QUICK GUIDE

VideoRay

Mission Specialist
SeaTrac USBL

This Quick Guide provides basic instructions for the installation and use of the Blueprint SeaTrac USBL system. Refer to the SeaTrac printed guide included with the system and online at blueprintsubsea.com/seatrac/ for detailed instructions.

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Specifications

Depth Rating: 300m	Communications: Single RS-232
Temp. Rating (Operating): -5° to +40°C	Supply Voltage: 9-28 VDC
Acoustic Range: 1 km hemispherical	Power : ~ 6W when transmitting

System Components

1. AC Power Adapter
2. Submersible Beacon to 9-pin Cable
3. Deck Lead Splitter
4. Topside Beacon Cable
5. Diagnostic Cable
6. Pole Mounting Bracket
7. Product Software/USB
8. Hardware/Reset Magnet
9. X010 Submersible Beacon
10. X150 Topside Beacon

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USBL Operation Guide

Installation

Apply a small amount of silicone lubricant to both ends of the Submersible Beacon to 9-pin Cable (2). Remove the float block from the submersible and fully insert the 9-pin connector of the cable into Port 6 of the Communications Module. If connectors are already plugged into Port 6 for other accessories (manipulator, sonar, GPS), add the connector to the chain of connections and fully mate.

For the Defender, feed the opposite end of the Beacon Cable through the GPS mast opening near the center of the float block. For the Pro 5, feed the opposite end of the Beacon Cable through the USBL opening near the back of the float block.

Carefully align and connect the cable to the X010 Submersible Beacon (9); insert fully and secure by twisting the connector sleeve clockwise. Replace the float block, ensuring it sits level on the ROV frame without cable obstruction.

For the Defender, align the X010 Submersible Beacon at either aft float block screw location; note the alignment of the base with the small hole in the float block. Secure the beacon using the float block screw.

For the Pro 5, align the X010 Submersible Beacon into the USBL opening and secure the beacon using the float block screw.

Carefully align and connect the Topside Beacon Cable (4) to the X150 Topside Beacon (10) and suspend it approximately 1 meter or ~3' underwater as close as practical to the operator.

Workhorse Operator Console: Connect the opposite end of the Topside Beacon Cable to any of the USB 'Accessory' hub ports and the 24VDC port in the OCC side panel using the Deck Lead Splitter (3).

Workhorse Splashproof Controller: Connect the opposite end of the Topside Beacon Cable to the port labeled 'USBL' on the left side of the top panel. The Deck Lead Splitter (3) will not be necessary for this application.

Expeditionary Reel: Connect the opposite end of the Topside Beacon Cable to the middle port on the top panel. The Deck Lead Splitter (3) will not be necessary for this application.

Reverse these steps for removal/storage. The Submersible Beacon to 9-pin Cable should be removed and stored in the USBL case and not remain attached to the submersible.

Using the USBL

Before the submersible is launched, ensure the topside GPS receiver is connected and has a consistent satellite fix. This will be indicated in the Positioning tab of the Diagnostics View and should also show accurate 'Topside' coordinates in the upper left corner of the Map View.

The topside USBL beacon will now be geolocated at the topside GPS receiver's coordinates. Note that if the location of the topside USBL beacon is an extended distance from the topside GPS receiver, the user should consider this positioning offset if high accuracy positioning is desired.

Dive and hold the submersible to a depth greater than the depth of the USBL topside beacon. The USBL system should now be tracking the submersible's position in the Map View, indicated by default as a yellow beacon.

When a DVL positioning error is apparent after prolonged navigation or navigation without consistent bottom lock, clicking 'Reset to USBL' will move the position to the USBL submersible beacon's current location.