OceanTRx4
Inertial Measurement Unit (IMU) Replacement Procedure

Document: **TEC-OceanTrx-IMU-001Rev:-**

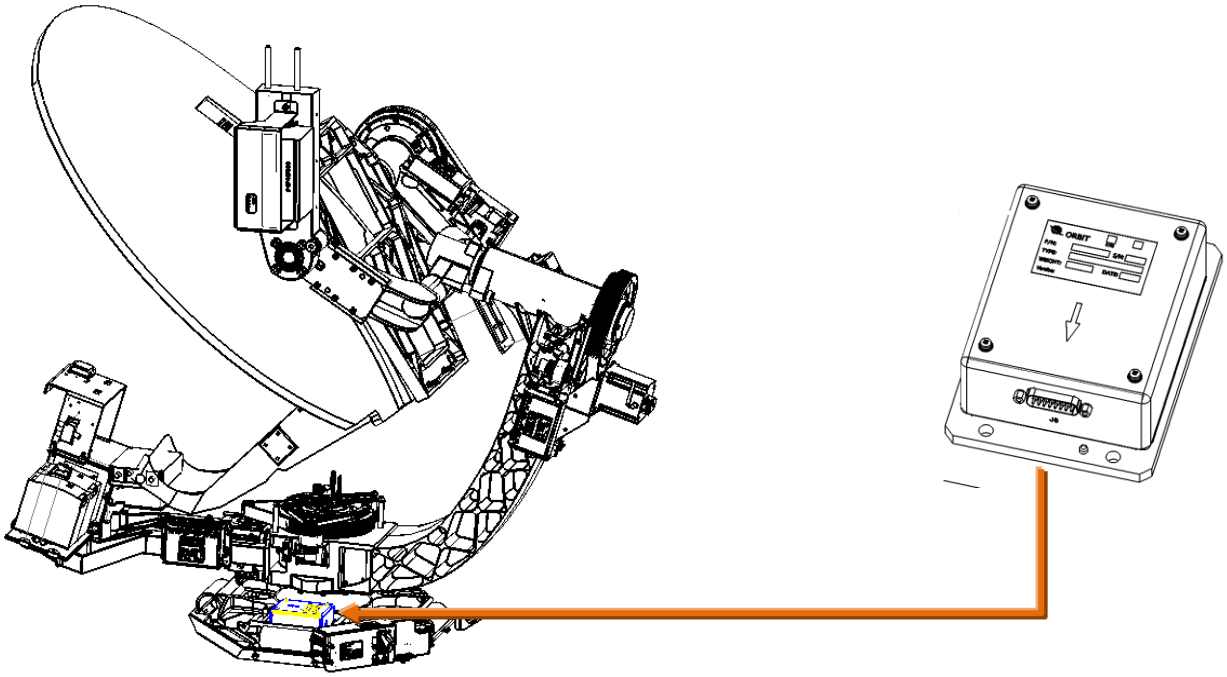


Figure 1-1 IMU Location on the Pedestal

General warnings and instructions!

WARNING!

Only qualified and authorized personnel are allowed to carry out system service/maintenance procedures.

Switch OFF antenna from the power switch on the power box.

Do not touch power input and output connectors of the power box

BEFORE starting the procedure:

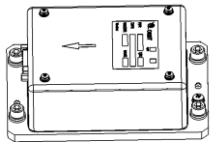
Manually rotate the pedestal axes to gain convenient access to the serviced unit.

Instructions relevant to this procedure

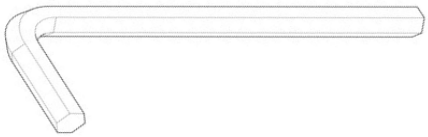
Note the following:

- Make sure you have USB drive with IMU calibration file**.**

1. Applicable for : (P/N: OceanTrx-IMU-001-SP)

Quantity	Description	Figure
1	IMU (inertial measurement unit) L00123007	
4	Washer	
4	Spring washer	
3	Allen bolt M4	
1	USB flash drive	

2. Required tools

Tool/Part Name	Figure
Flat screwdriver (small)	
Tie cutter	
Allen Key 5mm	

3. Replacement of the IMU

Step 1

Disconnect the control cable
Remove 4 Allen bolts securing
the IMU to the pedestal

