AL-7108/AL-7207/8/9

Maritime Stabilized VSAT System

TEC35-0148-003

Technical Note Encoder replacement

Orbit Communication Systems Ltd. 80 Hatzoran St. P.O.B. 8657, Netanya 42504, Israel, Tel: +(972)9 892 2777, Fax: +(972)9 885 5944 www.orbit-cs.com

1 INTRODUCTION

1.1 Overview

- The axis encoder provides axis position feedback to the system controller (ACU or SBC/LCU).
- Since the system utilize incremental encoder rather than absolute the zero position is unknown until it's found during the initialization of the axis (encoder init)
- Encoder offset is used to "learn" the ACU where is the zero position. The offset depended on the angle between the axis zero vs encoder shaft zero position

1.2 Scope

This Technical Note provides information how to install and set the offset of the axis encoder

1.3 Required Tools

Tool/Part Name	Figure
Small Phillips screwdriver	
Flat screwdriver	
Tie wraps	
Side Cutter	
Allen keys set Including 1.5 mm	

1.4 Safety Precautions

Make sure you press F9 to halt the system before entering the dome

Use caution while and opening and handling the SDU

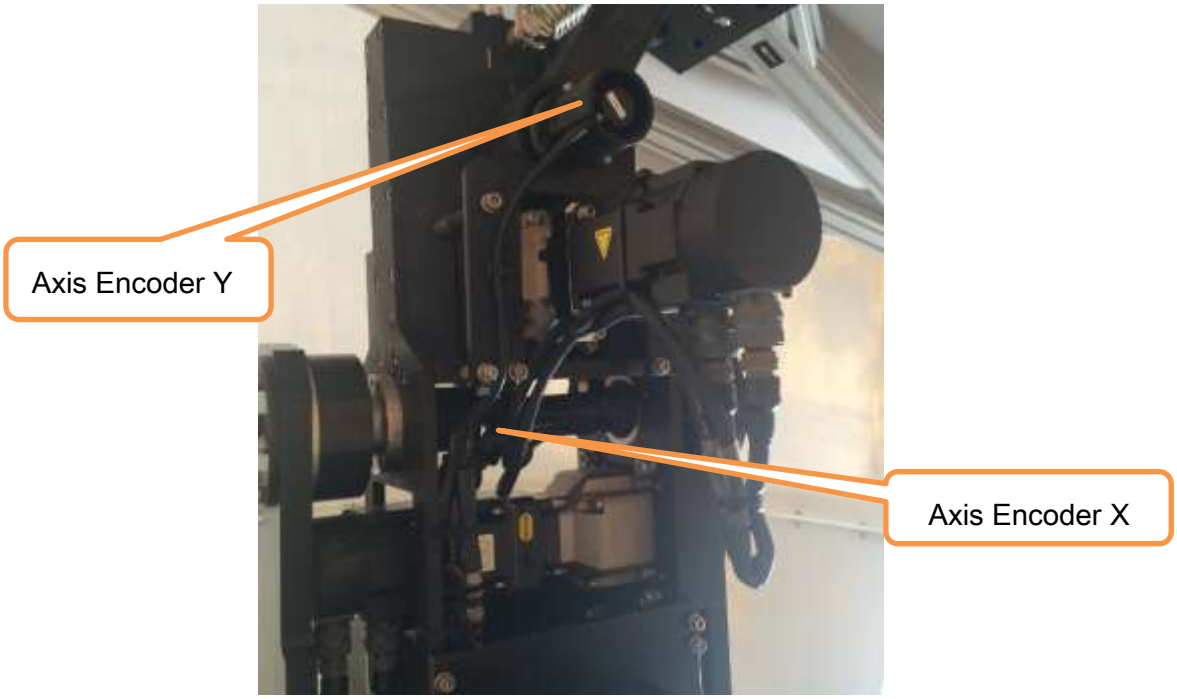
Keep clear from moving parts while performing test

Use caution while handling the encoder coupler. It's very delicate.

