STANFORD UNIVERSITY
W.W. HANSEN EXPERIMENTAL PHYSICS LABORATORY
GRAVITY PROBE B, RELATIVITY GYROSCOPE EXPERIMENT
STANFORD, CALIFORNIA 94305-4085

(PTP) PAYLOAD MAGNETOMETER TEMPORARY INSTALLATION

GP-B PAYLOAD VERIFICATION TEST II OPERATIONS ORDER

P0852 Rev -
31 May, 2001

PREPARED	W. Bencze	Date
APPROVED	K. Pearce, Systems Test Engr.	Date
APPROVED	W. Bencze, Test Director	Date
APPROVED	D. Ross, Quality Assurance	Date
APPROVED	R. Brumley, Payload Technical Mgr.	Date

REVISION RECORD

REVISION	ECO	PAGES	DATE

1. SCOPE

This procedure provides authority to temporarily connect the payload magnetometers to the flight ECU in the Fist-Ops lab to be used during Payload Verification II Phase B.

NOTE

Flight hardware; protect parts and assemblies to prevent magnetic contamination and physical damage.

2. REFERENCE DOCUMENTS

2.1. Procedures

Not applicable

2.2. Drawings

8A02105 Payload Cable Interconnection Diagram

2.3. FIGURES

Not applicable

2.4. SUPPORTING DOCUMENTATION

GP-B Magnetic Control Plan, LMMS-5835031

GP-B (FIST) Preliminary Hazards Analysis, LMMS-F314446

GP-B (FIST) Safety Plan, LMMS- F314447

FIST Emergency Procedures SU/GP-B P0141

SRE GSE Equipment Test Procedure P0843

3. GENERAL REQUIREMENTS

3.1 Quality Assurance

Integration shall be conducted on a formal basis to approved and released procedures. The QA program office shall be notified of the start of this procedure. A Quality Assurance Representative, designated by D. Ross shall be present during the procedure and shall review any discrepancies noted and approve their disposition. Upon completion of this procedure, the QA Program Engineer, D. Ross or her designate, nominally R. Leese, will certify her concurrence that the effort was performed and accomplished in accordance with the prescribed instructions by signing and dating in the designated place(s) in this document. Discrepancies will be recorded in a D-log or as a DR per Quality Plan P0108.

3.2 Red-line Authority

Authority to red-line (make minor changes during execution) this procedure is given solely to the Test Director or his designate and shall be approved by the QA Representative. Additionally, approval by the Payload Technical Manager shall be required, if in the judgment of the Test Director or QA Representative, experiment functionality may be affected.

3.3 Personnel

The following personnel are qualified to perform this procedure:

- William Benzce
- Lo Van Ho
- Scott Smader
- Rick Bevan
- Other:_____QA approval_____

See section 3.1 for details on which Quality Assurance personnel are required to be notified and/or witness this procedure.

3.4 Safety

In case of any injuries obtain medical treatment at:

Stanford University **Call 9-911**

4. CONFIGURATION REQUIREMENTS:

4.1 SMD mounted in SMD test stand with the work platforms and scaffolding attached.

5. HARDWARE REQUIREMENTS

The Dewar, SRE and accompanying build hardware are very delicate. Be sure to handle them with care so that they do not become damaged.

NOTE

Take all necessary precautions not to let anything physically damage the SRE and Science Mission Dewar or particulate onto its surfaces.

5.1 Hardware Required:

Qt. 2	Payload Magnetometer "Left" PN: APS 900-1130-L (SN 1,2)
Qt. 2	Payload Magnetometer "Right" PN" APS 900-1130-R (SN 3,4)
Qt. AR	Cable ties
Qt. 4	Cable tie blocks.
Qt. 5	ESD mat and ground wire.
Qt. AR	Hand tools (Allen wrenches, screw drivers, etc.)

6. OPERATIONS:

Operator _____.

Date Initiated_____.

Time Initiated_____.

7. NOTIFICATION

7.1 Safety Notification

Safety shall be notified 24 hours in advance prior to the start of any work performed. Record who was contacted, the date, and time below.

Contact: _____
Date and Time: _____

7.2 Quality Assurance Notification

The Test Director is to notify the Quality Engineer 24 hours in advance prior to the start of any work performed. Record who was contacted, the date, and time below.

Contact: _____
Date and Time: _____

7.3 Government Notification

Quality Engineer to notify Government Representative 24 hours in advance prior to the start of any work performed. Record who was contacted, the date, and time below.

Contact: _____
Date and Time: _____

8. INSTALLING THE SRE UNIT AND CABLES

8.1 Mounting the Magnetometer Units

CAUTION

The Magnetometer Units are ESD Sensitive. Use appropriate ESD protection when handling the unit or installing associated cables.

8.1.1 Locate table with ESD mat and cable tie blocks attached (Figure 1) Insure ESD mat is properly grounded to Dewar ground point.

