

HUGHES NETWORK SYSTEMS

FIELD SERVICE BULLETIN

SUBJECT: Hughes Universal Ku-band Radio Assemblies	FSB NUMBER: FSB_130919_01C
	FSB ISSUE DATE: 09/16/2013

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CHANGE TO BE IMPLEMENTED BY:
 AUTHORIZED HUGHES REPRESENTATIVE CUSTOMER

DOCUMENTATION AFFECTED:
 Training, Installation Specifications

CATEGORY:
 HARDWARE FIRMWARE SOFTWARE OTHER

EFFECTIVE DATE:

IMPLEMENT: IMMEDIATELY
 NEXT SERVICE CALL
 OTHER:

COMMENTS: **Background:**

This FSB describes the introduction of the Hughes Ku-Band Universal Radio Assembly to replace all Isis/Osiris/Anubis Ku-Band Radio assemblies within the United States. The Hughes Isis/Osiris/Anubis 1W/2W Radio Assemblies are being superseded by the Hughes Universal Ku-band Radio Assembly, effectively immediately.

Refer to the Hughes Universal Radio Assembly Installation Guide (1039599-0001) for detailed instructions. Ensure you are using the latest NAD sbc (satellite-based commissioning) file from the Installation Portal.

The Rembrandt radios can be used as a replacement for the Anubis/Isis/Osiris Radios with following restrictions:

- The Rembrandt radios cannot be used with DW6x00 and DW4020 IDUs
- The Rembrandt radios cannot be used at sites where the diplexer kit (1502487-0002) has been installed to use a single-IFL cable-run.

REMOVED MATERIAL DISPOSITION

SHIP TO	N/A
ATTENTION	N/A
COMMENTS	N/A

Hughes Network Systems, 11717 Exploration Lane, Germantown, MD 20876

1.0 Introduction to the Universal Radio

The Hughes Universal Radio will be available in the Pure-type as well as the Cradle/TG-type configurations as shown below.



Universal Pure-Type Radio



Universal Cradle/TG-Type Radio

Table 1 shows the mapping of the Hughes Part numbers for the Anubis and the Universal Radio assemblies.

Table 1 – Hughes Ku-Band Radio Assembly Part Numbers

	Anubis Radio (1W / 2W)	Universal Radio (2W)
Pure-Type	1500172-xxxx	1503927-0003
Cradle/TG-type	1500192-xxxx	1503927-0002

The **Universal Radio only comes in 2-watt configurations**. The Anubis 1-watt Radio assembly is no longer supported.

2.0 Universal Radio Antenna Compatibility

The Hughes Universal Ku-Band Radio is compatible to all existing 74cm, 98cm, 1.2m, 1.8m and 2.4m antennas in the Pure-type and Cradle (TG)-type configurations. For detailed assembly instructions, refer to the Hughes Universal Radio Assembly Installation Guide (1039599-0001, Rev A or higher).

2.1 Pure-type Universal Radio on a 74cm Antenna:

Figure 1 illustrates the mounting of the Pure-type Universal Radio on a 74cm Antenna. The Pure-type Universal Radio is attached directly to the feedhorn interface.