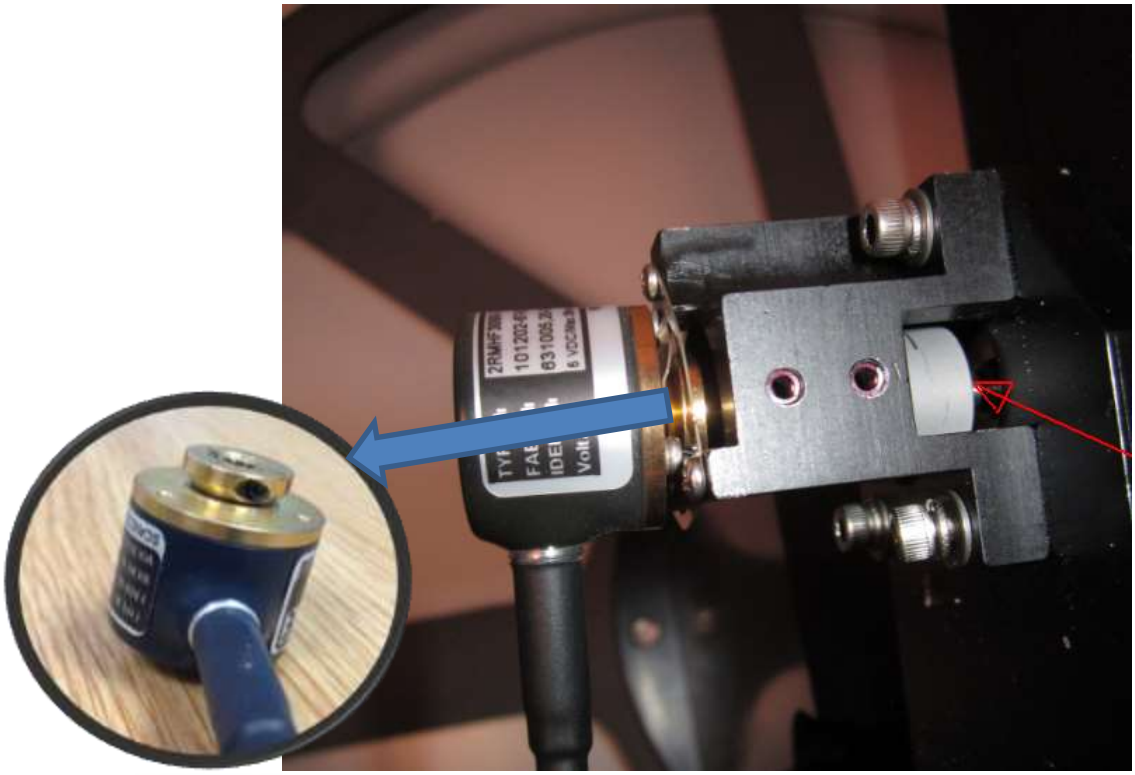
2 INSTRUCTIONS

2.1 Encoder replacement

1. Switch power off at the SDU and LCU power switches.
2. Locate the relevant encoder



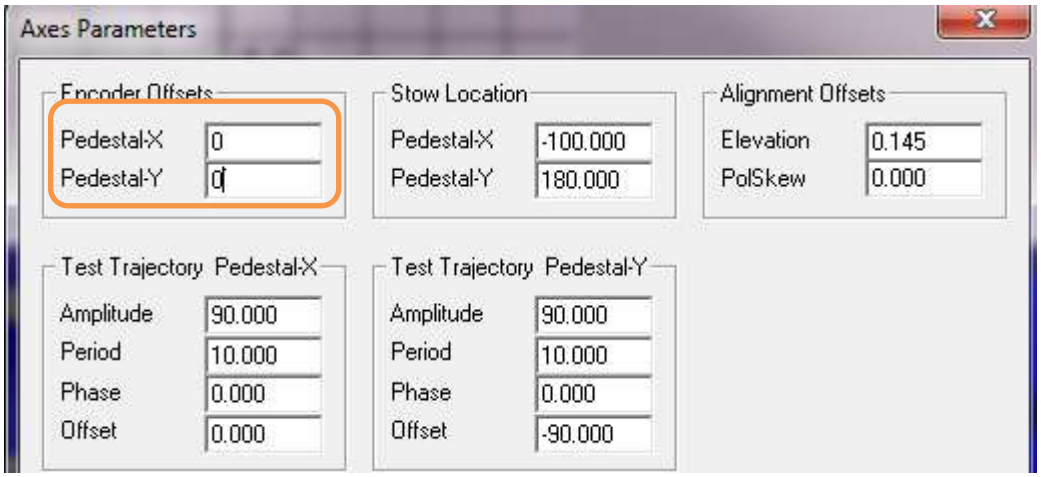
3. Remove encoder cover. Loosen the set screw on the encoder located on the coupler.



