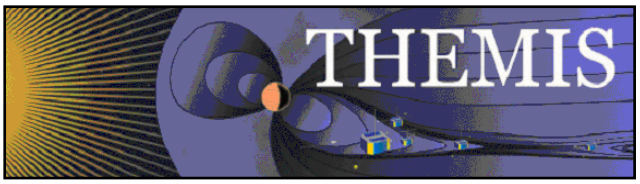

Problem/Failure Report
THM_PFR_065

PFR-065 Title: Bad Data and Missing and Out-of-Order Packets Observed During Continuous Mode Operation.

Assembly: IDPU	**Sub-Assembly: FSW**	
Component: n/a	**Units Affected:**	**Units fixed:**
Originator: John Bonnell	X X X X X X	X X X X X X
Organization: UCBSSL	**Date: 21 July 2005**	
Phone: 510-642-0852	**Email: jbonnell@ssl.berkeley.edu**	

Failure Occurred During (Check one)

X Functional test □ Qualification test □ S/C Integration □ Launch Operations □ Other (Flight Assy)

Environment when failure occurred:

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

Problem Description

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

During Continuous Mode operations during transitions in temperature during FM1 Suite TVAC, it was observed that data from the EFI and FGM instruments was anomalous – packet data looked incomplete and/or noisy, packets were missing or out-of-sequence.

Analyses Performed to Determine Cause

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

Detailed examination of EFI and FGM packets along with SOH packets has shown that the majority of the problems occur when the SURVEY partition in the SSR is "bottom-feeding," i.e. sitting at or just above the packet minimum. The anomalous packet contents and missing packets only occurred when bottom-feeding; the out-of-sequence packets appear to be repeated packets – packets that appeared at the correct point in the packet stream earlier in the file show up several hours later. There can be one to several missing packets or out-of-sequence packets in a row.

After increasing packet minimums, John Bonnell looked at each of the fields APIDs present in the first Continuous Mode data file (0x440, 0x441, 0x443, 0x444, 0x44d, 0x44e, 0x460, 0x461), and have found no obvious problems with the data quality pertaining to malformed packets (PFR-065).

On the basis of these results, it is apparent that the fix has solved the problem, and that PFR-065 may be closed at this time from the point of view of fields data packets.

Corrective Action/ Resolution

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

Use larger packet minimums.

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure: 10/19/05