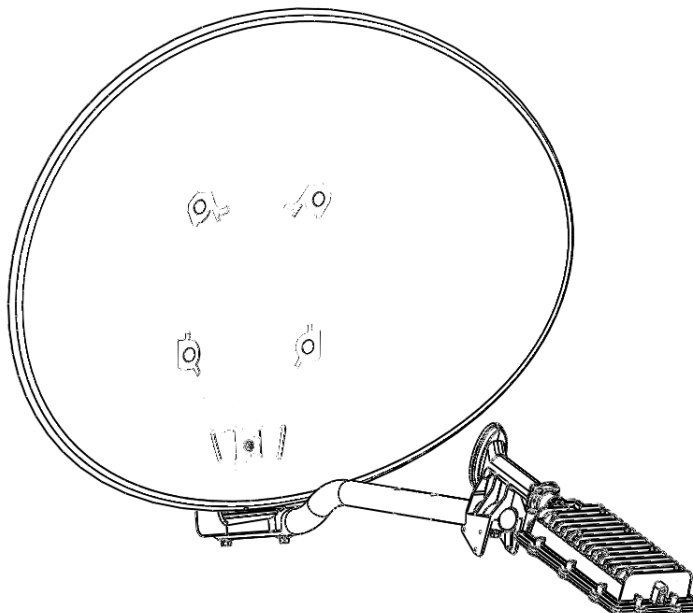


Figure 1 – Installation of Pure-type Universal Radio on a 74cm Antenna

2.2 Pure-type Universal Radio on 0.98m/1.2m Antennas:

Figure 2 illustrates the mounting of the Pure-type Universal Radio on a 0.98m/1.2m Antenna.

Note: The Isis brackets are still used to mount the Universal Radio in this configuration.

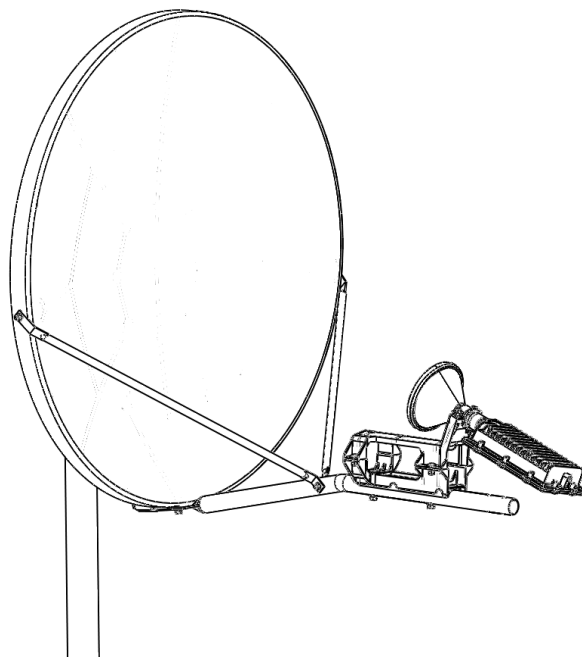


Figure 2 – Installation of Pure-type Universal Radio on a 0.98m/1.2m Antenna

2.3 Cradle-type Universal Radio on 0.98m/1.2m/1.8m/2.4m Antennas:

Figure 3 illustrates the mounting of the Cradle/TG-type Universal Radio on 0.98m/1.2m/1.8m/2.4m Antennas.

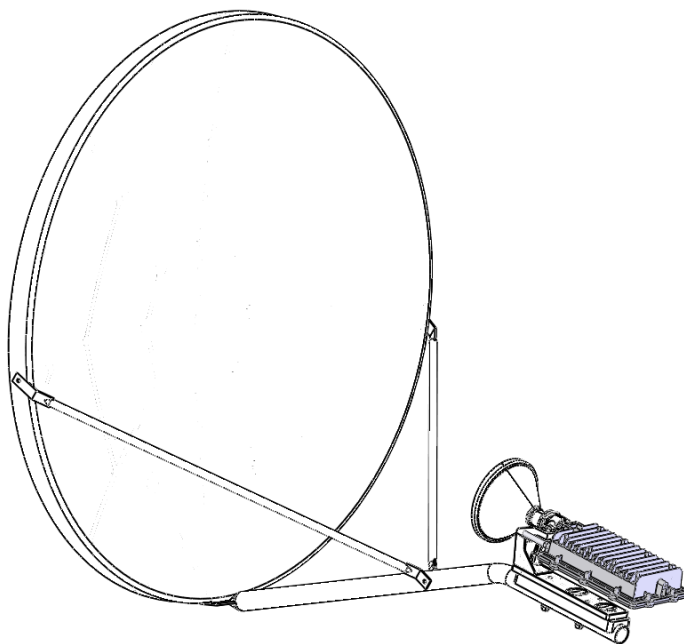


Figure 3 – Installation of Cradle/TG-type Universal Radio on a 0.98m/1.2m/1.8m/2.4m Antenna

3.0 Radio Polarization Setting

3.1 - Universal Radio Cradle/TG-type

The default shipping position of the Universal Cradle/TG-type Assembly is in the **vertical transmit polarization** as shown in Figure 4. The waveguide spacer is shipped in the horizontal polarization position.



