

PFR-052 Title: Incorrect ADC conversion					
Assembly : SST		SubAssembly : DAP			
Component : FPGA		<b>Units Affected:</b>	Units fixed:		
Originator: Ron Canario		X	X		
Organization: UCB/SSL		Date: 5/17/05			
Phone: 510-643-8646		Email : ronc@sss.berkeley.edu			
Failure Occurred During (Check one $$					
$\sqrt{\text{Functional test}}$ $\Box$ Qualification test $\Box$ S/C Integration $\Box$ Launch operations $\Box$ Other (Flight Assy)				as □ Other <u>(Flight Assy)</u>	
Environment when failure occurred:					
√ Ambient	$\Box$ Vibration		□ Shock	Acoustic	
Thermal	Vacuum		Thermal-Vacuum	□ EMI/EMC	
Problem Description					

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

Analog to digital conversion yielded incorrect results

## **Analyses Performed to Determine Cause**

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

Inspection revealed 2 solder bridges on the FPGA pins. Pins 99 & 100 were bridged, and pins 137 & 138 were bridged. All of these pins were configured as inputs, therefore the FPGA was not damaged. Bridge 99-100 also connected 2 RAM outputs, but the 2 in-line 100 ohm resistors limited the maximum current to 25 mA, which is the specified maximum output capability of the RAM, therefore it was not damaged. Bridge 137-138 connected a RAM output and a comparator output. Again, the 2 in-line 100 ohm resistors limited the RAM current to within the specified maximum, and the comparator is specified to withstand a short circuit.

## **Corrective Action/ Resolution**

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

Remove the solder bridges.

Acceptance:	
MAM: Ron Jackson	_; MSE: Ellen Taylor
PM: Peter Harvey	_; Cognizant Engineer
Date of Closure	

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Problem/Failure Report THM\_PFR\_052