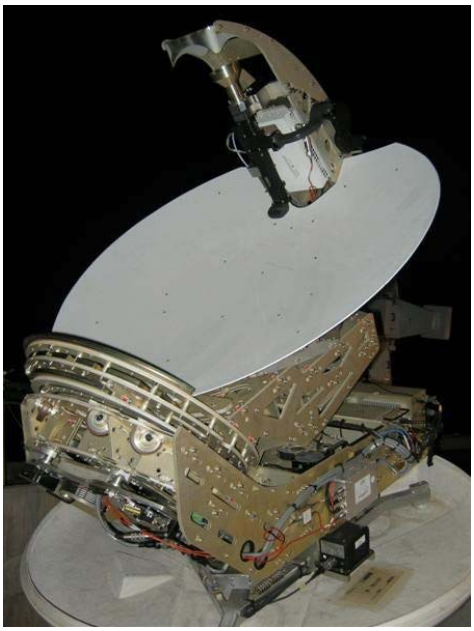
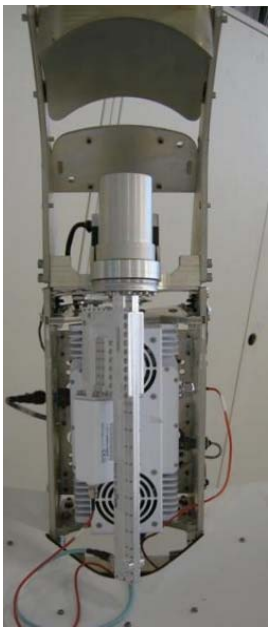
ORBIT

OrSat™

AL-7103 MKII

1.15m (45”) Ku-Band/X-Band Antenna
Maritime Stabilized VSAT System





On-Site Installation of

Ku-Band and X-Band RF Kits Manual

Document: MAN29-0668 Revision: A

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1 Overview

1.1 Introduction

This technical note provides information and instructions required for on-site integration of Ku-Band and X-Band RF Kits of the OrSat AL-7103 MKII System.

Note: Only authorized and qualified ORBIT technicians should perform the following procedures.

1.2 Changing the system configuration from Ku-Band to X-Band

Ku-Band 8W BUC to X-Band 10W BUC or

Ku-Band 8W BUC to X-Band 16W BUC or

Ku-Band 16W BUC to X-Band 16W BUC

- Removal of Ku-Band RF Kit
- Installation of X-Band RF Kit

1.3 Changing the system configuration from X-Band to Ku-Band

X-Band 10W BUC to Ku-Band 8W BUC or

X-Band 16W BUC to Ku-Band 8W BUC or

X-Band 16W BUC to Ku-Band 16W BUC

- Removal of X-Band RF Kit
- Installation of Ku-Band RF Kit

1.4 Configuration options

- Ku-Band 8W BUC to X-Band 10W BUC and vice versa

  Required steps:

  Remove Ku-Band RF Kit – Feed, LNB and 8W BUC

  Install X-Band RF Kit - Feed, LNB and 10W BUC.

  There is no need to replace PSU as both configurations are using L00321001 - PSU ASSEMBLY FOR 4W and 8W BUC SYSTEMS

- Ku-Band 8W BUC to X-Band 16W BUC and vice versa

  Required steps:

  Remove Ku-Band RF Kit – Feed, LNB and 8W BUC and Ku-Band 8W PSU L00321001 - PSU ASSEMBLY FOR 4W and 8W BUC SYSTEMS.

  Install X-Band RF Kit - Feed, LNB and 16W BUC and X-Band 16W PSU L00321002 - PSU ASSEMBLY FOR 16W BUC and up SYSTEMS.

- Ku-Band 16W BUC to X-Band 16W BUC and vice versa

  Required steps:

  Remove Ku-Band RF Kit – Feed, LNB and 16W BUC

  Install X-Band RF Kit - Feed, LNB and 16W BUC.

  There is no need to replace PSU as both configurations are using 16W PSU L00321002 - PSU ASSEMBLY FOR 16W BUC and up SYSTEMS.

2 Change System Configuration from Ku-Band to X-Band

2.1 Remove Ku-Band RF Kit

- **In this section you will see an 8W Ku-Band BUC in pictures; you can also use section 2.2.**
- **In Case your system includes a 16W Ku-Band BUC – please follow section 2.3 for removal of 16W Ku-Band BUC**
- **In case your system includes a 8W Ku-Band and you are changing to 16W X-Band BUC – please follow section 2.4 for removal of the PSU**

When performing the following procedures, be careful not to bend or damage the highly sensitive RF cables

Step 1

Disconnect the cables from the BUC and LNB connectors.

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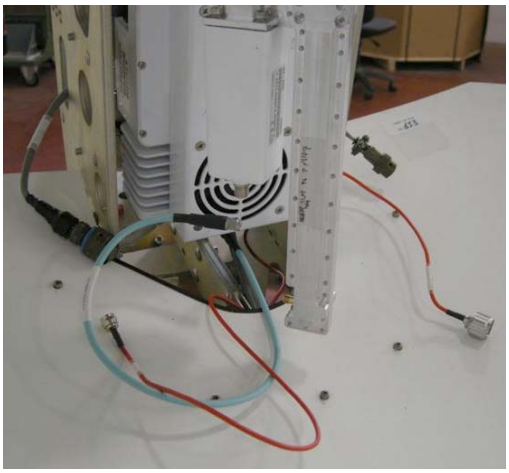
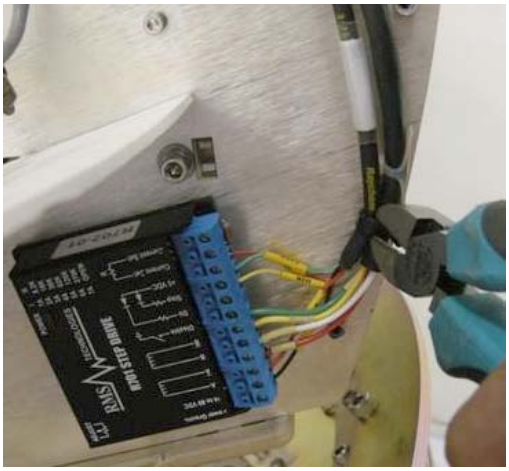


Step 2

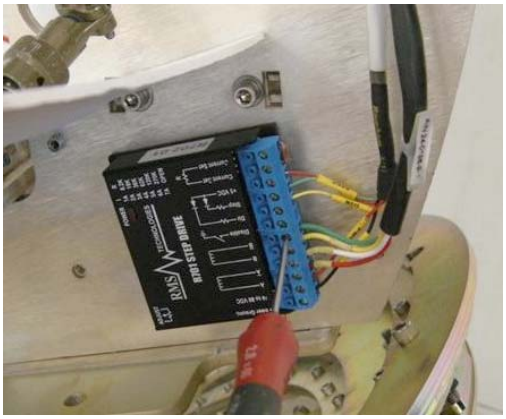
Cut the tie-wraps securing the cables to the DISH ASSEMBLY.



Step 3

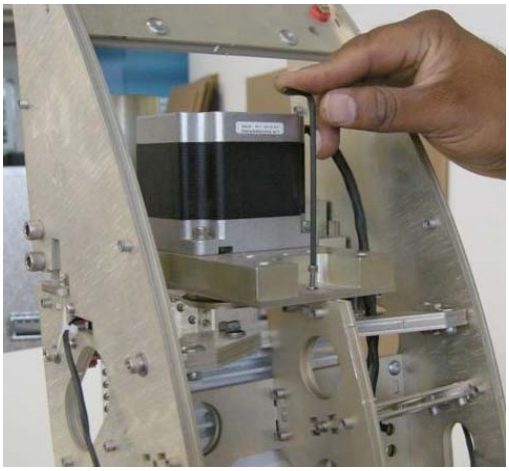
Disconnect the cable wires from the STEPPER MOTOR DRIVER.

Do not disconnect the current-limit resistor from the terminal.



Step 4

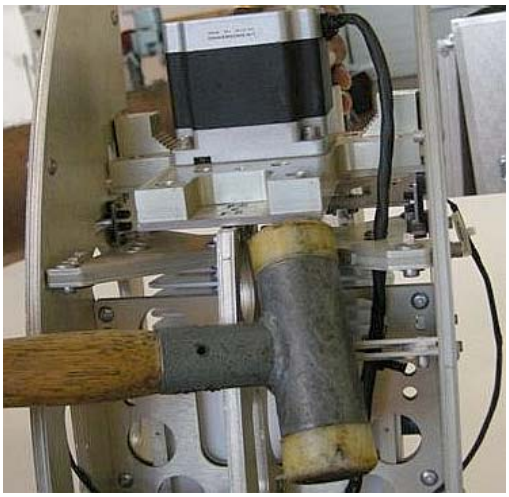
Remove the 3 6/32” screws and the 4 5/16” screws securing the FEED SUBASSEMBLY to the DISH ASSEMBLY.



Step 5

Tap the FEED SUBASSEMBLY with a mallet to release it from the DISH ASSEMBLY.

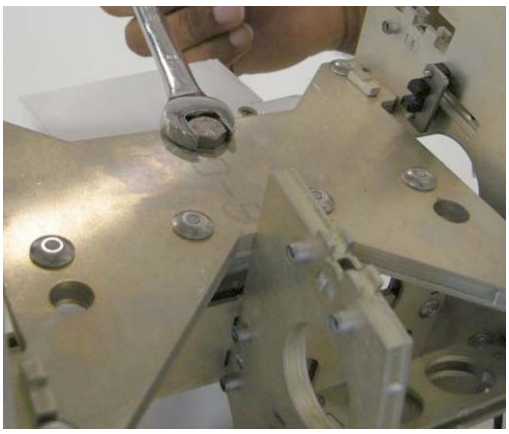
Remove the FEED SUBASSEMBLY.

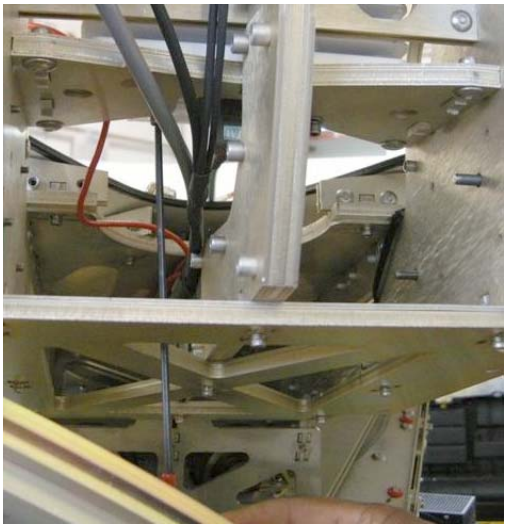


Step 6

Remove the 2 M-4 screws securing the BUC to the DISH ASSEMBLY.

Loosen the M-8 screw securing the BUC to the DISH ASSEMBLY.





