

LRAUV Antenna Assembly Procedure

Rev5

1. Parts required:
 - a. Antenna PCB with rigid coax cables cast into antenna fin assembly
 - b. (2) 29" long antenna cables with a DGO on one end SMA on the other
 - c. Devcon Flexane 94 Casting Polyurethane
2. Prep and attach DGO/SMA cables as describe below:
 - a. Compressed air shall not be used for any operation described below.
 - b. De-grease LRAUV antenna potting cup and connectors with alcohol and lint free wipes.
 - c. Prepare LRAUV antenna potting cup internal surface and antenna cables by sanding the internal surface and edges with 80-100 grit sandpaper to promote urethane bonding. Be careful not to break through the p/u jacket of cables and use new sandpaper for each cable.
 - d. Install the RF cables and tighten SMA connectors with torque wrench to 7 inch/lbs (gloved hands, keep clean)
3. Craig: Electrical test with VNA. No touch clean surfaces!
4. Seal them up
 - a. Wash the sanded surface with detergent and hot water, oven dry 100f overnight. (check the threads to insure that they are dry)
 - b. Do not touch the cleaned surfaces from this point on.
 - c. Apply Devcon Flexane FL-20 to all plastic surfaces under the fume hood
 - d. Air dry for a min of 60 minutes
 - e. Second primer coat, apply Devcon Flexane FL-20 under fume hood
 - f. Air dry for a min of 60 minutes
 - g. If any surface is touched even with gloved hands you must go to wash again from step 4.
 - h. If 2+ hrs have elapsed since Applying FL-20, reapply, dry min 30 minutes
 - i. Mount antenna onto stand with clamps
 - j. Position antenna cables in their final layback position
 - k. Mix 200 cc of polyurethane potting compound (3M 2130) per antenna using instruction sheet in a large bucket that provides lots of surface area.
 - l. De-gas mixed urethane in vacuum chamber
 - m. Pour mixed and de-gassed urethane into antenna SMA cup
 - n. Place antenna and stand in pressure chamber at ~80 psi to squeeze bubbles
5. Pressure test to 500 psi cured assembly inside sealed bag filled with saltwater
6. Craig: Final Electrical test with VNA
7. Record final resistance and capacitance values in log and release assembly for installation and deployment