Figure 4

For vertical TX polarization requirements, rotate the waveguide spacer so the 0° mark is at the top of the radio as shown in Figure 5.



Figure 5

To change the polarization on the Universal Radio to horizontal TX polarization, follow the steps below:

1. On the radio assembly, loosen the two bolts at the top of the circular bracket shown in Figure 6.

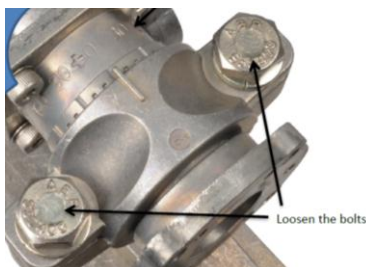


Figure 6

2. Rotate the Universal Radio so that it is horizontal to the mounting bracket as shown in Figure 7.

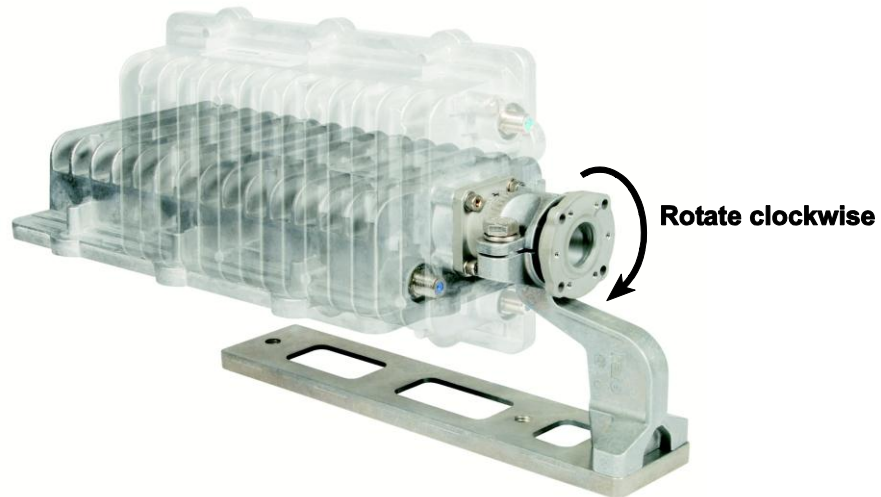


Figure 7: Rotating the radio to horizontal polarization

Note: The waveguide spacer has a polarization scale and the circular bracket holding the waveguide spacer has a marker to indicate the polarization offset.

The 0° mark on the waveguide spacer should be at the top as shown in Figure 8.



Figure 8: Universal Radio with polarization scale

To set the site-specific polarization on the Universal Radio, follow steps 3 and 4:

3. Rotate the radio assembly as shown in Figure 9. Example: To set the radio polarization to +30°, rotate the radio assembly in the direction of the + sign on the waveguide spacer until the +30° mark aligns with the marker on the circular bracket.
4. Tighten the two bolts.

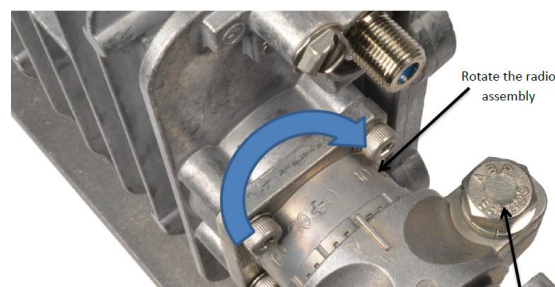


Figure 9: Rotate the Universal Radio assembly

3.2 - Universal Radio Pure-type

*Note:*The waveguide spacer is shipped in the horizontal polarization position.