Note

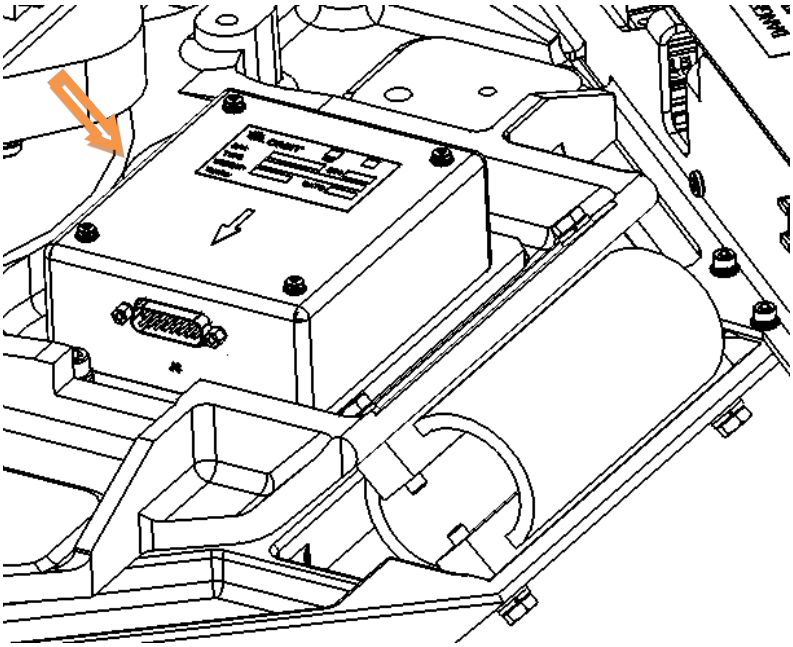
the picture display location of IMU
P/N L00123004

Step 2

Remove the IMU

Install new IMU P/N L00123007

in reverse order



If IMU PN L00123004 was installed you need to reroute the control cable

4. Configuration

Verify the cable routing is correct and properly secured
Make sure all bolts properly tight and Dome is clear of tools

To configure the IMU type

1. Power on the system
2. At the MtsVlink application, verify you have communication with the ACU
3. Access **Config** and choose **IMU configuration**
4. Configure the shown → IMU configuration set: sensors =**Advanced**, processing=**modified**.

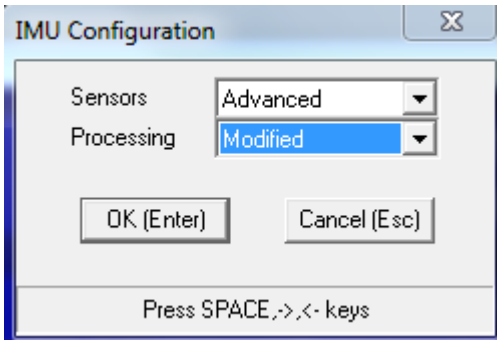


Figure 4-1: IMU configuration

If IMU P/N L00123004 was installed you need modify the current compass offset due to different IMU orientation following step 6. Otherwise skip step 6

6. Access **Config** and choose **Compass.** Add 90° degrees to existing compass "offset" value.

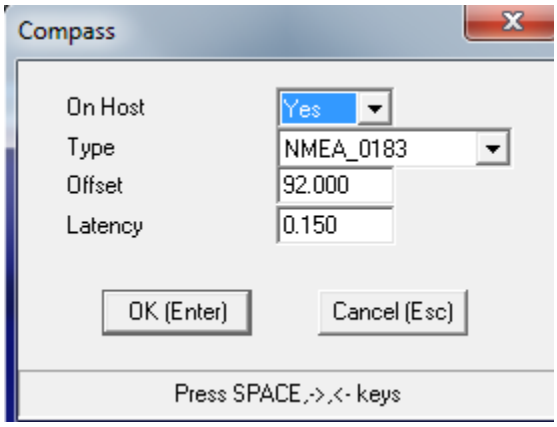


Figure 4-2: Compass configuration

For example if the current compass offset is 92°, the new compass offset will be 182° degrees

7. Access **Commands** and choose **Save Configuration** select **OK**

To upload the IMU Calibration file

1. Insert the insert the attached USB flash drive to CCU front panel USB port
2. Launch the MtsDock application
3. From the **ACU** menu, select **Put Any Relevant Files → Copy files.**
4. The Connect to ACU dialog box appears. Enter the ACU IP address appears in the **Network Address** field and click **OK (Enter)**.

