



Test Report

Herschel

Title: Test Report For SPIRE FM Warm Functional Test (WFT)

CI-No: 125 200

Prepared by:

A. Koppe / S. Hamer

Date:

5.10.2007

Checked by:

S. Idler

Product Assurance:

R. Stritter

Configuration Control:

W. Wietbrock

Project Management:

W. Fricke

5.10.2007

05.10.07

11.10.07

11/10/2007

Distribution:

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Issue	Date	Sheet	Description of Change	Release
1	05.10.07	All	Formal Issue	

Table of Content

0	Test Summary	5
0.1	Unit tested	5
0.2	Applied Procedures:	5
0.3	Procedure Execution Summary:	5
0.4	Summary Conclusion	7
0.5	Open Issues:	7
1	Scope	8
1.1	Objective	8
1.2	Test Flow	8
2	Documents/Drawings	9
2.1	Applicable Documents	9
2.2	Reference Documents	9
2.3	Other Documents	9
2.4	Acronyms & Abbreviations	9
3	Main Observations and Problems Identified	10
3.1	DPU Prime EEPROM Failure (NCRs: 3204)	10
3.2	Command Execution Failures when starting -DRCU-START-P/R-STEP2 (NCR-3631)	10
3.3	Unknown Type 21,4 Packets Reported on CCS (NCR-3633)	10
3.4	Procedure Changes	10
4	Conclusion	11
5	Appendix 1: SPIRE FM WFT As-Run Procedure	12

List of Tables

Table 1: FM SPIRE Warm Units UFT Summary6

The following main observations were made during the test or in the post-test results analysis:

Section/ Step No.	Description	Item Affected	NCR Raised	Affects Test Objective
7.2.2/2.14	WM408565 reporting FCU current lower than limit (<0.46A) – procedure update required	Procedure	No	No
7.2.2/2.14	2x Cmd execution failures (CLEAR_HK_REPORT) reported during DRCU switch on	Error in Script SPIRE-FM-WFT-DRCU-START-P-STEP2	NC-3631	No
7.2.3.19	CCS reports unknown 21,4 packets from APID 1288, but no type 21,4 packets expected during test		NC-3633	No
7.2.3.31	2x Cmd history status not updated as expected		NC-3616 to be updated	No since analysis shows all expected TM type 1 packets produced by SPIRE
7.2.3.37	1x 5,4 event packets reported as expected	Procedure update required	No	No
7.2.5/2.1	Current limits for FCU switch off are wrong – script updated required	Script updated	No	No
7.2.7/2.13	2x Cmd execution failures (CLEAR_HK_REPORT) reported during DRCU switch on	Error in Script SPIRE-FM-WFT-DRCU-START-R-STEP2	NC-3631	No, same as on prime side above
7.2.9.31	2x Cmd history status not updated as expected		NC-3616 to be updated	No since analysis shows all expected TM type 1 packets produced by SPIRE
7.2.9.37	1x 5,4 event packets reported as expected	Procedure update required	No	No
7.2.10	Current limits for FCU & DPU switch off are wrong – script update required	Script/ Procedure updated	No	No
	During test a number of out of limits have been observed on SPIRE parameters	MIB	No	No

Table 1: SPIRE FM WFT Summary

0.4 Summary Conclusion

The SPIRE FM Warm Functional Test (WFT) has been performed using version SPIRE_MIB_FM_2.2.G_PR_2 integrated into the HPSDB issue 14.

There were a couple of open issues arising from the integration and UFT activities, which are listed in the following:

- NC-3276, which leads to longer test times, but was not considered as a blocking point to the test
- PTC Flight Harness, which was connected in advance to the test

A number of Non-Conformance Reports (as listed above) were raised during the test, but none affected the test objectives.

All Spectrometer and Photometer packets were produced correctly.

0.5 Open Issues:

- SPIRE PRIME DPU EEPROM Partition 1 Failure (NCR-3204)
- Spectrometer Mechanism tests, which can only be executed with the HERSCHEL cryostat in horizontal position

1 Scope

This document reports on the WFT performed on the SPIRE FM Instrument to check correct operation, after final electrical integration on the HERSCHEL satellite. The tests were executed using the Herschel CCS & I-EGSE.

1.1 Objective

The objectives of the WFT were:

- To check as much as possible the correct functional operation of the SPIRE FM instrument both on prime and redundant side

1.2 Test Flow

The WFT test flow was structured to reflect nominal operations of SPIRE as much as possible to enable re-use higher-level Satellite tests (SFT and IST).

The flow is as follows:

1. Power on and configure EGSE and satellite for test (ref. to test steps chapter 7.2.1 of test procedure [AD1])
2. Power on SPIRE prime DPU and DRCU (ref. to test steps chapter 7.2.2 of test procedure [AD1])
3. Perform SPIRE Warm Functional tests with S/C vertical (ref. to test steps chapter 7.2.3 of test procedure [AD1])
4. Skip Mechanism and LPU tests due to vertical S/C position (ref. to test steps chapter 7.2.4 & 7.2.6 of test procedure [AD1])
5. Switch OFF SPIRE prime DPU and DRCU (ref. to test steps chapter 7.2.5 of test procedure [AD1])
6. Disable Mil1553B-bus interface and Power off NOMINAL SPIRE warm units
7. Power on SPIRE redundant DPU and DRCU (ref. to test steps chapter 7.2.7 of test procedure [AD1])
8. Skip Mechanism and LPU tests due to vertical S/C position (ref. to test steps chapter 7.2.8 and 7.2.11 of test procedure [AD1])
9. proceed with war Functional test on redundant side (ref. to test steps chapter 7.2.9 of test procedure [AD1])
10. Switch OFF SPIRE redundant DPU and DRCU (ref. to test steps chapter 7.2.10 of test procedure [AD1])
11. Satellite and EGSE switch off (ref. to test steps chapter 7.2.12 of test procedure [AD1])

2 Documents/Drawings

2.1 Applicable Documents

AD 1 SPIRE FM Warm Functional Test

HP-2-ASED-TP-0167,
iss.1

2.2 Reference Documents

None

2.3 Other Documents

None

2.4 Acronyms & Abbreviations

See "as-run" procedure.

3 Main Observations and Problems Identified

3.1 DPU Prime EEPROM Failure (NCRs: 3204)

This is a remaining NCR from Instrument Warm Unit Electrical Integration:

EEPROM Failure in Primary Partition of DPU Prime has been detected during Warm Unit Integration. The NRB agreed to use the secondary partition for further testing. A respective test script to force boot from the secondary partition has been provided by SPIRE.

3.2 Command Execution Failures when starting -DRCU-START-P/R-STEP2 (NCR-3631)

During SPIRE WFT on Prime, 2 x Cmd execution failures (CLEAR_HK_REPORT) reported to the DRCU switch on (error in script SPIRE-FM-WFT-DRCU-START-P-STEP2). The same anomaly was reported on the redundant side (error in script SPIRE-FM-WFT-DRCU-START-R-STEP2).

3.3 Unknown Type 21,4 Packets Reported on CCS (NCR-3633)

During SPIRE WFT, CCS (section 7.2.3.19) reports unknown 21,4 packets from APID 1288, but no type 21,4 packets were expected during the test.

3.4 Procedure Changes

Updates and clarifications in the WFT procedure as required during the test execution were included by redlining. All necessary modification have been reported in chapter 8.1, "Procedure Variation Summary".

The main change is the deletion of all test steps related to the LPU and SPIRE Spectrometer mechanism testing since the S/C was mounted on the Vertical Integration Stand (VIS) during the WFT and could not be moved to horizontal position which is a prerequisite for these tests. These tests can only be performed when the S/C is mounted to the Multi Purpose Trolley (MPT).

4 Conclusion

The SPIRE FM Warm Functional Test (WFT) was successfully performed apart from two open issues (ref. to SPIRE FM WU PTR, HP-2-ASED-MN-1410, dated 28.09.2007):

- The SPIRE PRIME WFT had to be performed booting from the secondary partition of DPU EEPROM (ref. NC-3204).
- LPU and Spectrometer mechanism tests to be performed in horizontal S/C position

The detailed evaluation of the test results will be performed by RAL, the SPIRE instrument supplier, in a separate test report. Initial results have been found satisfactory.

However, it was explained recently by RAL, that due to a mistake in the IEGSE lookup table the load curves of all bolometers do not allow a detailed comparison with the warm instrument level tests and most probably a subset of the already performed tests need to be repeated before cryostat closure. A respective decision by ESA/TAS-F is not yet available.

5 Appendix 1: SPIRE FM WFT As-Run Procedure

Title: SPIRE FM Warm Functional Test

CI-No: 125200

Prepared by: S. Hamer/TERMA AS
A. Körpe Date: 19.09.2007

Checked by: S. Idler 19.09.07

Product Assurance: R. Stritter 14.09.07

Configuration Control: W. Wietbrock 21.09.07

Project Management: W. Fricke 21/09/2007

Distribution: See Distribution List (last page)

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Issue	Date	Sheet	Description of Change	Release
1.0	19.09.07	All	First Formal Issue	

Table of Content

1	Scope	10
1.1	Objective	10
1.2	Test Flow	10
2	Documents/Drawings	12
2.1	Applicable Documents	12
2.2	Reference Documents	12
2.3	Other Documents	13
2.4	Acronyms & Abbreviations	13
3	Configuration	17
3.1	Satellite Configuration	17
3.2	EGSE Configuration	17
3.3	Set-up	17
4	Test Sequence	18
5	Conditions	23
5.1	Personnel	23
5.2	Environmental	23
5.3	General Precautions and Safety	24
5.3.1	General Safety Requirements, Precautions	24
5.3.2	ESD constraints	24
5.3.3	Special QA Requirements	24
5.4	GSE	24
5.4.1	MGSE	24
5.4.2	CVSE	24
5.4.3	EGSE	24
5.4.4	OGSE	25
5.4.5	Special Equipment	25
6	Verification Requirements and Test Criteria	26

7	Test Procedure	27
7.1	Initial EGSE and Satellite Configuration for the Test	27
7.2	Step by Step Procedure	27
7.2.1	EGSE & Satellite Switch On	27
7.2.2	Switch On SPIRE PRIME DPU & DRCU	28
7.2.3	Warm Functional Tests – S/C Vertical	31
7.2.3.1	Procedure SPIRE-FM-WFT-FUNC-SCU-01-P	31
7.2.3.2	Procedure SPIRE-FM-WFT-FUNC-SCU-03-P	32
7.2.3.3	Procedure SPIRE-FM-WFT-FUNC-SCU-06-P	34
7.2.3.4	Procedure SPIRE-FM-WFT-FUNC-SCU-02-P	36
7.2.3.5	Procedure SPIRE-FM-WFT-FUNC-SCU-04-P	37
7.2.3.6	Procedure SPIRE-FM-WFT-FUNC-SCU-05-P	39
7.2.3.7	Procedure SPIRE-FM-WFT-FUNC-SCU-07-P	41
7.2.3.8	Procedure SPIRE-FM-WFT-FUNC-SCU-08-P	43
7.2.3.9	Procedure SPIRE-FM-WFT-FUNC-MCU-01-P	44
7.2.3.10	Procedure: SPIRE-FM-WFT-FUNC-MCU-02-P	46
7.2.3.11	Procedure: SPIRE-FM-WFT-FUNC-MCU-03-P	47
7.2.3.12	Procedure: SPIRE-FM-WFT-FUNC-MCU-04-P	48
7.2.3.13	Procedure SPIRE-FM-WFT-FUNC-BSM-01-P	49
7.2.3.14	Procedure SPIRE-FM-WFT-FUNC-BSM-02C-P	50
7.2.3.15	Procedure SPIRE-FM-WFT-FUNC-BSM-02J-P	51
7.2.3.16	Procedure SPIRE-FM-WFT-FUNC-BSM-03-P	52
7.2.3.17	Procedure SPIRE-FM-WFT-FUNC-BSM-05A-P	53
7.2.3.18	Procedure SPIRE-FM-WFT-FUNC-BSM-05B-P	54
7.2.3.19	Procedure SPIRE-FM-WFT-FUNC-BSM-06-P	56
7.2.3.20	Procedure SPIRE-FM-WFT-FUNC-BSM-OFF-P	57
7.2.3.21	Procedure SPIRE-FM-WFT-FUNC-DCU-01-P	58
7.2.3.22	Procedure SPIRE-FM-WFT-FUNC-DCU-02-P	59
7.2.3.23	Procedure SPIRE-FM-WFT-FUNC-DCU-03-P	62
7.2.3.24	Procedure SPIRE-FM-WFT-FUNC-DCU-04-PHOT-P	63
7.2.3.25	Procedure SPIRE-FM-WFT-FUNC-DCU-11-PHOT-P	65
7.2.3.26	Procedure SPIRE-FM-WFT-FUNC-DCU-13-PHOT-P	67
7.2.3.27	Procedure SPIRE-FM-WFT-FUNC-DCU-14-PHOT-P	69

7.2.3.28	Procedure SPIRE-FM-WFT-PDET-OFF-P	71
7.2.3.29	Procedure SPIRE-FM-WFT-FUNC-DCU-04-SPEC-P	73
7.2.3.30	Procedure SPIRE-FM-WFT-FUNC-DCU-11-SPEC-P	75
7.2.3.31	Procedure SPIRE-FM-WFT-FUNC-DCU-13-SPEC-P	77
7.2.3.32	Procedure SPIRE-FM-WFT-FUNC-DCU-14-SPEC-P	79
7.2.3.33	Procedure SPIRE-FM-WFT-SDET-OFF-P	81
7.2.3.34	Procedure SPIRE-FM-WFT-FUNC-SMEC-01-P	82
7.2.3.35	Procedure SPIRE-FM-WFT-FUNC-SMEC-03-P	85
7.2.3.36	Procedure SPIRE-FM-WFT-SMEC-OFF-P	87
7.2.3.37	Procedure SPIRE-FM-WFT-MCU-OFF-P	88
7.2.3.38	Procedure SPIRE-FM-WFT-SCU-OFF-P	89
7.2.4	Warm Functional Tests – S/C Horizontal	90
7.2.4.1	Procedure SPIRE-FM-WFT-FUNC-MCU-01-P	90
7.2.4.2	Procedure SPIRE-FM-WFT-FUNC-SMEC-01-P	92
7.2.4.3	Procedure SPIRE-FM-WFT-FUNC-SMEC-03-P	94
7.2.4.4	Procedure SPIRE-FM-WFT-FUNC-SMEC-02A-P	96
7.2.4.5	Procedure SPIRE-FM-WFT-FUNC-SMEC-04A-P	98
7.2.4.6	Procedure SPIRE-FM-WFT-FUNC-SMEC-09-P	99
7.2.4.7	Procedure SPIRE-FM-WFT-FUNC-SMEC-07-P	101
7.2.4.8	Procedure SPIRE-FM-WFT-FUNC-SMEC-02B-P	103
7.2.4.9	Procedure SPIRE-FM-WFT-SMEC-OFF-P	104
7.2.4.10	Procedure SPIRE-FM-WFT-MCU-OFF-P	105
7.2.5	Switch Off DRCU & DPU PRIME	106
7.2.6	Procedure SPIRE-FM-WFT-LPU-01-P	107
7.2.7	Switch On SPIRE REDUNDANT DPU & DRCU	108
7.2.8	Warm Functional Tests – S/C Horizontal	110
7.2.8.1	Procedure SPIRE-FM-WFT-FUNC-MCU-01-R	110
7.2.8.2	Procedure SPIRE-FM-WFT-FUNC-SMEC-01-R	112
7.2.8.3	Procedure SPIRE-FM-WFT-FUNC-SMEC-03-R	114
7.2.8.4	Procedure SPIRE-FM-WFT-FUNC-SMEC-02A-R	115
7.2.8.5	Procedure SPIRE-FM-WFT-FUNC-SMEC-04A-R	116
7.2.8.6	Procedure SPIRE-FM-WFT-FUNC-SMEC-09-R	117
7.2.8.7	Procedure SPIRE-FM-WFT-FUNC-SMEC-07-R	119
7.2.8.8	Procedure SPIRE-FM-WFT-FUNC-SMEC-02B-R	120

