

Title: F4 Transponder needs resistor change PFR-174 **SubAssembly : Diplexor / Receiver Assembly :** Transponder **Component : Units Affected:** Units fixed: **Originator:** Ellen Taylor - - - X -_ - X _ _ _ **Organization:** Swales/UCB Date: 5/3/06 **Phone:** (510) 643-4054 Email: ertaylor@ssl.berkeley.edu **Failure Occurred During (Check one** $\sqrt{}$) \Box Functional test \Box Qualification test \Box S/C Integration \Box Launch operations $\sqrt{}$ Other (Flight Assy) **Environment when failure occurred:** √ Ambient □ Vibration \square Shock □ Acoustic □ Thermal □ Vacuum □ Thermal-Vacuum □ EMI/EMC **Problem Description**

The performance measured by L3 on transponder S/N 103 was -17 dBc with the 16 kHz command subcarrier and 1 kbps command data enabled. The original specs for spurious emissions call for -45 dBc.

Analyses Performed to Determine Cause

L3 proposed replacing two resistors in the receiver slice to improve the loop filter performance for extraction of the coherent reference signal. The resistors are accessible when the top cover is removed and expected improvement 10 dB in spurious emissions. The resistors are to be changed on all units.

Corrective Action/ Resolution

As Probe F4 (transponder S/N 104) was integrated and about to be shipped, the transponder had to be removed at UCB and returned to L3 Comm. This PFR can be closed after the unit has been returned and integrated back onto Probe F4.

Update 6/10/06: The transponder was returned to UCB and re-integrated onto Probe 2 on 6/7/06 without issue.

Acceptance:	
MAM: Ron Jackson	; MSE: Ellen Taylor
PM: Peter Harvey	; Cognizant Engineer

Date of Closure_____