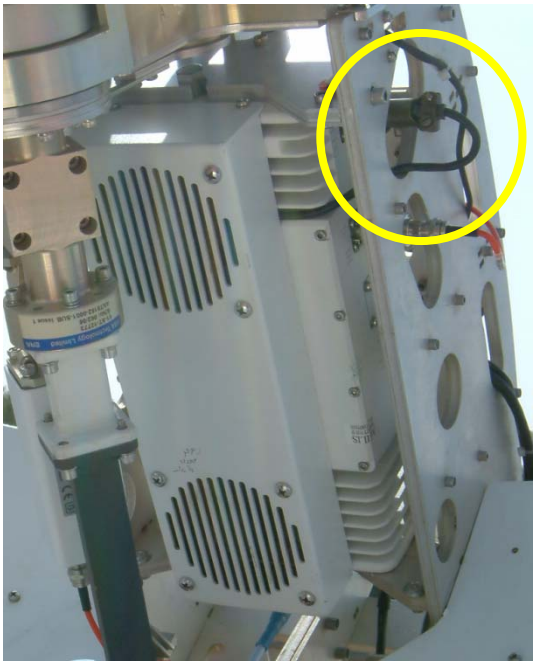
Step 7

Remove the BUC, reinstall the 2 M-4 screws, and fasten the M-8 screw.

2.2 Remove 8W Ku-Band BUC

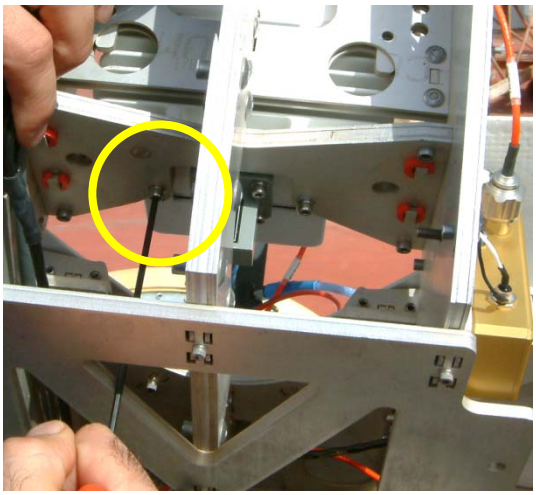
Step 1

Disconnect the cables from the BUC connectors.



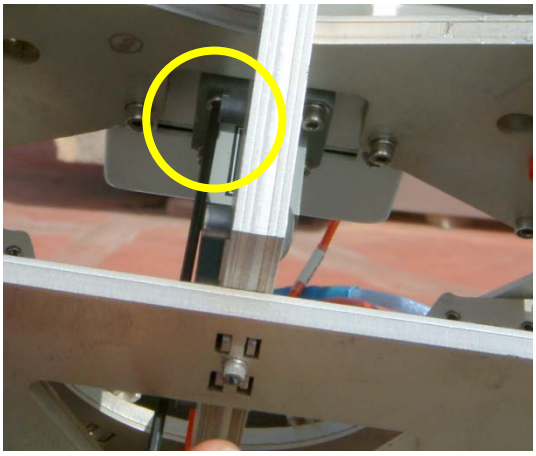
Step 2

Remove the two screws securing the BUC to the RF ASSEMBLY using a 13mm open wrench and 3mm Allen key.



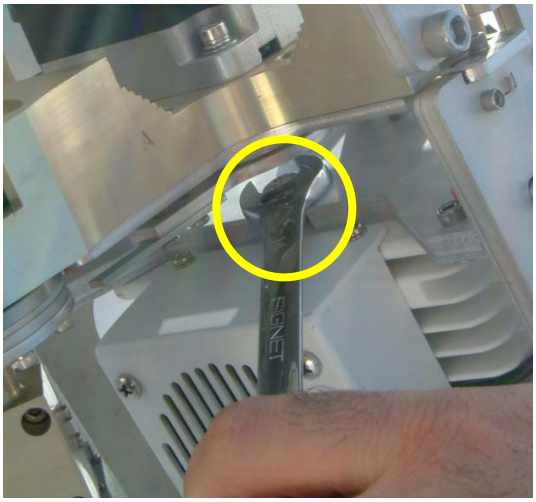
Step 3

Remove the 4 screws securing the BUC WAVEGUIDE using a 3mm Allen key.



Step 4

Loosen the securing screws using a 13mm open wrench.



Step 5

Remove the BUC.

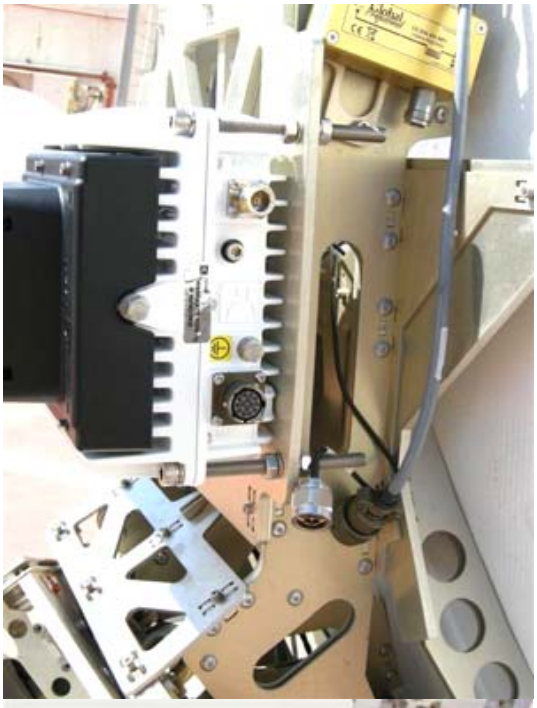
2.3 Remove 16W Ku-Band BUC

Step 1

Cut the tie-wraps binding the cables and remove them from the DISH ASSEMBLY.

Step 2

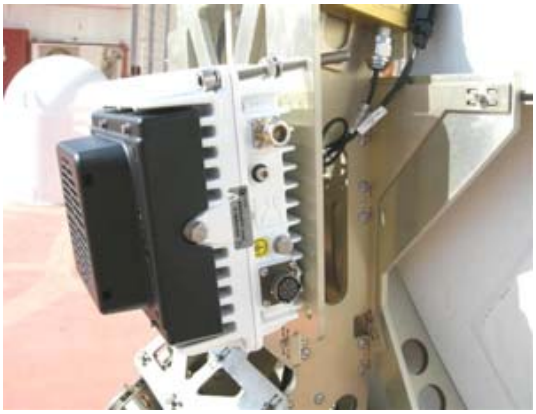
Disconnect the cables from the BUC connectors.

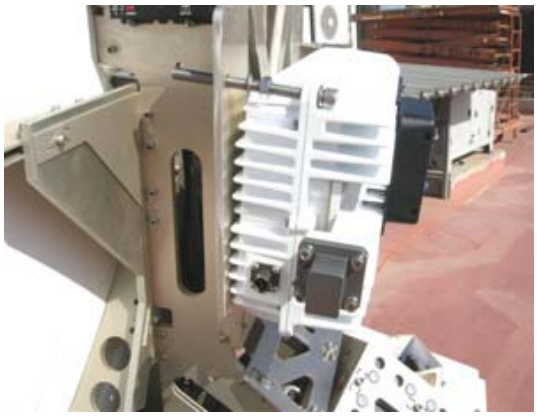


Step 3

Release the inner and outer nuts and remove the screws and washers.

Attach the nuts and washers to their screws and save them for the reinstallation procedure.





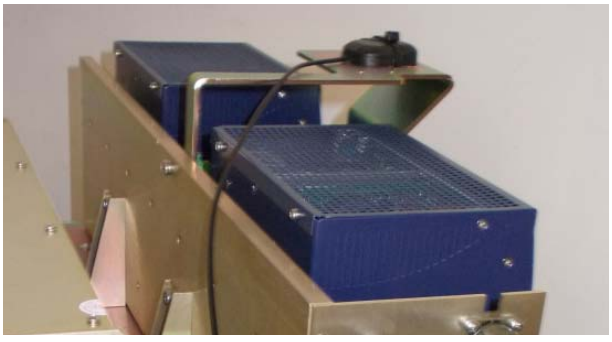
Step 4

Remove the BUC from the RF ASSEMBLY.

2.4 Remove PSU L00321001 - PSU ASSEMBLY FOR 4W and 8W BUC SYSTEMS

Step 1

Remove the GPS ANTENNA from the PSU.



Step 2

Disconnect the cables from the PSU connectors.

Step 3

Loosen the three screws securing the PSU to the BASE PLATE using a 5/32” Allen key.

Note: The screws remain attached to the PSU (Captives).

Step 4

Remove the PSU.

2.5 Install X-Band RF Kit

The X-Band RF Kit, ORBIT P/N KIT25-0097-16X-1 is shipped in a dedicated packing box.

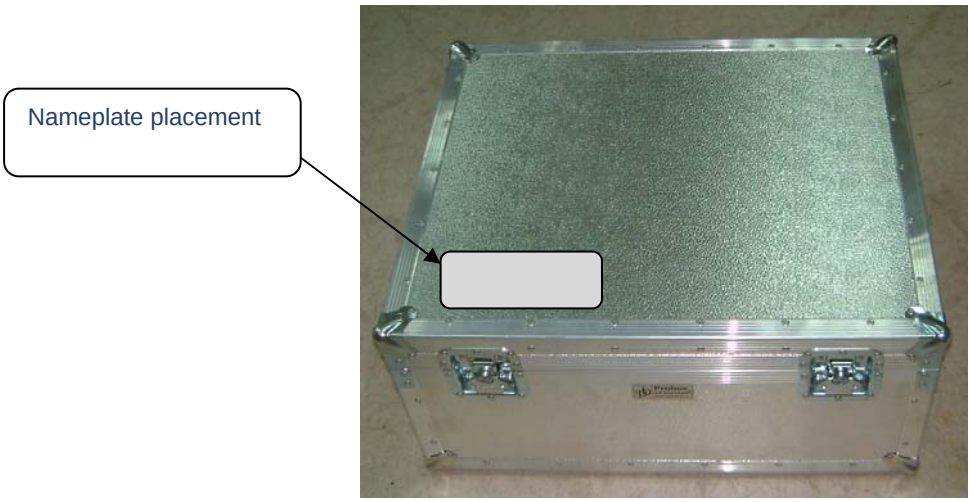


Figure G-1: X-Band RF Kit – Packing Box

- The picture displayed on the next page, of kit packaging**, is a kit with parts of SELEX (REF.)**
- If required to pack KIT25-0097-16X-1, has put the sub-assemblies and parts into plastic bags and put in the box.

The following image and table display the contents of the X-Band RF Kit.

