ORBIT

OceanTRx™

OceanTRx7™

Maritime Stabilized VSAT System

Technical Note

Slip Ring/Rotary Joint Assembly

COMMUNICATION WITHOUT BOUNDARIES

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Revision History and Control

Revision History

Rev #	Modified by	Date	Comments
.	Albert	September 24, 2013	New Release

About this Manual

This manual is designed to guide you through the procedures required for maintaining the `SLIP RING/ROTARY JOINT ASSEMBLY` for the OceanTRx7™ Maritime Satellite Communication System.

Text Conventions

Style	Indicates	Example
Text	Normal descriptive text	Contents
`Text`	Words or figures that appear on the screen or that should be typed The name of a file or directory	`System Status`
`<Text>`	A key to be pressed	`<ESC>`
`TEXT`	The name of a hardware component	`ANTENNA`
Text	The name of a GUI element	**Operation Screen**
➢	The description of a procedure	➢ **To configure…**

Notations

	Indicates important information that should be noted.
	Indicates a potential hazard.
	Indicates the safest method of installation or an operation that *must be adhered to.*

Effective Releases

This document is effective for both OrBand™ and OceanTRx7™ Maritime Satellite Communication Systems.

For a description of the changes between OrBand™ and OceanTRx7™, refer to the *OceanTRx7™ Maritime Satellite Communication System Release Notes*.

Table of Contents

1 Introduction

1.1 Purpose

The purpose of this Technical Note is to provide detailed instructions on how to replace and verify a SLIP RING/ROTARY JOINT ASSEMBLY.

1.2 Principles

The following principles must be followed when performing the procedures in this Technical Note.

1.2.1 Torque Table

The following table provides the torque that should be used when tightening screws of the listed types, as relevant.

Table 1-1: Torque

Screw Type	Torque
M5	$6^{N}/_{m}$
M4	$2.5^{N}/_{m}$
M3	$1.35^{N}/_{m}$

1.3 Slip Ring/Rotary Joint Assembly Description

The SLIP RING/ROTARY JOINT ASSEMBLY includes a Slip Ring and a Rotary Joint.

The Slip Ring is used to pass the following:

- AC power from the ADE POWER BOX to the power supply modules
- DC power from the ACU to the IMU.
- Communication between the ACU to the IMU.

The Rotary Joint is used to pass the following, between the ADE POWER BOX and the ADMX:

- Tx and Rx signals
- 10 MHz reference signal
- LAN communication

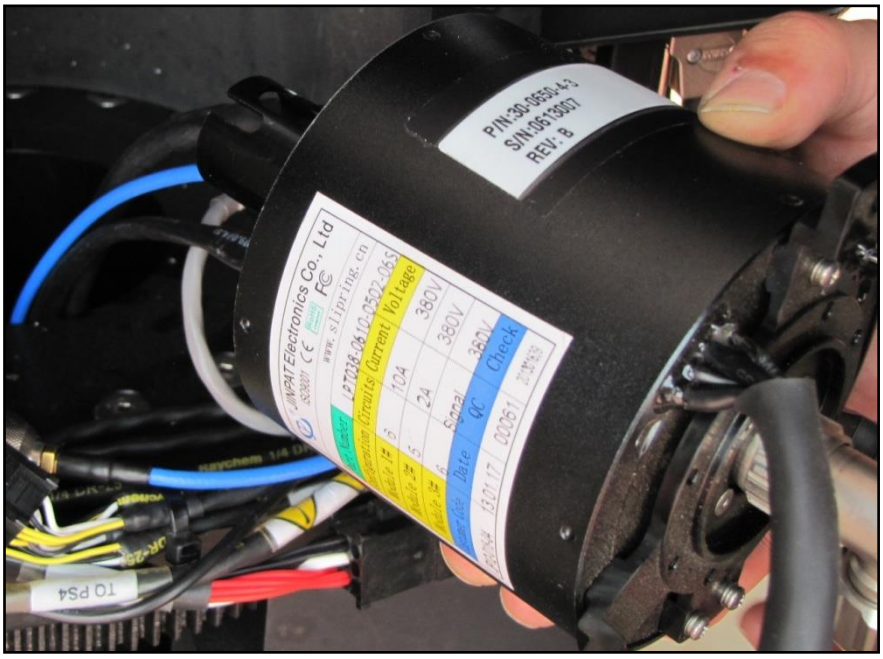


Figure 1-1: Slip Ring/Rotary Joint Assembly

The SLIP RING/ROTARY JOINT ASSEMBLIES have the same mechanical interface and different electrical interfaces.