7.2.8.9	Procedure SPIRE-FM-WFT-SMEC-OFF-R	121
7.2.8.10	Procedure SPIRE-FM-WFT-MCU-OFF-R	122
7.2.9	Warm Functional Tests – S/C Vertical	123
7.2.9.1	Procedure SPIRE-FM-WFT-FUNC-SCU-01-R	123
7.2.9.2	Procedure SPIRE-FM-WFT-FUNC-SCU-03-R	124
7.2.9.3	Procedure SPIRE-FM-WFT-FUNC-SCU-06-R	126
7.2.9.4	Procedure SPIRE-FM-WFT-FUNC-SCU-02-R	128
7.2.9.5	Procedure SPIRE-FM-WFT-FUNC-SCU-04-R	129
7.2.9.6	Procedure SPIRE-FM-WFT-FUNC-SCU-05-R	131
7.2.9.7	Procedure SPIRE-FM-WFT-FUNC-SCU-07-R	133
7.2.9.8	Procedure SPIRE-FM-WFT-FUNC-SCU-08-R	135
7.2.9.9	Procedure SPIRE-FM-WFT-FUNC-MCU-01-R	136
7.2.9.10	Procedure: SPIRE-FM-WFT-FUNC-MCU-02-R	138
7.2.9.11	Procedure: SPIRE-FM-WFT-FUNC-MCU-03-R	139
7.2.9.12	Procedure: SPIRE-FM-WFT-FUNC-MCU-04-R	140
7.2.9.13	Procedure SPIRE-FM-WFT-FUNC-BSM-01-R	141
7.2.9.14	Procedure SPIRE-FM-WFT-FUNC-BSM-02C-R	142
7.2.9.15	Procedure SPIRE-FM-WFT-FUNC-BSM-02J-R	143
7.2.9.16	Procedure SPIRE-FM-WFT-FUNC-BSM-03-R	144
7.2.9.17	Procedure SPIRE-FM-WFT-FUNC-BSM-05A-R	145
7.2.9.18	Procedure SPIRE-FM-WFT-FUNC-BSM-05B-R	146
7.2.9.19	Procedure SPIRE-FM-WFT-FUNC-BSM-06-R	148
7.2.9.20	Procedure SPIRE-FM-WFT-BSM-OFF-R	149
7.2.9.21	Procedure SPIRE-FM-WFT-FUNC-DCU-01-R	150
7.2.9.22	Procedure SPIRE-FM-WFT-FUNC-DCU-02-R	151
7.2.9.23	Procedure SPIRE-FM-WFT-FUNC-DCU-03-R	154
7.2.9.24	Procedure SPIRE-FM-WFT-FUNC-DCU-04-PHOT-R	155
7.2.9.25	Procedure SPIRE-FM-WFT-FUNC-DCU-11-PHOT-R	157
7.2.9.26	Procedure SPIRE-FM-WFT-FUNC-DCU-13-PHOT-R	159
7.2.9.27	Procedure SPIRE-FM-WFT-FUNC-DCU-14-PHOT-R	161
7.2.9.28	Procedure SPIRE-FM-WFT-PDET-OFF-R	163
7.2.9.29	Procedure SPIRE-FM-WFT-FUNC-DCU-04-SPEC-R	165

7.2.9.30	Procedure SPIRE-FM-WFT-FUNC-DCU-11-SPEC-R	167
7.2.9.31	Procedure SPIRE-FM-WFT-FUNC-DCU-13-SPEC-R	169
7.2.9.32	Procedure SPIRE-FM-WFT-FUNC-DCU-14-SPEC-R	171
7.2.9.33	Procedure SPIRE-FM-WFT-SDET-OFF-R	173
7.2.9.34	Procedure SPIRE-FM-WFT-FUNC-SMEC-01-R	175
7.2.9.35	Procedure SPIRE-FM-WFT-FUNC-SMEC-03-R	177
7.2.9.36	Procedure SPIRE-FM-WFT-SMEC-OFF-R	178
7.2.9.37	Procedure SPIRE-FM-WFT-MCU-OFF-R	179
7.2.9.38	Procedure SPIRE-FM-WFT-SCU-OFF-R	180
7.2.10	Switch Off DRCU & DPU REDUNDANT	181
7.2.11	Procedure SPIRE-FM-WFT-LPU-01-R	183
7.2.12	Satellite & EGSE Switch Off	184
8	Summary Sheets	185
8.1	Procedure Variation Summary	186
8.2	Non Conformance Report (NCR) Summary	187
8.3	Sign-off Sheet	188

Table of Figures

No table of figures entries found.

List of Tables

Table 8.1-1: Procedure Variation Sheet 186
Table 8.2-1: Non-Conformance Record Sheet..... 187

1 Scope

This document describes the set of warm functional tests to be performed on the SPIRE FM Instrument to check correct operation using the Herschel CCS after final mating between the HERSCHEL Cryostat and the SVM.

Specifically the functional test will verify the correct functioning of all subsystems at warm environmental conditions before cool down. Both redundancies are tested within this sequence.

Constraints

- This procedure requires the presence of SPIRE personnel as the I-EGSE will be required to assess the results online as part of the pass/fail criteria.
- Mechanism tests (marked in yellow in the sequence), which include opening and closing the internal SMEC Launch Latch shall only be performed with the Herschel Cryostat horizontal.
- Before carrying out the next procedure within the test sequence always ask for the go ahead by the SPIRE staff.
- Chapter 4 of this document specifies the sequence to be executed. Each of the steps in the sequence corresponds to procedures in sections 4.1 and 4.2.
- The procedure tables in section 4.1 and 4.2 include blank boxes where the actual values of parameters can be noted. Based on the comparison with the expected values the success or failure of a step should be recorded in the final column of the table.
- The last row in a procedure table should be used to record the overall Pass/Fail result of each test.
- Any text in boldface in the procedural steps generally indicates an action which may have to be performed manually by the CCS staff.

1.1 Objective

1. The objective of the test is to checkout the FM instrument.

1.2 Test Flow

This test flow is structured to reflect nominal operations of the FM SPIRE.

The flow is as follows:

1. Power on and configure SPIRE I-EGSE for test
2. Power on and configure SVM for test

3. Power on NOMINAL SPIRE Prime DPU and enable Mil1553B-bus interface
4. Power on DRCU(FCU) Prime
5. Run test sequence according to RD2 with exception of DPU and DRCU switch on which is covered by ASED procedure
6. Power off MCU Prime
7. Power off DRCU(FCU) Prime
8. Disable Mil1553B-bus interface and Power off SPIRE Prime DPU
9. Repeat Steps 3 – 10 for Spire Redundant including bus
10. Power off SVM
11. Switch off all EGSE

2 Documents/Drawings

2.1 Applicable Documents

AD 1	FM SPIRE PFM Final Electrical Integration Procedure	HP-2-ASED-TP-166
AD 2	Herschel PCDU & CDMS Nominal Switch On/Off Procedure	HP-2-ASED-PR-070 in preparation
AD 3	Herschel SAT Emergency Switch Off Procedure	HP-2-ASED-PR-071
AD 4	PA Plan	HP-2-ASED-PL-0007
AD 5	I-EGSE Switch ON/OFF Procedure	TBI
AD 6	Test Specification for Herschel Instrument AVM & FM Tests Performed at Satellite Level	H-P-2-ASP-TS-1083
AD 7	H-P GDIR	H-P-1-ASPI-SP-0027
AD 8	SPIRE I-EGSE Set-Up, Issue 1.2	SPIRE-RAL-DOC-002841

2.2 Reference Documents

RD 1	Herschel Planck Central Checkout System System User Manual	H-P-4-TE-MA-0010
RD 2	SPIRE Warm Functional Test Procedures	SPIRE-RAL-PRC-2422, iss. 2.3
RD 3	Herschel CDMU ASW S/W Interface Control Document	H-P-4-SSF-IC-0001
RD 4	Herschel CDMU BSW S/W Interface Control Document	H-P-4-SES-NT-0076
RD 5	SPIRE IID-B	SCI-PT-IIDB/SPIRE-02124
RD 6	SPIRE Functional Test Specification Iss. 1.4	SPIRE-RAL-DOC-001652
RD 7	SPIRE Instrument User Manual Iss. 1.0	SPIRE-RAL-PRJ-002395
RD 8	H/P OBT-UTC Time Synchronisation Technical Note Iss. 1.3	PT-CMOC-OPS-TN-6604-OPS- OGH

2.3 Other Documents

None

2.4 Acronyms & Abbreviations

1553	MIL-STD-1553B conform communication interface
AAD	Attitude Anomaly Detector
ACC	ACMS Control Computer
ACMS	Attitude Control and Measurement Subsystem
AD	Applicable Document
AIR	ACC In Reconfiguration
AIT	Assembly, Integration and Test
AIV	Assembly, Integration and Verification
APID	Application Process ID
ASW	Application Software
AVM	Avionics Model
BOLC	BOLometer Control unit (PACS)
BSW	Basic Software
CBH	Catalyst Bed Heater
CCS	Central Check-out System
CCSDS	Consultative Committee for Space Data Systems
CDMU	Control and Data Management Unit
CDMS	Control and Data Management Sub-system
CIR	CDMU In Reconfiguration
CLCW	Command Link Control Word
CLTU	Command Link Transmission Unit
CPDU	Command Pulse Distribution Unit
CRS	Coarse Rate Sensor
CTR	Central on board Reference Time
DCU	Detector Control Unit (SPIRE)
DEC	Detectors Electronics Control unit (PACS)
DMC	Detector and Mechanism Control unit (PACS)
DPU	Digital Processing Unit

DRCU	Detector Readout & Control Unit (SPIRE)
EEPROM	Electrically Erasable PROM
EGSE	Electrical Ground Support Equipment
FCL	Fold-back Current Limiter
FCU	FPU Control Unit (Spire)
FCV	Flow Control Valves
FDIR	Failure Detection, Isolation, and Recovery
FPU	Focal Plane Unit
GDIR	General Design and Interface Requirement
GRP	Group Heaters Switch
HBR	High Bit Rate
HL/HLC	High Level command
HP/HPC	High Priority commands
HPLM	Herschel PayLoad Module
HPADB	Herschel Planck System Data Base
HW	Hardware
i.a.w.	In accordance with
I/F	InterFace
I/O	Input/Output
ICD	Interface Control Document
IST	Integrated System Test
LCL	Latching Current Limiter
LV	Latching Valves
LBR	Low Bit Rate
MAP	Multiplexed Access Point
MBR	Medium Bit Rate
MCU	Mechanisms Control Unit (SPIRE)
MEC	Mechanisms Electronics Control unit (PACS)
ML 16	Memory Load command (ML 16)
MM	Memory Module
MOIS	Mission Operations Information System
MTL	Mission Timeline

NRZ-L	Non Return to Zero – Litton
OBCP	On-Board Control Procedure
OBDH	On-Board Data Handling
OBMF	On-Board Monitoring Function
OBRT/OBT	On-Board Reference Time
OIRD	Operation Interface Requirement Document
PACS	Photodetector Array Camera & Spectrometer
P/L	Payload
PCDU/PCS	Power Control Distribution Unit/Power Control Subsystem
PM	Processor Module
PROM	Programmable Read Only Memory
PSK	Phase Shift Keying
RA	Rate Anomaly
RAM	Random Access Memory
RCS	Reaction Control Subsystem
RD	Reference Document
RF	Radio Frequency
RM	Reconfiguration Module
RT	1553 Remote Terminal
RTU	RT Unit
RTA	RTU
RWL	Reaction Wheel Assembly
SA	1553 Remote Terminal Sub Address
SAS	Sun Acquisition Sensor
SCOE	Special Check-out Equipment
SCU	Subsystems Control Unit (SPIRE)
SIR	S/C In Reconfiguration
SIT	Subsystem Integrated Test
SP	Sun Pointing
SPIRE	Spectral & Photometric Imaging Receiver
SPU	Signal Processing Unit (PACS)
SSMM	Solid State Mass Memory

STR	Star Tracker
SVM	Service Module
SW	Software
TAI	International Atomic Time
TC	TeleCommand
TFG	Transfer Frame Generator
TM	TeleMetry
TTC	Telemetry Tracking & Command subsystem
TTR	Telemetry Telecommand and Reconfiguration
UFT	Unit Functional Test
VC	Virtual Channel
WD	Watchdog

3 Configuration

3.1 Satellite Configuration

The test requires use of the FM SVM powered on in its basic test mode (i.e. quick switch on (PCDU & CDMS) in accordance with AD 2. SPIRE FM units will be powered ON as per this procedure and assumes that FPU has already been successfully integrated to the warm units.

3.2 EGSE Configuration

This test requires the EGSE to be configured and elements powered on in accordance with AD 2.

I-EGSE shall be configured and connected to the HPCCS in accordance with AD 5 & AD 9.

3.3 Set-up

SPIRE Test Scripts for the test must be loaded on to the HPCCS and checked in prior to start of test.

4 Test Sequence

The following SPIRE test scripts are required for execution on the HPCCS:

No.	Tcl Script Name	Comment	Confirmed
1.	SPIRE-FM-WFT-DPU-START-P-SP	DPU ON PRIME	
2.	SPIRE-FM-WFT-DRCU-START-P-STEP1	DRCU ON PRIME Step1	
3.	SPIRE-FM-WFT-DRCU-START-P-STEP2	DRCU ON PRIME Step2	
4.	SPIRE-FM-WFT-FUNC-SCU-01-P	SCU science generation check	
5.	SPIRE-FM-WFT-FUNC-SCU-03-P	SCU DC thermometry check	
6.	SPIRE-FM-WFT-FUNC-SCU-06-P	SCU AC thermometry check	
7.	SPIRE-FM-WFT-FUNC-SCU-02-P	SCU Nominal Science Contents Check	
8.	SPIRE-FM-WFT-FUNC-SCU-07-P	Sorption Cooler Heater Check	
9.	SPIRE-FM-WFT-FUNC-SCU-04-P	Photometer Calibration Check	
10.	SPIRE-FM-WFT-FUNC-SCU-05-P	Spectrometer Calibration Check	
11.	SPIRE-FM-WFT-FUNC-SCU-08-P	SCU Test Pattern Check	
12.	SPIRE-FM-WFT-FUNC-MCU-01-P	MCU (Prime) Boot Check	
13.	SPIRE-FM-WFT-FUNC-MCU-02-P	MCU Nominal Frame Generation Check	
14.	SPIRE-FM-WFT-FUNC-MCU-03-P	MCU Nominal Science Contents Check	
15.	SPIRE-FM-WFT-FUNC-MCU-04-P	MCU Test Pattern Check	
16.	SPIRE-FM-WFT-FUNC-BSM-01-P	BSM (Prime) Chop/Jiggle Sensor Check	
17.	SPIRE-FM-WFT-FUNC-BSM-02C-P	BSM (Prime) Chop Sensor Polarity Check	
18.	SPIRE-FM-WFT-FUNC-BSM-02J-P	BSM (Prime) Jiggle Sensor Polarity Check	
19.	SPIRE-FM-WFT-FUNC-BSM-03-P	BSM (Prime) Open Loop Dynamics Check	
20.	SPIRE-FM-WFT-FUNC-BSM-05A-P	BSM (Prime) Open Loop Chop Test	
21.	SPIRE-FM-WFT-FUNC-BSM-05B-P	BSM (Prime) Closed Loop Chop Test	
22.	SPIRE-FM-WFT-FUNC-BSM-06-P	BSM (Prime) operational Mode Check	
23.	SPIRE-FM-WFT-BSM-OFF-P	BSM (Prime) Switch OFF	
24.	SPIRE-FM-WFT-FUNC-DCU-01-P	DCU Nominal Science Packet Generation Check PRIME	

