Feature	Type 8221
Operational frequency	HF (33–50 kHz)
Transceiver performance	Operating range
	500 m
	Acoustic coverage
	Full 180°
	Range precision
	Better than 15 mm
	Positioning repeatability external MRU
	All transceivers tested to better than 0.2% of slant range 1 Drms / 0.14% 1 Sigma
	Positioning repeatability internal Xsens pitch and roll
	All transceivers tested to better than 1.3% of slant range 1 Drms / 0.9% 1 Sigma
Source level (dB re 1 µPa @ 1 m)	194 dB
Electrical	48 V dc (±10%), typical 15 W, maximum 120 W
Communication	Ethernet 100 Mbps
Operating temperature	-5 to 40°C
Storage temperature	-20 to 45°C
Mechanical construction	Aluminium bronze
Dimensions (height x diameter)	310 x 234 mm
Weight in air/water	19.4/9.5 kg

Note: The absolute accuracy of the system is dependent upon the quality of external attitude and heading sensors, beacon source level, vessel noise, water depth, mechanical rigidity of the transceiver deployment machine, SV knowledge and proper calibration of the total system using CASIUS.