4. Insert into the brass collar a 1.5mm Allan Key
5. If set screw not visible you need to move axis by opening the override brakes in the SDU
6. Remove the retaining screws from the encoder bracket to the pedestal.
7. Remove the encoder from the axis shaft.
8. Cut the tie-wraps and disconnect the encoder from the DIN connector.
9. Install the new encoder in the reverse order as above. Do not install the cover.
10. Tighten the grub screw so that it grips the axis shaft but is still moveable on the shaft.

2.2 Encoder offset setup

1. Power on the system (LCU and SDU switches)
2. When communication is established Press O or C and enter technician password “AL-7200”
3. When the axis starts moving stop it by pressing F9 near the zero position.
4. Set encoder offset to 0 (inconfig →axis parameters @main screen)

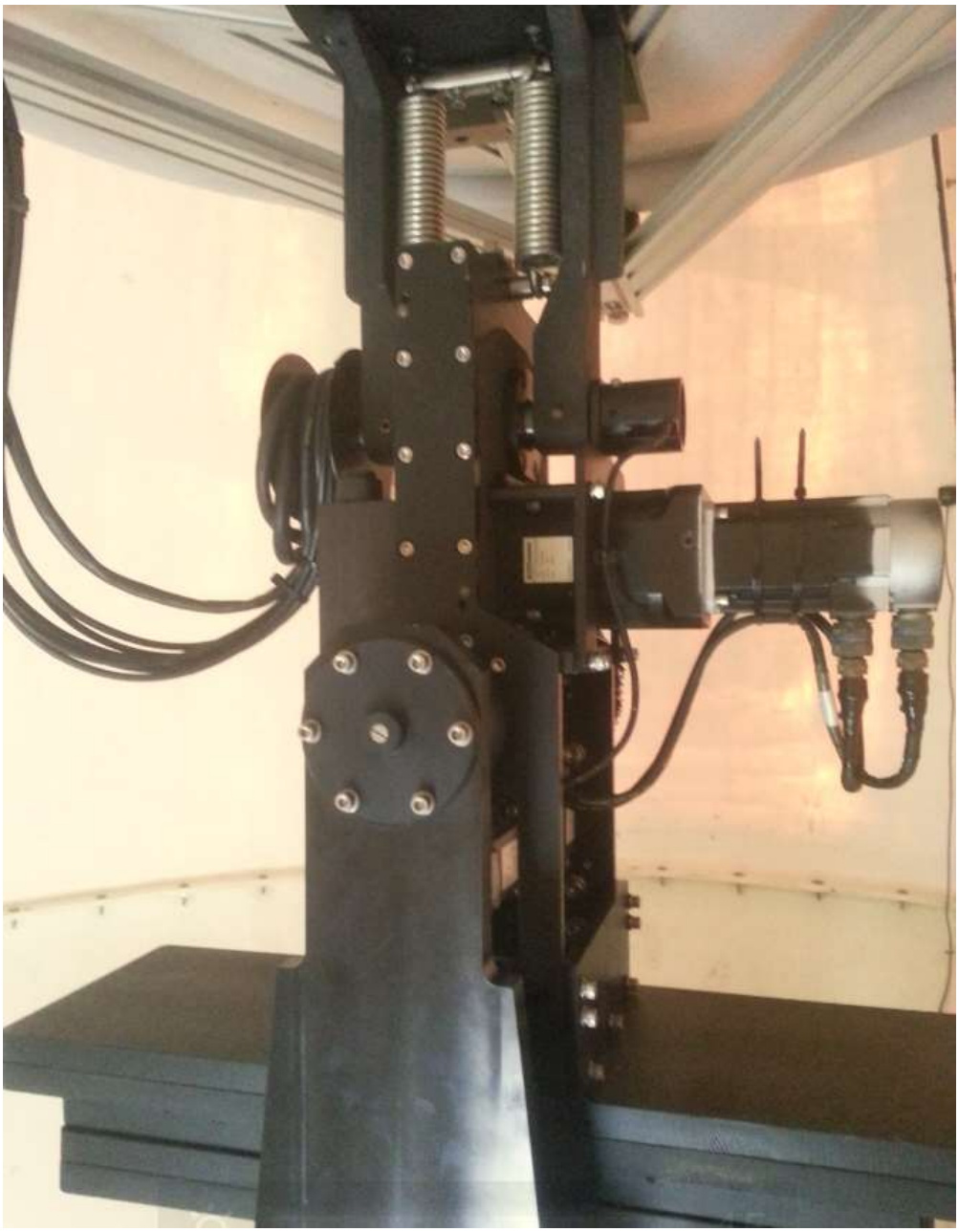


5. While the system still powered on in shut-down mode (F9) rotate encoder shaft by hand or small screw driver clockwise and anti-clock wise until the ZRO sign Zro stop blinking.
6. Continue to rotate until the position (axis window Ps @ maintenance screen) show near zero.