DCU-11 →

No.	Tcl Script Name	Comment	Confirmed
25.	SPIRE-FM-WFT-FUNC-DCU-02-P	DCU High Speed Link Check PRIME	
26.	SPIRE-FM-WFT-FUNC-DCU-03-P	DCU Test pattern Check PRIME	
27.	SPIRE-FM-WFT-FUNC-DCU-04-PHOT-P	Photometer LIAs Check PRIME	
28.	SPIRE-FM-WFT-FUNC-DCU-13-PHOT-P	Photometer BDAs Integrity Check PRIME	
29.	SPIRE-FM-WFT-FUNC-DCU-14-PHOT-P	Photometer BDAs Noise Check PRIME	
30.	SPIRE-FM-WFT-PDET-OFF-P	Photometer BDAs Switch OFF PRIME	
31.	SPIRE-FM-WFT-FUNC-DCU-04-SPEC-P	Spectrometer LIAs Check PRIME	
32.	SPIRE-FM-WFT-FUNC-DCU-11-SPEC-P	Spectrometer BDAs Integrity Check PRIME	
33.	SPIRE-FM-WFT-FUNC-DCU-13-SPEC-P	Spectrometer BDAs Integrity Check PRIME	
34.	SPIRE-FM-WFT-FUNC-DCU-14-SPEC-P	Spectrometer BDAs Noise Check PRIME	
35.	SPIRE-FM-WFT-SDET-OFF-P	Spectrometer BDAs Switch OFF PRIME	
36.	SPIRE-FM-WFT-MCU-OFF-P	MCU Switch OFF PRIME	
37.	SPIRE-FM-WFT-SCU-OFF-P	SCU Switch OFF PRIME	
38.	SPIRE-FM-WFT-DRCU-OFF-P	DRCU Switch OFF PRIME	
39.	SPIRE-FM-WFT-FUNC-SMEC-01-P	SMEC Encoder and LVDT check PRIME	
40.	SPIRE-FM-WFT-FUNC-SMEC-03-P	SMEC Encoder Levels Check PRIME	
41.	SPIRE-FM-WFT-FUNC-SMEC-02A-P	SMEC Open Launch Latch PRIME	
42.	SPIRE-FM-WFT-FUNC-SMEC-04A-P	SMEC Open Loop Position check PRIME	
43.	SPIRE-FM-WFT-FUNC-SMEC-09-P	SMEC Open Loop Scan check PRIME	
44.	SPIRE-FM-WFT-FUNC-SMEC-07-P	SMEC Closed Loop Scan check PRIME	
45.	SPIRE-FM-WFT-FUNC-SMEC-02B-P	SMEC Close Launch Latch PRIME	
46.	SPIRE-FM-WFT-SMEC-OFF-P	SMEC Switch OFF PRIME	
REDUNDANT UNIT SCRIPTS			
47.	SPIRE-FM-WFT-DPU-START-R-PP	DPU ON REDUN	
48.	SPIRE-FM-WFT-DRCU-START-R-STEP1	DRCU ON REDUN Step1	
49.	SPIRE-FM-WFT-DRCU-START-R-STEP2	DRCU ON REDUN Step2	

No.	Tcl Script Name	Comment	Confirmed
50.	SPIRE-FM-WFT-FUNC-SCU-01-R	SCU Nominal Science Packet Generation Check REDUN.	
51.	SPIRE-FM-WFT-FUNC-SCU-03-R	SCU DC Thermometry Check REDUN.	
52.	SPIRE-FM-WFT-FUNC-SCU-06-R	SCU AC Thermometry Check REDUN.	
53.	SPIRE-FM-WFT-FUNC-SCU-02-R	SCU Nominal Science Contents Check REDUN.	
54.	SPIRE-FM-WFT-FUNC-SCU-04-R	Photometer Calibrator Check REDUN.	
55.	SPIRE-FM-WFT-FUNC-SCU-05-R	Spectrometer Calibrator Check REDUN.	
56.	SPIRE-FM-WFT-FUNC-SCU-07-R	Sorption Cooler Heaters Check REDUN.	
57.	SPIRE-FM-WFT-FUNC-SCU-08-R	SCU Test Pattern Check REDUN.	
58.	SPIRE-FM-WFT-FUNC-MCU-01-R	MCU Boot Check REDUN.	
59.	SPIRE-FM-WFT-FUNC-MCU-02-R	MCU Nominal Science Packet Generation Check REDUN.	
60.	SPIRE-FM-WFT-FUNC-MCU-03-R	MCU Nominal Science Contents Check REDUN.	
61.	SPIRE-FM-WFT-FUNC-MCU-04-R	MCU Test Pattern Check REDUN	
62.	SPIRE-FM-WFT-FUNC-BSM-01-R	BSM Chop/Jiggle Sensors Check REDUN.	
63.	SPIRE-FM-WFT-FUNC-BSM-02c-R	BSM Chop Sensor Polarity Check REDUN.	
64.	SPIRE-FM-WFT-FUNC-BSM-02j-R	BSM Jiggle Sensor Polarity Check REDUN.	
65.	SPIRE-FM-WFT-FUNC-BSM-03-R	BSM Open Loop Dynamics Check REDUN.	
66.	SPIRE-FM-WFT-FUNC-BSM-05A-R	BSM Open Loop Chop Test REDUN.	
67.	SPIRE-FM-WFT-FUNC-BSM-05B-R	BSM Closed Loop Chop Test REDUN.	
68.	SPIRE-FM-WFT-FUNC-BSM-06-R	BSM Operational Mode Check REDUN	
69.	SPIRE-FM-WFT-BSM-OFF-R	BSM Switch OFF REDUN.	
70.	SPIRE-FM-WFT-FUNC-DCU-01-R	DCU Nominal Science Packet Generation Check REDUN.	
71.	SPIRE-FM-WFT-FUNC-DCU-02-R	DCU High Speed Link Check REDUN.	
72.	SPIRE-FM-WFT-FUNC-DCU-03-R	DCU Test pattern Check	

No.	Tcl Script Name	Comment	Confirmed
		REDUN.	
73.	SPIRE-FM-WFT-FUNC-DCU-04-PHOT-R	Photometer LIAs Check REDUN.	
74.	SPIRE-FM-WFT-FUNC-DCU-11-PHOT-R	Photometer BDAs Switch ON Check REDUN.	
75.	SPIRE-FM-WFT-FUNC-DCU-13-PHOT-R	Photometer BDAs Integrity Check REDUN.	
76.	SPIRE-FM-WFT-FUNC-DCU-14-PHOT-R	Photometer BDAs Noise Check REDUN.	
77.	SPIRE-FM-WFT-PDET-OFF-R	Photometer BDAs Switch OFF REDUN.	
78.	SPIRE-FM-WFT-FUNC-DCU-04-SPEC-R	Spectrometer LIAs Check REDUN.	
79.	SPIRE-FM-WFT-FUNC-DCU-11-SPEC-R	Spectrometer BDAs Integrity Check REDUN.	
80.	SPIRE-FM-WFT-FUNC-DCU-13-SPEC-R	Spectrometer BDAs Integrity Check REDUN.	
81.	SPIRE-FM-WFT-FUNC-DCU-14-SPEC-R	Spectrometer BDAs Noise Check REDUN.	
82.	SPIRE-FM-WFT-SDET-OFF-R	Spectrometer BDAs switch OFF REDUN.	
83.	SPIRE-FM-WFT-MCU-OFF-R	MCU Switch OFF REDUN.	
84.	SPIRE-FM-WFT-SCU-OFF-R	SCU Switch OFF REDUN.	
85.	SPIRE-FM-WFT-DRCU-OFF-R	DRCU Switch OFF REDUN	
86.	SPIRE-FM-WFT-FUNC-SMEC-01-R	SMEC Encoder and LVDT Check REDUN.	
87.	SPIRE-FM-WFT-FUNC-SMEC-03-R	SMEC Encoder Levels Check REDUN.	
88.	SPIRE-FM-WFT-FUNC-SMEC-02A-R	SMEC Open Launch Latch REDUN.	
89.	SPIRE-FM-WFT-FUNC-SMEC-04A-R	SMEC Open Loop Position Check REDUN.	
90.	SPIRE-FM-WFT-FUNC-SMEC-09-R	SMEC Open Loop Scan Check REDUN.	
91.	SPIRE-FM-WFT-FUNC-SMEC-07-R	SMEC Closed Loop Scan Check REDUN.	
92.	SPIRE-FM-WFT-FUNC-SMEC-02B-R	SMEC Close Launch Latch REDUN.	
93.	SPIRE-FM-WFT-SMEC-OFF-R	SMEC Switch OFF REDUN.	

The HPCSS must also have the following MIB files for SPIRE loaded:

HPCSS Software	Version	Comment	Confirmed Installed
SPIRE MIB version	15		✓

The SPIRE I-EGSE will be running the following software for the test:

I-EGSE Software	Version	Comment
SPIRE MIB version	2.2.6b	
SCOS version		

5 Conditions

5.1 Personnel

Responsibility	Name / Organisation
Test Director	BERNARD COLLAUDIN / TAS-F
Test Conductor	AXEL KOPPE / ASED
EGSE Operator	V. LAGIOLA / S. HANSE TERMA
Electrical Engineer	N/A
Specialist Engineer	N/A
Element Cognizant	S. IDLER / ASED
PA Responsible	R. STRITZER / ASED
Instrument Representative	S. SIDALL / RAL
Customer Representative	N/A
ESA Representative	C. SCHARMBERG / ESA

5.2 Environmental

The actual clean room environmental conditions for the test shall be recorded below.

Environmental	Nominal	Actual	P	N
Clean Room Class	class 100000 or better		✓	
Temperature	22°C ± 3°C	20,1	✓	
Rel. Humidity	40 % - 60 %	50,7	✓	
Pressure	Ambient	AMBIENT	✓	

5.3 General Precautions and Safety

Non-test specific precautions and safety considerations are detailed in section 5.3 of AD 2. Specific safety issues and general precautions for the tests to be performed are detailed in the following sections.

5.3.1 General Safety Requirements, Precautions

In the event of unrecoverable anomaly requiring emergency switch off of the satellite, the switch off shall be performed in accordance with AD 3.

5.3.2 ESD constraints

Normal ESD constraints are to be observed during the test.

5.3.3 Special QA Requirements

None.

5.4 GSE

Non-test specific GSE details are provided in section 5.4 of AD 2. Specific GSE needs for the tests to be performed are detailed in the following sections.

5.4.1 MGSE

None.

5.4.2 CVSE

None.

5.4.3 EGSE

The I-EGSE is required for this test and will be connected to the HPCCS in accordance with AD 5.

5.4.4 OGSE

None.

5.4.5 Special Equipment

None.

6 Verification Requirements and Test Criteria

This is a functional check of all SPIRE PFM subsystems in warm conditions. No specific requirements are to be verified.

Functional performance and status parameter actual values recorded will be checked during the test and must be the same as the nominal status value indicated.

The test will only be deemed successful once all offline analysis of the results has been performed. Typically, the PTR will be held before completion of this activity and therefore only a preliminary assessment of the test success can be provided to allow disconnection of any specific GSE required for the test and which needs to be removed before further activities can be performed.

7 Test Procedure

7.1 Initial EGSE and Satellite Configuration for the Test

The Spire FM Final Integration according to the Test Procedure ref. AD 1 must be successfully completed before the execution of this procedure.

The EGSE and Satellite must be configured according to AD 2 prior to start of test.

In the event of emergency the Satellite SHALL be switched down according to AD 3.

7.2 Step by Step Procedure

7.2.1 EGSE & Satellite Switch On

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	Install Test Box and Satellite & EGSE Switch On						
1.1	Confirm I-EGSE physically connected to HPCCS	OK					
1.2	If not already on, switch on HPCCS, SCOEs and Satellite/SVM and configure into Basic Test Mode i.a.w. AD 2 Section 7.1 to 7.5					✓	
1.3	Record Test Session Name: <i>2007-09-26-04-28_herschel_wu_hpws23_REALTIME-SPR-WFT</i>						✓
1.4	Confirm that EGSE and Satellite are in the correct configuration as per AD 2	OK					
1.5	If not already selected, from HPCCS command CDMU to use SPIRE Bus Profile (Profile 3): DC819160 SelectActiveSCBP DH049160 =3	OK		OK	AND: ZAD07999 SPIRE Bus Profile	✓	

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
1.6	Verify correct bus profile selected: DEF5F160	3		3		✓	
1.7	Switch on & configure SPIRE I-EGSE i.a.w. AD5 & AD 9						
1.8	Confirm SPIRE I-EGSE is in the correct configuration as per AD5 & AD 9	OK		OK		✓	
1.9	From HPCCS Test Conductor console issue command to connect to SPIRE I-EGSE connect HSPIREEGSE						
1.10	Confirm from HPCCS and SPIRE I-EGSE that the connection has been established	OK		OK			
1.11	On HPCCS start the following test script: ALL_SubscribeParams.tcl	OK		OK			
	START OF SPIRE WFT						
1.12	Load Synoptics INSTRUMENTS on HPCCS to display SPIRE status overview			OK			

7.2.2 Switch On SPIRE PRIME DPU & DRCU

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	SWITCH ON DPU PRIME						
	Initial Conditions: DPU-A & DRCU A OFF						

05:43

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2.1	<p>On HPCCS execute the following test script to power on the SPIRE DPU and DRCU.</p> <p>S102999SCVT009_ASDWFTSPIR_PWR_ON_P.tcl</p> <p>Respond to the prompts as listed below:</p>			OK	<p>AND: ZAD07999, ZAD14999 MIM: LCL_HERSHEL</p>		
	<p><i>The test script (calling the specific SPIRE scripts as appropriate) powers ON the DPU and enables the MilBus before forcebooting the ASW (NB: currently powers ON DPU using secondary partition). The DRCU is then powered and configured.</i></p>						
2.2	<p>Check that Nominal and Critical HK packets are arriving at the HPCCS:</p> <p>SPIRE Nominal HK:</p> <ul style="list-style-type: none"> (type ,subtype) : (3,25) APID : 0x502 (1282) <p>SPIRE Critical HK:</p> <ul style="list-style-type: none"> (type ,subtype) : (3,25) APID: 0x500 (1280) 	OK		OK		✓	
2.3	On I-EGSE/HPCCS check that THSK parameter is refreshing every second	OK		OK		✓	
2.4	On I-EGSE check that TM2N parameter is incrementing by 1 every second	OK		OK		✓	
2.5	On I-EGSE check that TM1N parameter is incrementing by 1 every 2 second	OK		OK		✓	

05:53

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2.6	On HPCCS check the consistency of the SPIRE on board time to the HCDMU time and the CCS (need to clarify if SPIRE requests a time verification report as part of DPU-ON sequence).	OK		OK	SMD2V505 = -1591 ✓		
2.7	On IEGSE check the consistency between SCOS time and THSK and QLA time.	OK		OK			
2.8	Continue test script by responding to prompt SWITCH ON DRCU PRIME						
2.9	When prompted by test script:						
2.10	On I-EGSE/HPCCS check that THSK parameter is not refreshing anymore	OK		OK			
2.11	On I-EGSE/HPCCS check that TM2N parameter is not incrementing anymore	OK		OK			
2.12	Continue test script by responding to prompt to power on DRCU			OK			
2.13	On I-EGSE check that THSK parameter is refreshing every second	OK		OK			
2.14	On I-EGSE check that TM2N parameter is incrementing by 1 every second	OK		OK	OK @ 2x and 6x rate line		
2.15	Continue test script by responding to prompt SPIRE PRIME DPU & DRCU POWER ON COMPLETE						

DPU (LCL 71)
Current = 0.44A

OK
Error in Script!
SPIRE-FILWPT
DRCU-STARTED
-STEP 2

06:08
5/11

Sep 26, 07 16:23

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Page 1/1

Command history display printout from time: 2007.269.05.49.52.237 to time: 2007.269.05.59.49.210
Current printout time: 2007.269.16.23.02.965 Display view mode: BRIEF Sort order: RELEASE Filter status: INACTIVE
Number of commands printed: 50

Table with columns: Name, Description, Sequence, Release Time, Execution Time, S D C G B I L ST Source, Update Time, R GTO A S 012345 C. Contains command history entries for SET_OBSID, DEFINE_NEW_HK_REPORT, SReq_Obs_TC_Params_Chunks, etc.

