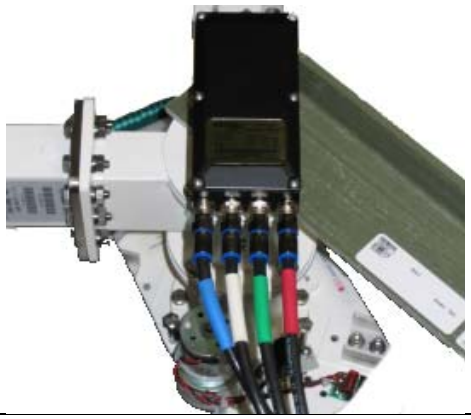
1. Quattro Quad Linear LNB Replacement Procedure.

Below are the instructions for replacing a defective Brainwave Quad Linear LNB with a Quattro Quad Linear LNB on the Series 97(A/B) & Series 00/07(D) Antenna Systems. As a part of the replacement process you will be required to perform the following steps:

- Removal and replacement of the LNB's
- Re-balance the General assembly
- Electrical calibration of the feed assembly (re-optimizing the POL OFFSET/Sat Skew parameter value).
- Verify normal operation of the system

Remove and Replace the LNB's	
Using the SAT Menu, Target a satellite that is of your same longitudinal position. (i.e. We would target a satellite number of 122W for our GEO location of 38N and 122W in Concord, California). Turn power off to the system, once the Target LED on the front panel of the ACU extinguishes. Open the radome hatch or radome door to allow access to the antenna assembly. Rotate the antenna by hand to gain access to the back of the dish. Note that the body of the current LNB is vertical (straight up). NOTE or Record the color code of the coax to LNB port assignments. Then remove coaxes connected to the LNB	
Note or Record the color code of the coax to LNB port assignments. (i.e. Blue to Horizontal Hi-Band.) Then remove coaxes connected to the LNB.	
Loosen the Allen set screws on the existing LNB mounting collar (three set screws, 120 degrees apart) and remove it from the mounting collar.	

Insert the new LNB into the mounting collar, ***assure it is seated all the way into the mounting collar tube***, rotate the LNB as needed to align the center of the body of the LNB to a vertical position (straight up) and tighten the set screws. This must be aligned this way to ensure full range of drive motion to prevent the LNB from hitting the Motor or Pot during polarization drive and to allow for electrical calibration.

Using the color code recorded earlier, install and secure the coaxes to the new Quattro Quad Band LNB.

NOTE: Although it will use the same color code (i.e. The Left to Right Port assignments on the Quattro Quad LNB is NOT the same as the Brainwave Quad LNB.

Re-balance the Antenna

Due to the weight differences between the Brainwave and the Quattro Quad LNB's, the antenna's balance adjustment may be necessary. If your system has not been fitted with CL and EL brake assemblies, turn power off to the antenna and go straight to step 2.

The antenna and equipment frame are balanced at the factory however, after disassembly for shipping or maintenance, balance adjustment may be necessary. The elevation and cross-level motors have a brake mechanism built into them, therefore, ***power*** must be ON to release the brakes and **DishScan *and antenna drive*** must be OFF to balance the antenna. . ***Do NOT remove any of the drive belts***. Balancing is accomplished by adding or removing balance trim weights at strategic locations to keep the antenna from falling forward/backward or side to side. The antenna system is not pendulous so 'balanced' is defined as the antenna remaining at rest when left in any position.

The "REMOTE BALANCE" parameter (located at the end of the Remote Parameters after REMOTE TILT) of the ACU. When enabled, Remote Balance Mode temporarily turns DishScan, Azimuth, Elevation and Cross-Level drive OFF. This function is required when trying to balance antenna systems that have a built-in brakes on the elevation and cross-level motors.

Assure that Antenna power is ON and that the antenna has completed initialization.

At the ACU:

1. From the ACU - REMOTE BALANCE parameter: Enable balance mode (refer to your ACU manual). The screen should now display "REMOTE BALANCE ON".

At the Antenna:

2. At the Antenna: Balance the antenna with the elevation near horizon (referred to as front to back balance) **by adding**, **or subtracting**, **small counter-weights**.
3. Then balance Cross Level axis (referred to as left-right balance) **by moving existing counter-weights from the left to the right or from the right to the left**. Always move weight from one location on the equipment frame to the same location on the opposite side of the equipment frame (ie from the top left of the reflector mounting frame to the top right of the reflector mounting frame). Do NOT add counter-weight during this step.
4. Last, balance the antenna with the elevation pointed at, or near, zenith (referred to as top to bottom balance) **by moving existing counter-weights from the top to the bottom or from the bottom to the top**. Always move weight from one location on the equipment frame to the same location on the opposite side of the equipment frame (ie from the top left of the reflector mounting frame to the bottom left of the reflector mounting frame). Do NOT add counter-weight during this step.
5. When completed, the antenna will stay at any position it is pointed in for at least 5 minutes (with no ship motion).

Do NOT cycle antenna power to re-Initialize the antenna. Return to the ACU, which is still in REMOTE BALANCE mode, and press ENTER to exit Remote Balance Mode. When you exit Balance Mode the antenna will be re-initialized, which turns DishScan, Azimuth, Elevation and Cross-Level drive Off

Verify that the LNB is operating properly and resume normal operation by targeting the desired Ku-Band Linear Based Satellite. Using your receivers satellite signal meter, adjust POL Skew to obtain the highest signal Quality possible and save to the appropriate preset.
If you are unable to achieve a valid Quality level, refer to your antenna manual and calibrate the Polarization Pot.