New Driver for the Ouster OS-1 LIDAR Sensor

by Andrew Clos

Hello Fellow HYPACK Users,
Our Ouster OS-1 driver has been updated to support firmware versions 3.0 and higher. If you have an Ouster OS-1 LIDAR with the newest firmware and would like use it with HYPACK, here is how to do so.

Connect your Ouster OS-1

Turn on your Ouster OS-1 and GPS/IMU devices and connect them to your network switch. Open a web browser and navigate to: os-122418123123.local. Replace the red characters with the serial number of your OS-1 device. The browser window should allow you to control your LIDAR and make sure that it is running properly without errors. If you have also installed Ouster Studio software you can view the sonar in operation here, but you must close the Ouster Studio program to connect to and use the device in HYPACK®.

Configure the device in HYPACK Hardware

Load your project in HYPACK® and navigate to Preparation -> Hardware to open the HYPACK Combined Hardware window. In the Mobile tab under Device Type, click HYSWEEP Devices to open the HYSWEEP Devices tab and scroll down to or search for Ouster and select the Ouster OS-1 (Horizontal) or (Vertical) option. These drivers are very similar, but choose the one based on how the LIDAR is mounted. Choose horizontal if the top of the OS-1 is facing up (Figure 2, left image) and choose vertical if the OS-1 is tilted on its side (Figure 2, right image).

Figure 1. HYPACK Hardware configuration and device selection

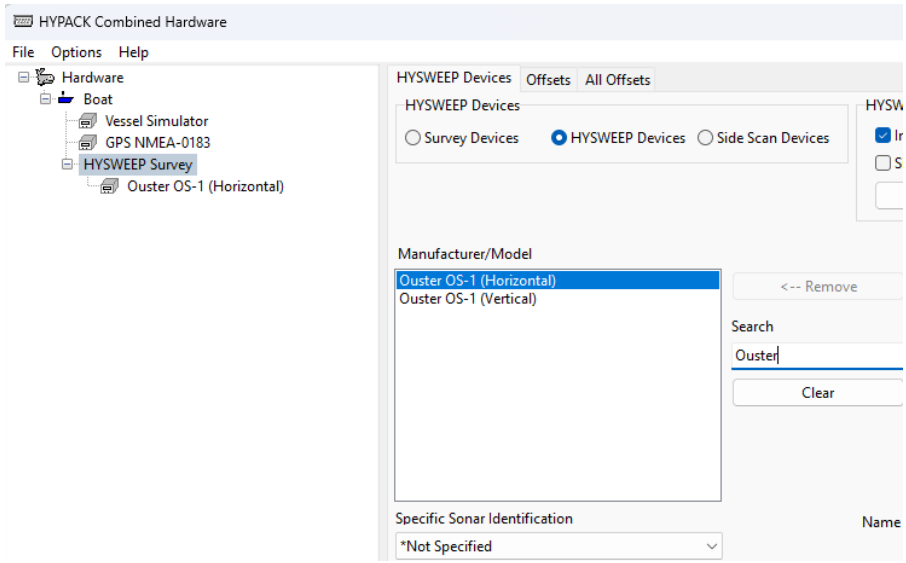
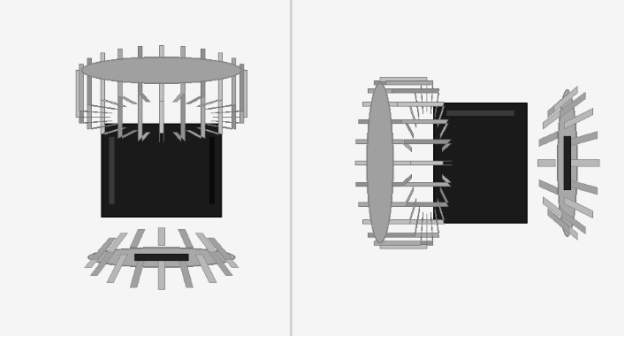
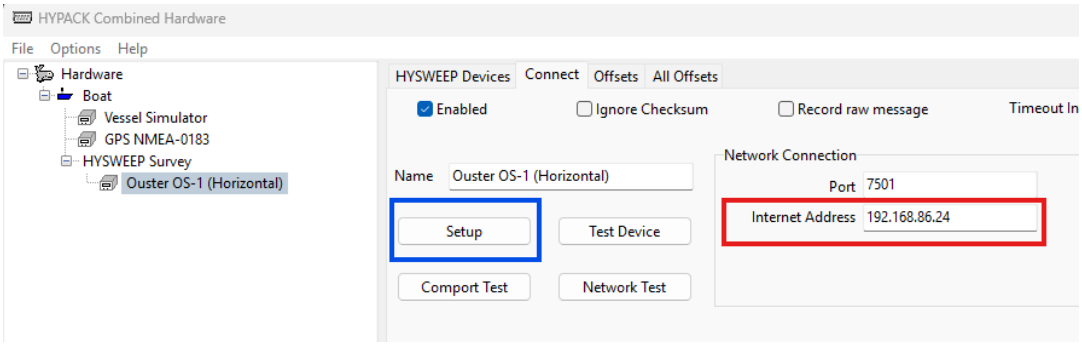