7. Select mode “slew” and move the axis until it’s on the perfect zero position. (antenna is pointing to the zenith “bird bath” when both X and Y at zero potion)
8. Take note of the PS value (position) in example 28.34).
9. Enter the value as encoder offset with opposite sign in Axis parameters(in this example-28.34)
10. Select mode ”Enc Init”(maintenance screen axis window mode)and check if the axis find the zero position.
11. Of OK save configuration. Otherwise repeat the process or replace encoder.

3 VERIFICATION TEST

1. Power on both LCU and SDU power switches
2. Visually observe axis initialization. Verify the antenna find zero position (antenna to zenith)



3. Verify CCU felids are populated and WRN/ERR messages.

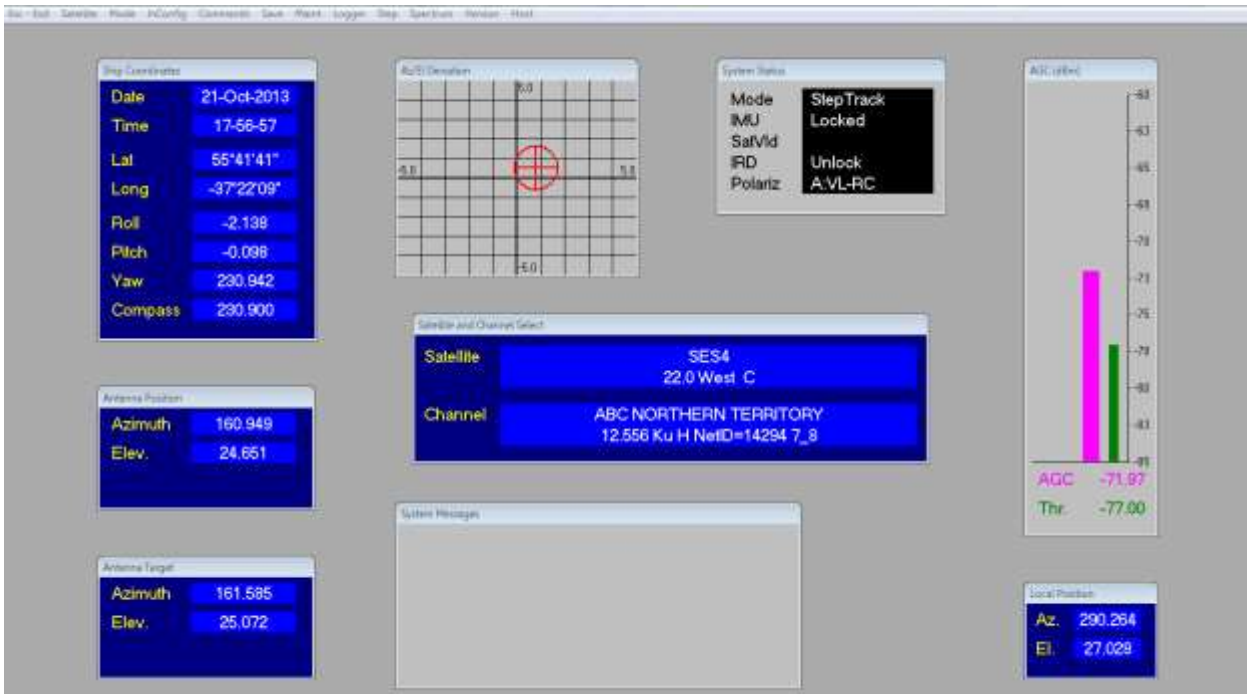


Figure 6 MtsLink SW with fields populated

4. Login (press O) with technician password (AL-7200) and go to maintenance screen.
5. Issue mode ”enc init” few times. Verify proper zero position