1.4 Spare Kit Contents

The following table provides a list of the parts in the `SLIP RING/ROTARY JOINT ASSEMBLY` spare kit.

Table 1-2: Spare Part Kit Contents

KIT32-1664-001-SP		
P/N	**Description**	**Quantity**
30-0650-4-3	SLIP RING/ROTARY JOINT ASSEMBLY VS	1
32-0431-4-1	SR/RJ ADAPTOR ASSY AL-7107	1
32-1173-9-1	CABLE ADAPTOR S.R/R.J OceanTRx7™ TO P.BOX OrBand™ AL-7107SYS2	1
K01000055	PKG BOX 299X213X200	1
M12000077	PHIL PAN HD SCR M3X10 SS W/FLAT&SPR WASHERS SS	3

1.5 Required Tools and Parts

The following table provides a list of tools and customer-supplied parts that are needed to perform the procedures in this Technical Note.

Table 1-3: Required Tools and Parts

Tool/Part Name	Notes	Figure
Medium Phillips screwdriver		
Tie cutter		
Open/ring wrench 11,19mm And ¾”		

2 Preliminary Procedures

➢ **To Perform Preliminary Procedures:**

The preliminary procedure described below must be performed before replacing the SLIP RING/ROTARY JOINT ASSEMBLY:

1. Perform System Shut-Down of the vessel's main power AC Voltage terminal outside the RADOME.
2. Open the RADOME hatch.
3. Switch off the ADE POWER BOX at the ANTENNA PEDESTAL base (located inside the RADOME).
4. Manually rotate the PEDESTAL AXES to gain convenient access to the serviced unit.

In the following procedures, be very careful when tightening and loosening the screws with which the parts are assembled and attached to the system. Some of these screws are delicate and can be damaged by excess force. When using an Allen key make sure to insert the key all the way into the screw head to avoid thread stripping.

WARNING!

The Utility Outlet is connected directly to the vessel's AC voltage input terminals (125 VAC / 250 VAC). Therefore, there still exists live voltage at the Utility Outlet after disconnecting the power supply to the ADE using the Mains Power On/Off Switch.

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

3 Replacing the Slip Ring/Rotary Joint

3.1 Removing the Slip Ring/Rotary Joint (OceanTRx7™)

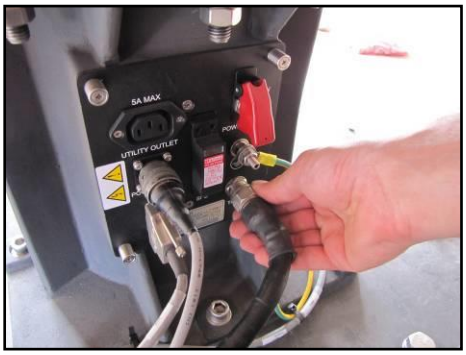
➢ **To Remove the Slip Ring/Rotary Joint:**

Step 1

Shut down the antenna and ensure that the power is off

Step 2

Disconnect the TX/RX, IMU and the POWER INLET connectors.

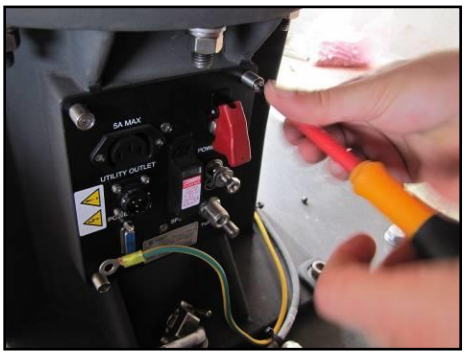


Step 3

Disconnect the ground cable using 11mm key.

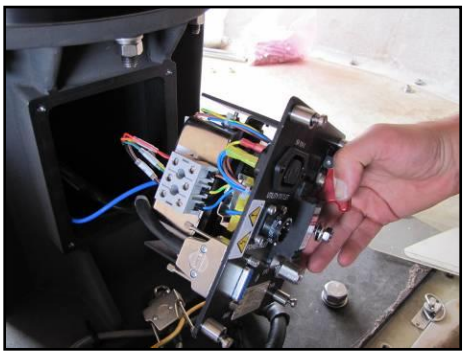
Step 4

Release 4 captive bolts using Phillips key.