Figure 2. Ouster OS-1 illustration, horizontal orientation (left) and vertical orientation (right)



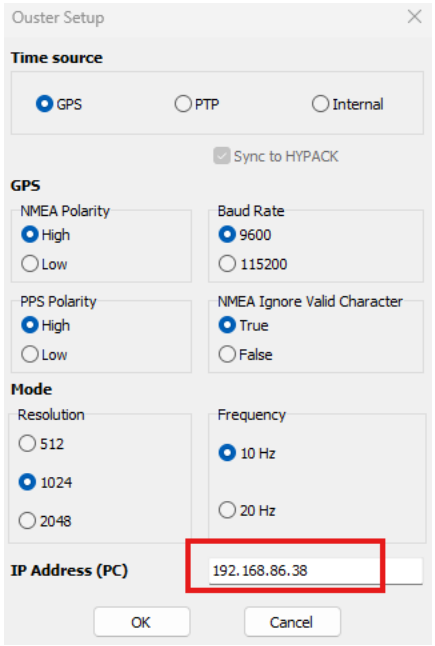
Once you've added the device with the correct orientation, configure its network properties. Fill in the Internet Address field (Figure 3, red box) with the IP address of the Ouster OS-1, which can be determined from the device configuration details in the web browser. Next, click on [Setup] (Figure 3, blue box).

Figure 3. Fill in the Internet Address box with the IP address of the Ouster OS-1



In the Ouster Setup dialog, configure your device operating parameters and enter the IP address of the PC running HYPACK® in the corresponding field (Figure 4).

Figure 4. The Ouster OS-1 Setup dialog. Fill in the HYPACK PC IP address in the field boxed in red



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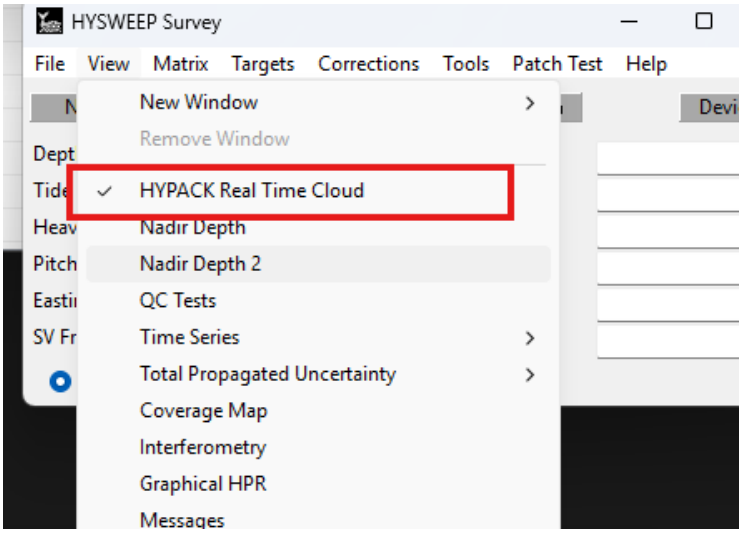
Configure the GPS

The Ouster OS-1 requires the GPS device to output RMC messages in the TTL format and the PPS timing should be set to 3-5 volts at 1ms (1000000ns). This part can be tricky, so please reach out to the HYPACK support team or your GPS device's support team if you have questions.

Launch HYSWEEP Survey

Save your hardware configuration and launch HYSWEEP Survey. The Ouster OS-1 should boot up with your settings within a few seconds. I recommend viewing the incoming data with the HYPACK Real Time Cloud (Figure 5).

Figure 5. HYPACK Real Time Cloud opens from the View drop down in HYSWEEP Survey



Thank You

I hope this guide helps you get started using your Ouster OS-1 LIDAR in HYPACK®.

Happy Surveying,

Andrew Clos

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