Vertical handwritten text on the right margin: Sat 7.2.2.1 Step 2.13

7.2.3 Warm Functional Tests – S/C Vertical

7.2.3.1 Procedure SPIRE-FM-WFT-FUNC-SCU-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU science packet generation check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail Criteria	Specified SCU HK parameters show expected increment.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-01-P.tcl	SCUFRAMECNT TM5N	0/31 0x3FFF/1	OK	✓
Test Result (Pass/Fail): Pass SNA 06:11					

7.2.3.2 Procedure SPIRE-FM-WFT-FUNC-SCU-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU DC thermometry check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and DC thermometry is ON
Constraints	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • SFT PARAMETERS display is selected on the CCS
Duration	8 minutes
Pass/Fail Criteria	DC Thermometry channels show temperature readings according to the actual instrument temperature* *: At warm temperatures all channels should show short circuit RAW readings of -32768

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-03-P.tcl	—	—	—	—
2	Wait for the parameter BBFULLTYPE to get set to SCU_DC_Therm				
3	A few seconds later record the value of parameter SCUTEMPSTAT	SCUTEMPSTAT	0/0xFFFF/0xFFFF	OK	
4	Configure the SFT	PUMPHTRTEMP	—		

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
	<p>PARAMETERS display to show the RAW values of SCU DC thermometry channels.</p> <p>Record the values of SCU DC thermometry channels. Nominal values should show a short circuit status (or RAW - 32768)</p> <p>Non Nominal (Open Circuit Criterion): RAW reading in the range [0, -100]</p>	PUMPHSTEMP EVAPHSTEMP SHUNTTEMP EMCFILTEMP SL0TEMP PL0TEMP OPTTEMP BAFTEMP BSMIFTEMP SCAL2TEMP SCAL4TEMP SCALTEMP SMECIFTEMP SMECTEMP BSMTEMP	— — — — — — — — — — — — — — — —	OIC - RAW Note calibrated values not valid at room temperature (Raw values checked)	
<p>Test Result (Pass/Fail): <i>PASS</i></p>					

06:17 SH

7.2.3.3 Procedure SPIRE-FM-WFT-FUNC-SCU-06-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU AC thermometry check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and DC thermometry is ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Constraints	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • SFT PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail Criteria	AC Thermometry channel shows temperature readings according to the actual instrument temperature

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-06-P.tcl	—	—	—	—
2	Wait for the parameter BBFULLTYPE to get set to SCU_AC_Therm				
3	A few seconds later record the value of parameter SUBKSTAT	SUBKSTAT	0/1/1	OK	
4	<p>Configure the SFT PARAMETERS display to show the RAW values of SCU AC thermometry channel.</p> <p><i>Nominal is short circuit RAW value = 32768.</i></p> <p>Record the value of SCU AC thermometry channel if it indicates an open circuit.</p> <p><i>Non-nominal</i> Open Circuit Criterion: RAW reading in the range [0, -100]</p>	SUBKTEMP	—	32749	OK
Test Result (Pass/Fail):					

06:24 SWH

7.2.3.4 Procedure SPIRE-FM-WFT-FUNC-SCU-02-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU Nominal Science Contents Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	Specified SCU HK parameters show expected increment.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-02-P.tcl	SCUFRAMECNT TM5N	31/62 1/3	62 5	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): Pass					

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7.2.3.5 Procedure SPIRE-FM-WFT-FUNC-SCU-04-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer Calibration Check (PRIME)
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail Criteria	PCAL voltage and current agree with expected values

Procedure Steps:

Step	Description	Parameter Name - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	<p>Execute TCL script SPIRE-FM-WFT-FUNC-SCU-04-P.tcl</p> <p>The expected values during the test should be monitored when parameter BBFULLTYPE in the FUNCTIONAL TEST PARAMETERS display is set to PCAL_Check This usually happens about 30 seconds from the start of test execution.</p>	<p>PCALCURR - mA PCALV - V</p> <p>BBFULLTYPE</p>	<p>0.0/0.1/0.0 0.0/0.02/0.0</p> <p>PCAL_Check</p>	<p>OK</p> <p>OK</p>	<p>OK</p>
2	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
<p>Test Result (Pass/Fail): <i>Pass</i></p>					

Final Configuration: Unchanged

06:37 5/18

7.2.3.6 Procedure SPIRE-FM-WFT-FUNC-SCU-05-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer Calibration Check (PRIME)
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	SCAL2 and SCAL4 voltage and currents agree with expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-05-P.tcl	—	—	—	
2	Wait for the parameter BBFULLTYPE to get set to SCAL4_Check	BBFULLTYPE	SCAL4_Check	OK	
3	A few seconds later record the value of parameters SCAL4CURR and SCAL4V <i>These parameters are set back to 0 after ~20 seconds</i>	SCAL4CURR – mA SCAL4V – V	0.0/0.10/0.0 0.0/0.05/0.0	— OK	
4	Wait for the parameter BBFULLTYPE to get set to SCAL2_Check	BBFULLTYPE	SCAL2_Check	— OK	
5	A few seconds later record the values of parameters SCAL2CURR and SCAL2V <i>These parameters are set back to 0 after ~20 seconds</i>	SCAL2CURR – mA SCAL2V – V	0.0/0.10/0.0 0.0/0.05/0.0	— OK	
6	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	— OK	—
Test Result (Pass/Fail): Pass					

06.11.07
 [Handwritten signature]

7.2.3.7 Procedure SPIRE-FM-WFT-FUNC-SCU-07-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Sorption Cooler Heater Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and DC thermometry is ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	Sorption cooler heat switches and pump heater show expected voltages

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/During/After	Actual Values Before/During/After	Success/Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-07-P.tcl	—	—	—	—
2	Wait for the parameter BBFULLTYPE to get set to Cooler_Htr_Chk	BBFULLTYPE	Cooler_Htr_Chk	OK	
3	Record the value of parameter SPHSV – the Sorption Pump Heat Switch Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	SPHSV – mV	0/~323/0	OK	
4	Record the value of parameter EVHSV – the Evaporator Heat Switch Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	EVHSV – mV	0/~323/0	OK	
5	Record the value of parameter SPHTRV – the Sorption Pump Heater Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	SPHTRV – V	0/~8.8/0	OK	
6	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—

SFT script run in error. Repeated with WFT script

7.2.3.8 Procedure SPIRE-FM-WFT-FUNC-SCU-08-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU test pattern check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	SCU Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-08-P.tcl	SCUFRAMECNT TM5N	62/93 3/5	2/53 8/5	OK
2	Wait for the I-EGSE staff to confirm the success of the test.				
Test Result (Pass/Fail): Pass					

06:58 JMJ

7.2.3.9 Procedure SPIRE-FM-WFT-FUNC-MCU-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU (PRIME) Boot Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU voltages and board temperatures show expected 'ON' values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-01-P.tcl	—	—	—	—
2	Check that the MCU is booted up successfully	MCUBITSTAT	0/1/1	0/1/1	OK
3	Check MCU HK parameter values and ensure that the values are refreshing	MCUP5V - V MCUP14V - V MCUM14V - V MCUP15V - V MCUM15V - V MCUMACTEMP - K MCUSMECTEMP - K MCUBSMTEMP - K	~ 5.0 ± 0.2 ~ 14.0 ± 0.6 ~ -14.0 ± 0.6 ~ 15.0 ± 0.6 ~ -15.0 ± 0.7 ~300 ~300 ~300	5.01 14.15 -14.46 15.54 -15.63 291.52 296.70 296.30	OK
Test Result (Pass/Fail): Pass					

(KLL)
DRCU/COMET
0.87A

07:01 SAA

7.2.3.10 Procedure: SPIRE-FM-WFT-FUNC-MCU-02-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Nominal Frame Generation Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified MCU HK parameters show expected increment

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-02-P.tcl	MCUFRAMECNT	0/~ 6000	6491	—
Test Result (Pass/Fail): Pass					

07:07
Suz

7.2.3.11 Procedure: SPIRE-FM-WFT-FUNC-MCU-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Nominal Science Contents Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified MCU HK parameters show expected increment

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-03-P.tcl	MCUFRAMECNT	~6000/~ 6297 Should increment by 297	6491 / 6788 6491 / 6788	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): Pass					

07:13
JAL

7.2.3.12 Procedure: SPIRE-FM-WFT-FUNC-MCU-04-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Test Pattern Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During / After	Actual Values Before/ During / After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-04-P.tcl	MCUFRAMECNT	N/N+99 6788/6882	— 6577	— OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Fail</i>					

07:18
Fail

7.2.3.13 Procedure SPIRE-FM-WFT-FUNC-BSM-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Chop/Jiggle Sensor Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters CHOPSENSPWR and JIGGSENSPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-01-P.tcl	—	—	—	—
2	Check that the Chop and Jiggle sensors have switched on	CHOPSENSPWR JIGGSENSPWR	0/1/1 0/1/1	0/1/1 0/1/1	OK
Test Result (Pass/Fail): Pass					

07:21 *Shet*
Page 49

7.2.3.14 Procedure SPIRE-FM-WFT-FUNC-BSM-02C-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Chop Sensor Polarity Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	CHOPSENSSIG HK parameter increments in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-02C-P.tcl	—	—	OK	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): Pass					

07:30 JMD

7.2.3.15 Procedure SPIRE-FM-WFT-FUNC-BSM-02J-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Jiggle Sensor Polarity Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	JIGGSENSSIG HK parameter increments in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-02J-P.tcl	—	—	— QR	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Pass</i>					

7.2.3.16 Procedure SPIRE-FM-WFT-FUNC-BSM-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Open Loop Dynamics Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	CHOPSENSSIG/JIGGSENSIG HK parameter evolve in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-03-P.tcl	—	—	OK	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): Pass					

07-10-07
 S. J. H. K.

7.2.3.17 Procedure SPIRE-FM-WFT-FUNC-BSM-05A-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Open Loop Chop Test
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-05A-P.tcl	—	—	—	— OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): Pass					

07:54, SWS

7.2.3.18 Procedure SPIRE-FM-WFT-FUNC-BSM-05B-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Closed Loop Chop Test
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	BSM is in closed loop mode
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-BSM-INIT-P.tcl	CHOPLOOPMODE JIGGLOOPMODE	3/-/1 3/-/1	3/-/1 3/-/1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-05B-P.tcl	—	—	OK	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Pass</i>					

SPIRE-FM-WFT-FUNC-BSM-05B-P.tcl before BSM-INIT-P by accident. Performed Step 2 followed by Step 2 as directed by KAZ

OP: OS SMTD

7.2.3.19 Procedure SPIRE-FM-WFT-FUNC-BSM-06-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Operational Mode Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON. BSM is in closed loop.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-06-P.tcl	CHOPLOOPMODE JIGGLOOPMODE	1 1	1 1	OK?
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Pass</i>					

*08:06:06
Unknown pkt
21,4 reported
received
from APID 1288.*

*08:12
Incl*

1190793966	556704	tm	1288	509	1709	1248252	1024	21	4	1	0	1569485166	22201	1
1190793966	558144	tm	1288	510	1710	1249276	1024	21	4	1	0	1569485166	22247	1
1190793966	559918	tm	1288	511	1711	1250300	1024	21	4	1	0	1569485166	22295	1
1190793967	556760	tm	1288	512	1712	1251324	1024	21	4	1	0	1569485166	23004	1
1190793967	557102	tm	1288	513	1713	1252348	136	21	4	1	0	1569485166	23037	1

Section 7.2.3.19
 Unex packet of (and 1 report of unknown)
 21,4 scanner packets

7.2.3.20 Procedure SPIRE-FM-WFT-BSM-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (PRIME) Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. BSM Chop/Jiggle sensors are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters CHOPSENSPWR and JIGGSENSPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-BSM-OFF-P.tcl	—	—	—	— OK
2	Check that the power to the BSM sensors is switched off	CHOPSENSPWR JIGGSENSPWR	1/-/0 1/-/0	0 0	
Test Result (Pass/Fail): Pass					

08:19
SATH

7.2.3.21 Procedure SPIRE-FM-WFT-FUNC-DCU-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	DCU science packet generation check for all Photometer and Spectrometer packet types (PF, PSW, PMW, PLW, SF, SSW and SLW)
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified DCU HK parameter shows expected increment

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-01-P.tcl	DCUFRAMECNT	n/n+700	1600 / 2300	OK
Test Result (Pass/Fail): <i>Pass</i>					

*05:33
Wif*

7.2.3.22 Procedure SPIRE-FM-WFT-FUNC-DCU-02-P

Version	2.3
Date	10 th Sept. 2007
Purpose	To check the correct functioning of the DCU PRIME High Speed Link
Initial configuration	SPIRE DPU and DRCU PRIME are switched ON, SPIRE HK is being produced and MCU is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • I-EGSE is up and running • DCU PARAMETERS display is selected on the CCS • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	<p>The following DCU telemetry packet types are received at CCS with :</p> <p>Full Photometer:</p> <ul style="list-style-type: none"> - (type,subtype): (21,1). - APID 0x504 <p>PSW</p> <ul style="list-style-type: none"> - (type,subtype): (21,2). - APID 0x504 <p>PMW</p> <ul style="list-style-type: none"> -(type,subtype): (21,2). - APID 0x504 <p>PLW</p> <ul style="list-style-type: none"> -(type,subtype): (21,2). - APID 0x504 <p>Full Spectrometer:</p> <ul style="list-style-type: none"> - (type,subtype): (21,1). - APID 0x506 <p>SSW</p>

	- (type,subtype): (21,2). - APID 0x506 SLW -(type,subtype): (21,2). - APID 0x506
--	--

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-02-P.tcl	DCUFRAMECNT	n/n+700	2300/3000	OK

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
2	Verify that the following type of DCU science telemetry packets have been received at the CCS : Full Photometer: - (type,subtype): (21,1). - APID 0x504 PSW - (type,subtype): (21,2). - APID 0x504 PMW -(type,subtype): (21,2). - APID 0x504 PLW -(type,subtype): (21,2). - APID 0x504 Full Spectrometer: - (type,subtype): (21,1). - APID 0x506 SSW - (type,subtype): (21,2). - APID 0x506 SLW -(type,subtype): (21,2). - APID 0x506	Time stamp: 1190795674 No longer possible to verify on CCS. (Science plots no longer presented by SCUS - only archived and distributed to IEGG).	-	-	
Test Result (Pass/Fail): Pass					

7.2.3.23 Procedure SPIRE-FM-WFT-FUNC-DCU-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	DCU Test Pattern Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU (Photometer/Spectrometer) Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-03-P.tcl	DCUFRAMECNT	n/n+100 100	3000/3000	OK
Test Result (Pass/Fail): <u>Pass</u>					

08:45
SMK

7.2.3.24 Procedure SPIRE-FM-WFT-FUNC-DCU-04-PHOT-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer LIAs check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer LIAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-04-PHOT-P.tcl	—	—	—	OK
2	Check that the Photometer LIAs are switched on	PLIAP5V PLIAP9V PLIAM9V	~0/ ~+5.17 ± 0.1V ~0/ ~+11.53 ± 0.1V ~0/ ~-11.53 ± 0.1V	5.23V 11.58V -11.58V	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

DCU current = 2.10A.