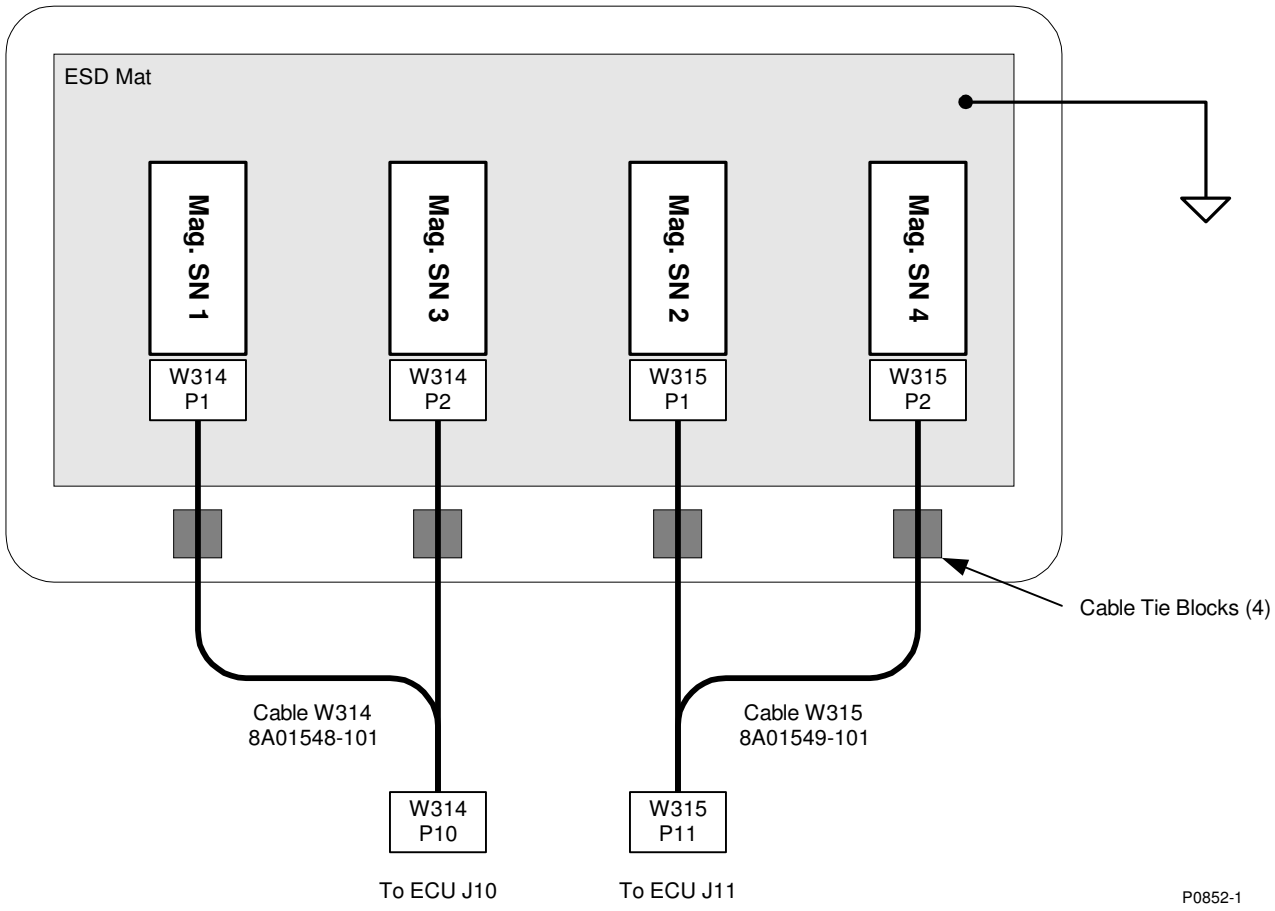

Figure 1 – Layout of Magnetometer Test Stand

8.1.2 Affix ends of cables W314 and W315 to tie-down blocks as shown in Figure 1 using cable ties. Connector end of cable should have sufficient slack to enable it to mate to the magnetometer assemblies..

8.1.3 Connect each magnetometer to the end of its respective cable. Prior to installing each cable, inspect the cable's connectors and mating connectors for bent or misaligned pins or sockets. If any contacts are discrepant, do not install the cable and notify Quality Assurance in order to document the discrepancy. Once mated, finger tighten screws in connector backshell, and set each magnetometer on ESD mat. No further securing of the magnetometers is required.

8.1.4 Verify that all the cables are installed in their proper locations and their fasteners are hand tight.

8.1.5 Quality Assurance to witness connection

QA Witness _____

Approval of Section 8.1

Approved: _____ Date: _____
Integration Engineer

Discrepancies if any:

Approved: _____ Date: _____
QA Representative

Approved: _____ Date: _____
Integration Manager

8.2 Connecting Magnetometer cables to ECU

CAUTION

The Magnetometer Units and ECU are ESD Sensitive. Use appropriate ESD protection when handling the unit or installing associated cables.

8.2.1 Confirm that the ECU is powered **OFF**.

8.2.2 Once the Magnetometers are installed on the test stand, connect two cables to the ECU per 8A02105 Prior to installing each cable, inspect the cable's connectors and mating connectors for bent or misaligned pins or sockets. If any contacts are discrepant, do not install the cable and notify Quality Assurance in order to document the discrepancy.

W314	8A01548-101
W315	8A01549-101

8.2.3 Verify that all the cables are installed in their proper locations and their fasteners are hand tight.

Approval of Section 8.2

Approved: _____ Date: _____
Integration Engineer

Discrepancies if any:

Approved: _____ Date: _____
QA Representative

Approved: _____ Date: _____
Integration Manager

9. PROCEDURE COMPLETED

The results obtained in the performance of this procedure are acceptable:

Test Engineer _____ Date _____

Discrepancies if any:

The information obtained under this assembly and test procedure is as represented and the documentation is complete and correct:

Integration Manager _____ Date _____

QA Representative _____ Date _____

Quality Assurance Manager _____ Date _____