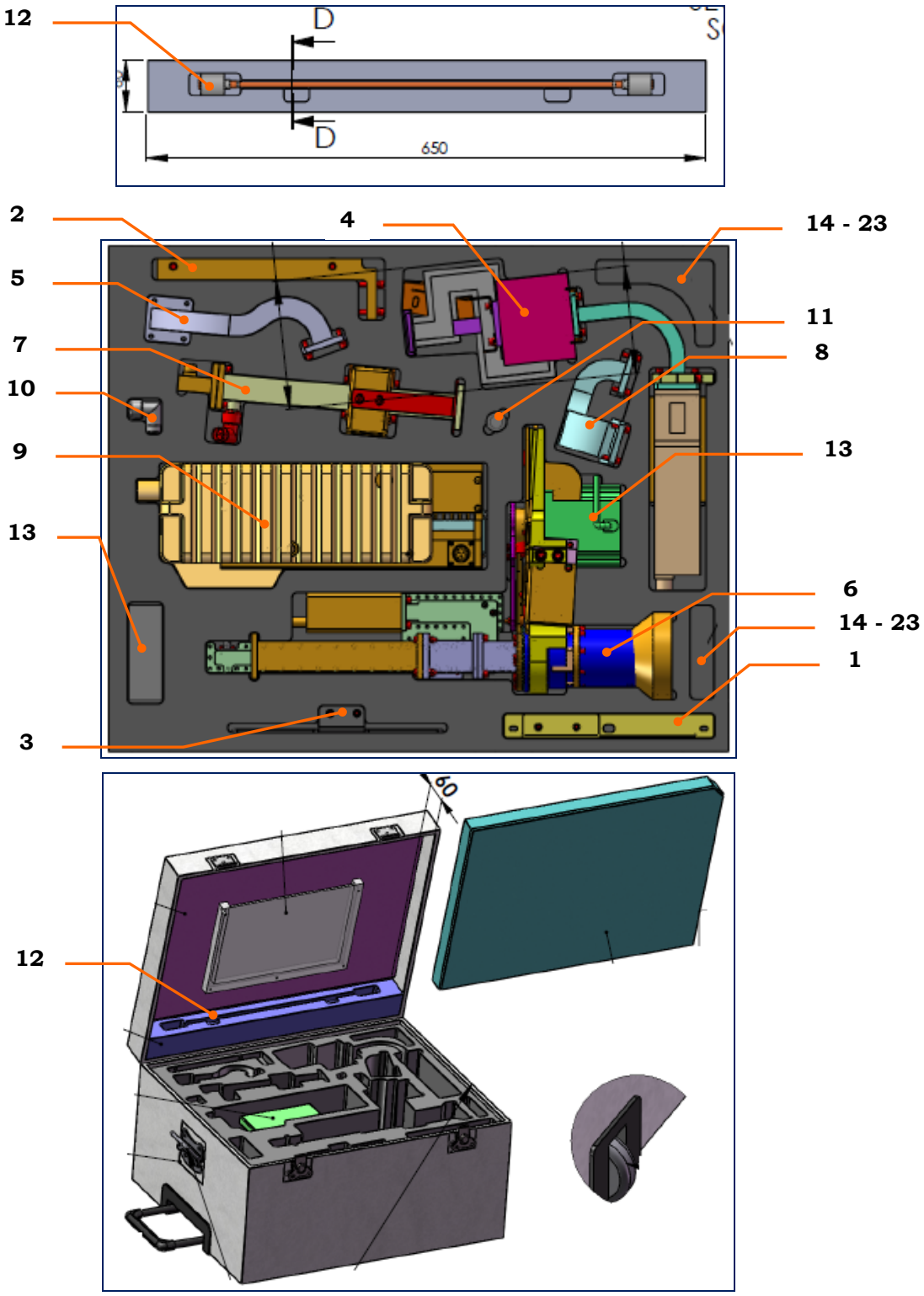


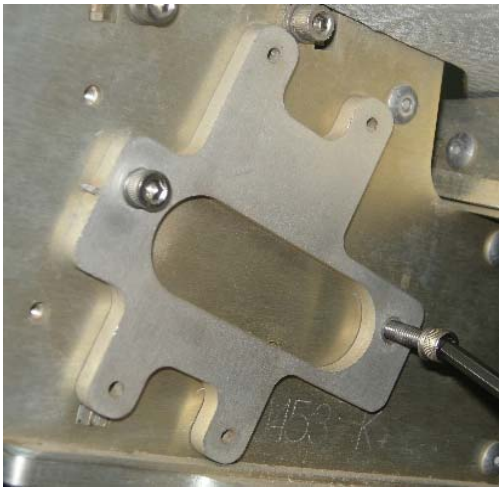
Figure G-2: X-Band RF Kit 25-0097-16X-1 – Packing Arrangement

Item	Designation	Description	Orbit Part No.	Qty
1.	9	BRACKET #1 TRF ASSY	29-0649-4-1	1
2.	10	BRACKET #2 TRF ASSY	29-0641-4-1	1
3.	11	BRACKET #3 TRF ASSY	29-0642-4-1	1
4.	12	TRF+LNB SUB ASSY	29-0643-4-1	1
5.	13	FLEX WG SUB ASSY	29-0644-4-1	1
6.	14	FEED SUB ASSY	29-0645-4-1	1
7.	15	RRF SUB ASSY	29-0646-4-1	1
8.	16	FLEX WG #2 SUB ASSY	29-0647-4-1	1
9.	17	BUC SUB ASSY	29-0828-4-1	1
10.	7	N-TYPE TO N-TYPE 90° ADAPTER	53N-50-0-4	1
11.	8	ATTENUATOR 15DB	E12000021	1
12.	6	RF CABLE	SF104-11NX2-0.5M	1
18	2	O- RING FOR FLEXIBLE WAVEGUIDES #1 & #2	K03000001	4
19	1	SCKT CAP SCR 6-32X3/4 STST(**FEED**)	H06063271204	3
21	5	SCKT CAP SCR 6-32X1" ST.ST.32X1" **(LNB**)	H06063271604	5
22	4	HELIC SPR WASHER #6 STST 316	H28200691074	8
23	3	FLAT RD WASHER #6 STST 316	H20200691074	5
	18	PSU ASSEMBLY FOR 16W BUC	L00321002	1
	19	MARINE USB LOA D WITH O/I MAN&DCD	USB33-0823	1
	20	NAME PLATE	29-0804-3 E14000007	1
	18	PSU ASSEMBLY FOR 16W BUC	L00321002	1

Step 1

Remove the 2 screws securing the DC INSERTER BRACKET to the DISH ASSEMBLY.

Remove the DC INSERTER BRACKET.

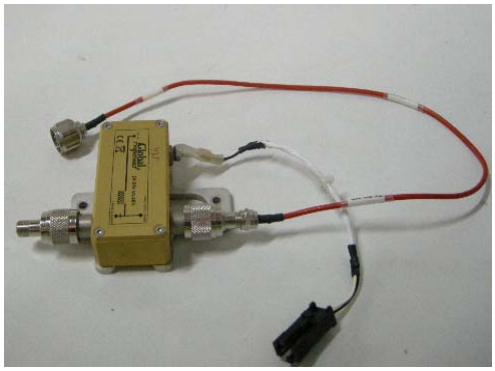


Step 2

Install the 2 N-MALE TO F-FEMALE ADAPTERS on the DC INSERTER N-Type connectors.

Step 3

Connect the RF cable (14) to the L-Band 10 MHz and DC CONNECTOR.

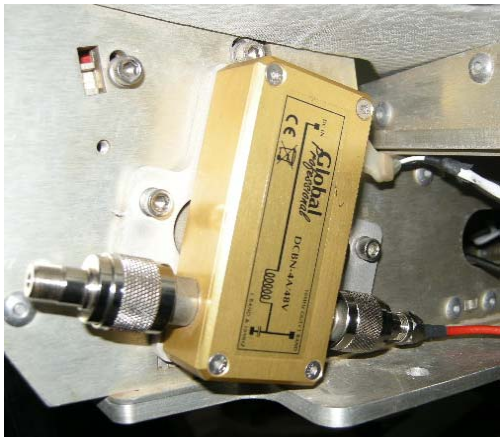


Step 4

Fasten the 4 screws (16) securing the DC INSERTER to its bracket.

Step 5

Mount the DC INSERTER and bracket on the DISH ASSEMBLY and fasten the 2 screws.



Step 6

Connect the system's DC cable to the DC INSERTER Mollex cable (DC IN).

Step 7

Connect the system's Rx cable to the DC INSERTER L-Band and 10 MHz connector.

Step 8

If the TX REJECT FILTER (TRF) BRACKET (1) is already installed on the DISH ASSEMBLY, proceed to the next step.

If not, mount the TRF BRACKET and secure it with 2 screws, lock washers, and washers (21, 22, and 23).

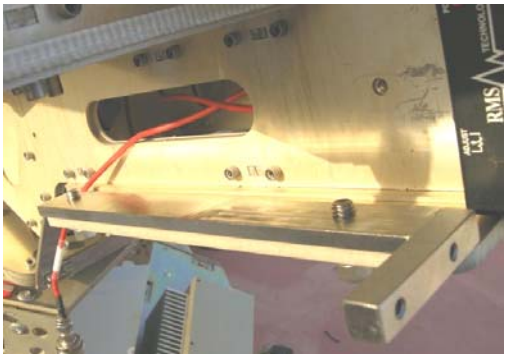
Step 9

If the RX REJECT FILTER (RRF) BRACKET (1) is already installed on the DISH ASSEMBLY, proceed to the next step.
If not, mount the RRF BRACKET and secure it with 3 screws, lock washers, and washers (21, 22, and 23).

Step 10

If the LNB BRACKET (2) is already installed on the DISH ASSEMBLY, proceed to the next step.

If not, mount the LNB BRACKET and secure it with 2 5/16” screws (supplied with the bracket).



Step 11

Mount the BUC (9) on the DISH ASSEMBLY and secure it with the 2 M-4 screws (supplied with the bracket) and the M-8 screw (supplied with the BUC).

Step 11

Connect the following cables to the BUC cable connectors:

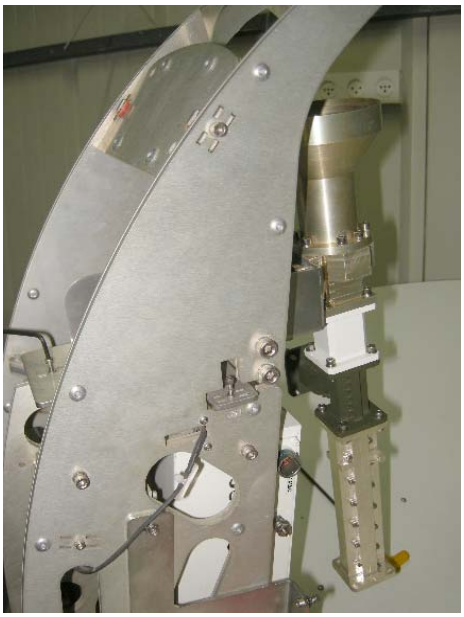
- The RF cable (12) to the RF OUT connector.
- The power cable to the DC/M&C connector.
- The N-TYPE TO N-TYPE 90° ADAPTER (10) to the RF INPUT connector.
- The 15DB ATTENUATOR (11) to the N-TYPE TO N-TYPE 90° ADAPTER (10).
- The system's Tx cable to the 15DB ATTENUATOR (11).

Step 12

Remove the 4 5/16” screws mounted on the FEED SUBASSEMBLY (6) BRACKET.

Mount the X-band FEED SUBASSEMBLY BRACKET on the DISH ASSEMBLY and secure it with 3 screws and lock washers (19, 20).

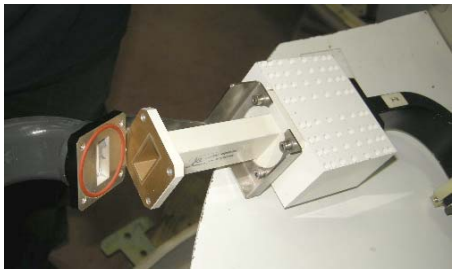
Fasten the 4 5/16” screws securing the bracket.