*09.06
SMU.*

7.2.3.25 Procedure SPIRE-FM-WFT-FUNC-DCU-11-PHOT-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs switch ON check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer BDAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-11-PHOT-P.tcl	—	—	—	—
2	Check that the Photometer detectors and LIAs are switched on	PSWJFETSTAT PMLWJFETSTAT PLIABITSTAT	0/-/0x3F 0/-/0x7F 1	0/0x3F 0/0x7F 1/1	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): Pass					

09:05
SUA

7.2.3.26 Procedure SPIRE-FM-WFT-FUNC-DCU-13-PHOT-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs integrity check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	15 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that Photometer LIAs and detectors are switched on	PLIABITSTAT PSWJFETSTAT PMLWJFETSTAT	1 0x3F 0x7F	1 0x3F 0x7F	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-13-PHOT-P.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

*09:38
SNA*

7.2.3.27 Procedure SPIRE-FM-WFT-FUNC-DCU-14-PHOT-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs noise level check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Photometer BDAs signal show no excess noise

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that Photometer LIAs and detectors are switched on	PLIABITSTAT PSWJFETSTAT PMLWJFETSTAT	1 0x3F 0x7F	1 0x3F 0x7F	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-14-PHOT-P.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

09:40
SM

7.2.3.28 Procedure SPIRE-FM-WFT-PDET-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer BDAs are ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Photometer BDAs are OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-PDET-OFF-P.tcl	—	—		OK
2	Check that the Photometer detectors are switched off	PSWJFETSTAT PMLWJFETSTAT	0x3F/-0 0x7F/-0	0 0	OK
3	Check that the Photometer LIAs are switched off	PLIABITSTAT	1/-0	0	OK
4	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): Pass					

Drawn out = 090A

09:50 SWD

7.2.3.29 Procedure SPIRE-FM-WFT-FUNC-DCU-04-SPEC-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer LIAs check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer LIAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-04-SPEC-P.tcl	—	—	—	—
2	Check that the Spectrometer LIAs are switched on	SLIAP5V - V SLIAP9V - V SLIAM9V - V	~0/ ~+5.23 ± 0.1 ~0/ ~+11.57 ± 0.1 ~0/ ~-11.54 ± 0.1	5.25 V 11.59 V -11.56 V	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

*LCU
DCU/Current
= 1.29A*

*09:58
SMB*

7.2.3.30 Procedure SPIRE-FM-WFT-FUNC-DCU-11-SPEC-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs switch ON check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer BDAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-11-SPEC-P.tcl	—	—	—	—
2	Check that the Spectrometer detectors are switched on	SPECJFETSTAT SLIABITSTAT	0/-/7 1	0/7 1	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

10:03
SAM

7.2.3.31 Procedure SPIRE-FM-WFT-FUNC-DCU-13-SPEC-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs integrity check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	12 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that the Spectrometer detectors and LIAs are switched on	SPECJFETSTAT SLIABITSTAT	7 1	7 1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-13-SPEC-P.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

2x cmd. History status not updated correctly

*16:17
JH*

Sep 26, 07 10:18

CHIS_PRNT_2007.269.10.18.13.949

Page 1/1

Command history display printout from time: 2007.269.10.13.57.177 to time: 2007.269.10.15.03.191
Current printout time: 2007.269.10.18.13.950 Display view mode: BRIEF Sort order: RELEASE Filter status: INACTIVE
Number of commands printed: 50

Table with columns: Name, Description, Sequence, Release Time, Execution Time, S D C G B IL ST Source, Update Time, R GTO A S 012345 C. Contains 50 rows of command execution logs.

Section 7.2.3.3 Step 2

Sep 26, 07 10:21

TMPH_PRNT_2007.269.10.21.24.911

Page 1/1

TM Packet Query Display
=====

TM Packet Details

Mnemonic: SP13TCESR500 Description: P_TC_Execution_Started_Report

SC001500
SET-1381 Decima J. - OK
Simulated: N

S/C ID: 486 G/S ID: 0 SLE ID: 0 OCC ID: 0 VCID: 0 HFA D/S: 65535

Data Unit Type: GOOD SP Time Stamp Type: PG Time Quality: G

APID: 1280 SSC: 455 Type: 1 Subtype: 3 PI1: 0 PI2: 0

SPID: 190801500 TPSD: -1 HFA Counter: 2670 Filing: E Distribution: E

Time Field: Y Packet Period: 0 [msec] CRC: ? Event Severity: ?

TM Packet Parameter Data

Generation time: 2007.269.10.14.49.169 Reception time: 2007.269.10.14.52.353

TM Packet Raw Data

SCOS-2000 Header:
0000:0000 0000 1931 FA46 8D95 0200 1C31 FA46 4C64 0500 0100 0000 E601 0000 5600 0000
0020:1138 FFFF 6E0A 0000 5C66 5F0B 0000 0000 0000 0000 FFFF FFFF 10FF 0005 C701 0103

Packet Raw Data:
0000:0D00 C1C7 000F 0001 0300 5D8C 8F99 2B5B 1D00 C272 55FE

Set 10x7.23.31 Step 2

Sep 26, 07 10:21

TMPH_PRINT_2007.269.10.21.38.733

Page 1/1

TM Packet Query Display

TM Packet Details

Mnemonic: SP15TCECR500 Description: P_TC_Execution_Completed_Report

SC001500
SET_BBID command - OK

Simulated: N

S/C ID: 486 G/S ID: 0 SLE ID: 0 OCC ID: 0 VCID: 0 HFA D/S: 65535
Data Unit Type: GOOD SP Time Stamp Type: PG Time Quality: G
APID: 1280 SSC: 456 Type: 1 Subtype: 7 PI1: 0 PI2: 0
SPID: 190803500 TPSD: -1 HFA Counter: 2670 Filing: E Distribution: E
Time Field: Y Packet Period: 0 [msec] CRC: ? Event Severity: ?

TM Packet Parameter Data

Generation time: 2007.269.10.14.49.169 Reception time: 2007.269.10.14.52.353

TM Packet Raw Data

SCOS-2000 Header:
0000:0000 0000 1931 FA46 2696 0200 1C31 FA46 1C65 0500 0100 0000 E601 0000 5600 0000
0020:1138 FFFF 6E0A 0000 2C6E 5F0B 0000 0000 0000 0000 FFFF FFFF 10FF 0005 C801 0107

Packet Raw Data:
0000:0D00 C1C8 000F 0001 0700 5D8C 8F99 2B65 1D00 C272 6ED2

Section 7.2-3.31 Step 2

Sep 26, 07 10:22

TMPH_PRINT_2007.269.10.22.38.995

Page 1/1

TM Packet Query Display
=====

TM Packet Details

Mnemonic: SP11TCAR0500 Description: P_TC_Acceptance_Report *SCD06505* Simulated: N
Send_DRW_COMMAND - OK

S/C ID: 486 G/S ID: 0 SLE ID: 0 OCC ID: 0 VCID: 0 HFA D/S: 65535

Data Unit Type: GOOD SP Time Stamp Type: PG Time Quality: G

APID: 1280 SSC: 457 Type: 1 Subtype: 1 PI1: 0 PI2: 0

SPID: 190800500 TPSD: -1 HFA Counter: 2673 Filing: E Distribution: E

Time Field: Y Packet Period: 0 [msec] CRC: ? Event Severity: ?

TM Packet Parameter Data

Generation time: 2007.269.10.14.50.919 Reception time: 2007.269.10.14.52.353

TM Packet Raw Data

SCOS-2000 Header:
0000:0000 0000 1A31 FA46 B406 0E00 1C31 FA46 BD65 0500 0100 0000 E601 0000 5600 0000
0020:1138 FFFF 710A 0000 7462 5F0B 0000 0000 0000 0000 FFFF FFFF 10FF 0005 C901 0101

Packet Raw Data:
0000:0D00 C1C9 000F 0001 0100 5D8C 8F9A EB52 1D00 C273 68A7

Section 7.2.3.31 Step 2

7.2.3.32 Procedure SPIRE-FM-WFT-FUNC-DCU-14-SPEC-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs noise check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Spectrometers BDAs signal show no excess noise

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that the Spectrometer detectors and LIAs are switched on	SPECJFETSTAT SLIABITSTAT	7 1	7 1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-14-SPEC-P.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

*10:30
SM*

7.2.3.33 Procedure SPIRE-FM-WFT-SDET-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer BDAs are ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and Spectrometer BDAs are OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-SDET-OFF-P.tcl	—	—	OK	OK
2	Check that the Spectrometer detectors are switched off	SPECJFETSTAT	7/0	7/0	OK
3	Check that the Spectrometer LIAs are switched off	SLIABITSTAT	1/0	1/0	OK
4	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

10:31 SMD

7.2.3.34 Procedure SPIRE-FM-WFT-FUNC-SMEC-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Encoder/LVDT Sensor Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted.



Test Procedure

Herschel

	<ul style="list-style-type: none">• SPIRE MIB PRIME is imported in the CCS database.• CCS is up and running• FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-01-P.tcl	—	—	—	—
2	Check that power to the SMEC LED and LVDT sensor is on	SMECENCPWR SMECLVDTWPR	0/-/6 0/1/1	0/6 0/1	OK
Test Result (Pass/Fail): Pass					

10:39
SVA

7.2.3.35 Procedure SPIRE-FM-WFT-FUNC-SMEC-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Encoder Integrity Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCUENGSMECENC SIG1/2 increase as the encoder power is increased

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-03-P.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				OK
Test Result (Pass/Fail): Pass					

10:45
SWK

7.2.3.36 Procedure SPIRE-FM-WFT-SMEC-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-SMEC-OFF-P.tcl	—	—	—	OK
2	Check that the power to the SMEC sensors is switched off	SMECENCPWR SMECLVDPWR	6/-/0 1/-/0	6 0	OK
Test Result (Pass/Fail): Pass					

10:46
5/16

7.2.3.37 Procedure SPIRE-FM-WFT-MCU-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU PRIME Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is ON. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified MCU HK Parameter shows expected value.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-MCU-OFF-P.tcl	—	—	—	—
2	Check that the MCU is switched off	MCUBITSTAT	1/-/0	0	OK

Test Result (Pass/Fail): *Pass*

*10:47:56
S, 4 event
reported (expected)
procedure update*

*10:48
PWS*

7.2.3.38 Procedure SPIRE-FM-WFT-SCU-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU PRIME Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified SCU HK Parameters show expected value.

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-SCU-OFF-P.tcl	—	—	—	OK
2	A few seconds later record the value of parameter SCUTEMPSTAT	SCUTEMPSTAT	0xFFFF/-0	0	OK
3	A few seconds later record the value of parameter SUBKSTAT	SUBKSTAT	1/-0	0	OK
Test Result (Pass/Fail): <i>Pass</i>					

~~OK~~

10:50
SNA

7.2.4 Warm Functional Tests – S/C Horizontal

7.2.4.1 Procedure SPIRE-FM-WFT-FUNC-MCU-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU (PRIME) Boot Check
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU voltages and board temperatures show expected 'ON' values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC MCU-01-P.tcl	—	—	—	—
2	Check that the MCU is booted up successfully	MCUBITSTAT	0/1/1		
3	Check MCU HK parameter values and ensure that the values are refreshing	MCUP5V - V MCUP14V - V MCUM14V - V MCUP15V - V MCUM15V - V MCUMACTEMP - K MCUSMECTEMP - K MCUBSMTEMP - K	~ 5.0 ± 0.2 ~ 14.0 ± 0.6 ~ -14.0 ± 0.6 ~ 15.0 ± 0.6 ~ -15.0 ± 0.7 ~300 ~300 ~300		
Test Result (Pass/Fail):					

7.2.4.2 Procedure SPIRE-FM-WFT-FUNC-SMEC-01-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Encoder/LVDT Sensor Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDTPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-01-P.tcl	—	—	—	—
2	Check that power to the SMEC LED and LVDT sensor is on	SMECENCPWR SMECLVDTPWR	0/-/6 0/1/1		
Test Result (Pass/Fail):					

7.2.4.3 Procedure SPIRE-FM-WFT-FUNC-SMEC-03-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Encoder Integrity Check.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCUENGSMECENCNSIG1/2 increase as the encoder power is increased

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-03-P.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.4 Procedure SPIRE-FM-WFT-FUNC-SMEC-02A-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Open the SMEC Launch Latch (Unlatch it)
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and SMEC is latched
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and SMEC is ON and Unlatched
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	TBD

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-02A-P.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.5 Procedure SPIRE-FM-WFT-FUNC-SMEC-04A-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Open Loop Positioning Test.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC moves to the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-04A-P.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.6 Procedure SPIRE-FM-WFT-FUNC-SMEC-09-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Open Loop Scan Test.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC performs a scan between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	<p>A manual reset of the encoder signals 1 and 2 offsets may be required. If this is the case Two MANUAL commands will be required to be sent from the CCS:</p> <p>SPIRE_SEND_DRCU_COMMAND</p> <ul style="list-style-type: none"> param 1 = 0x9058xxxx param 2 = 0 <p>SPIRE_SEND_DRCU_COMMAND</p> <ul style="list-style-type: none"> param 1 = 0x905Axxxx param 2 = 0 <p>The 16 bit parameters xxxx will be provided by SPIRE staff</p>	<p>SMECECNSIG1OFF SMECENCNSIG2OFF</p>			
2	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-09-P.tcl	—	—	—	—
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.7 Procedure SPIRE-FM-WFT-FUNC-SMEC-07-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Close Loop Scan Test.
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	SMEC is in closed loop
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC performs a scan between the commanded positions and the loop remains closed

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-SMEC-INIT-P.tcl	SMECLOOPMODE	6/-1		
2	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-07-P.tcl	—	—	—	—
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.8 Procedure SPIRE-FM-WFT-FUNC-SMEC-02B-P

Version	2.3
Date	10 th Sept. 2007
Purpose	Close the SMEC Launch Latch (Latch it)
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and SMEC is ON and unlatched
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted and SMEC is ON and Latched
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	TBD

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-02B-P.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.4.9 Procedure SPIRE-FM-WFT-SMEC-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (PRIME) Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are ON.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted. SMEC Encoder and LVDT are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is booted. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-SMEC-OFF-P.tcl	—	—	—	—
2	Check that the power to the SMEC sensors is switched off	SMECENCPWR SMECLVDPWR	6/-/0 1/-/0		
Test Result (Pass/Fail):					

7.2.4.10 Procedure SPIRE-FM-WFT-MCU-OFF-P

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU PRIME Switch OFF
Initial configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is booted.
Final configuration	SPIRE DPU and DRCU PRIME are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU PRIME is OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU PRIME is switched ON • SPIRE MCU PRIME is ON. • SPIRE MIB PRIME is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified MCU HK Parameter shows expected value.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-MCU-OFF-P.tcl	—	—	—	—
2	Check that the MCU is switched off	MCUBITSTAT	1/-/0		

Test Result (Pass/Fail):

7.2.5 Switch Off DRCU & DPU PRIME

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	SWITCH OFF DRCU PRIME						
	Initial Conditions: DPU-A & DRCU A ON						
2.1	On HPCCS execute the following test script to power on the SPIRE DPU and DRCU. S102999SCVT011_ASDWFTSPIR_PWR_OFF_P.tcl Respond to the prompts as listed below:			OK	AND: ZAD07999, ZAD14999 MIM: LCL_HERSCHEL		
	<i>The test script (calling the specific SPIRE scripts as appropriate) powers OFF the DRCU. The DPU is then powered OFF before disabling the Mil1553 bus interface.</i>						
2.2	On I-EGSE/HPCCS check that THSK parameter is not refreshing anymore	OK		OK		✓	
2.3	On I-EGSE/HPCCS check that TM2N parameter is not incrementing anymore	OK		OK		✓	
2.4	Continue test script by responding to prompt			OK		✓	
	SWITCH OFF DPU PRIME						
2.5	Continue test script by responding to prompt			OK		✓	
	SPIRE PRIME DRCU & DPU POWER OFF COMPLETE						

Script update
regul for Fan
limits.
-connected to
0.45-0.55A
26/09/07

10:59
SWH

7.2.6 Procedure SPIRE-FM-WFT-LPU-01-P

Version	1.0
Date	Tuesday, 28 August 2007
Purpose	DPU PRIME Switch OFF
Initial configuration	Prime and redundant DPU and DRCU are off
Final configuration	Prime and redundant DPU and DRCU are off
Constraints	<ul style="list-style-type: none"> • Cryostat is vertical to within $\pm 45^\circ$ • Prime and redundant DPU and DRCU are off
Duration	5 minutes
Pass/Fail criteria	The specified current is drawn when the LPU is enabled and is switched off when the LPU is disabled

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/During/After	Actual Values Before/During/After	Success/ Failure
1	Power on Prime LPU LCL (LCL #25)	LCL status	OFF/ /ON		State of LCL #25 switches to ON
2	Send HL command #5 (LPU Enable Prime)	LCL #25 current	0mA/ /130-180mA		Current between 130-180mA
4	Send HL command #6 (LPU Disable Prime)	LCL #25 current	130-180mA/ /0mA		Current off
5	Un-power Prime LPU LCL (LCL # 25)	LCL status	ON/ / OFF		State of LCL #25 switches to OFF