For horizontal TX polarization:

1. Mount the Universal Radio Pure type assembly with the 0° mark on the waveguide spacer to the top of the radio using the Isis brackets as shown in Figure 10.



Figure 10

2. Site-specific polarization settings will be accomplished by rotating the reflector.

For vertical TX polarization:

1. Remove the four M4-0.7 X 12mm hex-head screws on the waveguide spacer.
2. Rotate the waveguide spacer such that the 0° mark is at the top of the radio as shown in Figure 11.



Figure 11

3. Mount the Universal Radio Pure type assembly with the 0° mark on the waveguide spacer to the top of the radio using the Isis brackets as shown in Figure 12.

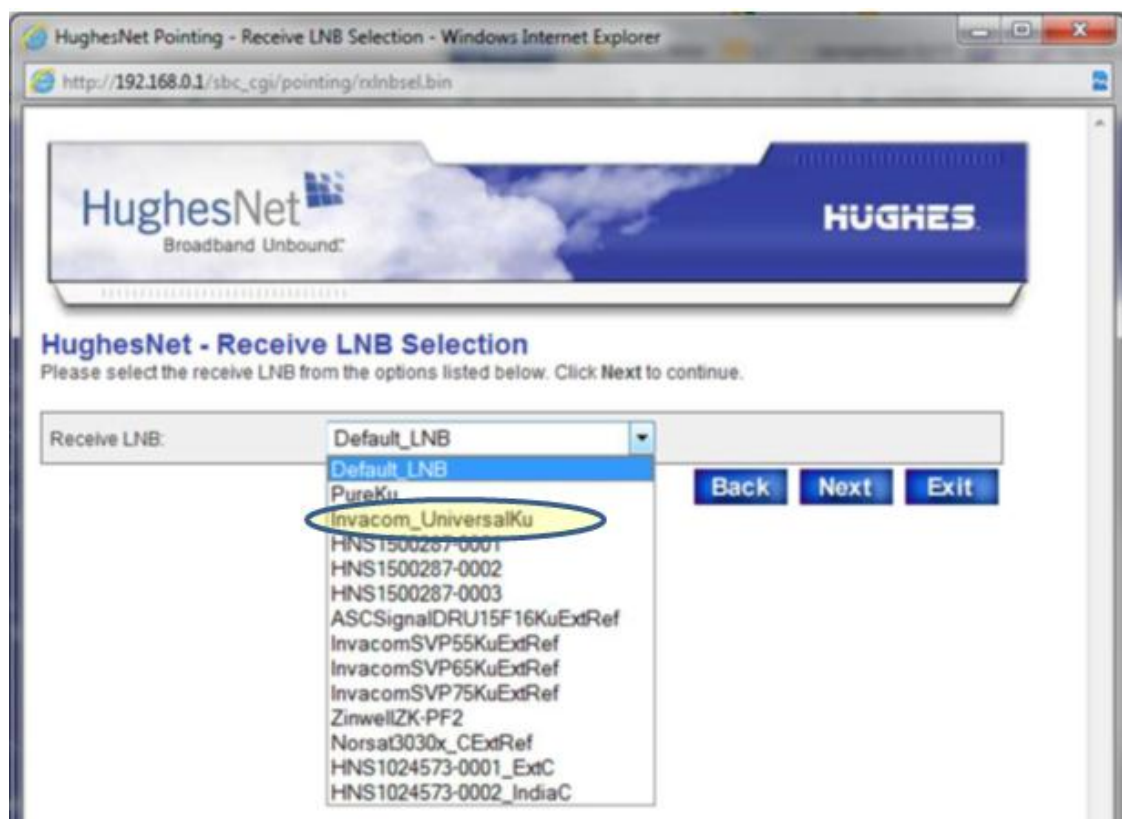


Figure 12

4. Site-specific polarization settings will be accomplished by rotating the reflector.

4.0 - Receive LNB Selection

During the SBC process, select Invacom_UniversalKu on the Receive LNB Selection drop down menu screen as shown.



References:

- *Hughes Universal Radio Assembly Installation Guide 1039599-0001*