OceanTRx7™

Maritime Stabilized VSAT System

Technical Note

BUC

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COMMUNICATION WITHOUT BOUNDARIES

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Revision History and Control

Revision Status

Revision Level	Date	Responsible Person	Description of Change	ECO NO.
-	24/09/2013	Albert	New Release	-

About this Manual

This manual is designed to guide you through the procedures required for maintaining the `BUCK` 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 configure a BUC.

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 Values

Screw Type	Torque
M8	$25^{N}/_{m}$
M6	$10.2^{N}/_{m}$
M5	$6^{N}/_{m}$
M4	$2.5^{N}/_{m}$
M3	$1.35^{N}/_{m}$

1.3 BUC Description

A block upconverter (BUC) is used in the transmission (uplink) of satellite signals. It converts a band of frequencies from a lower frequency to a higher frequency. Modern BUCs convert from the L band to Ku band, C band and Ka band.

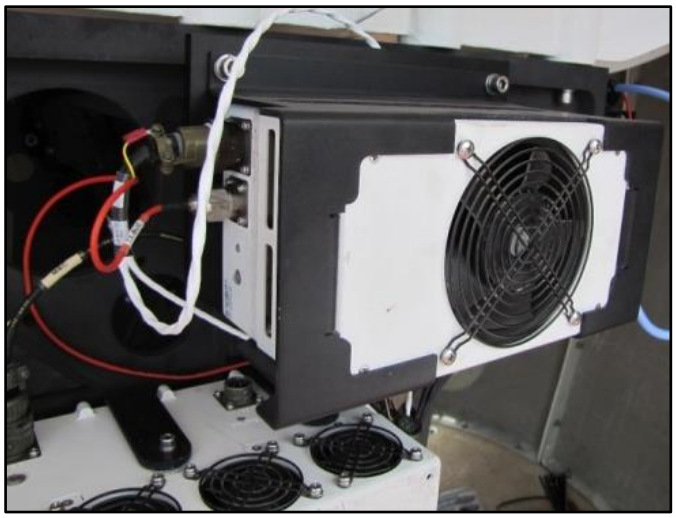


Figure 1-1: KU band BUC

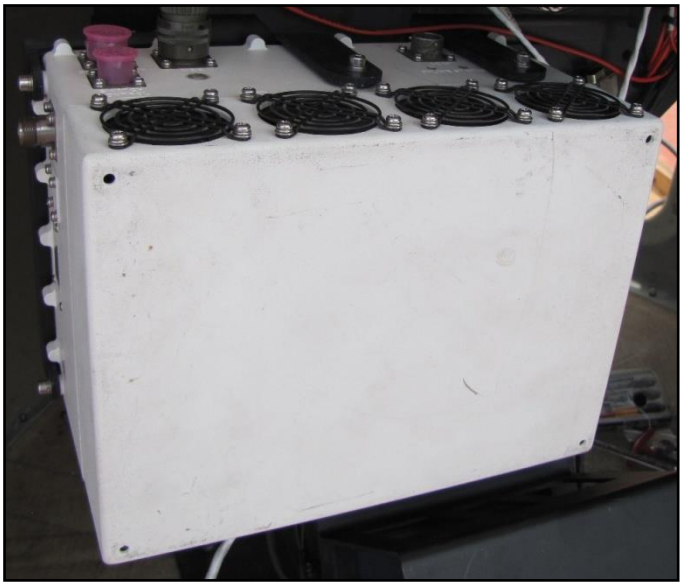
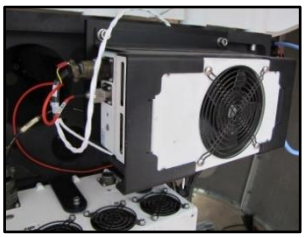
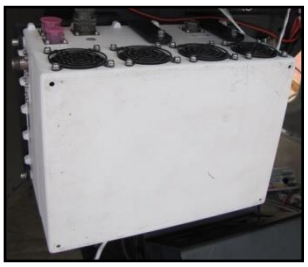


Figure 1-2: C band BUC

1.4 Spare Kit Contents

The following table provides a list of the parts in the BUC spare kit.

