



Integrating Optimal Ranging ORION with HYPACK®

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Optimal Ranging, Inc. (<http://www.optimalranging.com/>) provides technology-leading products for survey of underwater, offshore, and underground utilities based on its advanced FieldSens™, MultiSens™, and AccuSens™ technologies. The flagship of their products is ORION, a cable tracker Depth-of-Cover surveyor system. This system can be used in a variety of configurations including vessel-mounted, towed, or mounted on an ROV system.

The purpose of our attempt to integrate with HYPACK® was to use it for underwater pipe/cable detection. We will start with the device setup window.

FIGURE 1. Device Setup Window

- **Scale Width/Depth** and **Pipe Diameter** are parameters that affect display only.
- **Offset Threshold** triggers an event/target when the sensor gets close enough to the object.

These parameters can also be edited in SURVEY.

The ORION comes with a magnetic compass. If we want to use it, we have to specify the magnetic declination for our area.

In order to position the object accurately, we have to provide the seabed depth indicating the depth sensor “**Vessel Id**”. If the depth sensor and ORION are located on the same vessel, we must also check the “**Relative to ORION**” option.

Additionally, we have to provide the ORION depth (**towfish depth**). There are several scenarios: we can use a pressure sensor from the ORION or on towfish, or a depth sensor on the towfish.

At the end, we use the following measurements to figure out vertical parameters.

FIGURE 2. Calculating Vertical Parameters

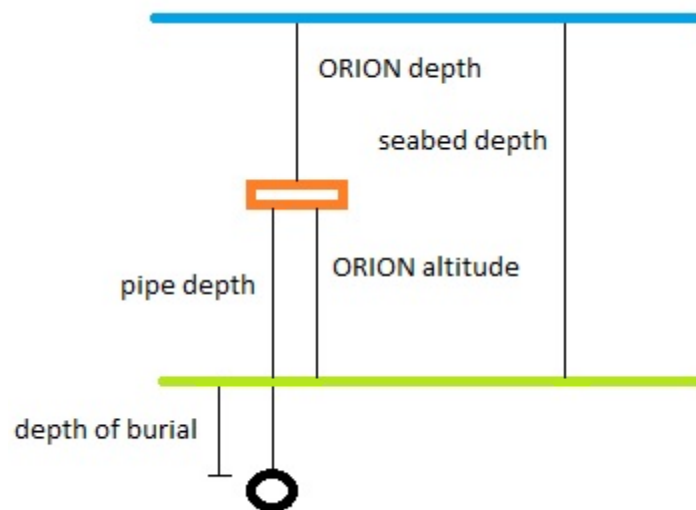


FIGURE 3. Runtime Device Window

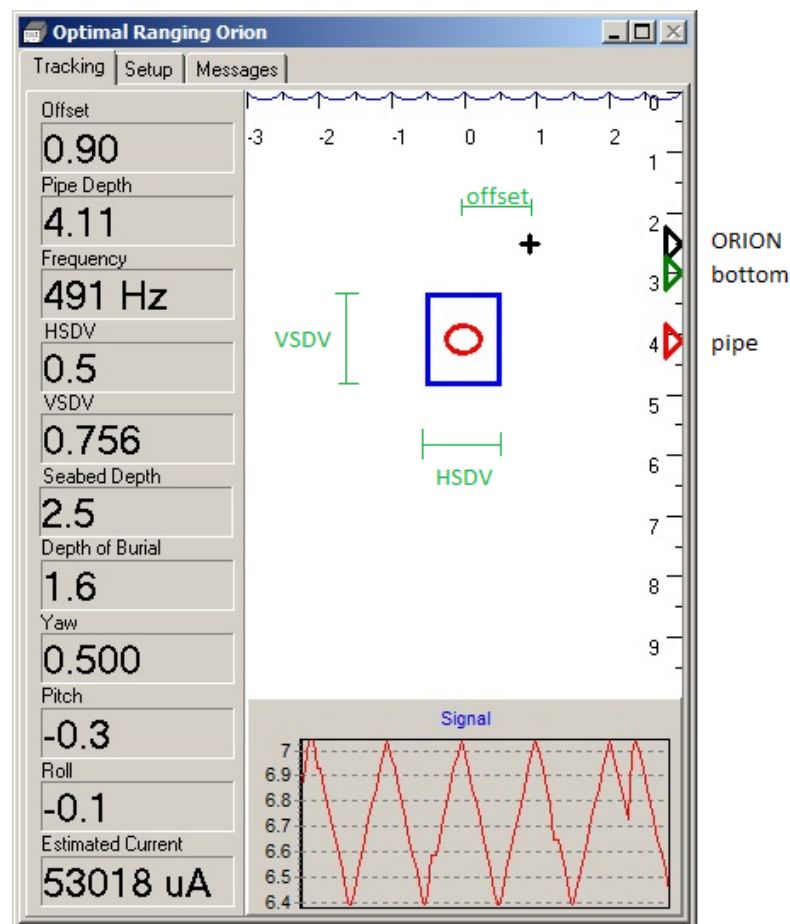


FIGURE 4. Map Window

