

## STEREO IMPACT IDPU FM1 Vibration Report

Document # IMP-595-DOC

Revision: --

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### 1. OVERVIEW

The STEREO IDPU vibration tests for the flight model 1 (FM1) unit were conducted November 18, 2004 at Quanta Laboratories in Santa Clara, California. Dave Curtis and Jeremy McCauley were in attendance for instrument handling, verification and test support. Quanta Laboratories provided Test Engineer Sun Lian.

Tests were conducted in the X-, Z-, and Y-axis, where the axes are defined as in the ICD (See Appendix). Test objectives, procedures and levels are defined and explained in IMP-585-DOC, STEREO IDPU Vibration Test Procedure, Revision - (Attached).

All vibration runs were completed. However, further testing was required as the FM1 IDPU saw minor rework in the replacement of a diode (D5, See PFR1027). A retest to GEVS Minimum Workmanship levels was completed in the X-axis on December 16, 2004. Test objectives, procedures and levels are defined and explained in IMP-594-DOC, STEREO IDPU Vibration Re-Test Procedure, Revision - (Attached).

The FM1 unit again underwent rework. A final retest to GEVS Minimum Workmanship levels was accomplished in the Z-axis on February 14, 2005.

No degradation to the IDPU mechanically, structurally, or functionally was shown by post-test CPTs and inspections.

### 2. REFERENCE DOCUMENTS (Attached):

Quanta Laboratories Report Number QL-04-520 – Vibration Report

UCB Document IMP-585-DOC, STEREO IDPU Vibration Test Procedure, Revision -

UCB Document PR-1027, STEREO IDPU FM1 TVac

### 3. PASS/FAIL CRITERIA

Post-vibration CPT of the IDPU assembly, on December 17, 2004, verified functionality was not lost in testing. Post-vibration inspections found no notable degradation mechanically or structurally.

One screw was noted to be missing from the IDPU structure after the December 17 vibration. Subsequent investigation determined the screw was likely not installed. The screw was installed for both retests and is likely the cause of the lowered peak resonance value in the sine signature because it tied the circuit boards to the bottom plate.

The IDPU was vibrated with the ETU MAG heater powered on (launch configuration) and the current monitored. There was no change in the current to the heater circuit during vibration.

4. ACCELEROMETER PLACEMENT

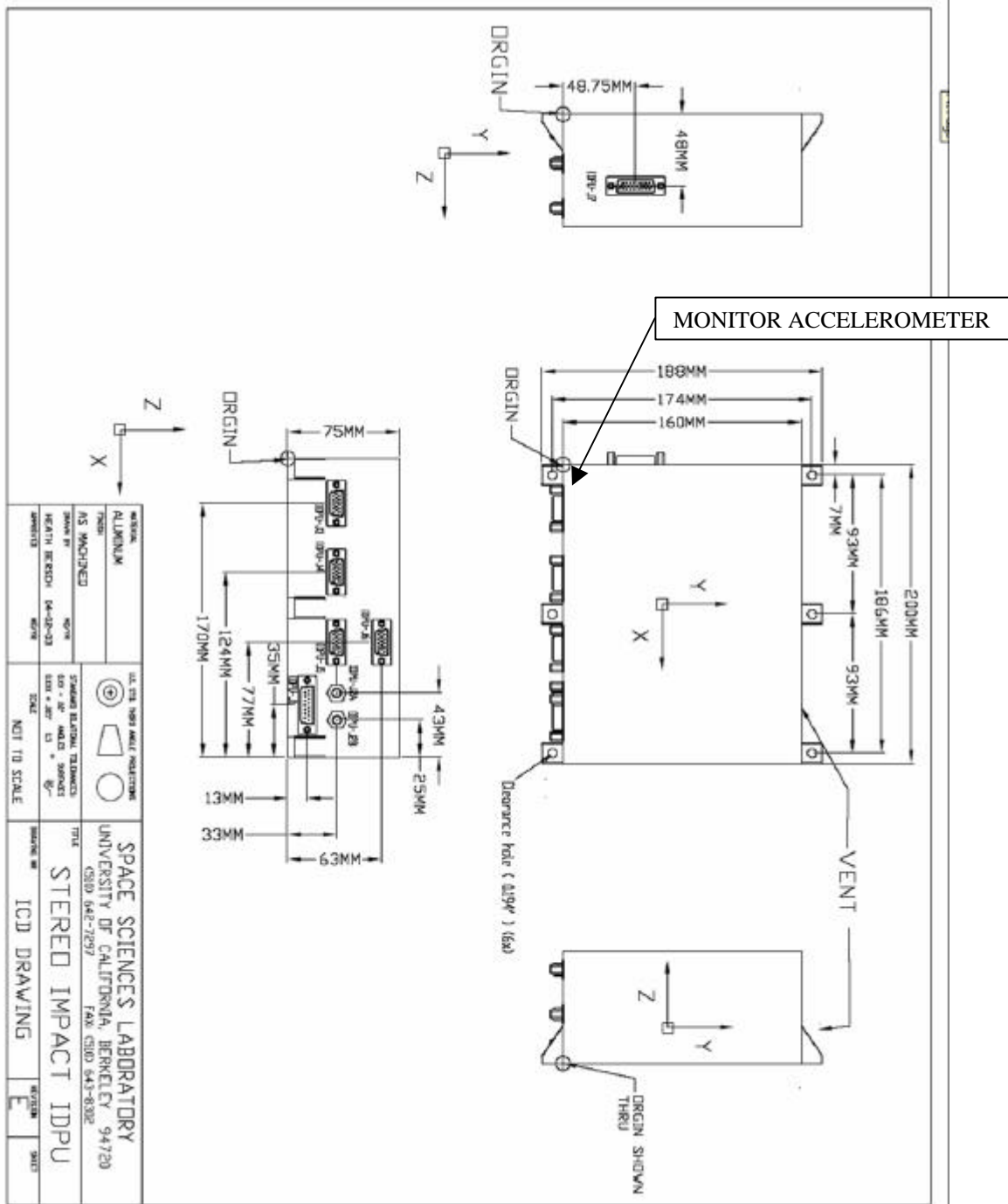


Figure 1: Control Accelerometer Placement

5. RELEVANT DATA

Full data is available for review upon request.