



PFR-076 Title: Reversed Tantalum Capacitors on BEB

Assembly : BEB S/N 013	SubAssembly :	
Component : CWR06 Tantalum Cap	Units Affected:	Units fixed:
Originator: H Richard	- - - - x -	0 0 0 0 x 0
Organization: UCB	Date: 8 July 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

At the start of the basic functionality test of BEB S/N 013 current measurements were taken on all supplies to the board, pre Actel installation; all measurements were nominal. After the Actel was installed the basic functionality test was resumed. At this point, a failure occurred with the following symptoms: a.) The BEB Bias, Usher, Guard drivers' outputs could not be controlled through the programmable DACs. All outputs were constant at about 1V. b.) The housekeeping addresses could not be changed.

Despite these failures, the digital supplies to the Actel were drawing nominal current and the Braid driver relays could be controlled via the Actel.

Analyses Performed to Determine Cause

After the failure was discovered, current measurements were taken again. The +10VA current went as high as 500mA before the cognizant engineer turned off the power.

The cog. engineer then performed a visual inspection and saw that two tantalum capacitors had been loaded with the incorrect orientation by Jackson and Tull. These two capacitors were part of the filter circuits of the Channel 2 +/-10VA supplies, and therefore loading these supplies down.

Corrective Action/ Resolution

These capacitors on BEB S/N 013 have been removed and replaced.

All flight BEB boards have been visually inspected by the cognizant engineer for proper orientation of the tantalum capacitors. No other capacitors were found to be installed backwards.

Acceptance:

MAM: Ron Jackson _____; MSE: Ellen Taylor _____

PM: Peter Harvey _____; Cognizant Engineer _____

Date of Closure _____