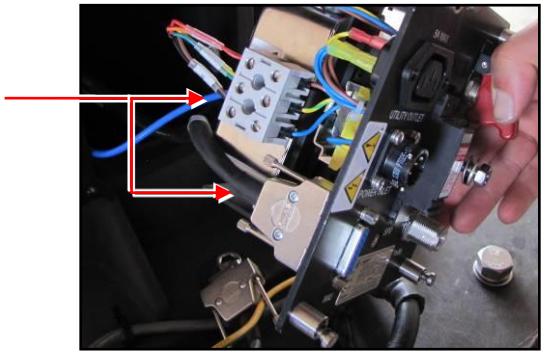
Step 5

Gently Pull out the power box assembly.



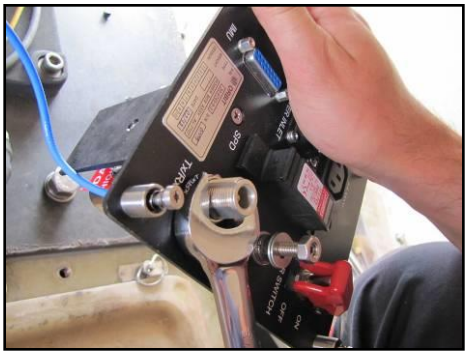
Step 6

Using a flat screw driver, disconnect the power wires (N, G, L) and the IMU plug.



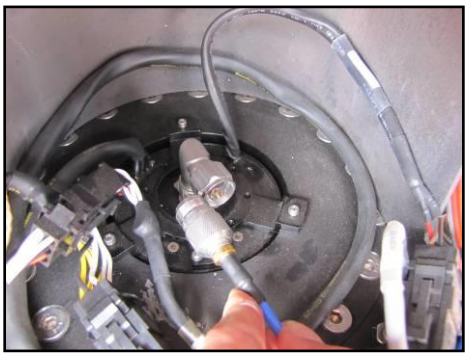
Step 7

Disconnect the TX/RX plug using 3/4” key.



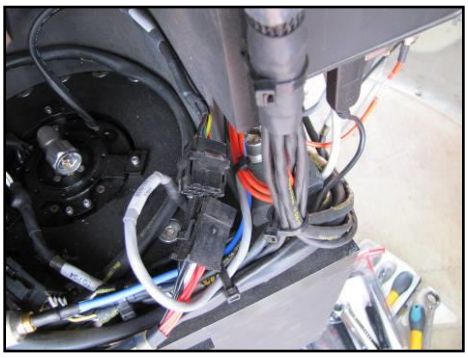
Step 8

Disconnect the blue RF cable from the RJ of the SR-RJ assembly.



Step 9

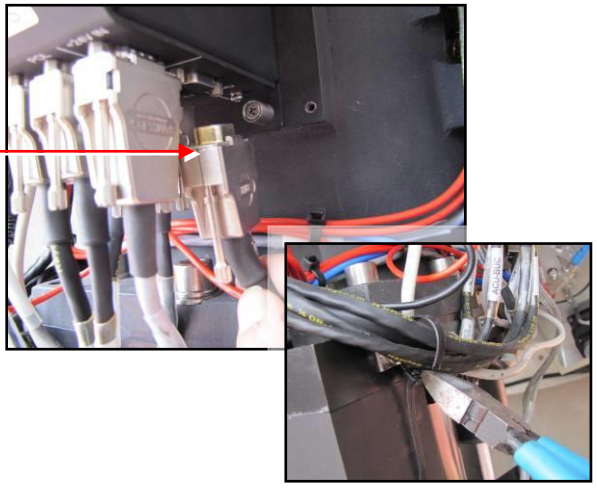
Disconnect the Power connector.



Step 10

Disconnect the IMU connector from the ACU unit.

Remove the tie warp.



Step 11

Untie the IMU cable around the Rotary Joint.