Test Result (Pass/Fail):

7.2.7 Switch On SPIRE REDUNDANT DPU & DRCU

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
SWITCH ON DPU REDUNDANT							
	Initial Conditions: DPU-A & DRCU B OFF				Start 11:55		
2.1	On HPCCS execute the following test script to power on the SPIRE DPU and DRCU. S102999SCVT010_ASDWFTSPIR_PWR_ON_R.tcl Respond to the prompts as listed below:			OK	AND: ZAD07999, ZAD14999 MIM: LCL_HERSCHEL	✓	
	<i>The test script (calling the specific SPIRE scripts as appropriate) powers ON the DPU and enables the MilBus before forcebooting the ASW (NB: currently powers ON DPU using secondary partition). The DRCU is then powered and configured.</i>					✓	
2.2	Check that Nominal and Critical HK packets are arriving at the HPCCS: SPIRE Nominal HK: <ul style="list-style-type: none"> (type ,subtype) : (3,25) APID : 0x502 (1282) SPIRE Critical HK: <ul style="list-style-type: none"> (type ,subtype) : (3,25) APID: 0x500 (1280) 	OK		OK		✓	
2.3	On I-EGSE/HPCCS check that THSK parameter is refreshing every second	OK		OK		✓	

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
2.4	On I-EGSE check that TM2N parameter is incrementing by 1 every second	OK		OK		1	
2.5	On I-EGSE check that TM1N parameter is incrementing by 1 every 2 second	OK		OK		1	
2.6	On HPCCS check the consistency of the SPIRE on board time to the HCDMU time and the CCS (need to clarify if SPIRE requests a time verification report as part of DPU ON sequence)	OK		OK		1	
2.7	On IEGSE check the consistency between SCOS time and THSK and QLA time.	OK		OK		1	
2.8	Continue test script by responding to prompt						
SWITCH ON DRCU REDUNDANT							
2.9	When prompted by test script:						
2.10	On I-EGSE/HPCCS check that THSK parameter is not refreshing anymore	OK		OK		1	
2.11	On I-EGSE/HPCCS check that TM2N parameter is not incrementing anymore	OK		OK		1	
2.12	Continue test script by responding to prompt to power on DRCU			OK		1	
2.13	On I-EGSE check that THSK parameter is refreshing every second	OK		OK	2x Command execution failures as for PERS		
2.14	On I-EGSE check that TM2N parameter is incrementing by 1 every second	OK		OK		1	
2.15	Continue test script by responding to prompt			OK		1	
SPIRE REDUNDANT DPU & DRCU POWER ON COMPLETE							

DPU (LCL) correct
0.44A

DRCU correct
0.37A

12:07
SNA

7.2.8 Warm Functional Tests – S/C Horizontal

7.2.8.1 Procedure SPIRE-FM-WFT-FUNC-MCU-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU (REDUNDANT) Boot Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU voltages and board temperatures show expected 'ON' values

Sep 26, 07 16:24

CHIS_PRNT_2007.269.16.24.28.474

Page 1/1

Command history display printout from time: 2007.269.12.00.20.113 to time: 2007.269.12.05.12.860
Current printout time: 2007.269.16.24.28.475 Display view mode: BRIEF Sort order: RELEASE Filter status: INACTIVE
Number of commands printed: 50

Table with columns: Name, Description, Sequence, Release Time, Execution Time, S D C G B IL ST Source, Update Time, R GTO A S 012345 C. Contains command history entries for SET_OBS_STEP, SET_OBSID, SET_OBS_STEP, SET_BBID, DEFINE_NEW_HK_REPORT, CLEAR_HK_REPORT, SReq, SReport, SwOn, and UPDATE_TABLE.

Section 7.27 Supp 2-13

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-01-R.tcl	—	—	—	—
2	Check that the MCU is booted up successfully	MCUBITSTAT	0/1/1		
3	Check MCU HK parameter values and ensure that the values are refreshing	MCUP5V - V MCUP14V - V MCUM14V - V MCUP15V - V MCUM15V - V MCUMACTEMP - K MCUSMECTEMP - K MCUBSMTEMP - K	~ 5.0 ± 0.2 ~ 14.0 ± 0.6 ~ -14.0 ± 0.6 ~ 15.0 ± 0.6 ~ -15.0 ± 0.7 ~300 ~300 ~300		
Test Result (Pass/Fail):					

7.2.8.2 Procedure SPIRE-FM-WFT-FUNC-SMEC-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Encoder/LVDT Sensor Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDTPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-01-R.tcl	—	—	—	—
2	Check that power to the SMEC LED and LVDT sensor is on	SMECENCPWR SMECLVDPWR	0/-/6 0/1/1		

Test Result (Pass/Fail):

7.2.8.3 Procedure SPIRE-FM-WFT-FUNC-SMEC-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Encoder Integrity Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCUENGSMECENCSTG1/2 increase as the encoder power is increased

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-03-R.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.4 Procedure SPIRE-FM-WFT-FUNC-SMEC-02A-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Open the SMEC Launch Latch (Unlatch it)
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and SMEC is latched
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and SMEC is ON and Unlatched
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	TBD

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-02A-R.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.5 Procedure SPIRE-FM-WFT-FUNC-SMEC-04A-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Open Loop Positioning Test.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC moves to the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-04A-R.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.6 Procedure SPIRE-FM-WFT-FUNC-SMEC-09-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Open Loop Scan Test.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC performs a scan between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	<p>A manual reset of the encoder signals 1 and 2 offsets may be required. If this is the case Two MANUAL commands will be required to be sent from the CCS:</p> <p>SPIRE_SEND_DRCU_COMMAND</p> <ul style="list-style-type: none"> param 1 = 0x9056xxxx param 2 = 0 <p>SPIRE_SEND_DRCU_COMMAND</p> <ul style="list-style-type: none"> param 1 = 0x905Axxxx param 2 = 0 <p>The 16 bit parameters xxxx will be provided by SPIRE staff</p>	<p>SMECECNSIG1OFF SMECENCNSIG2OFF</p>			
2	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-09-R.tcl	—		—	—
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.7 Procedure SPIRE-FM-WFT-FUNC-SMEC-07-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Close Loop Scan Test.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	SMEC is in closed loop
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS • The Herschel Cryostat should be tilted horizontal
Duration	5 minutes
Pass/Fail criteria	SMEC performs a scan between the commanded positions and the loop remains closed

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/During/After	Actual Values Before/During/After	Success/Failure
1	Execute TCL script SPIRE-FM-WFT-SMEC-INIT-R.tcl	SMECLOOPMODE	6/-1		
2	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-07-R.tcl	—	—	—	—
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.8 Procedure SPIRE-FM-WFT-FUNC-SMEC-02B-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Close the SMEC Launch Latch (Latch it)
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and SMEC is ON and unlatched
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and SMEC is ON and Latched
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	TBD

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-02B-R.tcl	—	—	—	—
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail):					

7.2.8.9 Procedure SPIRE-FM-WFT-SMEC-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-SMEC-OFF-R.tcl	—	—	—	—
2	Check that the power to the SMEC sensors is switched off	SMECENCPWR SMECLVDPWR	6/-/0 1/-/0		
Test Result (Pass/Fail):					

7.2.8.10 Procedure SPIRE-FM-WFT-MCU-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU REDUNDANT Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is ON. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified MCU HK Parameter shows expected value.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-MCU-OFF-R.tcl	—	—	—	—
2	Check that the MCU is switched off	MCUBITSTAT	1/-/0		
Test Result (Pass/Fail):					

7.2.9 Warm Functional Tests – S/C Vertical

7.2.9.1 Procedure SPIRE-FM-WFT-FUNC-SCU-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU science packet generation check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail Criteria	Specified SCU HK parameters show expected increment.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-01-R.tcl	SCUFRAMECNT TM5N	0/31 0x3FFF/1	0 / 31 3FFF / 1	OK
Test Result (Pass/Fail): <i>Pass</i>					

stet

*12:13
5/14*

7.2.9.2 Procedure SPIRE-FM-WFT-FUNC-SCU-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU DC thermometry check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and DC thermometry is ON
Constraints	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • SFT PARAMETERS display is selected on the CCS
Duration	8 minutes
Pass/Fail Criteria	DC Thermometry channels show temperature readings according to the actual instrument temperature* *: At warm temperatures all channels should show short circuit RAW readings of -32768

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-03-R.tcl	—	—	— OK	—
2	Wait for the parameter BBFULLTYPE to get set to SCU_DC_Therm				
3	A few seconds later record the value of parameter	SCUTEMPSTAT	0/0xFFFF/0xFFFF	0xFFFF	

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
	SCUTEMPSTAT				
4	<p>Configure the SFT PARAMETERS display to show the RAW values of SCU DC thermometry channels.</p> <p>Record the values of SCU DC thermometry channels. Nominal values should show a short circuit status (or RAW - 32768)</p> <p>Non Nominal (Open Circuit Criterion): RAW reading in the range [0, - 100]</p>	PUMPHTRTEMP PUMPHSTEMP EVAPHSTEMP SHUNTTEMP EMCFILTEMP SL0TEMP PL0TEMP OPTTEMP BAFTEMP BSMIFTEMP SCAL2TEMP SCAL4TEMP SCALTEMP SMECIFTEMP SMECTEMP BSMTEMP	— — — — — — — — — — — — — —	<p>RAW to complete.</p>	OK
Test Result (Pass/Fail): <i>Pass</i>					

12:17 PM

7.2.9.3 Procedure SPIRE-FM-WFT-FUNC-SCU-06-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU AC thermometry check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and DC thermometry is ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Constraints	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • SFT PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail Criteria	AC Thermometry channel shows temperature readings according to the actual instrument temperature

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-06-R.tcl	—	—	OK	—
2	Wait for the parameter BBFULLTYPE to get set to SCU_AC_Therm				
3	A few seconds later record the value of parameter SUBKSTAT	SUBKSTAT	0/1/1	1	OK
4	<p>Configure the SFT PARAMETERS display to show the RAW values of SCU AC thermometry channel.</p> <p><i>Open circuit = 32768</i></p> <p>Record the value of SCU AC thermometry channel if it indicates an open circuit.</p> <p><i>Non-nominal!</i></p> <p>Open Circuit Criterion: RAW reading in the range [0, -100]</p>	SUBKTEMP	—	32767	OK
<p>Test Result (Pass/Fail): <i>Passed</i></p>					

*12/22
SNH*

7.2.9.4 Procedure SPIRE-FM-WFT-FUNC-SCU-02-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU Nominal Science Contents Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	Specified SCU HK parameters show expected increment.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-02-R.tcl	SCUFRAMECNT TM5N	31/62 1/3	31 / 62 1 / 3	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

*12:30
SWH*

7.2.9.5 Procedure SPIRE-FM-WFT-FUNC-SCU-04-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer Calibration Check (REDUNDANT)
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail Criteria	PCAL voltage and current agree with expected values

Procedure Steps:

Step	Description	Parameter Name - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-04-R.tcl The expected values during the test should be monitored when parameter BBFULLTYPE in the FUNCTIONAL TEST PARAMETERS display is set to PCAL_Check This usually happens about 30 seconds from the start of test execution.	PCALCURR - mA PCALV - V BBFULLTYPE	0.0/0.1/0.0 0.0/0.02/0.0 PCAL_Check	OK OK	
2	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

Final Configuration: Unchanged

*K2:32
SAUL*

7.2.9.6 Procedure SPIRE-FM-WFT-FUNC-SCU-05-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer Calibration Check (REDUNDANT)
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	SCAL2 and SCAL4 voltage and currents agree with expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-05-R.tcl	—	—	OK	OK
2	Wait for the parameter BBFULLTYPE to get set to SCAL4_Check	BBFULLTYPE	SCAL4_Check	—	OK
3	A few seconds later record the value of parameters SCAL4CURR and SCAL4V <i>These parameters are set back to 0 after ~20 seconds</i>	SCAL4CURR – mA SCAL4V – V	0.0/0.10/0.0 0.0/0.05/0.0	—	OK
4	Wait for the parameter BBFULLTYPE to get set to SCAL2_Check	BBFULLTYPE	SCAL2_Check	—	OK
5	A few seconds later record the values of parameters SCAL2CURR and SCAL2V <i>These parameters are set back to 0 after ~20 seconds</i>	SCAL2CURR – mA SCAL2V – V	0.0/0.10/0.0 0.0/0.05/0.0	—	OK
6	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	OK
Test Result (Pass/Fail): Pass					

7.2.9.7 Procedure SPIRE-FM-WFT-FUNC-SCU-07-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Sorption Cooler Heater Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and DC thermometry is ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	Sorption cooler heat switches and pump heater show expected voltages

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/During/After	Actual Values Before/During/After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-07-R.tcl	—	—	—	OK
2	Wait for the parameter BBFULLTYPE to get set to Cooler Htr Chk	BBFULLTYPE	Cooler_Htr_Chk		OK
3	Record the value of parameter SPHSV – the Sorption Pump Heat Switch Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	SPHSV – mV	0/~323/0		OK
4	Record the value of parameter EVHSV – the Evaporator Heat Switch Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	EVHSV – mV	0/~323/0		OK
5	Record the value of parameter SPHTRV – the Sorption Pump Heater Voltage. <i>This voltage stays on for ~20 seconds. Wait for the voltage to go to zero to continue.</i>	SPHTRV – V	0/~8.8/0		OK
6	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): Pass					

12:38
SVA

7.2.9.8 Procedure SPIRE-FM-WFT-FUNC-SCU-08-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU test pattern check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail Criteria	SCU Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SCU-08-R.tcl	SCUFRAMECNT TM5N	62/93 3/5	62/93 3/5	OK
2	Wait for the I-EGSE staff to confirm the success of the test.				OK
Test Result (Pass/Fail): Pass					

12:41
SNH

7.2.9.9 Procedure SPIRE-FM-WFT-FUNC-MCU-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU (REDUNDANT) Boot Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU voltages and board temperatures show expected 'ON' values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-01-R.tcl	—	—	—	OK
2	Check that the MCU is booted up successfully	MCUBITSTAT	0/1/1	0/1	
3	Check MCU HK parameter values and ensure that the values are refreshing	MCUP5V - V MCUP14V - V MCUM14V - V MCUP15V - V MCUM15V - V MCUMACTEMP - K MCUSMECTEMP - K MCUBSMTEMP - K	~ 5.0 ± 0.2 ~ 14.0 ± 0.6 ~ -14.0 ± 0.6 ~ 15.0 ± 0.6 ~ -15.0 ± 0.7 ~300 ~300 ~300	5.0V 14.13 V - 14.49 V 15.50 V 15.61 V 293.98 297.96 297.61	OK
Test Result (Pass/Fail): Pass					

DRCU/KCU
 current
 = 0.92A

12:44
 SNA

7.2.9.10 Procedure: SPIRE-FM-WFT-FUNC-MCU-02-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Nominal Frame Generation Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified MCU HK parameters show expected increment

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-02-R.tcl	MCUFRAMECNT	0/~ 6000	0/6000	OK
Test Result (Pass/Fail): <i>Pass</i>					

12:50
SAH

7.2.9.11 Procedure: SPIRE-FM-WFT-FUNC-MCU-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Nominal Science Contents Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified MCU HK parameters show expected increment

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-03-R.tcl	MCUFRAMECNT	~6000/~ 6297 Should increment by 297	6491/6788	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

12:55
SNH

7.2.9.12 Procedure: SPIRE-FM-WFT-FUNC-MCU-04-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU Test Pattern Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	Unchanged.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCU Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-MCU-04-R.tcl	MCUFRAMECNT	N/N+99		
2	Wait for the I-EGSE staff to confirm the success or failure of this test			6788/6887	OK
Test Result (Pass/Fail): <i>Passed</i>					