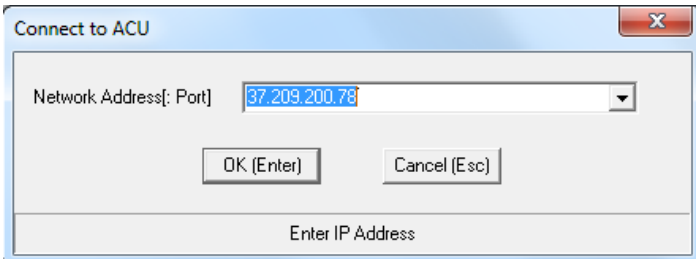
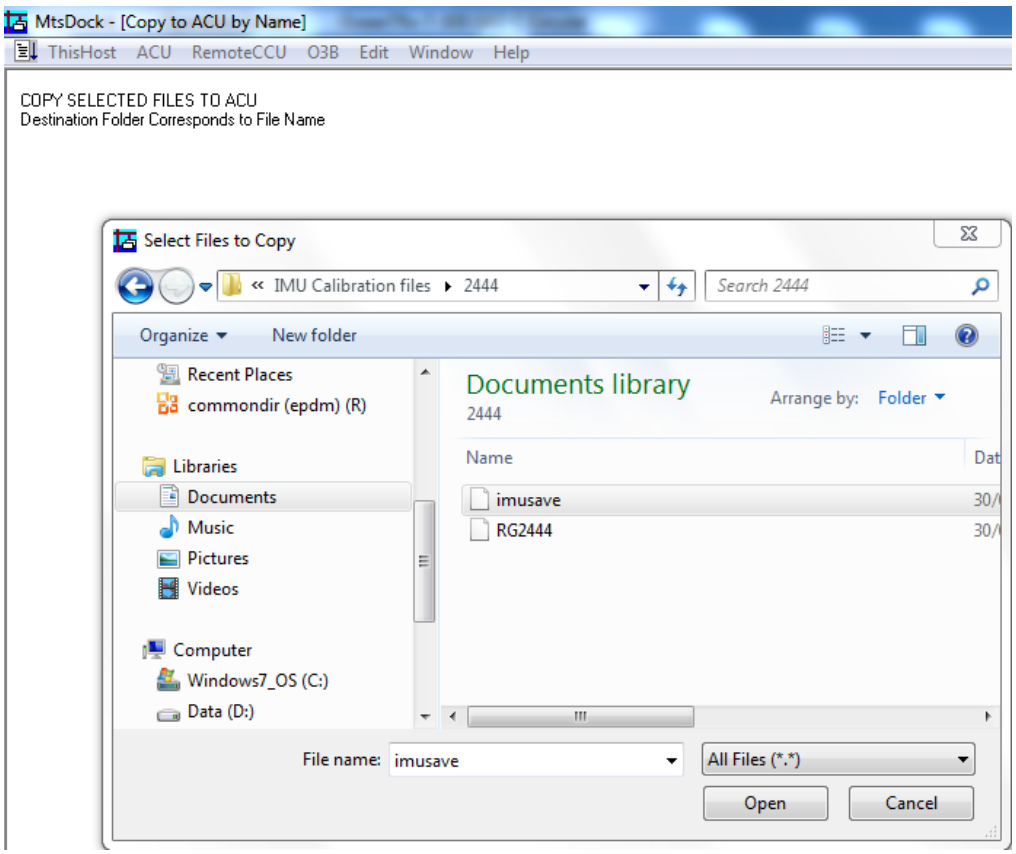


Figure 4-3: Connect dialog

5. Browse for the IMU calibration file (imusave) in the USB flash drive. Load the file.



6. From the MtsDock application, **ACU** menu, click **Reboot.**

USB drive containing the calibration file is supplied in your kit. If the USB drive has been lost, contact supportgroup@orbit-cs.com to obtain **IMU** calibration file based on serial number.

