

PFR-122 Title:Temporary failure of sensor#11 attenuator mechanism

Assembly : SST sensor		SubAssembly : Attenuator		
Component : Microswitch		Units Affected:	Units fixed:	
Originator: D. Lar	son	0 0 0 0 0 x 0	0 x 0 0 0 0	
Organization: UCB		Date: 2/1/06		
Phone:		Email :davin@ssl.berkeley.edu		
Failure Occurred During (Check one $\sqrt{)}$				
\Box Functional test $\sqrt{\text{Qualification test}} \ \Box \text{ S/C Integration} \ \Box \text{ Launch operations} \ \Box \text{ Other (Flight Assy)}$				
Environment when failure occurred:				
Ambient	□ Vibration	□ Shock	□ Acoustic	
Thermal	Vacuum	√ Thermal-Vacuum	⊐ EMI/EMC	
Problem Description				

Sensor #11attenuator mechanism showed improper microswitch status (both switches open) following a close operation during a hot cycle of thermal vac testing. Unit was left undisturbed. After several hours the switch status changed to its proper value (all by itself). Subsequent attenuator operations "appeared" successful.

Analyses Performed to Determine Cause

(How do we know how the failure happened? Was it a bad part, bad handling, what?) Close examination using an oscilloscope showed that the "attenuator open" switch had a delayed response that could last several seconds (even at room temperature). i.e. the switch contact would not close properly. Generally the delay was only 100s of milliseconds but it could last seconds sometimes and at least on one occasion lasted hours.

Corrective Action/ Resolution

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

The entire SMA assembly (micro switch, SMA, wiring and connector) was replaced with a pre-inspected replacement assembly (#55). Sensor was reassembled and given a workmanship vibration test. Thermal testing will be done with suite tests.

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