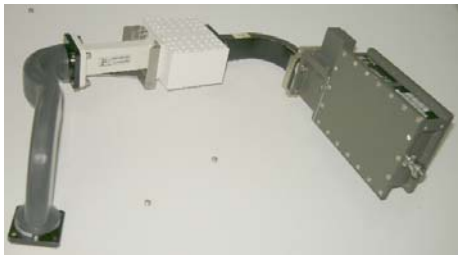


Step 13

Place an O-RING (13) on the FLEXIBLE WAVEGUIDE #1 (5).

Fasten the 4 screws (supplied with the WAVEGUIDE) securing the WAVEGUIDE to the TRF+LNB SUBASSEMBLY (4).





Step 14

Loosen the 2 screws, lock washers, and washers (21, 22, 23) securing the TX REJECT FILTER (TRF) BRACKET (1) to the DISH ASSEMBLY.

Remove the 2 screws from the TRF BRACKET.

Step 15

Place the combined FLEXIBLE

WAVEGUIDE #1/TRF+LNB SUBASSEMBLY

on the TX REJECT FILTER (TRF) BRACKET.

Install and loosely fasten the 2 screws securing the combined FLEXIBLE

WAVEGUIDE #1/TRF+LNB SUBASSEMBLY

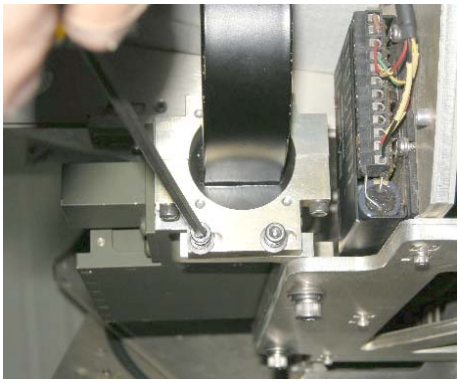
on the TRF BRACKET.

Remove the 2 screws from the LNB BRACKET (2).

Install and loosely fasten the 2 screws securing the combined FLEXIBLE

WAVEGUIDE #1/TRF+LNB SUBASSEMBLY

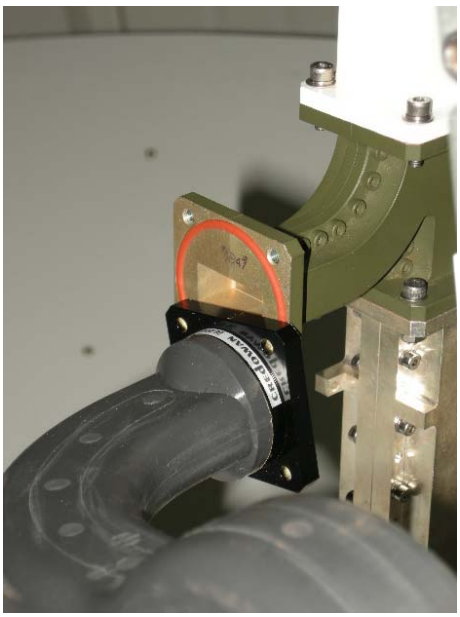
on the TRF BRACKET to the LNB BRACKET.



Step 16

Place an O-RING (13) on the X-BAND FEED SUBASSEMBLY (6).

Fasten the 4 screws (supplied with the X-BAND FEED SUBASSEMBLY) securing the FLEXIBLE WAVEGUIDE #1 (5) to the X-BAND FEED SUBASSEMBLY (6).



Step 17

Rotate the 15dB ATTENUATOR (11) with the N-TYPE TO N-TYPE 90° ADAPTER (10) approximately 30° clockwise.

Step 18

Carefully fasten the following screws in a cross-wise manner:

- 2 screws, lock washers, and washers (21, 22, 23) securing the

TX REJECT FILTER (TRF)

BRACKET (1) to the DISH ASSEMBLY.

- 2 screws securing the combined

FLEXIBLE WAVEGUIDE

#1/TRF+LNB SUBASSEMBLY on

the TX REJECT FILTER (TRF) BRACKET.

- 2 screws securing the combined

FLEXIBLE WAVEGUIDE

#1/TRF+LNB SUBASSEMBLY on

the TX REJECT FILTER (TRF) BRACKET to the LNB BRACKET.

Step 19

Place 2 O-RINGS (13) on the FLEXIBLE WAVEGUIDE #2 (8).

Fasten the 4 screws (supplied with the FLEXIBLE WAVEGUIDE #2) securing the WAVEGUIDE to the RRF SUBASSEMBLY (9).

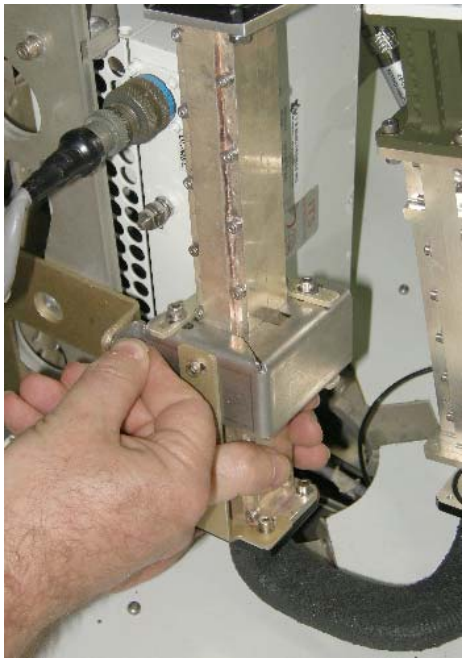
Step 20

Place the combined FLEXIBLE WAVEGUIDE #2/RRF SUBASSEMBLY on the RX REJECT FILTER (RRF) BRACKET (3).

Loosely fasten the 2 screws (supplied with the RRF BRACKET) securing the combined

FLEXIBLE WAVEGUIDE #2/RRF

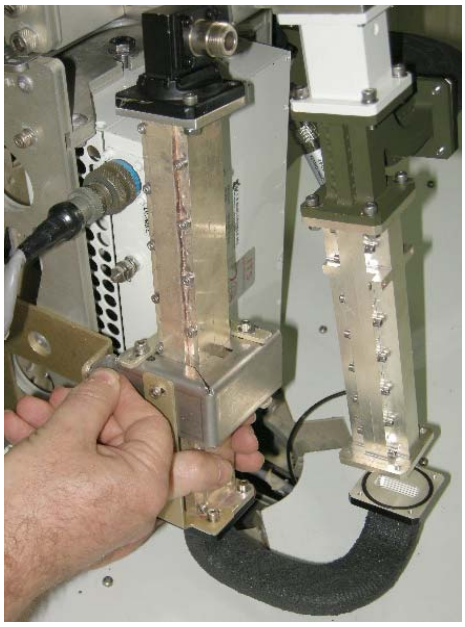
SUBASSEMBLY to the RX REJECT FILTER (RRF) BRACKET.



Step 21

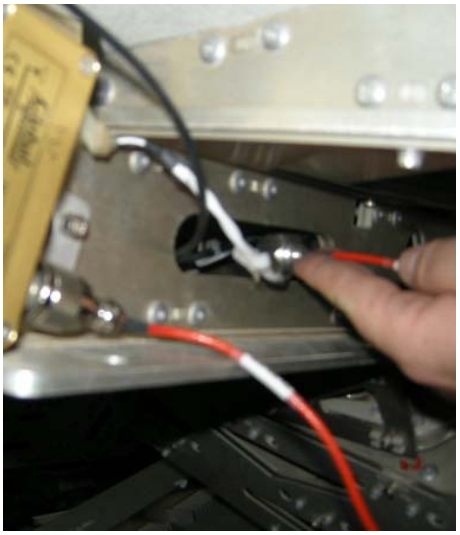
Fasten the 4 screws (supplied with the FLEXIBLE WAVEGUIDE #2) securing the WAVEGUIDE to the FEED SUBASSEMBLY (6).

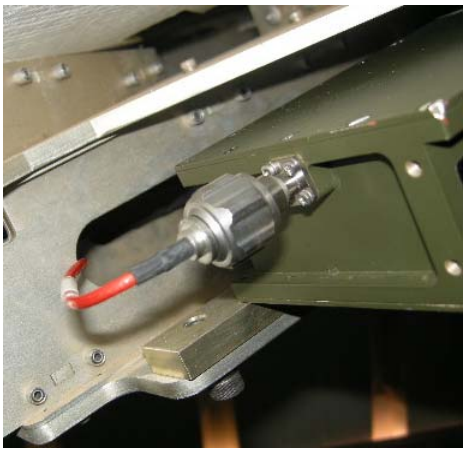
Fasten the 2 screws (supplied with the RX REJECT FILTER RRF BRACKET) securing the combined FLEXIBLE WAVEGUIDE #2/RRF SUBASSEMBLY to the RRF BRACKET.



Step 22

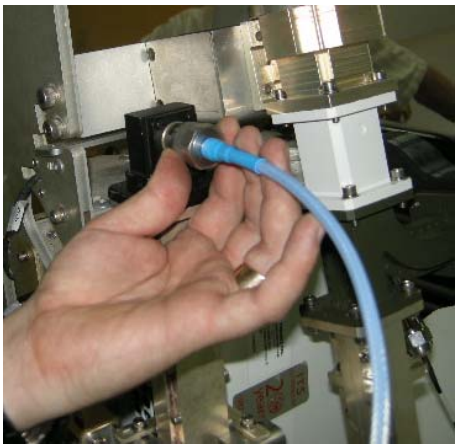
Pass the RF CABLE (14) through the DISH ASSEMBLY and connect it to the LNB connector.





Step 23

Connect the RF CABLE (12) to the Waveguide-to-Coax connector on the RRF ASSEMBLY.



Step 24

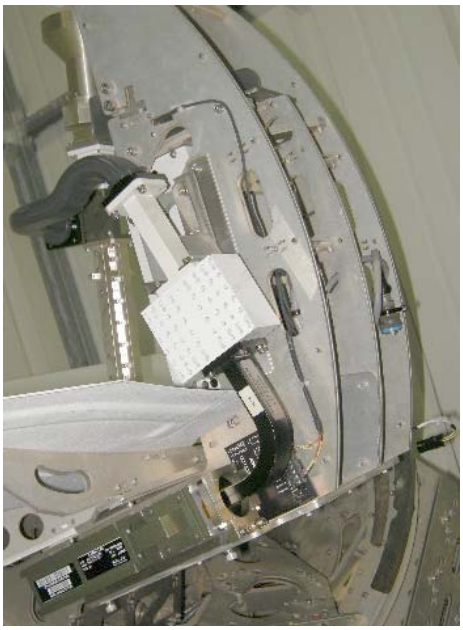
Disconnect the cable from the SBC AGC connector P8 and connect the DC BLOCK (15).

Re-connect the cable to the DC BLOCK.

Step 25

The X-Band RF Kit is now installed.

Visually inspect that all screws are tightened and all cables connected and secured.