Table 1-2: Spare Part Kit Contents

Part Name	Part No.	Figure
KU BAND BUC		
C BAND BUC		

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		
Flat screwdriver		

2 Preliminary Procedures

➢ **To Perform Preliminary Procedures:**

The following preliminary procedure must be performed before replacing the BUC:

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.

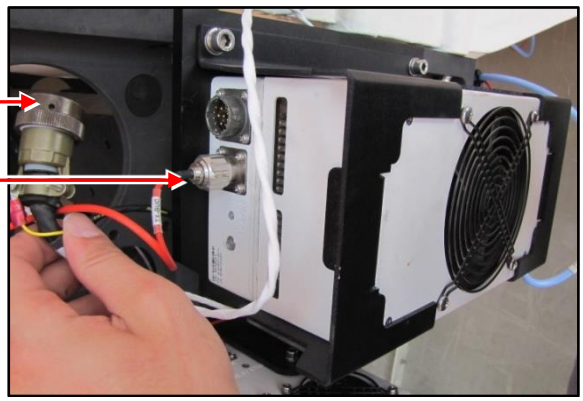
3 Replacing the KU band BUC

3.1 Removing the KU Band BUC

➢ **To Remove the KU Band BUC:**

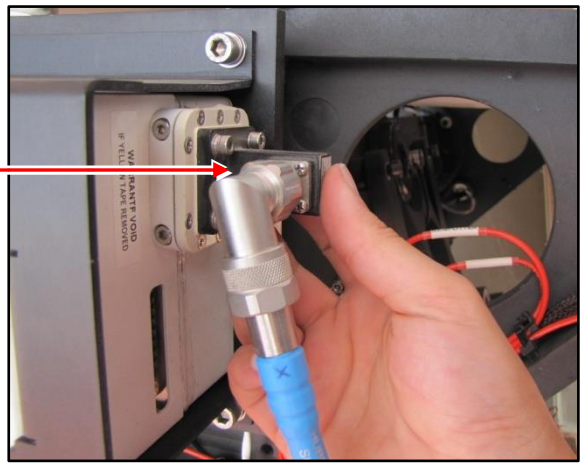
Step 1

Disconnect the power plug



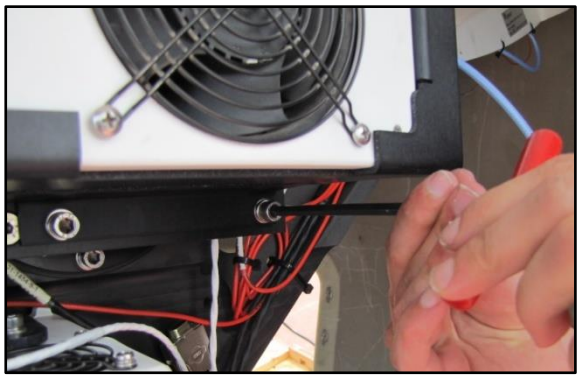
Step 2