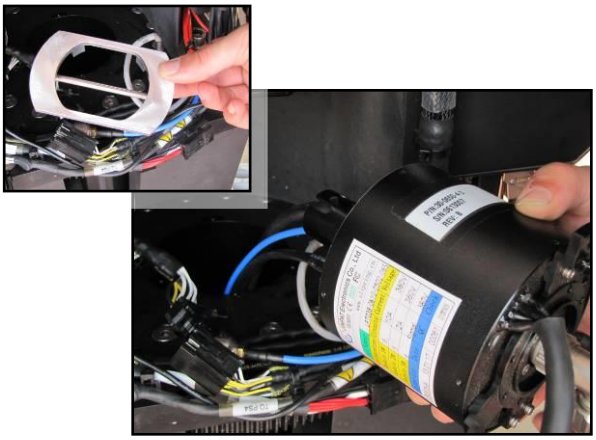
Step 12

Using a short Philips screwdriver, remove the 3 Philips bolt securing SR-RJ.

Step 13

Pull out the Slip Ring RJ assembly.

Note: the Slip Ring may come out together with the mechanical adaptor that drives the SR-RJ motor.



3.2 Installing a Slip Ring/Rotary Joint (OceanTRx7™)

➢ **To Install a Slip Ring/Rotary Joint:**

Step 1

Locate the mechanical adaptor and make sure the part is located properly in place.

Rotate the pedestal so the Slip Ring will face you as illustrated.

Step 2

Route the cables as illustrated:

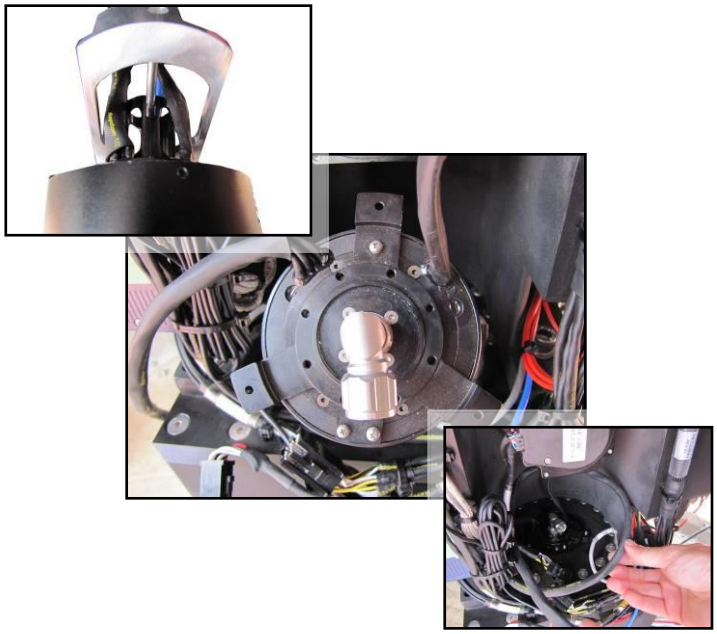
The RX/TX cable and the Power cable to the right side and the IMU to the left.

Step 3

Locate the Rotary Joint.

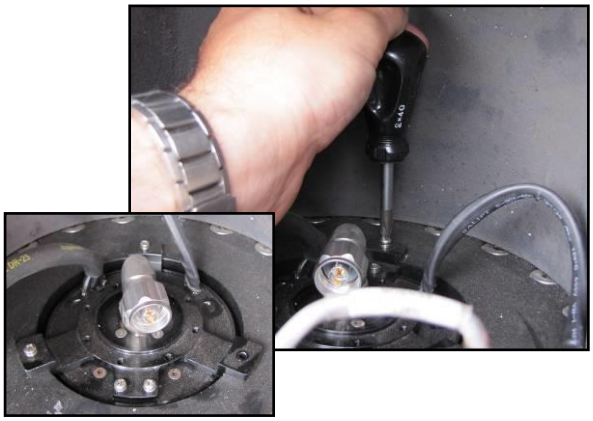
Note: make sure the Rotary Joint slot is located properly onto the Slip Ring.