- **In case you removed an 8W Ku-Band BUC and installed a 10W X-Band BUC – move to the next section** 2.7**2.7**
- **In Case you removed an 8W Ku-Band and installed a 16W X-Band BUC –thus must follow the next section 2.6**

2.6 Install PSU L00321002 - PSU ASSEMBLY FOR 16W BUC and up SYSTEMS

Please note:

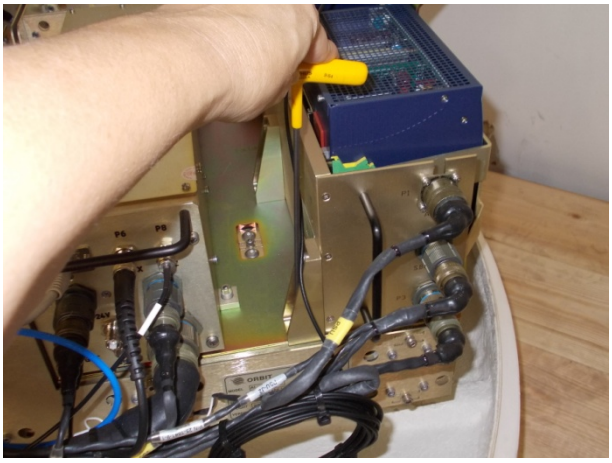
PSU 20W includes a 3rd Power supply in the middle of the assembly compare to the PSU 8W

Step 1

Mount the new PSU in its place on the ADE BASE.

Step 2

Tighten the three screws securing the PSU to the ADE BASE using a 5/32" Allen key.

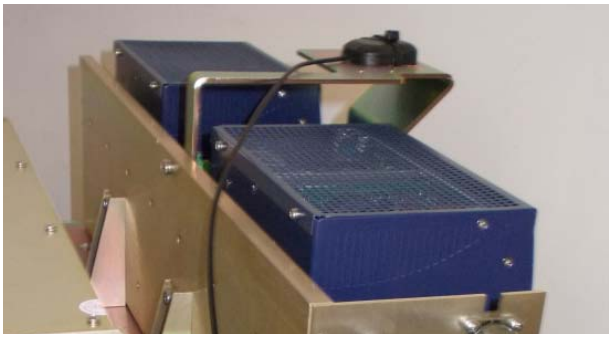


Step 3

Connect the cables to the PSU connectors.

Step 4

Mount the GPS ANTENNA in its place on the PSU and secure it with a tie-wrap.



2.6.1 Post-Assembly System Verification

After replacing the PSU, power up the system and activate Enc Init Mode several seconds after startup (see the *AL-7103 MKII Installation and Operation Manual* for instructions). Verify that the system functions properly.

2.7 Software Configuration Changes when Changing from Ku-Band to X-Band

Following installation of the X-Band RF Kit, perform the following procedure to change the software configuration from the Ku-Band to the X-Band configuration:

1. Power the system up.
2. In the MTSLINK **Operation Screen**, open the **InConfig** Menu and select **Step-Track**, then **X-Band**. The **X Step-Track Mode** dialog box opens.

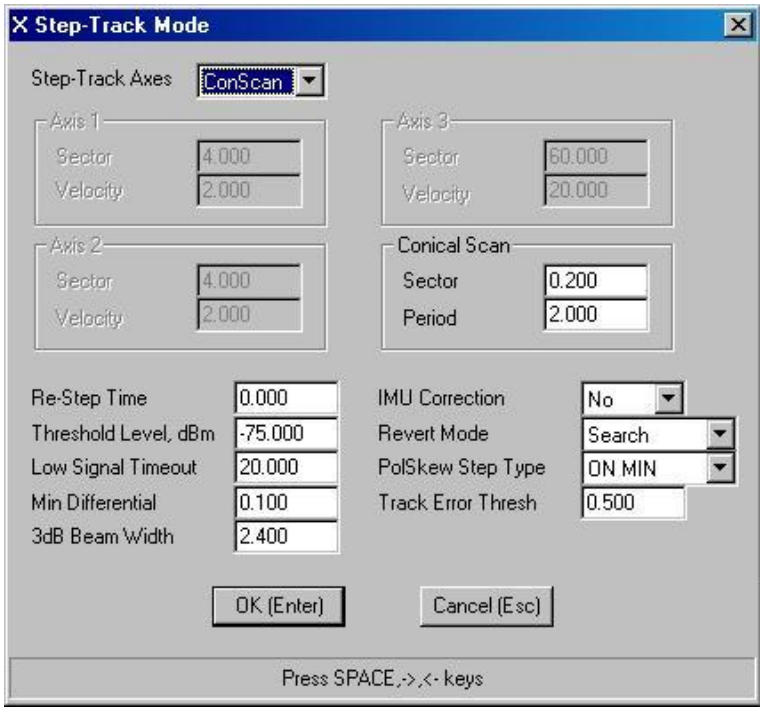


Figure G-3: X Step-Track Mode dialog box

3. Verify that the settings match those displayed in the above figure.
4. Open the **Maintenance Screen**. In the **Receiver** window, click the **Band** button and select **X Circular**.

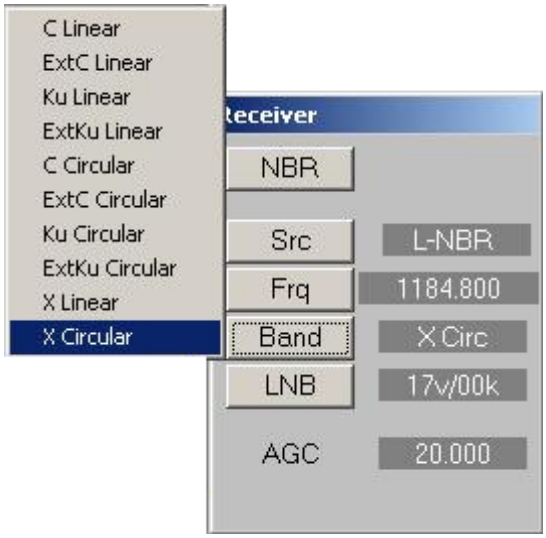


Figure G-4: Receiver Window Band Menu

5. In the **Tx Chain** window, click the **BUC Model** button and select 10W X ITS M&C.

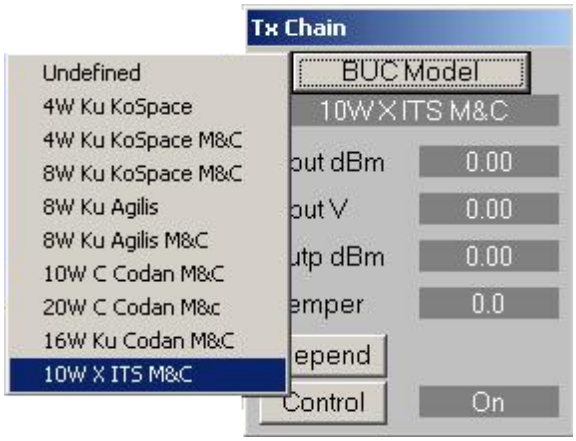


Figure G-5: Tx Chain Window BUC Model Menu

6. Save the changes to non-volatile memory.

3 Change System Configuration from X-Band to Ku-Band

3.1 Remove X-Band RF Kit

- **In this section you will see a 16W X-Band BUC in pictures.**
- **In Case your system includes a 10W X-Band BUC – please follow the same section 3.1 of X-Band RF Kit removal, as both BUCs are the same**
- **If you are changing from 10W X-Band to 8W Ku-Band BUC please follow section 2.33.4 for installing 8W Ku-Band BUC, there is no need to replace PSU**
- **If you are changing from 16W X-Band to 8W Ku-Band BUC please follow section 3.4 2.3for installing 8W Ku-Band BUC and section 3.2 and section 3.6 for replacing the PSU**
- **If you are changing from 16W X-Band to 16W Ku-Band BUC please follow section 3.5 2.3for installing 16W Ku-Band BUC, there is no need to replace PSU**

Step 1

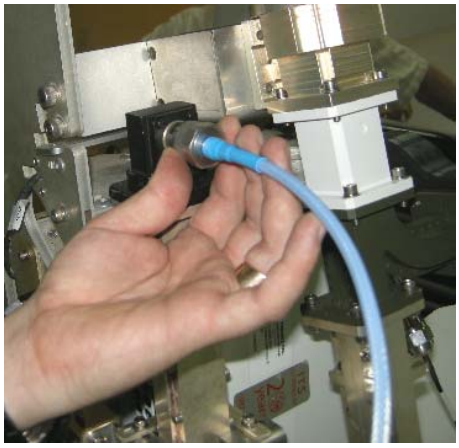
Disconnect the DC BLOCK cable from the SBC AGC connector P8.

Remove the DC BLOCK and re-connect the cable to the SBC AGC connector P8.

Step 2

Disconnect the RF cable (12) from the Waveguide-to-Coax connector on the RRF ASSEMBLY.

Disconnect the RF cable (12) from the RF OUT connector on the BUC.

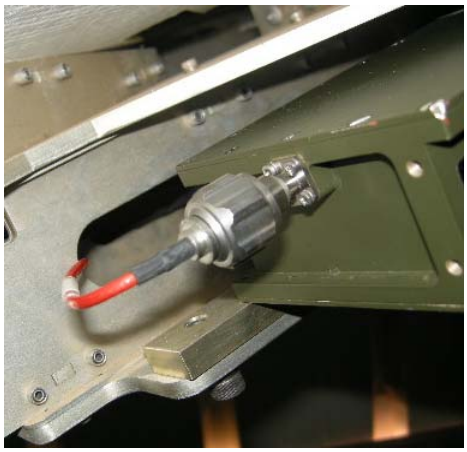


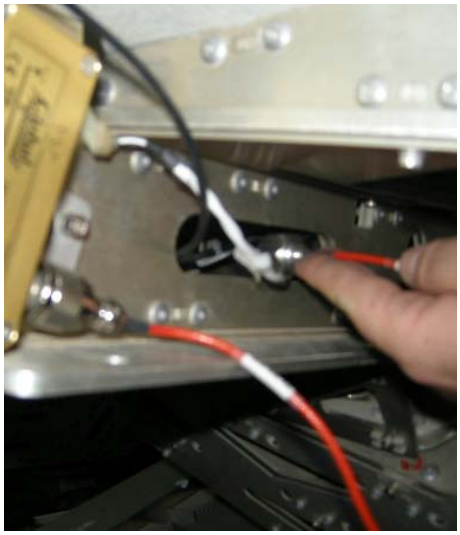
Step 3

Disconnect the RF cable (12) from the RF OUT connector on the BUC.

Step 4

Disconnect the RF cable (14) from the LNB connector and pass it through the DISH ASSEMBLY.





Step 5

Disconnect the system's DC cable from the DC INSERTER Mollex cable (DC IN).

Disconnect the system's Rx cable from the DC INSERTER L-Band & 10 MHz connector.

Step 6

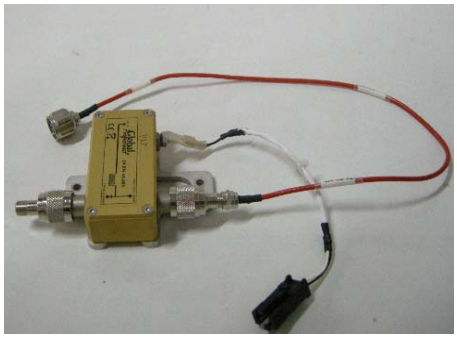
Remove the DC INSERTER and its bracket from the DISH ASSEMBLY.