Manually disconnect the RF and IF cables from the BUC



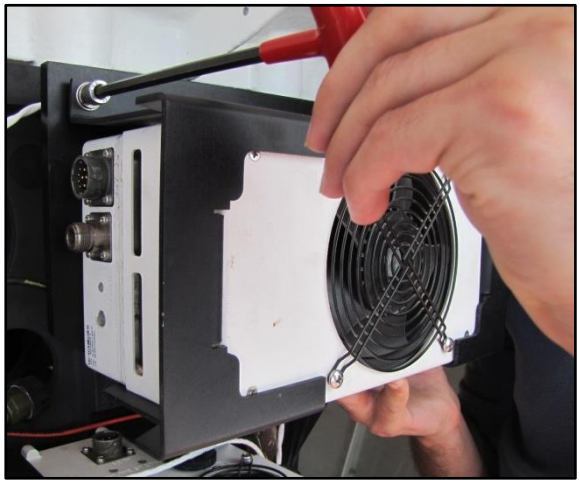
Step 3

Use a 6mm Allen key to remove the two bottom screws



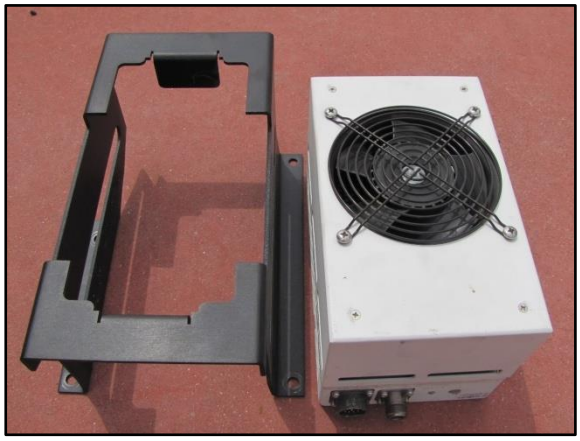
Step 4

Support the BUC and remove the two upper screws, using 6mm Allen key.



Step 5

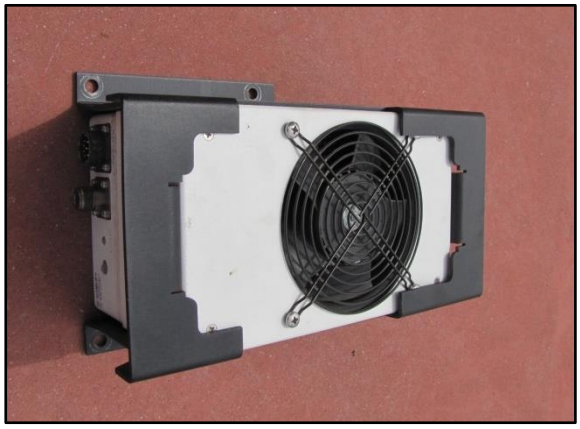
Remove the BUC with its cover.



3.2 Installing the KU band BUC

Step 1

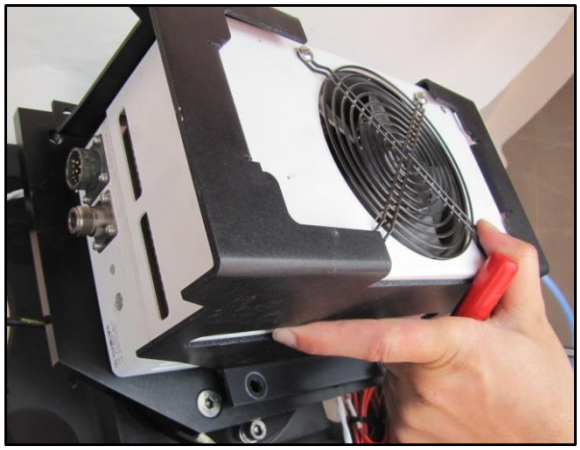
Place the cover as described.



Note: The proper cover direction.

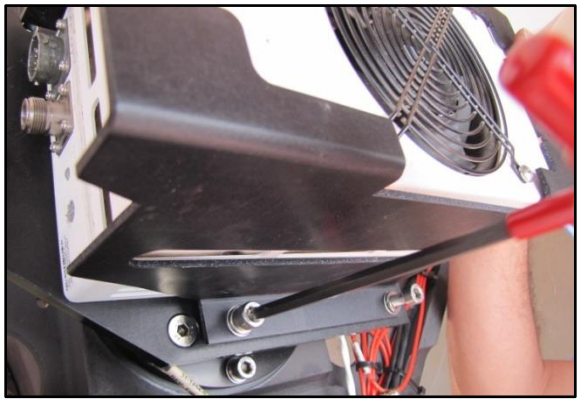
Step 2

Install the BUC with its cover and hand tight it's four screws.



