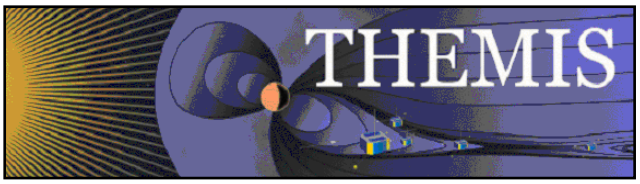

PFR-218 Title: Burst Packet Count Incorrect

Assembly : IDPU	**SubAssembly : DCB**	
Component : FSW V4.01	**Units Affected:**	**Units fixed:**
Originator: Peter Harvey	x x x x x x	x x x x x x
Organization: SSL	**Date: 12 Aug 06**	
Phone: 510-642-0643	**Email :prh@ssl.berkeley.edu**	

Failure Occurred During (Check one √)

□ Functional test □ Qualification test x S/C Integration □ Launch operations □ Other

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 the problem. In the event we see it happen again, we would like to know as much as possible.)

While collecting a number of Particle Bursts and Wave Bursts, the telemetry point "ISSR_Burst" increased as expected and then suddenly dropped to a much lower value. Though no packets had been played out, the indicator of the Burst packets clearly went down.

Analyses Performed to Determine Cause

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

Before playing anything back, we dumped the evaluations of PBurst and WBurst and found that there were 5 PBursts and 16 WBursts. We examined the software routine which calculates the SSR_BURST value and determined that the QMULT routine was masking the # Wbursts to a maximum of 15. This caused the Wbursts to be accounted as if 0. So, the value increased up to 15 and then zeroed when the 16th burst was recorded.

Corrective Action/ Resolution

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

FSW Version 4.02 replaced the QMULT call with a call to MU21. This provides the full multiply as required. The maximum impact is on the order of 150 usec in that interrupt. TEST_SCR55.CMD was used to verify that all Wbursts are counted in the Burst total.

Version 4.02 has been loaded on all probes and the Instrument Spare unit. This should close all activities relating to this PFR.

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____