Remove the 4 screws (16) securing the DC INSERTER to its bracket.

Step 7

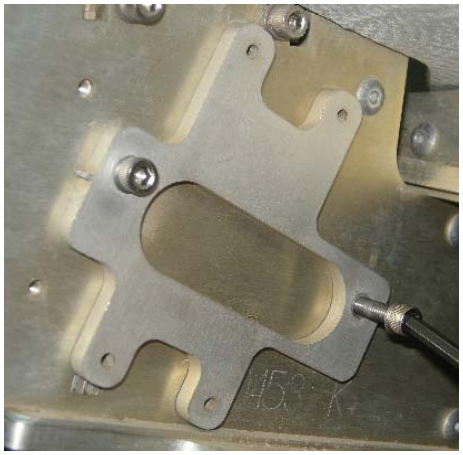
Disconnect the RF cable (14) from the L-Band 10 MHz & DC connector.

Remove the 2 N-MALE TO F-FEMALE ADAPTERS from the DC INSERTER N-Type connectors.



Step 8

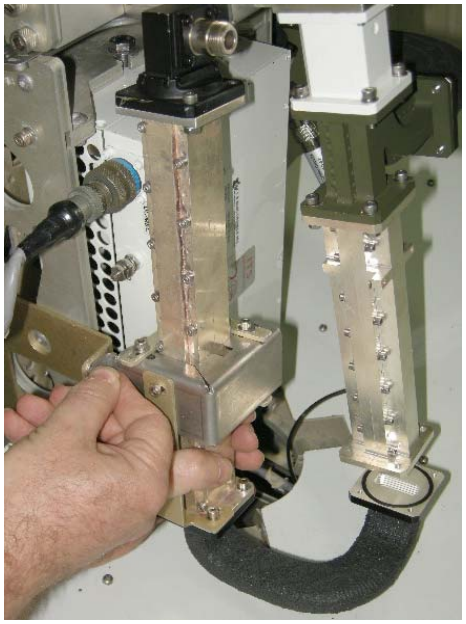
Mount the DC INSERTER bracket on the DISH ASSEMBLY and fasten the 2 screws.



Step 9

Remove the 2 screws securing the combined FLEXIBLE WAVEGUIDE #2/RRF SUBASSEMBLY to the RX REJECT FILTER (RRF) BRACKET.

Remove the 4 screws securing the FLEXIBLE WAVEGUIDE #2 to the FEED SUBASSEMBLY.



Step 10

Remove the 4 screws securing the FLEXIBLE WAVEGUIDE #2 to the RRF SUBASSEMBLY.

Fasten the 8 removed screws on both sides of the FLEXIBLE WAVEGUIDE #2.

Remove the two O-RINGS and put them into their plastic bag.

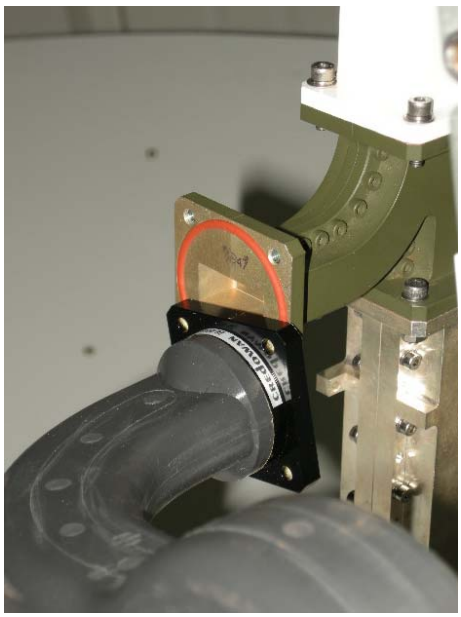
Step 11

Loosen the 2 screws securing the combined FLEXIBLE WAVEGUIDE #1/TRF+LNB SUB-ASSEMBLY on the TX REJECT FILTER (TRF) BRACKET.

Step 12

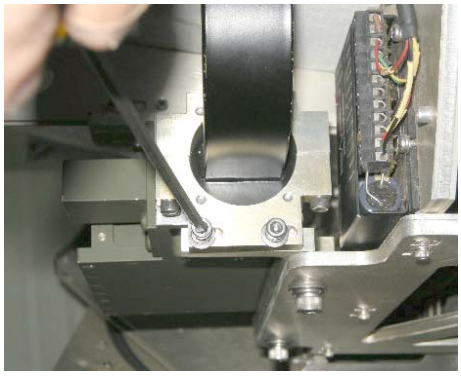
Remove the 4 screws securing the FLEXIBLE WAVEGUIDE #1 (5) to the X-BAND FEED SUB-ASSEMBLY (6).

Remove the O-RING (13) from the X-BAND FEED SUB-ASSEMBLY (6).



Step 13

Remove the 2 screws securing the combined FLEXIBLE WAVEGUIDE #1/TRF+LNB SUB-ASSEMBLY to the LNB bracket.



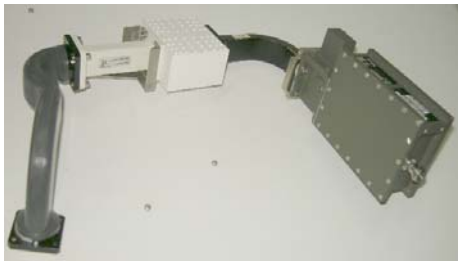
Step 14

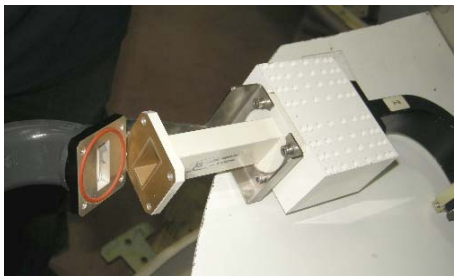
Remove the 4 screws securing the FLEXIBLE WAVEGUIDE #1 (5) to the TRF+LNB SUB-ASSEMBLY (4).

Remove the O-RING (13) from the FLEXIBLE WAVEGUIDE #1 (5).

Fasten the 4 removed screws on both sides of the WAVEGUIDE.

Remove the 2 O-RINGS and put them into their plastic bag.





Step 15

Attach the removed screws to the LNB BRACKET and the TRF BRACKET.

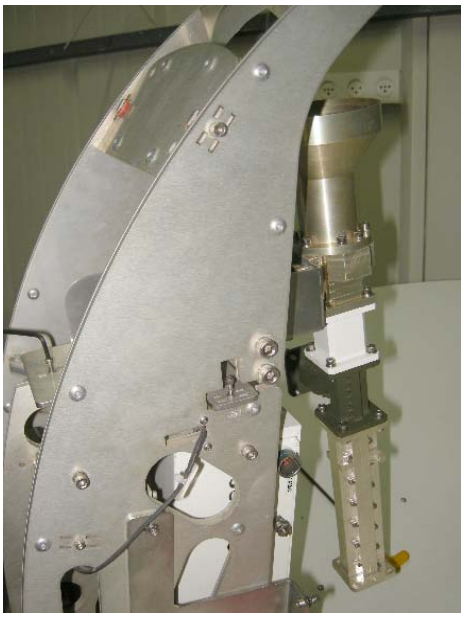
Step 16

Remove the 4 5/16” screws securing the FEED SUB-ASSEMBLY (6) BRACKET to the DISH ASSEMBLY.

Remove the 3 screws and lock washers (19, 20) securing the X-BAND FEED SUB-ASSEMBLY (6) BRACKET to the DISH ASSEMBLY.

Remove the X-BAND FEED SUB-ASSEMBLY (6) from the DISH ASSEMBLY.

Attach the 4 four 5/16” screws mounted on the FEED SUB-ASSEMBLY (6) BRACKET.



Step 17

Disconnect the system's Tx cable from the 15dB ATTENUATOR (11).

Disconnect the ATTENUATOR (11) from the N-TYPE TO N-TYPE 90° ADAPTER (10).

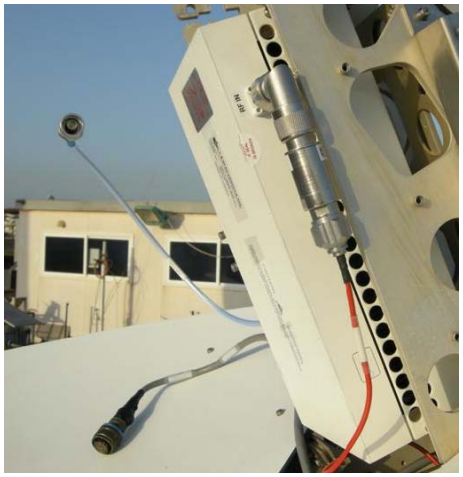
Disconnect the N-TYPE TO N-TYPE 90° ADAPTER (10) from the RF INPUT connector on the BUC.

Disconnect the power cable from the DC/M&C connector on the BUC.

Remove 2 M-4 screws securing the BUC to the DISH ASSEMBLY.

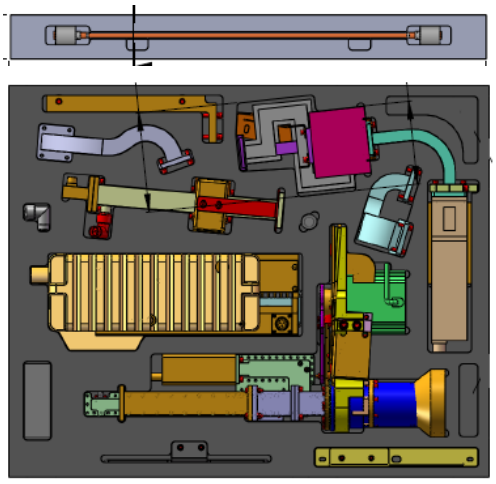
Remove the M-8 screw securing the BUC to the DISH ASSEMBLY.

Remove the BUC (9).



Step 18

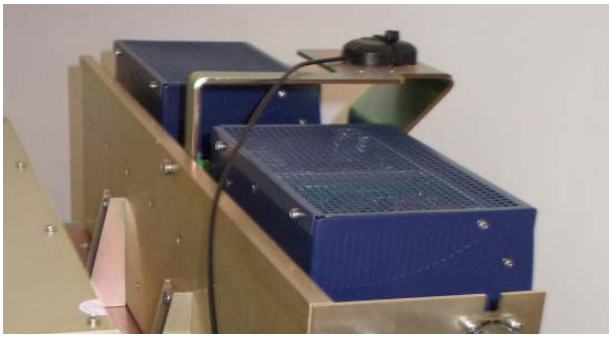
Verify that all the X-Band RF Kit components are inserted in their designated locations in the packing box.



3.2 Remove PSU L00321002 - PSU ASSEMBLY FOR 16W BUC and up SYSTEMS

Step 1

Remove the GPS ANTENNA from the PSU.



Step 2

Disconnect the cables from the PSU connectors.

Step 3

Loosen the three screws securing the PSU to the BASE PLATE using a 5/32” Allen key.

Note: The screws remain attached to the PSU (Captives).

Step 4

Remove the PSU.

3.3 Installing the Ku-Band RF Kit

The Ku-Band RF Kit ORBIT P/N KIT25-0097-8W-KU is shipped in a dedicated packing box.