Step 3

Tighten the four screws using 6mm Allen key



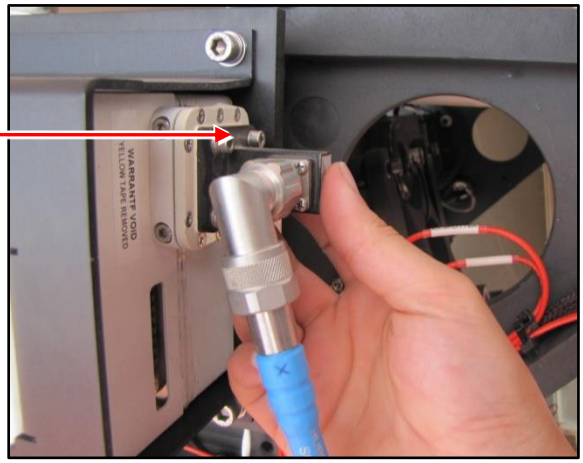
Step 4

Connect the BUC's power and M&C plug.

The plug lead pin.

Step-5

Manually connect the blue and red (RF and IF) cables to the BUC.



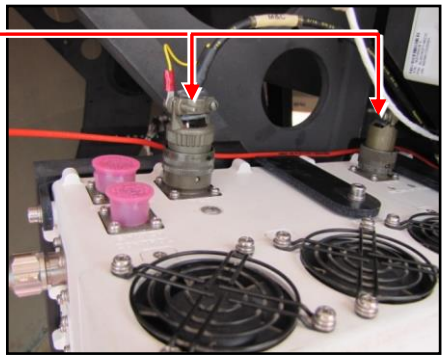
4 Replacing the C band BUC

4.1 Removing the C Band BUC

➢ **To Remove the C Band BUC:**

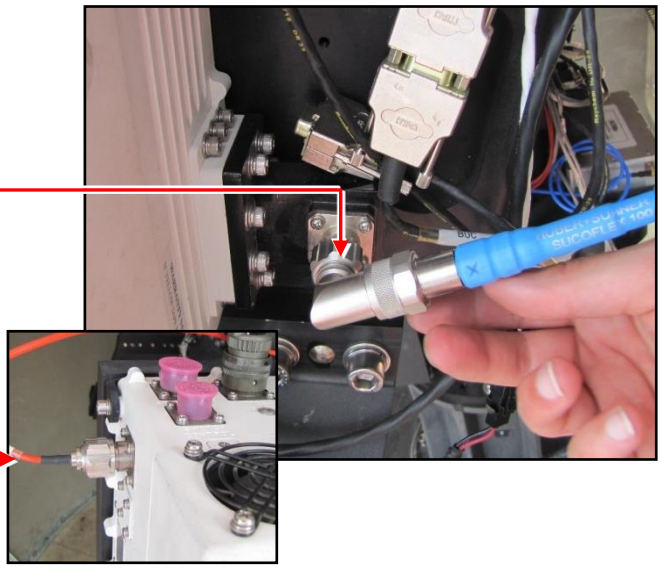
Step 1

Manually disconnect the two BUC plugs (Power and M&C).



Step 2

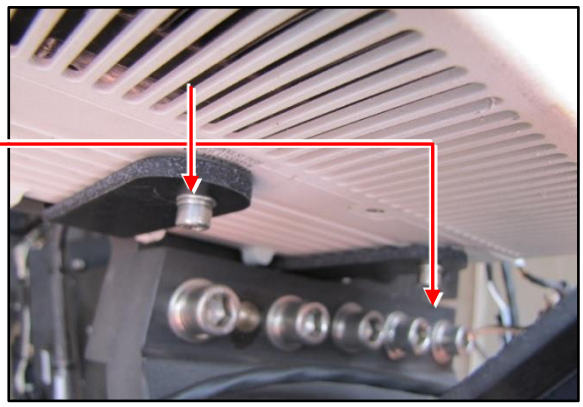
Manually disconnect blue and red (RF out and IF) cables from the BUC.



Step 3

Use a 4mm Allen key to remove the screws securing the BUC.

Remove the BUC from the system.



