

STEREO IMPACT

PROBLEM REPORT

PR-1026

PLASTIC LVC FM2

2004-12-01

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

Assembly : PLASTIC FM2	SubAssembly : Plastic
Component/Part Number: 8W9444503-014	Serial Number: FM2
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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

The 2.5VDA Output Voltage on Plastic LVC was shorted to chassis. The resistance was about 1 ohm.

Analyses Performed to Determine Cause

The screws and connectors were disconnected while monitoring the short to the chassis. When the bottom right screw was removed the short to chassis disappeared. The PCB was removed from its box. Pin 1 of L1 is very close to the box. After isolating box and installing the pcb back into it the problem was eliminated. There was a problem with the flight board layout that has caused traces to be routed close to the edge of the board and/or the mounting hardware.

A packaging review was performed on the assembly to determine whether there were any other shorting potentials on the board. The detailed fix is noted below. It includes using standoffs under the mounting hardware. There are no concerns with board resonance during vibration with these standoffs. These modifications need to be implemented on both flight units.

Corrective Action/ Resolution

- Rework Repair Use As Is Scrap
1. Identified and eliminated the areas that have shorting potentials on the board. (See detailed fix attached.) This fix was implemented on both flight units. The board layout/work order was redlined to include this fix.
 2. The D29 short to chassis fix was a step that got missed on this flight board. (The fix was implemented on FM1.) How this step was missed is unclear. UCB QA was alerted. The detailed fix is attached and was implemented on FM2.

Date Action Taken: Dec 17, 2004 **Retest Results:** Success (room temperature functional test)

Corrective Action Required/Performed on other Units Serial Number(s): FM1 (Step 1 only)

Closure Approvals

Subsystem Lead:	_____	Date:	_____
IMPACT Project Manager:	_____	Date:	_____
IMPACT QA:	_____	Date:	_____
NASA IMPACT Instrument Manager:	_____	Date:	_____

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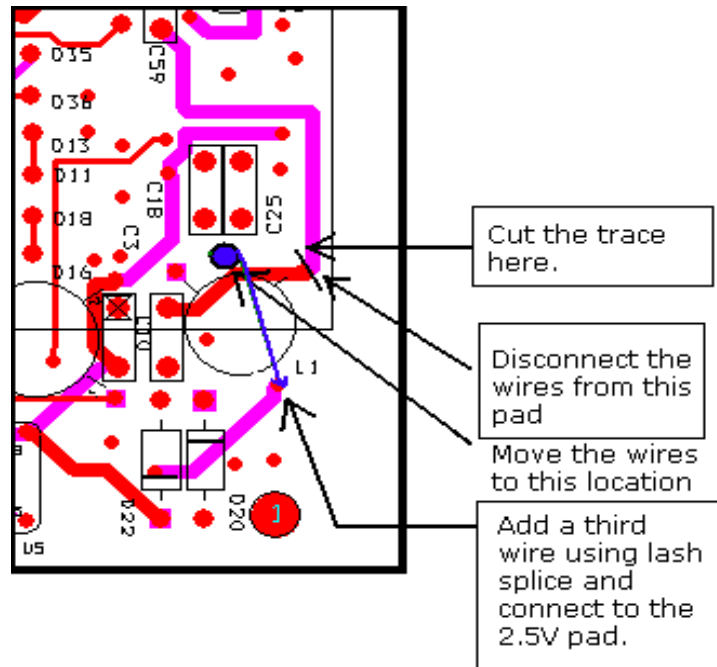
short to chassis

Solution of 2.5V net shorting to chassis:

1. Remove the previous repair wires from L1 pin 2
2. Add another wire (#24 AWG) using lash splice and isolate the connection using shrink tubing.
3. Stake the wires on the new location shown in Figure (blue dot) below using Uralane 5753.
4. Connect the wire on C13 via (shown in figure below)
5. Cut the trace connecting to Pin 2 of L1
6. Epoxy the cut trace using Scotch Weld 1838B/A Green.
7. Place a G10 material along the trace covering Pin 2 of L1.
8. The Plastic LVPS Main board will be raised using ~0.03" thick washers at the corners of the LVC.
9. Record the part number for the screws used to raise the board:

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Solution for possibility of D29 shorting to chassis (FM2 only)

- 1- Cut the trace connecting the input ground to C65 (as shown in figure below)
- 2- Epoxy the cut trace using Scotch Weld 1838B/A Green.