Arrange the IMU cable around the Rotary Joint



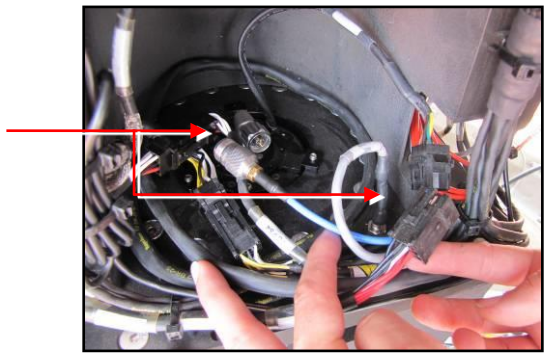
Step 4

Secure the SR-RJ using its 3 Phillips bolts (use a short Philips screwdriver).



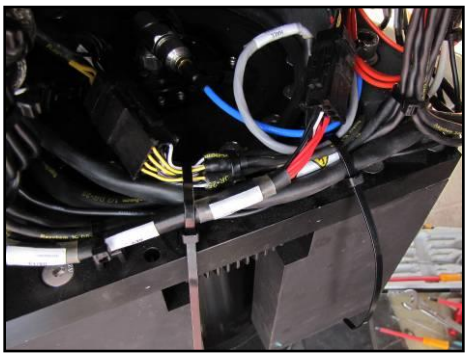
Step 5

Connect the RF plug and the Power connector



Step 6

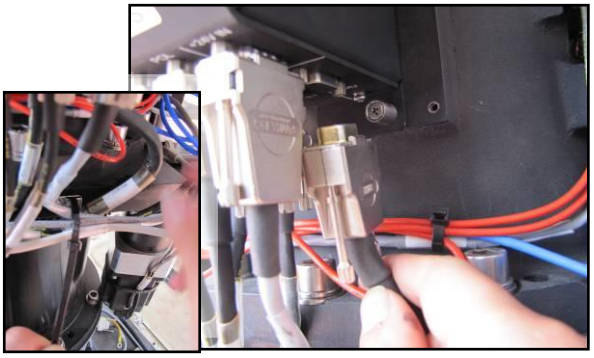
Secure the cables using tie warps.



Step 7

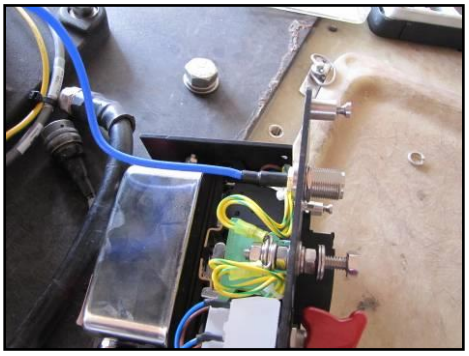
Connect the IMU connector to the ACU unit.

Secure the cables using tie warps.



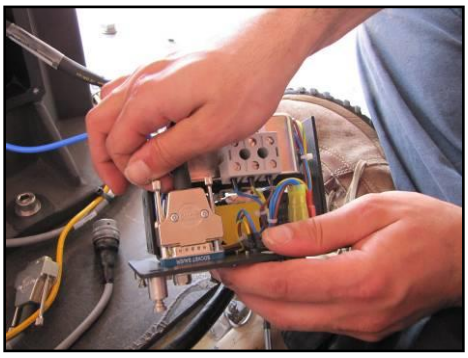
Step 8

Assemble the TX/RX plug using 3/4” key.



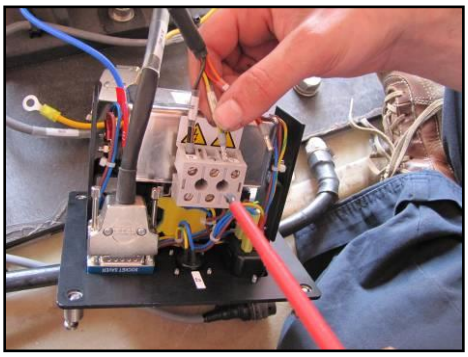
Step 9

Connect the IMU plug.



Step 10

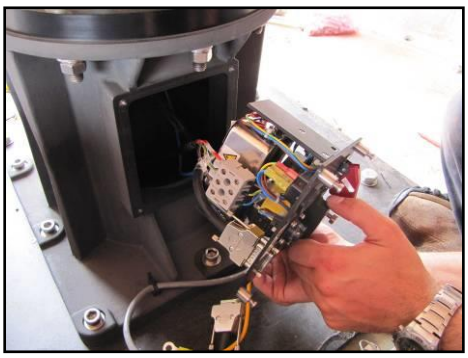
Connect the power wires (N, G, L) according to labels using flat screwdriver.