7.2.9.13 Procedure SPIRE-FM-WFT-FUNC-BSM-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Chop/Jiggle Sensor Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters CHOPSENSPWR and JIGGSENSPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-01-R.tcl	—	—	—	OK
2	Check that the Chop and Jiggle sensors have switched on	CHOPSENSPWR JIGGSENSPWR	0/1/1 0/1/1	0/1 0/1	
Test Result (Pass/Fail): Pass					

12:00
SWH

7.2.9.14 Procedure SPIRE-FM-WFT-FUNC-BSM-02C-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Chop Sensor Polarity Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	CHOPSENSSIG HK parameter increments in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-02C-R.tcl	—	—	—	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

13:05 SWH

7.2.9.15 Procedure SPIRE-FM-WFT-FUNC-BSM-02J-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Jiggle Sensor Polarity Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	JIGGSENSSIG HK parameter increments in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-02J-R.tcl	—	—	—	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

*13:08
SMT*

7.2.9.16 Procedure SPIRE-FM-WFT-FUNC-BSM-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Open Loop Dynamics Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	CHOPSENSSIG/JIGGSENSIG HK parameter evolve in the same direction as the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-03-R.tcl	—	—	—	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

*Bill
SMA*

7.2.9.17 Procedure SPIRE-FM-WFT-FUNC-BSM-05A-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Open Loop Chop Test
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-05A-R.tcl	—	—	—	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

*13:14
SNH*

7.2.9.18 Procedure SPIRE-FM-WFT-FUNC-BSM-05B-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Closed Loop Chop Test
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON.
Final configuration	BSM is in closed loop mode
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-BSM-INIT-R.tcl	CHOPLOOPMODE JIGGLOOPMODE	3/-1 3/-1	3/1 3/1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-05B-R.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

13:19
SWH

7.2.9.19 Procedure SPIRE-FM-WFT-FUNC-BSM-06-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Operational Mode Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON. BSM is in closed loop.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	The BSM Chops in between the commanded positions

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-BSM-06-R.tcl	CHOPLOOPMODE JIGGLOOPMODE	1 1	1 1	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

13:28

SN44 Page 148

7.2.9.20 Procedure SPIRE-FM-WFT-BSM-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	BSM (REDUNDANT) Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. BSM Chop/Jiggle sensors are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters CHOPSENSPWR and JIGGSENSPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-BSM-OFF-R.tcl	—	—	—	OK
2	Check that the power to the BSM sensors is switched off	CHOPSENSPWR JIGGSENSPWR	1/-/0 1/-/0	1/0 1/0	
Test Result (Pass/Fail): <i>Passed</i>					

13:32
SNH

7.2.9.21 Procedure SPIRE-FM-WFT-FUNC-DCU-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	DCU science packet generation check for all Photometer and Spectrometer packet types (PF, PSW, PMW, PLW, SF, SSW and SLW)
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Specified DCU HK parameter shows expected increment

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-01-R.tcl	DCUFRAMECNT	n/n+700	12005/19700	OK
Test Result (Pass/Fail): <i>Passed</i>					

13:45 SWB

7.2.9.22 Procedure SPIRE-FM-WFT-FUNC-DCU-02-R

Version	2.3
Date	10 th Sept. 2007
Purpose	To check the correct functioning of the DCU REDUNDANT High Speed Link
Initial configuration	SPIRE DPU and DRCU REDUNDANT are switched ON, SPIRE HK is being produced and MCU is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • I-EGSE is up and running • DCU PARAMETERS display is selected on the CCS • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	<p>The following DCU telemetry packet types are received at CCS with :</p> <p>Full Photometer: - (type,subtype): (21,1). - APID 0x505</p> <p>PSW - (type,subtype): (21,2). - APID 0x505</p> <p>PMW -(type,subtype): (21,2). - APID 0x505</p> <p>PLW -(type,subtype): (21,2). - APID 0x505</p> <p>Full Spectrometer: - (type,subtype): (21,1). - APID 0x507</p>

*Can't be performed on CCS.
To be checked by SPIRE on IEGSE.*

	<p>SSW - (type,subtype): (21,2). - APID 0x507</p> <p>SLW -(type,subtype): (21,2). - APID 0x507</p>
--	--

Procedure Steps:

Step	Description	Parameter	Expected Values Before/After	Actual Values Before/After	Success/Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-02-R.tcl	DCUFRAMECNT	n/n+700	1900/2600	OK
2	<p>Verify that the following type of DCU science telemetry packets have been received at the CCS :</p> <p>Full Photometer: - (type,subtype): (21,1). - APID 0x505</p> <p>PSW - (type,subtype): (21,2). - APID 0x505</p> <p>PMW -(type,subtype): (21,2). - APID 0x505</p> <p>PLW -(type,subtype): (21,2). - APID 0x505</p> <p>Full Spectrometer: - (type,subtype): (21,1). - APID 0x507</p> <p>SSW - (type,subtype): (21,2). - APID 0x507</p> <p>SLW -(type,subtype): (21,2). - APID 0x507</p>	<p>—</p> <p>Timestamp = 1190814413</p> <p>No longer possible to verify on CCS (science plots no longer processed by SCOS - only archived and distributed to IEGSE R&E to check.</p>	—	—	
<p>Test Result (Pass/Fail): <i>Passed</i></p>					

7.2.9.23 Procedure SPIRE-FM-WFT-FUNC-DCU-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	DCU Test Pattern Check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU (Photometer/Spectrometer) Test Pattern generated agrees with the one generated on a previous execution.

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-03-R.tcl	DCUFRAMECNT	n/n+700	2600/2700	OK
Test Result (Pass/Fail): <i>Passed</i>					

*13:58
SMH*

7.2.9.24 Procedure SPIRE-FM-WFT-FUNC-DCU-04-PHOT-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer LIAs check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer LIAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-04-PHOT-R.tcl	—	—	—	OK
2	Check that the Photometer LIAs are switched on	PLIAP5V PLIAP9V PLIAM9V	~0/ ~+5.19 ± 0.1V ~0/ ~+11.54 ± 0.1V ~0/ ~-11.53 ± 0.1V	5.24V 11.60V -11.58V	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

DRCU current = 2.07 A.

*14:02.
SN66*

7.2.9.25 Procedure SPIRE-FM-WFT-FUNC-DCU-11-PHOT-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs switch ON check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer BDAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-11-PHOT-R.tcl	—	—	—	OK
2	Check that the Photometer detectors and LIAs are switched on	PSWJFETSTAT PMLWJFETSTAT PLIABITSTAT	0/-/0x3F 0/-/0x7F 1	0/3F 0/7F 1	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Pass</i>					

14:08
SNW

7.2.9.26 Procedure SPIRE-FM-WFT-FUNC-DCU-13-PHOT-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs integrity check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	15 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that Photometer LIAs and detectors are switched on	PLIABITSTAT PSWJFETSTAT PMLWJFETSTAT	1 0x3F 0x7F	1 3F 7F	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-13-PHOT-R.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

14:25
SMA

7.2.9.27 Procedure SPIRE-FM-WFT-FUNC-DCU-14-PHOT-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs noise level check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Photometer BDAs signal show no excess noise

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that Photometer LIAs and detectors are switched on	PLIABITSTAT PSWJFETSTAT PMLWJFETSTAT	1 0x3F 0x7F	1 3F 7F	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-14-PHOT-R.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

14:30
SMH

7.2.9.28 Procedure SPIRE-FM-WFT-PDET-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Photometer BDAs Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer BDAs are ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Photometer BDAs are OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-PDET-OFF-R.tcl	—	—		OK
2	Check that the Photometer detectors are switched off	PSWJFETSTAT PMLWJFETSTAT	0x3F/-/0 0x7F/-/0	3F/0 7F/0	OK
3	Check that the Photometer LIAs are switched off	PLIABITSTAT	1/-/0	1/0	OK
4	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

*14:34
SNK*

7.2.9.29 Procedure SPIRE-FM-WFT-FUNC-DCU-04-SPEC-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer LIAs check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer LIAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-04-SPEC-R.tcl	—	—	—	OK
2	Check that the Spectrometer LIAs are switched on	SLIAP5V - V SLIAP9V - V SLIAM9V - V	~0/ ~+5.23 ± 0.1 ~0/ ~+11.57 ± 0.1 ~0/ ~-11.54 ± 0.1	5.23 V 11.57 V -11.57 V	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

*DCU current
1.29A.*

*14:42
SNA*

7.2.9.30 Procedure SPIRE-FM-WFT-FUNC-DCU-11-SPEC-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs switch ON check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer BDAs are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-11-SPEC-R.tcl	—	—	—	OK
2	Check that the Spectrometer detectors are switched on	SPECJFETSTAT SLIABITSTAT	0/-/7 1	0/7 1/1	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

14:4
SNW

7.2.9.31 Procedure SPIRE-FM-WFT-FUNC-DCU-13-SPEC-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs integrity check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	12 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that the Spectrometer detectors and LIAs are switched on	SPECJFETSTAT SLIABITSTAT	7 1	7 1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-13-SPEC-R.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

1 command not acknowledged on CMD history on CCS. (but pkt downloaded)

15:06 SWA

Sep 26, 07 15:01

CHIS_PRNT_2007.269.15.01.03.998

Page 1/1

Command history display printout from time: 2007.269.14.54.14.191 to time: 2007.269.14.55.20.097
 Current printout time: 2007.269.15.01.03.999 Display view mode: BRIEF Sort order: RELEASE Filter status: INACTIVE
 Number of commands printed: 50

Name	Description	Sequence	Release Time	Execution Time	S	D	C	G	B	IL	ST	Source	Update Time	R	GTO	A	S	012345	C
SCD06505	SEND_DRCU_COMMAND		2007.269.14.55.20	2007.269.14.55.20.157	E	E	E					EX hp2-s	2007.269.14.55.24.446	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.55.10	2007.269.14.55.10.204	E	E	E					EX hp2-s	2007.269.14.55.16.440	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.55.09	2007.269.14.55.09.251	E	E	E					EX hp2-s	2007.269.14.56.39.229	S	SS	S	S		X
SCD06505	SEND_DRCU_COMMAND		2007.269.14.55.09	2007.269.14.55.09.173	E	E	E					EX hp2-s	2007.269.14.55.11.490	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.55.07	2007.269.14.55.07.282	E	E	E					EX hp2-s	2007.269.14.55.11.479	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.55.07	2007.269.14.55.07.219	E	E	E					EX hp2-s	2007.269.14.55.11.470	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.55.05	2007.269.14.55.05.329	E	E	E					EX hp2-s	2007.269.14.55.11.455	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.55.05	2007.269.14.55.05.189	E	E	E					EX hp2-s	2007.269.14.55.11.436	S	SS	S	S		S
SCD01505	FLUSH_FIFO		2007.269.14.55.04	2007.269.14.55.04.188	E	E	E					EX hp2-s	2007.269.14.55.11.426	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.55.03	2007.269.14.55.03.173	E	E	E					EX hp2-s	2007.269.14.55.11.415	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.55.00	2007.269.14.55.00.157	E	E	E					EX hp2-s	2007.269.14.55.05.452	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.59	2007.269.14.54.59.328	E	E	E					EX hp2-s	2007.269.14.55.05.438	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.59	2007.269.14.54.59.190	E	E	E					EX hp2-s	2007.269.14.55.05.416	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.57	2007.269.14.54.57.276	E	E	E					EX hp2-s	2007.269.14.55.00.477	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.57	2007.269.14.54.57.173	E	E	E					EX hp2-s	2007.269.14.55.00.460	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.56	2007.269.14.54.56.219	E	E	E					EX hp2-s	2007.269.14.55.00.449	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.54	2007.269.14.54.54.266	E	E	E					EX hp2-s	2007.269.14.55.00.432	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.54	2007.269.14.54.54.126	E	E	E					EX hp2-s	2007.269.14.55.00.415	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.52	2007.269.14.54.52.250	E	E	E					EX hp2-s	2007.269.14.55.00.405	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.52	2007.269.14.54.52.172	E	E	E					EX hp2-s	2007.269.14.54.54.485	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.51	2007.269.14.54.51.219	E	E	E					EX hp2-s	2007.269.14.54.54.469	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.50	2007.269.14.54.50.328	E	E	E					EX hp2-s	2007.269.14.54.54.450	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.50	2007.269.14.54.50.188	E	E	E					EX hp2-s	2007.269.14.54.54.428	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.48	2007.269.14.54.48.360	E	E	E					EX hp2-s	2007.269.14.54.54.419	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.48	2007.269.14.54.48.219	E	E	E					EX hp2-s	2007.269.14.54.54.396	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.46	2007.269.14.54.46.266	E	E	E					EX hp2-s	2007.269.14.54.50.461	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.46	2007.269.14.54.46.125	E	E	E					EX hp2-s	2007.269.14.54.50.445	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.45	2007.269.14.54.45.235	E	E	E					EX hp2-s	2007.269.14.54.50.426	S	SS	S	S		S
SCD01505	FLUSH_FIFO		2007.269.14.54.44	2007.269.14.54.44.156	E	E	E					EX hp2-s	2007.269.14.54.50.410	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.43	2007.269.14.54.43.141	E	E	E					EX hp2-s	2007.269.14.54.50.390	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.33	2007.269.14.54.33.187	E	E	E					EX hp2-s	2007.269.14.54.36.403	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.32	2007.269.14.54.32.297	E	E	E					EX hp2-s	2007.269.14.54.36.397	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.32	2007.269.14.54.32.156	E	E	E					EX hp2-s	2007.269.14.54.36.394	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.30	2007.269.14.54.30.328	E	E	E					EX hp2-s	2007.269.14.54.36.379	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.30	2007.269.14.54.30.187	E	E	E					EX hp2-s	2007.269.14.54.36.368	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.28	2007.269.14.54.28.362	E	E	E					EX hp2-s	2007.269.14.54.32.431	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.28	2007.269.14.54.28.218	E	E	E					EX hp2-s	2007.269.14.54.32.409	S	SS	S	S		S
SCD01505	FLUSH_FIFO		2007.269.14.54.27	2007.269.14.54.27.203	E	E	E					EX hp2-s	2007.269.14.54.32.397	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.26	2007.269.14.54.26.187	E	E	E					EX hp2-s	2007.269.14.54.32.376	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.23	2007.269.14.54.23.172	E	E	E					EX hp2-s	2007.269.14.54.32.366	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.22	2007.269.14.54.22.343	E	E	E					EX hp2-s	2007.269.14.54.24.395	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.22	2007.269.14.54.22.203	E	E	E					EX hp2-s	2007.269.14.54.24.385	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.20	2007.269.14.54.20.275	E	E	E					EX hp2-s	2007.269.14.54.24.366	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.20	2007.269.14.54.20.172	E	E	E					EX hp2-s	2007.269.14.54.24.356	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.19	2007.269.14.54.19.219	E	E	E					EX hp2-s	2007.269.14.54.21.415	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.17	2007.269.14.54.17.343	E	E	E					EX hp2-s	2007.269.14.54.21.399	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.17	2007.269.14.54.17.265	E	E	E					EX hp2-s	2007.269.14.54.21.387	S	SS	S	S		S
SC001500	SET_BBID		2007.269.14.54.15	2007.269.14.54.15.249	E	E	E					EX hp2-s	2007.269.14.54.21.365	S	SS	S	S		S
SC003500	SET_OBS_STEP		2007.269.14.54.15	2007.269.14.54.15.172	E	E	E					EX hp2-s	2007.269.14.54.21.352	S	SS	S	S		S
SCD06505	SEND_DRCU_COMMAND		2007.269.14.54.14	2007.269.14.54.14.219	E	E	E					EX hp2-s	2007.269.14.54.16.392	S	SS	S	S		S

Sep 26, 07 15:04

TMPH_PRNT_2007.269.15.04.38.992

Page 1/1

TM Packet Query Display

=====

TM Packet Details

Mnemonic: SP15TCECR500 Description: R_TC_Execution_Completed_Report *SCOS-2000* Simulated: N
Set to OBS Step

S/C ID: 486 G/S ID: 0 SLE ID: 0 OCC ID: 0 VCID: 0 HFA D/S: 65535

Data Unit Type: GOOD SP Time Stamp Type: PG Time Quality: G

APID: 1281 SSC: 13363 Type: 1 Subtype: 7 PI1: 0 PI2: 0

SPID: 190803500 TPSD: -1 HFA Counter: 5443 Filing: E Distribution: E

Time Field: Y Packet Period: 0 [msec] CRC: ? Event Severity: ?

