SPIRE-AST-REP-002629

Title: **SPIRE SFT Cold He 2**

CI-No: 153100

Prepared by:	S. Ilsen	Date:	26/09/2005
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Distribution: See Distribution List (last page)

Issue	Date	Sheet	Description of Change	Release
1	26/09/ 2005		First Issue	

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1 Scope

1.1 Objective

This test report describes the results of the SFT Cold He II performed for the Herschel SPIRE Instrument.

The test was performed at ASED in Ottobrunn on 26/09/2005.

1.2 Summary

Detailed results are given in the as-run-procedure in Chapter 7

The following NCR's have been raised:

- N/A

The following NCR's have been altered:

- N/A

Conclusion:

No problems were detected.

Extra Comments:

N/A

2 Documents/Drawings

2.1 Applicable Documents

INSTRUMENT PLM EQM LEVEL TEST PROCEDURE

HP-2-ASED-PR-0051, issue 1.1 from 24.06.2005

EGSE CONFIGURATION PROCEDURE

HP-2-ASED-PR-0035, Issue 4 from 03.08.2005

INSTRUMENT TEST PROCEDURE

SPIRE-RAL-PRC-002494, Issue 1.3 from 23.09.2005

2.2 Reference Documents

N/A

2.3 OtherDocuments

N/A

3 Configuration

3.1 PLM Configuration

SVM integrated with cryostat. Cryostat is at He II level (~1.7 K).

3.2 Environment

Environmental	Actual
Clean Room Class	100.000
Temperature	~21 °C
Rel. Humidity	~52.10 %
Pressure	~857 mbar

4 Conditions

4.1 Personnel

Responsibility	Name / Organization
Test Manager	S. Idler
Test Engineer	S. Ilsen
EGSE Operator	S. Ilsen
Instrument Engineer	A. Aramburu, B. Swinyard
PA Responsible	D. Hendry / E. Lamprecht
ESA/Alcatel Representative	W. Pinter-Krainer, G. Doubrovik

4.2 Environmental

See chapter 3.2

4.3 General Precautions and Safety

N/A

4.3.1 General Safety Requirements, Precautions

N/A

4.3.2 ESD constraints

N/A

4.3.3 Special QA Requirements

N/A

4.4 EGSE

4.4.1 Hardware: CCS, EGSE's and DFE's

Item	Hardware Id	Serial No.
CCS	N/A	HPCCS 4
PLM SCOE	SE8426	03/001
CDMU DFE	SE8455	03/002
CRYO SCOE	EQM	N/A
IEGSE	N/A	N/A

4.4.2 Hardware: Prime Instrument: SPIRE

Item	Model	Remark
DPU	HSDPU AVM	
DRCU	HSDCU QM1 HSFCU QM1	

4.4.3 Software

Prime Instrument: PACS

SW Ident	Issue /Version	Responsible	Comment
Inst OBS SPU	11.7	Inst	
Inst SPU boot OBSW	1.4	Inst	
Inst OBS DECMEC	5.0.25 Version for Mech control cold	Inst	V 5.0.24 Mech controller hot
Inst DECMEC boot OBSW	1.1	Inst	
Inst OBS DPU	7.68	Inst	
Inst DPU Boot OBSW	1.0	Inst	

Standby Instrument: HIFI

SW Ident	Issue /Version	Responsible	Comment
Inst ICU OBS	2.22	Inst	18.05.2005
Inst LCU OBS	17.0	Inst	01.10.2004

Standby Instrument: SPIRE

SW Ident	Issue /Version	Responsible	Comment
Inst DPU OBS	2.0.A1 Boot SW June 2003	Inst	

IEGSE Configuration

SW Ident	Issue /Version	Responsible	Comment
MIB on I-EGSE	SPIRE_MIB_CQM2_2.0.A2_After_WUC_08 072005	Inst	
HCSS Build Version	644	Inst	
PACS Build	159	Inst	