Wrong wiring may cause damage!!

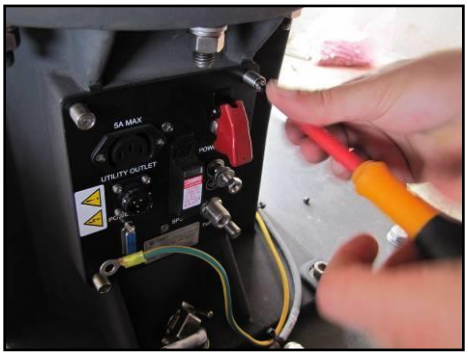
Step 11

Locate the power box assembly.



Step 12

Tighten 4 screw using Phillips screwdriver.



Step 13

Connect the ground cable using 11mm key.

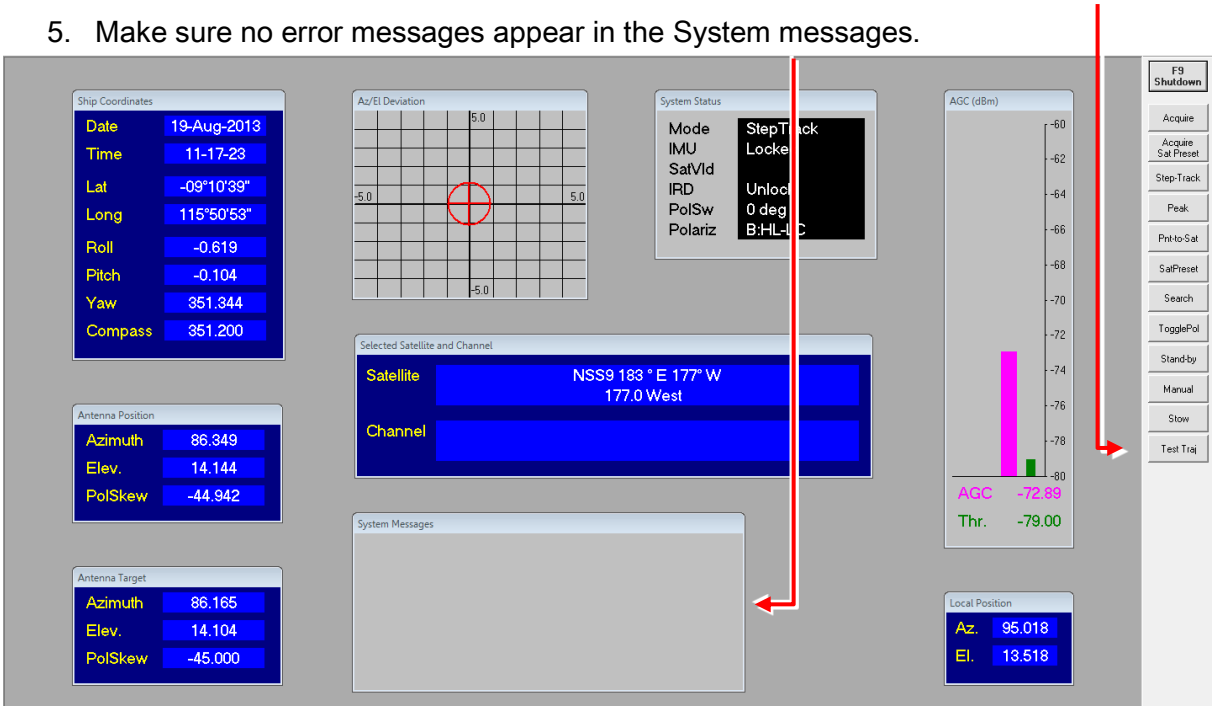
Step 14

Connect the TX/RX, IMU and the POWER INLET connectors.

4 Performing Verification Test

➢ **To Perform Verification Test:**

1. Verify the cable routing is correct and properly secured.
2. Manually move all pedestal's axis's and confirm smooth movement.
3. Power up the system and confirm system initializes properly.
4. To make sure the technical process completed successfully click on **Test Traj.**
5. Make sure no error messages appear in the System messages.



6. Verify the Modem Rx EdNo and TX power with NOC.