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Massachusetts Institute of Technology
Kavli Institute for Astrophysics and Space
Research (MKI)

Post Vibration Quality Assurance Inspection
Procedure

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Preface

Revision A issued the initial release of 64-02017-3005 with ECO 64-911.

1.0 Introduction and Scope

1.1 Use

This procedure is to be used to perform the inspection after three (3) axes of vibration as described in MIT document 64-02005.14. Specifically, paragraph 4.12 of that procedure requires MIT to "visually inspect the exterior of the Experiment (EDS) for structural damage, backed out screws, or other abnormalities. Remove cover, P/N 64-22600 and visually inspect the internal components of the EDS".

1.2 Required Inspections

This procedure provides specific procedures for the preparation for, and physical accomplishment of, the required inspections as defined in paragraph 4.12 OF 64-02005.14.

2.0 Referenced Documents

MIT Documents	
64-02005.14	EDS Strength and Vibration Test Procedure
64-02011	Contamination Control Implementation Plan
64-02017.2006	Handling for Static Sensitive Electronics
64-02017.2008	Nonconforming material and - - - reports

3.0 General

3.1 Facilities

The procedures described herein shall take place in the flight assembly area at NE80.

3.2 Equipment

Hand tools, as required, to remove the side cover, shall be available. Inspection aids such as high intensity lights, mirrors, magnifying glasses, microscopes, etc. shall be used at the discretion of the inspectors.

3.3 Environment

External inspections and procedures do not require special Electrostatic Discharge (ESD) protection. All connector dust covers must be installed and kept in place during this procedure. The one exception to this, is while connectors are being examined. During EDS internal examination, ESD protection procedures per 64-02017.2006 shall be followed. Caution shall be taken to prevent introduction of particulate contamination, greases and oils during the inspection. One procedure during the post vibration inspection requires a relatively quiet environment. Loud equipment such as machinery and blowers/fans shall be turned off during this phase.

3.4 Personnel

Qualified personnel, as determined by the Performance Assurance Manager, shall perform the required inspections and procedures. An Electromechanical technician and a certified Inspector are required.

3.5 Contamination

The EDS has been baked out per MIT Contamination Control Implementation Plan, 64-02011. No new material may be added. The spot bonding removed to perform this inspection will be replaced.

4.0 Procedure

4.1 External Visual Inspection

4.1.1 Inspection

Inspect the exterior of the EDS, using inspection aids as applicable.

4.1.2 Items of Particular Interest:

- Base plate - evidence of fatigue, fractures, and other nonconformances
- Connectors - bent pins, damaged inserts, contamination, etc.
- Vent - dislocation or other anomalies
- Frames - fatigue, fracture at mounting feet and attachment of tie rods
- Panels - fatigue/fracture, screws backing out
- Tie Rods - bent

COMMENTS:

COMMENTS:				
PASS	FAIL	DATE	TIME	INITIAL

4.3.3 Items of Particular Interest

Items of particular interest are:

- Frames/Circuit Boards - attachment
- Brackets - evidence of fatigue, fractures, and other nonconformances
- Connectors - evidence of damage
- Bird caging of wires
- Cables clamps - loose or missing
- Bonding not adhered to supports
- Broken bonding
- General contamination
- Loose parts or particles from procedure 4.2 above
- Loose lacing
- Connector clamps - evidence of fatigue, fractures, and other nonconformances
- Connectors J1 through J9, J11, J12, and J14, are the TVPS connectors supplied by GSFC. These have no positive rear insert lock. The rear insert holds the connector pin in the shell. Insure by inspection, that all TVPS connectors are intact.

COMMENTS:

PASS	FAIL	DATE	TIME	INITIAL

**** In the event of a nonconformance, do not proceed beyond this point until so directed.**

4.4 Side Cover Reinstallation

Reinstall the side cover, P/N 64-22600 and install the following new hardware:

- six (6) 1/4 - 20 full height hex nuts and 1/4 flat washers from the tie rods on the cover side (64-20900 and 64-2100 respectively)
- twenty (20) #6-32 x 5/16 SHC screws and #6 flat washers (64-25900 and 64-22400 respectively)
- three (3) #4-40 x 1/4 SHC screws and #4 flat washers (64-23300 and 64-23400 respectively)

6.0 Torqueing and Spot Bonding

6.1 Torqueing

The twenty-three (23) screws and six self locking nuts identified in paragraph 4.4 above must be torqueed. Torque hardware using a calibrated torque wrench per note 1 on 64-20000, which is repeated herein for convenience:

#4-40 UNC	5 inch pounds
#6-32 UNC	9 inch pounds
1/4-20 UNC	86 inch pounds

TORQUED ?	DATE	TIME	INITIAL
YES			

Manufacturer _____

Model Number _____

Serial Number _____

Calibration Expiration Date _____

6.2 Spot Bonded

The twenty-three (23) screws and six self locking nuts identified in paragraph 4.4 above must be spot bonded and cured. Spot bond using 64-23200 which is repeated herein for convenience (Stycast 1090).

SPOT BONDED ?	DATE	TIME	INITIAL
YES			

Spot Bond

Sample Identification _____

Post cure Inspection (initial) _____

Post cure Inspection (date) _____