



W. W. Hansen Experimental Physics Laboratory
STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305-4085

Gravity Probe B Relativity Mission

ITF TIMING TEST: TEST CONFIGURATION AND VERSION CONTROL DOCUMENTATION

P0939 Rev –
August 29, 2002

Prepared by: Paul Shestople Date

Approved by: Dorrene Ross Date
GP-B Quality Assurance

Approved by: Richard Whelan Date
GP-B Systems Engineering

ITAR Assessment Performed _____ ITAR Control Req'd? <input type="checkbox"/> Yes <input type="checkbox"/> No Tom Langenstein

Table of Contents:

1.0	Revision History	2
2.0	Scope	2
3.0	Formal Requirements Verification	3
4.0	Reference Documents	3
5.0	Test Facilities	3
6.0	QA Provisions	4
7.0	Test Personnel	4
8.0	General Instructions	4
9.0	Hardware Safety Requirements	5
10.0	Hardware Configuration	5
11.0	Software Control	7
12.0	Start and End Times of Test	8
13.0	Data File Name	8
14.0	Completion of procedure	8

1.0 Revision History

Rev Level	Comments/notes	Date	Revised By
-	First release of this test procedure	29-Aug-2002	P Shestople

2.0 Scope

This procedure documents Integrated Testing Facility (ITF) software versions and hardware configurations used during GPB Timing Tests

This procedure Does Does not provide formal verification of GP-B requirements.
 This procedure Does Does not include constraints and restrictions for the Payload.

3.0 Formal Requirements Verification

This procedure documents hardware configuration and software versions used to verify requirements shown in Table 1.

	Section	Title	Part A	Part B
3.1	T002, 11	Telemetry and Data Processing		4
3.2	T003, 3.6.6	Timing and Signal Processing		4
3.3	T003, 7.6.5	Pointing and Light Intensity Signals		4
3.4	T003, 16.1.1	Primary Payload Clock Frequency	4	
3.5	T003, 16.4	Payload-to-Spacecraft Synchronization	4	
3.6	T003, 16.4.1	ATC Data Strobe Pulse Frequency		4
3.7	T003, 16.5	Payload Absolute Time Standard	4	
3.8	T003, 16.6	Time Tagging	4	
3.9	T003, 16.6.1	GPS PPS Time Tag	4	
3.10	T003, 16.6.2	ATC Data Pulse Strobe Time Tag	4	
3.11	T003, 16.6.3	SQUID Readout Science Signals Time Tag		4
3.12	T003, 16.6.4	Telescope Readout Science Signals Time Tag		4
3.13	T003, 16.6.6	Gyroscope Suspension System Science Signals Time Tagging		4
3.14	T003, 16.6.7	Experiment Control Unit Science Signals Time Tagging		4
3.15	SE-23, 3.2.1.3	PPS Accuracy	4	
3.16	SE-23, 3.2.1.4	PPS Ambiguity Resolution	4	

Table 1: GPB Timing Requirements

4.0 Reference Documents

- 4.1. MIL-STD-1686 Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies, and Equipment
- 4.2. P0875 GP-B Maintenance and Testing at all Facilities
- 4.3. MIL-STD-1540C Test Requirements for Launch, Upper-stage, and Space Vehicles, Section 6.4.2.

5.0 Test Facility

Primary facility: Lockheed Palo Alto Integrated Testing Facility, Bldg. 205.

6.0 QA Provisions

- 6.1. This procedure shall be conducted on a formal basis to its latest approved and released version. The QA Program Engineer (D. Ross) and the ONR representative (E. Ingraham) shall be notified 24 hours prior to the start of this procedure. QA may monitor the execution of all or part of this procedure should they elect to do so.

Date/time: _____
GP-B QA (D. Ross)

Date/time: _____
ONR (E. Ingraham)

- 6.2. Upon completion of this procedure, the Timing Test REE and the GP-B QA manager shall certify her/his concurrence that the procedure was performed and accomplished in accordance with the prescribed instructions by signing and dating his approval at the end of this procedure.

7.0 Test Personnel

This document shall be completed only by persons familiar with hardware configuration and software version control, or be those designated by the Timing Test REE at the time of test (redline names in below as required).

- 7.1. Kelly Burlingham
7.2. Bill Given
7.3. Paul Shestople

8.0 General Instructions

- 8.1. Redlines can be initiated by the test personnel listed in Section 7.0 and must be approved by QA.
- 8.2. Test operators shall read this procedure in its entirety and resolve any apparent ambiguities prior to beginning this test.
- 8.3. Any nonconformance or test anomaly should be reported by a Discrepancy Report. Refer to the Quality Plan, P0108, for guidance. Do not alter or break test configuration if a test failure occurs; notify quality assurance.
- 8.4. Only the following persons have the authority to exit/terminate this test or perform a retest: test operators listed in Section 7.0 and GP-B QA.