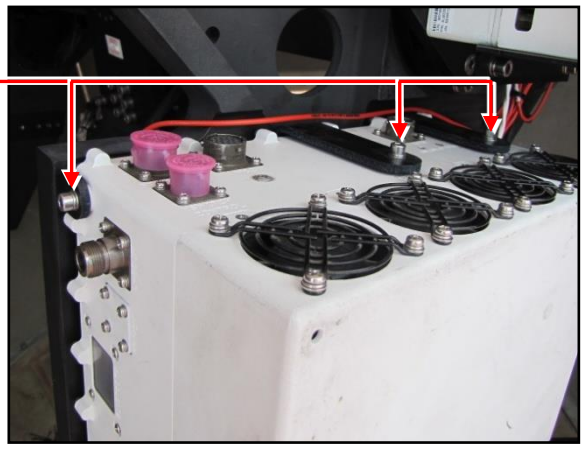
C-Band BUC is heavy.

4.2 Installing the C Band BUC

➢ **To Install the C Band BUC:**

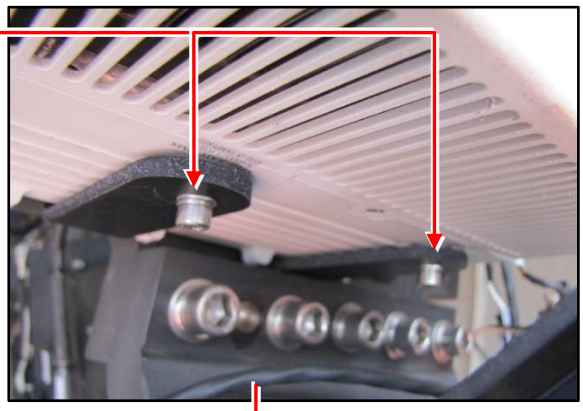
Step 1

Mount the BUC to its place on the system and hand tight its four screws (two above and two below) screws.



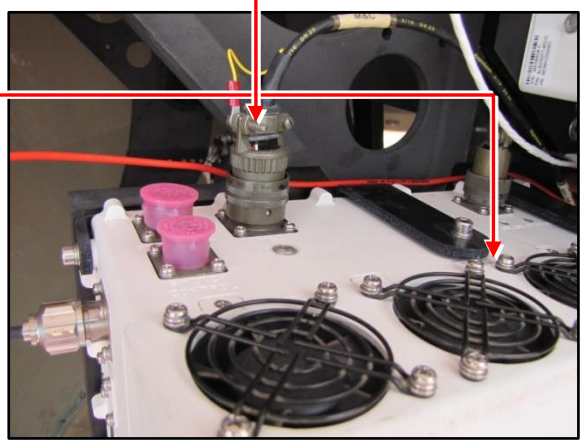
Step 2

Using a 4mm Allen key, tighten the BUCS screws.



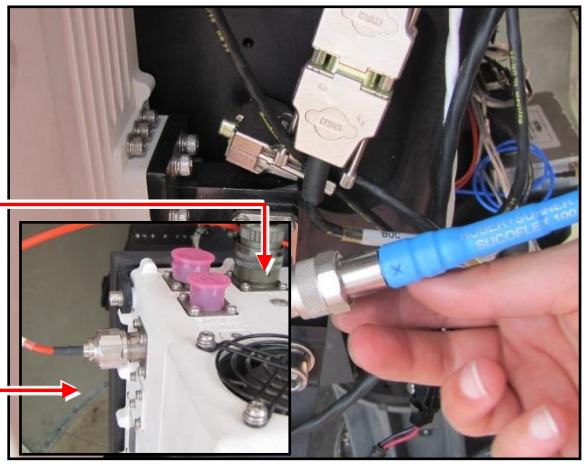
Step 3

Manually connect the two BUC plugs.



Step 4

Manually connect the blue and red (RF out and IF) cables to the BUC.



5 Perform Verification Test

➢ **To Perform Verification Test:**

1. Start up the system (see the *OceanTRx7™ Installation and Operation Manual* for instructions).
2. Make sure no error messages appear in the **System messages** window.
3. Perform 1db compression point test with the satellite operator.