TM Packet Parameter Data

Generation time: 2007.269.14.55.11.169 Reception time: 2007.269.14.55.16.421

TM Packet Raw Data

SCOS-2000 Header:

0000:0000 0000 CF72 FA46 6396 0200 D472 FA46 956E 0600 0100 0000 E601 0000 5600 0000
 0020:1138 FFFF 4315 0000 2C6E 5F0B 0000 0000 0000 0000 FFFF FFFF 10FF 0105 3334 0107

Packet Raw Data:

0000:0D01 F433 000F 0001 0700 5D8C D14F 2B69 1D00 C54A BB9B

7.2.9.32 Procedure SPIRE-FM-WFT-FUNC-DCU-14-SPEC-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs noise check
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer BDAs are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	Spectrometers BDAs signal show no excess noise

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Check that the Spectrometer detectors and LIAs are switched on	SPECJFETSTAT SLIABITSTAT	7 1	7 1	OK
2	Execute TCL script SPIRE-FM-WFT-FUNC-DCU-14-SPEC-R.tcl	—	—	—	OK
3	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

*15:20
SN4*

7.2.9.33 Procedure SPIRE-FM-WFT-SDET-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	Spectrometer BDAs Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer BDAs are ON
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted and Spectrometer BDAs are OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	DCU HK parameters show expected values

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-SDET-OFF-R.tcl	—	—		OK
2	Check that the Spectrometer detectors are switched off	SPECJFETSTAT	7/-/0	7/0	OK
3	Check that the Spectrometer LIAs are switched off	SLIABITSTAT	1/-/0	1/0	OK
4	Wait for the I-EGSE staff to confirm the success or failure of this test	—	—	—	—
Test Result (Pass/Fail): <i>Passed</i>					

15:26
SNA

7.2.9.34 Procedure SPIRE-FM-WFT-FUNC-SMEC-01-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Encoder/LVDT Sensor Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDTPWR show expected ON values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-01-R.tcl	—	—	—	OK
2	Check that power to the SMEC LED and LVDT sensor is on	SMECENCPWR SMECLVDTPWR	0/-6 0/1/1	0/6 0/1	OK
Test Result (Pass/Fail): <i>Passed</i>					

15:27
SNH

7.2.9.35 Procedure SPIRE-FM-WFT-FUNC-SMEC-03-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Encoder Integrity Check.
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	Unchanged
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	5 minutes
Pass/Fail criteria	MCUENGSMECENC SIG1/2 increase as the encoder power is increased

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-FUNC-SMEC-03-R.tcl	—	—	—	OK
2	Wait for the I-EGSE staff to confirm the success or failure of this test				
Test Result (Pass/Fail): <i>Passed</i>					

15:32
SNAH

7.2.9.36 Procedure SPIRE-FM-WFT-SMEC-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SMEC (REDUNDANT) Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are ON.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted. SMEC Encoder and LVDT are OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is booted. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	3 minutes
Pass/Fail criteria	HK Parameters SMECENCPWR and SMECLVDPWR show expected OFF values.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-SMEC-OFF-R.tcl	—	—	—	OK
2	Check that the power to the SMEC sensors is switched off	SMECENCPWR SMECLVDPWR	6/-0 1/-0	6/0 1/0	OK
Test Result (Pass/Fail): <i>Pass</i>					

15:33
SNH

7.2.9.37 Procedure SPIRE-FM-WFT-MCU-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	MCU REDUNDANT Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is booted.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON and MCU REDUNDANT is OFF.
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MCU REDUNDANT is ON. • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified MCU HK Parameter shows expected value.

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute SPIRE-FM-WFT-MCU-OFF-R.tcl	—	—	—	OK
2	Check that the MCU is switched off	MCUBITSTAT	1/-/0	1/0	OK
Test Result (Pass/Fail): <i>Passed</i>					

*1x 5,4 event expected
procedure update reqd*

*15:34
SWH*

7.2.9.38 Procedure SPIRE-FM-WFT-SCU-OFF-R

Version	2.3
Date	10 th Sept. 2007
Purpose	SCU REDUNDANT Switch OFF
Initial configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is ON.
Final configuration	SPIRE DPU and DRCU REDUNDANT are ON and SPIRE HK is being produced and AC/DC thermometry is OFF
Preconditions	<ul style="list-style-type: none"> • SPIRE DRCU REDUNDANT is switched ON • SPIRE MIB REDUNDANT is imported in the CCS database. • CCS is up and running • FUNCTIONAL TEST PARAMETERS display is selected on the CCS
Duration	2 minutes
Pass/Fail criteria	Specified SCU HK Parameters show expected value.

Procedure Steps:

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-FM-WFT-SCU-OFF-R.tcl	—	—	—	OK
2	A few seconds later record the value of parameter SCUTEMPSTAT	SCUTEMPSTAT	0xFFFF/-0	FFF/0	OK
3	A few seconds later record the value of parameter SUBKSTAT	SUBKSTAT	1/-0	1/0	OK
Test Result (Pass/Fail): <i>Passed</i>					

*17:35
SWH*

7.2.10 Switch Off DRCU & DPU REDUNDANT

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
	SWITCH OFF DRCU REDUNDANT						
	Initial Conditions: DPU-A & DRCU B ON						

Step-No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value	Remarks	P	N
8.1	On HPCCS execute the following test script to power on the SPIRE DPU and DRCU. S102999SCVT012_ASDWFTSPIR_PWR_OFF_R.tcl Respond to the prompts as listed below:				AND: ZAD07999, ZAD14999 MIM: LCL_HERSHEL		
	<i>The test script (calling the specific SPIRE scripts as appropriate) powers OFF the DRCU. The DPU is then powered OFF before disabling the Mil1553 bus interface.</i>				<i>DPU current < 0.45A before below low limit script continues</i>		
8.2	On I-EGSE/HPCCS check that THSK parameter is not refreshing anymore	OK		OK			
8.3	On I-EGSE/HPCCS check that TM2N parameter is not incrementing anymore	OK		OK			
8.4	Continue test script by responding to prompt SWITCH OFF DPU REDUNDANT						
8.5	Continue test script by responding to prompt SPIRE REDUNDANT DRCU & DPU POWER OFF COMPLETE				DPU current limit wrong.		

Script update reqd, -corrected to 0.41-0.51A was followed 26/09/07 sw4

7.2.11 Procedure SPIRE-FM-WFT-LPU-01-R

Version	1.0
Date	Tuesday, 28 August 2007
Purpose	DPU PRIME Switch OFF
Initial configuration	Prime and redundant DPU and DRCU are off
Final configuration	Prime and redundant DPU and DRCU are off
Constraints	<ul style="list-style-type: none"> • Cryostat is vertical to within $\pm 45^\circ$ • Prime and redundant DPU and DRCU are off
Duration	5 minutes
Pass/Fail criteria	The specified current is drawn when the LPU is enabled and is switched off when the LPU is disabled

Procedure Steps:

Step	Description	Parameter – Unit	Expected Values Before/During/After	Actual Values Before/During/After	Success/ Failure
1	Power on Redundant LPU LCL (LCL #26)	LCL status	OFF/ /ON		State of LCL #26 switches to ON
3	Send HL command #21 (LPU Enable Redundant)	LCL #26 current	0mA/ /130-180mA		Current between 130- 180mA
4	Send HL command #22 (LPU Disable Redundant)	LCL #26 current	130-180mA/ /0mA		Current off
5	Un-power Prime LPU LCL (LCL # 25)	LCL status	ON/ / OFF		State of LCL #26 switches to OFF
Test Result (Pass/Fail):					

7.2.12 Satellite & EGSE Switch Off

Step- No.	Test-Step-Description	Nominal Value	Tolerance	Actual Value		P	N
Satellite & EGSE Switch Off							
	Initial Conditions: Nominal & Redundant SPIRE warm units OFF						
9.1	On HPCSS terminate ALL SubscribeParams.tcl test script.	OK		OK			
9.2	From HPCSS Test Conductor console issue command to disconnect from SPIRE I-EGSE disconnect HSPIREEGSE	OK		OK			
9.3	Confirm from HPCSS and SPIRE I-EGSE that the disconnection was successful	OK		OK			
9.4	Switch OFF I-EGSE i.a.w. AD 5						
9.5	Switch OFF Satellite/SVM, HPCSS and SCOEs i.a.w. procedure AD 2 Sections 7.7 to 7.11	OK		left powered for NCR investigations			
9.6	Confirm both Satellite and EGSE powered down	OK		N/A			
	End Conditions: Satellite and EGSE OFF						
END OF TEST							

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8 Summary Sheets

8.1 Procedure Variation Summary

		Test Change	Curr. No.:	
			Date <i>26.09.07</i>	
			Page <i>1</i> of <i>1</i>	
Test designation <i>SPIRE FM WFT</i>		Test Procedure <i>HP-2-ASED-TP-0167</i>	Issue <i>1</i>	Rev. <i>0</i>
Test step changed <i>7.2.4, 7.2.6, 7.2.8, 7.2.11</i>		Reason for Change <i>S/C mounted on VIS, LPU not integrated</i>		
<p><i>Skip LPU and Mechanism tests on prime and redundant side (test steps in chapter 7.2.4, 7.2.6, 7.2.8 and 7.2.11)</i></p>				
Prepared by: <i>P. Koppe</i>		Resp. Test Leader	Project Engineer <i>Koppe</i>	
PA/QA <i>[Signature]</i>		Prime	Customer	



Table 8.1-1: Procedure Variation Sheet

8.2 Non Conformance Report (NCR) Summary (NEW)

NCR - No.	NCR - Title	Date	Open Closed	PA sig.
3632	Command Execution failures when executing SPIRE-FMTWFT-DRAW-START-PIR-STEP2	26/09/07	open	
3633	Unknown type 21, 4 packets reported by CCS.	26/09/07	open	

Table 8.2-1: Non-Conformance Record Sheet

8.3 Sign-off Sheet

	Date	Signature
Test Manager		
Operator	26/09/07	
PA Responsible	26.09.07	
ESA Representative		

END OF DOCUMENT

	Name	Dep./Comp.		Name	Dep./Comp.
X	Alberti von Mathias Dr.	ASG22		Schweickert Gunn	ASG22
	Baldock Richard	FAE12	X	Sonn Nico	ASG51
	Barlage Bernhard	AED13		Steininger Eric	AED32
	Bayer Thomas	ASA42	X	Stritter Rene	AED11
	Brune Holger	ASA45		Suess Rudi	OTN/ASA44
	Edelhoff Dirk	AED2		Wagner Klaus	ASG22
	Fehringer Alexander	ASG13	X	Wietbrock Walter	AET12
X	Fricke Wolfgang Dr.	AED 65		Wöhler Hans	ASG22
	Geiger Hermann	ASA42		Wössner Ulrich	ASE252
	Grasl Andreas	OTN/ASA44	X	Theunissen Martijn/Dutch Space	ASA43
	Grasshoff Brigitte	AET12	X	Martin Olivier	ASA43
X	Hamer Simon	Terma			
X	Hendry David	Terma			
	Hengstler Reinhold	ASA42			
	Hinger Jürgen	ASG22			
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252			
	Idler Siegmund	AED312			
	Ivány von András	FAE12			
	Jahn Gerd Dr.	ASG22			
	Kalde Clemens	ASM2			
	Kameter Rudolf	OTN/ASA42			
	Kettner Bernhard	AET42			
	Knoblauch August	AET32	X	Alcatel Alenia Space Cannes	AAS-F
X	Koelle Markus	ASA43		Alcatel Alenia Space Torino	AAS-I
X	Koppe Axel	AED312	X	ESA/ESTEC	ESA
X	Kroeker Jürgen	AED65			
X	La Gioia Valentina	Terma		Instruments:	
	Lang Jürgen	ASE252		MPE (PACS)	MPE
	Langenstein Rolf	AED15	X	RAL (SPIRE)	RAL
	Langfermann Michael	ASA41		SRON (HIFI)	SRON
X	Maukisch Jan	ASA43			
X	Much Christoph	ASA43			
	Müller Jörg	ASA42		Subcontractors:	
X	Müller Martin	ASA43		Alcatel Alenia Space Antwerp	ABSP
	Peltz Heinz-Willi	ASG13		Austrian Aerospace	AAE
	Pietroboni Karin	AED65		Austrian Aerospace	AAEM
	Platzer Wilhelm	AED2		BOC Edwards	BOCE
	Reichle Konrad	ASA42		Dutch Space Solar Arrays	DSSA
	Runge Axel	OTN/ASA44		EADS Astrium Sub-Subsyst. & Equipment	ASSE
	Schink Dietmar	AED32		EADS CASA Espacio	CASA
	Schlosser Christian	OTN/ASA44		EADS CASA Espacio	ECAS
	Schmidt Rudolf	FAE12		European Test Services	ETS
	Schmidt Thomas	ASA42		Patria New Technologies Oy	PANT
	Schuler Günter	ASA42		SENER Ingenieria SA	SEN

END OF DOCUMENT

	Name	Dep./Comp.		Name	Dep./Comp.
X	Alberti von Mathias Dr.	ASG22		Schweickert Gunn	ASG22
	Baldock Richard	FAE12	X	Sonn Nico	ASG51
	Barlage Bernhard	AED13		Steininger Eric	AED32
	Bayer Thomas	ASA42	X	Stritter Rene	AED11
	Brune Holger	ASA45		Suess Rudi	OTN/ASA44
	Edelhoff Dirk	AED2		Wagner Klaus	ASG22
	Fehringer Alexander	ASG13	X	Wietbrock Walter	AET12
X	Fricke Wolfgang Dr.	AED 65		Wöhler Hans	ASG22
	Geiger Hermann	ASA42		Wössner Ulrich	ASE252
	Grasl Andreas	OTN/ASA44	X	Martin Olivier	ASA43
	Grasshoff Brigitte	AET12	X	Theunissen Martijn	DutchSpace
X	Hamer Simon	Terma			
X	Hendry David	Terma			
	Hengstler Reinhold	ASA42			
	Hinger Jürgen	ASG22			
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252			
	Idler Siegmund	AED312			
	Ivány von András	FAE12			
	Jahn Gerd Dr.	ASG22			
	Kalde Clemens	ASM2			
	Kameter Rudolf	OTN/ASA42			
	Kettner Bernhard	AET42			
	Knoblauch August	AET32	X	Alcatel Alenia Space Cannes	AAS-F
X	Koelle Markus	ASA43		Alcatel Alenia Space Torino	AAS-I
X	Koppe Axel	AED312	X	ESA/ESTEC	ESA
X	Kroeker Jürgen	AED65			
X	La Gioia Valentina	Terma		Instruments:	
	Lang Jürgen	ASE252		MPE (PACS)	MPE
	Langenstein Rolf	AED15	X	RAL (SPIRE)	RAL
	Langfermann Michael	ASA41		SRON (HIFI)	SRON
X	Maukisch Jan	ASA43			
X	Much Christoph	ASA43			
	Müller Jörg	ASA42		Subcontractors:	
X	Müller Martin	ASA43		Alcatel Alenia Space Antwerp	ABSP
	Peltz Heinz-Willi	ASG13		Austrian Aerospace	AAE
	Pietroboni Karin	AED65		Austrian Aerospace	AAEM
	Platzer Wilhelm	AED2		BOC Edwards	BOCE
	Reichle Konrad	ASA42		Dutch Space Solar Arrays	DSSA
	Runge Axel	OTN/ASA44		EADS Astrium Sub-Subsyst. & Equipment	ASSE
	Schink Dietmar	AED32		EADS CASA Espacio	CASA
	Schlosser Christian	OTN/ASA44		EADS CASA Espacio	ECAS
	Schmidt Rudolf	FAE12		European Test Services	ETS
	Schmidt Thomas	ASA42		Patria New Technologies Oy	PANT
	Schuler Günter	ASA42		SENER Ingenieria SA	SEN