Figure G-7: Ku-Band RF Kit – Packing Box

The following figure and table display the contents of the Ku-Band RF Kit.

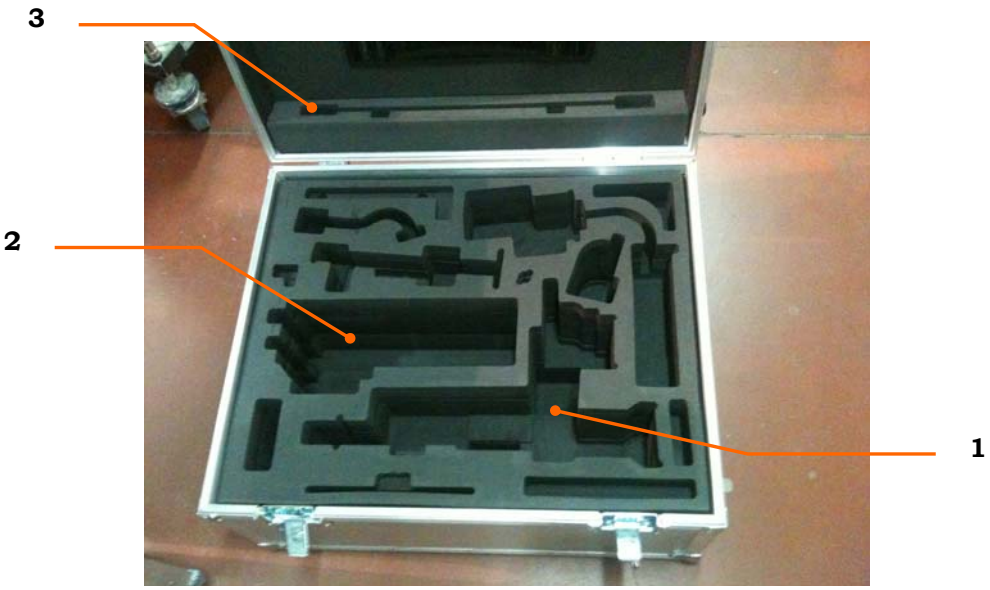


Figure G-8: Ku-Band RF Kit – Packing Arrangement

Table G-3. Ku-Band RF Kit – Packing List

ITEM	DESCRIPTION	ORBIT P/N	QTY
1.	FEED SUBASSEMBLY	29-0683-4-1	1
2.	BUC SUBASSEMBLY	29-0684-4-1	1
3.	RF CABLE	CF-210-51CM-SMSM	1
Fasteners Set for Ku-Band Feed Subassembly			
4.	ALLEN SOCKET CAP SCREW, #6 32 × 3/4	H06063271204	3
5.	LOCK WASHER, #6	MS35338-136	3
6.	ALLEN SOCKET CAP SCREW, #5/16-18 × 5/8	H06051671004	4

Note: Following pictures show an 8W Ku-Band BUC, in case your system's configuration has a 16W Ku-Band BUC please refer to section

Step 1

Loosen the M-8 screw on the BUC (2).

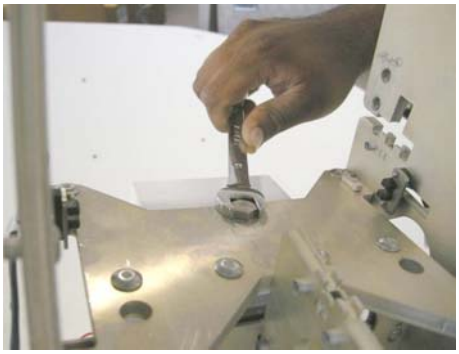
Remove the 2 M-4 screws from the BUC.

Install the BUC on the DISH ASSEMBLY.

Step 2

Fasten the 2 M-4 screws securing the BUC to the DISH ASSEMBLY.

Fasten the M-8 screw securing the BUC to the DISH ASSEMBLY.

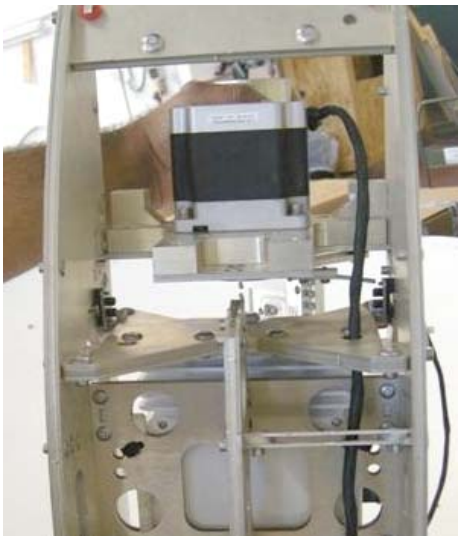


Step 3

Install the FEED SUBASSEMBLY (1) on the DISH ASSEMBLY.

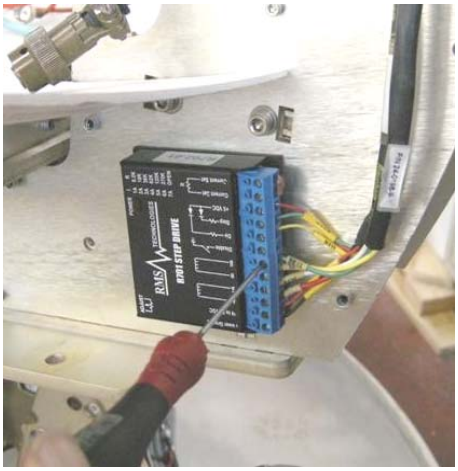
Using a plastic hammer, tap on the FEED ABSSEMBLY to secure it to the DISH ASSEMBLY.

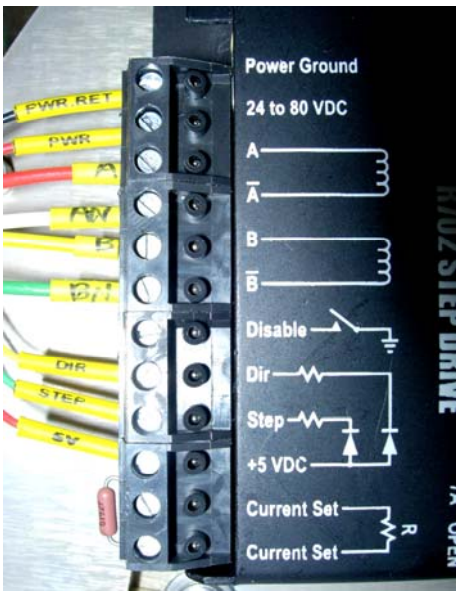
Fasten the 3 6/32" screws and 4 5/16" screws securing the FEED SUBASSEMBLY to the DISH ASSEMBLY.



Step 4

Connect the motor cable wires to the STEPPER MOTOR DRIVER.



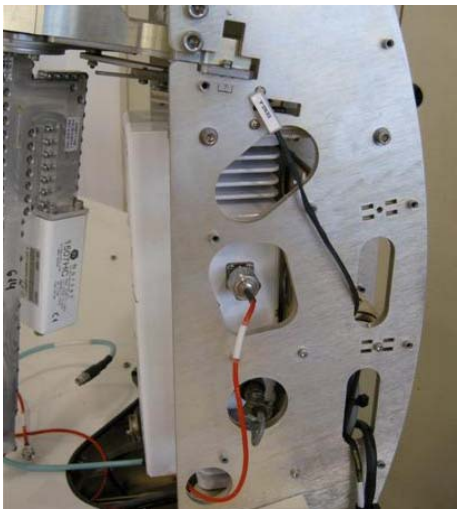


Step 5

Secure the cables to the DISH ASSEMBLY with tie-wraps.

Step 6

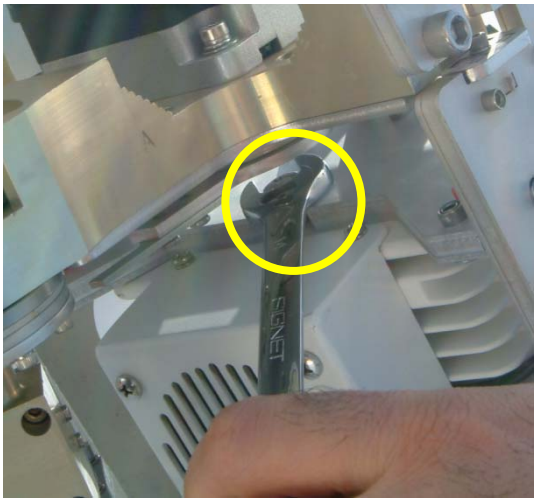
Connect the cables to the BUC and LNB connectors.



3.4 Install 8W Ku-Band BUC

Step 1

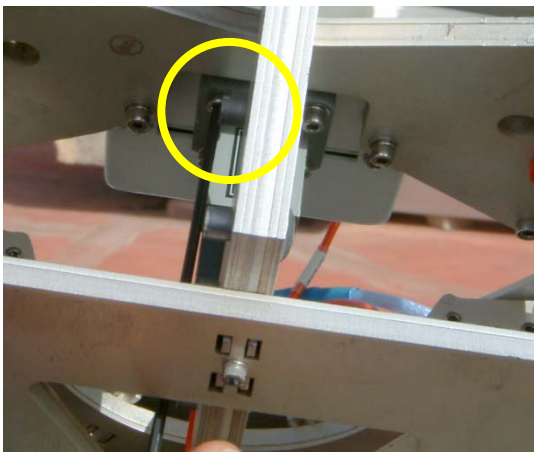
Mount the new BUC in its place and use a 13mm open wrench to tighten the securing screws.



Step 2

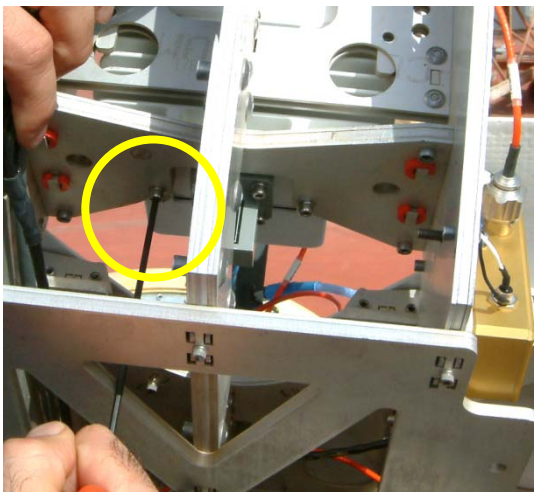
Use a 3mm Allen key to secure the BUC WAVEGUIDE.

Attention: Make sure to replace the rubber O-Ring that seals the WAVEGUIDE to the BUC.



