STEREO IMPACT

PR Numbers: 1xxx=UCB, 2xxx=Caltech/JPL, 3xxx=UMd, 4xxx=GSFC/SEP, 5xxx=GSFC/Mag,
6xxx=CESR, 7xxx=Keil, 8xxx=ESTEC, 9xxx=MPAe

Assembly: SEP	**SubAssembly: SEP Central**
Component/Part Number:	**Serial Number: FM1**
Originator: Branislav Kecman	**Organization: Caltech**
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Failure Occurred During (Check one √)

☐ Functional test   √ Qualification test   ☐ S/C Integration   ☐ Launch operations

Environment when failure occurred:

☐ Ambient   ☐ Vibration   ☐ Shock   ☐ Acoustic
☐ Thermal   ☐ Vacuum   √ Thermal-Vacuum   ☐ EMI/EMC

Problem Description

During thermal balance test on 5/21/2005, at -15 ºC as the temperature rose, SEP Central crashed just before LET reboot command was issued. Power-cycle solved the problem.

During T/V test on 6/21/2005, at -15 ºC SEP Central crashed again while a series of repetitive LET reboot commands was being sent to LET. SEP reset command solved the problem.

Analyses Performed to Determine Cause

Command log reviewed for command syntax and command sequence, but no issues were found.

As part of PFR 2014 investigation it was determined that a bit-flip problem in SEP Central memory could cause a symptom like this.

Corrective Action/ Resolution

√ Rework   ☐ Repair   ☐ Use As Is   ☐ Scrap

1. 5/28/2005 Retested FM1 SEP Main Assembly at -10 ºC in thermal chamber at Caltech, but could not reproduce the anomaly. The instrument wasn't able to get colder than -10 ºC due to the insulation provided by bagging and purging.
2. 7/31/2005 Memory chip replaced on SEP Central Logic Board and it apparently solved this problem for good (Reference PFR 2014). The FM1 unit passed re-qualification T/V test between 8/8/2005 – 8/11/2005.

Date Action Taken: 5/28/2005 – 7/31/2005   **Retest Results**: Passed
Corrective Action Required/Performed on other Units ☐ Serial Number(s): N/A

Closure Approvals

Subsystem Lead: _Branislav Kecman_____ Date:_8/31/05_____
IMPACT Project Manager: _____ Date _____
IMPACT QA: _____ Date:_____
NASA IMPACT Instrument Manager: _____ Date:_____