9.0 Hardware Safety Requirements:

- 9.1. Hardware used in this test is ESD sensitive; special care shall be exercised per the “Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies, and Equipment”, MIL-STD-1686.
- 9.2. Lockheed facilities are under Lockheed configuration control. Only Rich Campbell, or his representative, may change ITF hardware configuration, and all such changes must be documented.
- 9.3. Software version control must be strictly adhered to. Only Bill Given, or his representative, may change software versions, and all such changes must be documented.

10.0 Hardware Configuration

Timing Test Hardware Configuration is shown schematically in Figure 1. Document Configuration by completing table on next page.

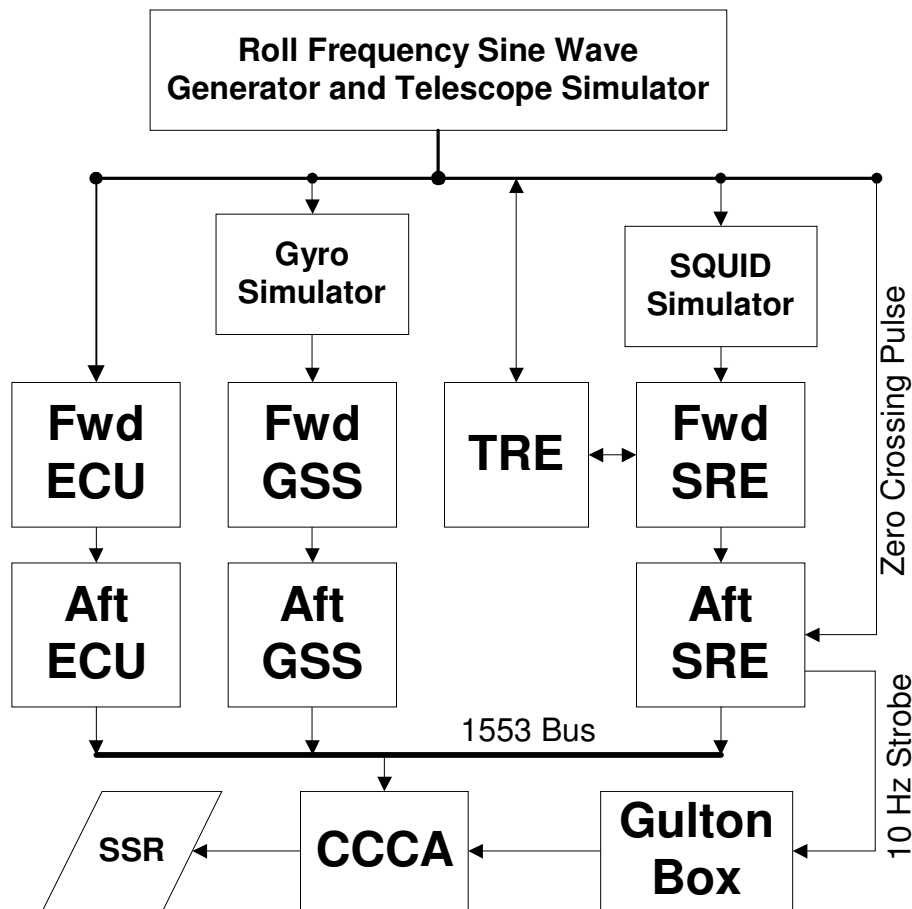


Figure 1: Hardware Configuration

Item	Equipment Description	Qty	Make	PN	SN	Cal Due
1.	Roll Frequency Sine Wave Generator and Telescope Simulator	1				N/A
2.	Gyro Simulator	1				N/A
3.	SQUID Simulator	1				N/A
4.	Forward ECU	1				N/A
5.	Aft ECU	1				N/A
6.	Forward GSS	1				N/A
7.	Aft GSS	1				N/A
8.	TRE	1				N/A
9.	Forward SRE	1				N/A
10.	Aft SRE	1				N/A
11.	Gulton Box	1				N/A
12.	CCCA	1				N/A
13.	SSR	1				N/A
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11.0 Software Control

Software version is documented by completing the following table.

	Software	Version
11.1	Oasis CSTOL	
11.1.1	timing_test2.prc	
11.1.2	scfpodon.prc	
11.1.3	fqt_ephem.prc	
11.2	Command Load, modified for timing test	
11.2.1	pong11921736.load	
11.2.2	pong11921736.tline	
11.2.3	at_init.load	
11.3	Relevant software versions in ITF	
11.3.1	Onboard SPCs in EEPROM	
11.3.2	MSS	
11.3.3	GSW	
11.3.4	GndRT	
11.4	Other	

12.0 Start and End of Test

Record start and end of test time

Test Operator:	Name:	
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Start of test:	Date:	
	Time:	

End of test:	Date:	
	Time:	

13.0 Data File

Record file name

File Name:

14.0 Certification

The undersigned certify that this procedure was performed in whole and that the data recorded above is complete and accurate.

Test Engineer	<input type="text"/>	Date	<input type="text"/>
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This is to certify that the information obtained under this test procedure is as represented and the documentation is completed and correct.

Timing Test REE	<input type="text"/>	Date	<input type="text"/>
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Quality Assurance	<input type="text"/>	Date	<input type="text"/>
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