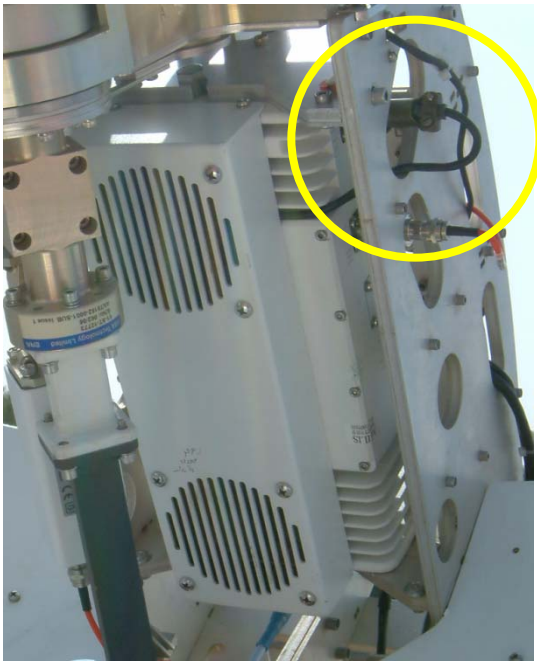
Step 3

Use a 13mm open wrench and 3mm Allen key to secure the BUC to the RF ASSEMBLY.



Step 4

Connect the cables to the BUC connectors.



➢ **Post-Installation System Verification**

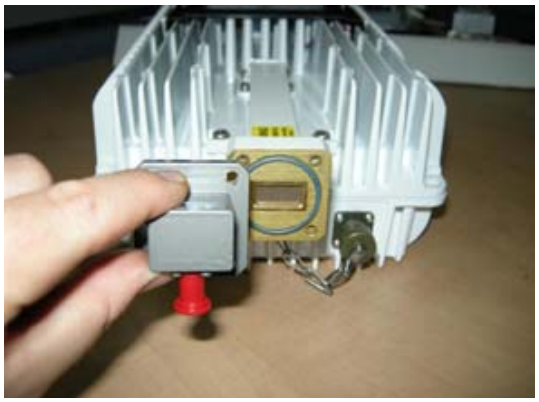
After replacing the BUC, power up the system and drive the BUC to 1dB compression (see the *AL-7103 MKII Installation and Operation Manual* for instructions). Verify that the EB/N0 is exactly as defined in the link budget.

3.5 Install 16W Ku-Band BUC

Step 1

Connect the Waveguide-to-SMA adapter to the BUC with M4 fasteners and an EMI O-Ring.

Use a 3mm Allen key and a 7mm open wrench.



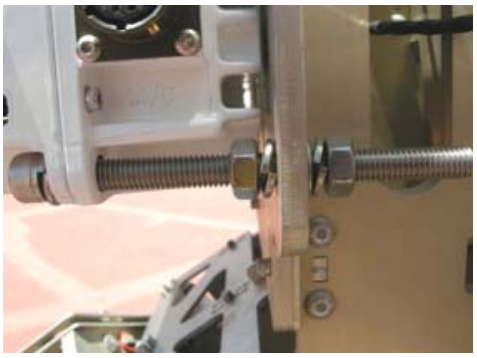
Step 2

Use a 2.5mm Allen key to remove the screws holding the safety caps in place. Remove the caps and replace the screws.

Step 3

Use a 6mm Allen key and a 13mm open wrench to loosely attach the BUC to the DISH ASSEMBLY with M8 fasteners.

Attention: Make sure the spring washers and flat washers are correctly positioned.



Step 4

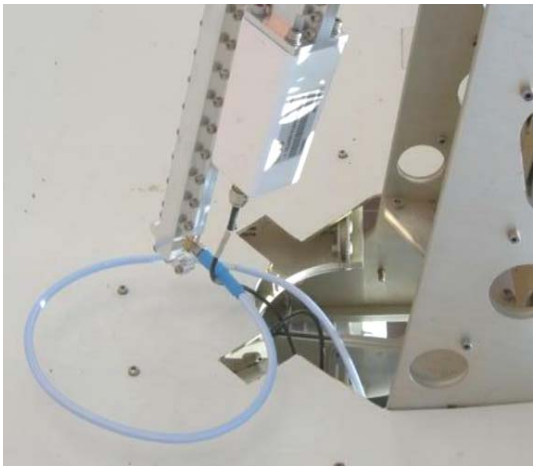
Tighten the nuts and screws.

Attention: The distance between the BUC and the DISH ASSEMBLY should not exceed 3mm.

Step 5

Connect the cables to the BUC connectors.

Use an SMA torque wrench for the SMA connectors.



Step 6

Bind the cables to the DISH ASSEMBLY with tie-wraps.

- **Post-Installation System Verification**

After replacing the BUC, power up the system and drive the BUC to 1dB compression (see the *AL-7103 MKII Installation and Operation Manual* for instructions). Verify that the EB/N0 is exactly as defined in the link budget.

3.6 Install PSU L00321001 - PSU ASSEMBLY FOR 4W and 8W BUC SYSTEMS

Please note:

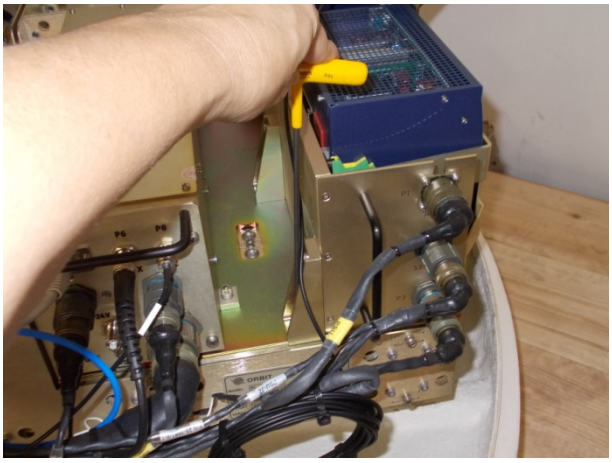
PSU 8W includes 2 Power supplies compare to 3 units in PSU 20W

Step 1

Mount the new PSU in its place on the ADE BASE.

Step 2

Tighten the three screws securing the PSU to the ADE BASE using a 5/32” Allen key.

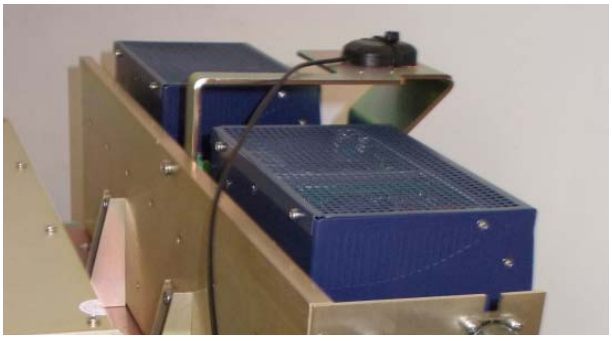


Step 3

Connect the cables to the PSU connectors.

Step 4

Mount the GPS ANTENNA in its place on the PSU and secure it with a tie-wrap.



3.6.1 Post-Assembly System Verification

After replacing the PSU, power up the system and activate Enc Init Mode several seconds after startup (see the *AL-7103 MKII Installation and Operation Manual* for instructions). Verify that the system functions properly.

3.7 Change the software configuration from X-Band to Ku-Band

Following the installation of the Ku-Band RF Kit, perform the following procedure to change the software configuration from X-Band to Ku-Band configuration:

1. Apply power to the system.
2. In the MTSLINK **Operation Screen**, open the **InConfig** Menu, select **Step-Track**, and then **Ku-Band**. The **Ku Step-Track Mode** dialog box opens.

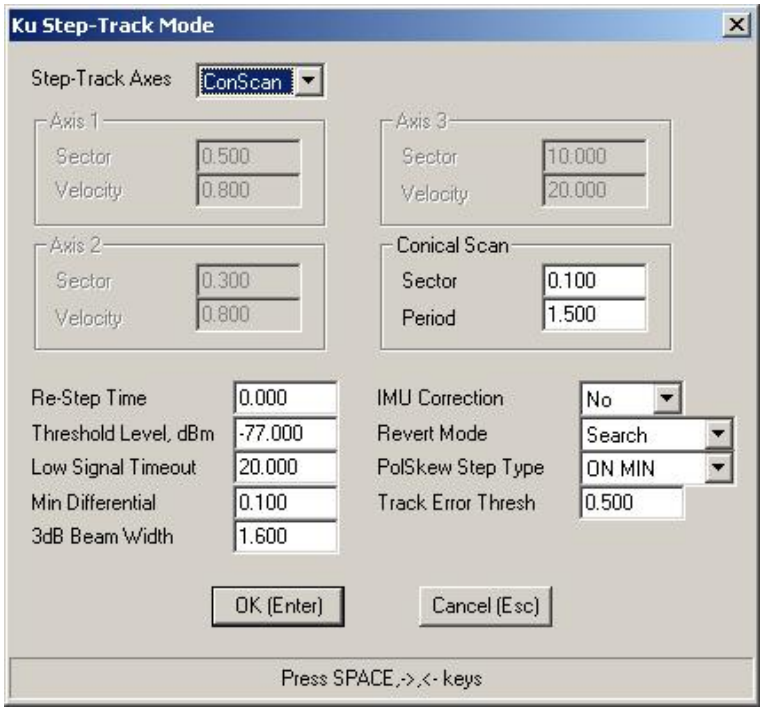


Figure G-1: Ku Step-Track Mode dialog box

3. Verify that the settings match those displayed in the above figure.
4. Open the **Maintenance Screen**. In the **Receiver** window, click the **Band** button and select **Ku Linear Circular**.

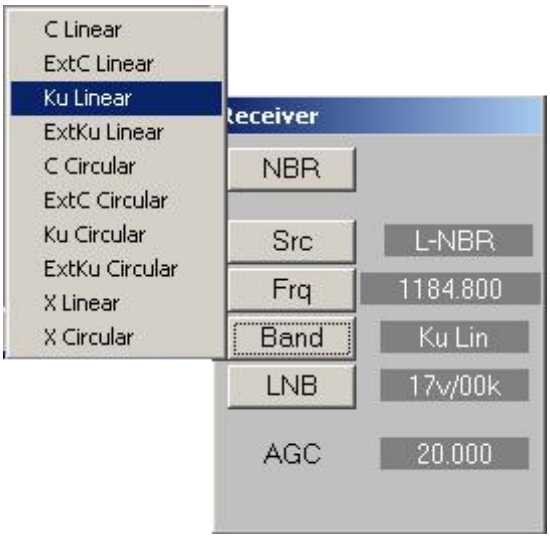


Figure G-2: Receiver Window Band Menu

5. In the **Tx Chain** window, click the **BUC Model** button and select 8W Ku Agilis M&C.

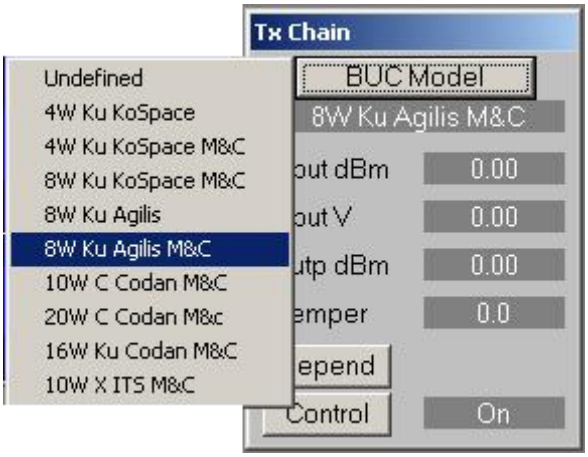


Figure G-3: Tx Chain Window BUC Model Menu

6. Save the changes to non-volatile memory.