5. Verifying System Operation

1. Check the MtsVLink **System Messages** window for any warning messages related to the IMU.
2. In the MtsVLink **Config** menu, select **Hardware ID.** Check if the IMU serial number matching the SN of the installed IMU.

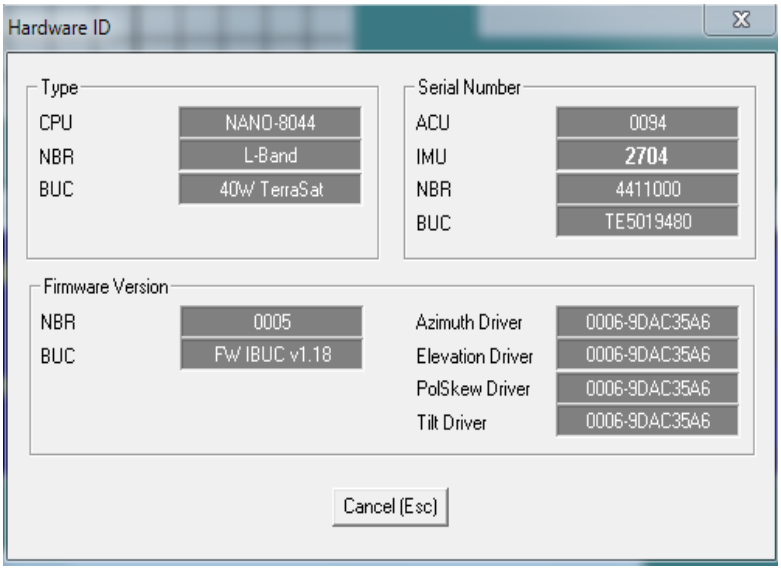


Figure 5-1

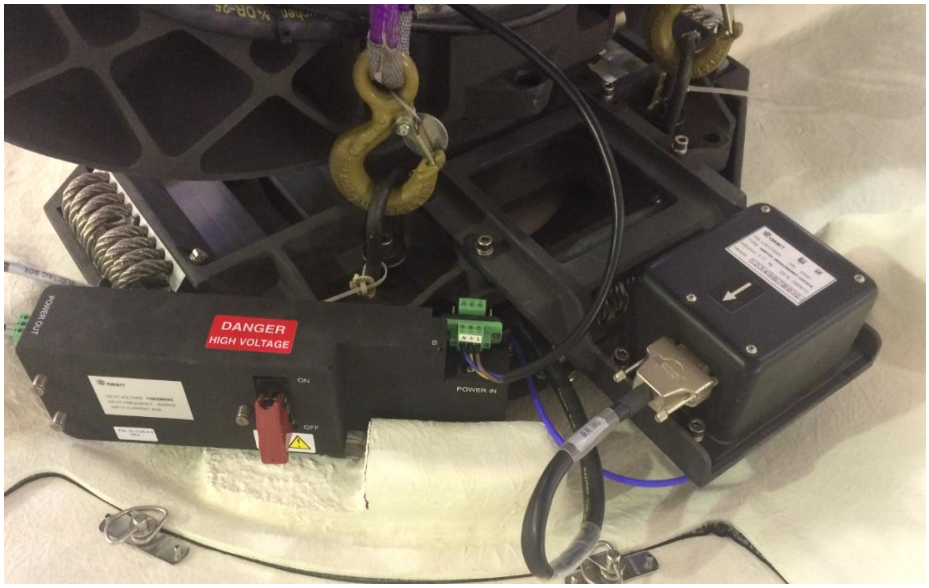
3. Check the **Ship Coordinates** window and verify that the **Roll** and **Pitch** values are correct compared with ship navigation system.

Verify No drift develops on **Roll** and **Pitch** after at least 30 minutes of operation

Verify the **Yaw** is following the **Compass** closely after at least 5 minutes of operation**.**

6. Apending A Modifications for systems with IMU L00123004

When replacing previous generation IMU (P/N L00123004) on OceanTRx 4-500 the IMU location changes

Previous generation IMU Located on extension protruding support bracket	
Current generation IMU (L00123007) location behind the power box in parallel to the wire isolator (spring) Its required to reroute the IMU cable from its existing location to the new location