



PFR-082 Title: SPB S918 Post-Vibe Preamp Failure

Assembly: EFI.	Sub-Assembly: SPB.	
Component: Preamp.	Units Affected:	Units fixed:
Originator: John Bonnell	- - - - X -	- - - - X -
Organization: UCBSL	Date: 29 June 2005	
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Failure Occurred During (Check one ✓)

Functional test Qualification test S/C Integration Launch operations Other (Flight Assy)

Environment when failure occurred:

Ambient Vibration Shock Acoustic
 Thermal Vacuum Thermal-Vacuum EMI/EMC

Problem Description

(In this section it is important to document the specific symptoms of the problem. In the event we see it happen again, we would like to know as much as possible.)

EFI SPB S918 failed its DC Functional Test during its post-vibe LPT; instead of the nominal DC voltage gain of approx. 0.11, the observed voltage gain was 0.75. An additional AC Functional Test indicated reduced AC voltage gain as well.

Analyses Performed to Determine Cause

(How do we know how the failure happened? Was it a bad part, bad handling, what?)

As noted above, the initial analysis of the problem consisted of the standard post-vibe LPT, with the addition of the standard AC Functional Test from the boom unit CPT, each in the fully-stowed configuration. The doors were then popped, and the sphere and preamp partially-deployed and stowed in the external spool. A complete Packaged Preamp electrical test was performed; the results of the test were nominal. A DC Functional test was performed; the results of the test were nominal. The sphere and preamp were then restowed, and a boom unit CPT performed; the results of the CPT was nominal.

The preamp was unpackaged and inspected (see attached inspection procedure and results); some spots of conformal coating were found on pins and on the ferrule spring; these spots were removed, and the unit re-packaged.

The unit underwent an additional diagnostic vibration test at which an electrical LPT was performed between each of the three random single-axis vibes; the unit passed each of these special LPTs, as well as the usual post-vibe LPT, indicating that the problem has been solved.

Corrective Action/ Resolution

(How do we fix the unit? And how do we make sure it doesn't happen again?)

As noted above, the affected unit was disassembled, the affected part was cleaned, the unit was re-assembled, tested, and passed normal electrical performance tests. The usual vibration and electrical performance tests performed during the environmental test flow caught the problem, and so no additional tests have been added to the test flow.

Acceptance:

MAM: Ron Jackson _____ ; MSE: Ellen Taylor _____

PM: Peter Harvey _____ ; Cognizant Engineer _____

Date of Closure _____