CCS Configuration

SW Ident	Issue /Version	Responsible	Comment
TCL Scripts HIFI	ist_cus_0.7_tcl.zip	Inst	Delivered on 19.08.2005
TCL Scripts PACS	IMT_cus-shell-scripts_19092005.zip	Inst	Delivered on 19.09.2005
TCL Scripts SPIRE	SPIRE-SFTs-Issue1.2_15092005 SPIRE_EQM_IMT_1_1	Inst	Delivered on 16.09.2005 Delivered on 23.09.2005
CCS MIB Bridge files	CCS_Her_PLM__01_v1_2.zip	ASP	2005-09-08
CCS S/W Release	2.0.614	Terma	

CDMU DFE Configuration

SW Ident	Issue /Version	Responsible	Comment
CDMU DFE CMS	2.3.0.0	SSBV	Part of CDMU DFE Workstation
CDMU DFE Pipe I/F (IPC Handler P7001)	2.4.0.0	SSBV	Part of CDMU DFE Workstation
CDMU DFE Pipe I/F (IPC Handler Pipe P 7002)	1.2.1.0	SSBV	Part of CDMU DFE Workstation
CDMU archive Browser	2.2.2.72	SSBV	Part of CDMU DFE Workstation
Mil-STD-1553b BusMonitor	1.11.1.87	SSBV	Part of CDMU DFE Workstation
CDMU DFE IPC Handler object implementation	2.4.0.18	SSBV	Part of CDMU DFE Workstation

SimFE	1.5.0.0	SSBV	Part of CDMU DFE Platform
HLBC	1.07.00	SSBV	Part of CDMU DFE Platform

PLM SCOE Configuration

SW Ident	Issue /Version	Responsible	Comment
PLM SCOE CMS	1.5.0.0	SSBV	Part of PLM SCOE Workstation
PLM SCOE archive browser	2.2.1.70	SSBV	Part of PLM SCOE Workstation
PLM SCOE pipe I/F	1.3.0.0	SSBV	Part of PLM SCOE Workstation
PLM SCOE IPC Handler object implementation	2.1.0.7	SSBV	Part of PLM SCOE Workstation
PDU Controller	1.5.0.0	SSBV	Part of PLM SCOE Platform

Bus Profiles

The following bus profiles are loaded on the CDMU DFE. They are provided, checked and validated by Patrice Couzin (ASP). They were delivered by email on 01.09.2005

- PACS_prime_inst.PST
- SPIRE_prime_inst.PST
- HIFI_prime_inst.PST
- PACS_SPIRE_par.PST
- PACS_burst_mode.PST
- Inst_sdby.PST

The profiles allow one instrument in PRIME mode, while the others are in standby mode. This test will use only the following bus profile(s):

- SPIRE_prime_inst.PST (see Appendix 1)

4.4.4 Special Equipment

N/A

4.5 MIB

4.5.1 Version

The used MIB has reference: CCS_Her_PLM__01_v1_2.zip

And reference date: 2005-09-08

The MIB was received by email from Sonia Dos-Santos (ASP) on 08/09/2005

4.5.2 Configuration & Manual changes

The following files have been manually changed by Alcatel after the generation process (taken from the configuration.txt file included in the MIB):

- CDF.DAT

  HPSDB does not allows fixed counter flags (ie CDF_ELTYPR=F for counters) HPSDB NCR 478

- CDF.DAT

  Problem on the (PTC,PFC)=(7,0) Variable octect string (PP004380).

  PACS has the following data:

  PC010380 E 8 32 PP004380 R

  On HPSDB this line is generated

  PC010380 E 0 32 0 PP004380 R

  For now has been manually replaced.

- DPC.DAT

  Add the line

  HA000289 HU035197 63 1 Y N

  HPSDB NCR, not possible to add User parameters on an alphanumeric display (NCR 495)

  Note: The parameter HU035197 can not be loaded via S2K files, because is not associated to a Packet (NCR created 475)

  Error HPSDB Solution: The parameter as been loaded by the an XML file Add_Parameter_HU035197.xml, to correct this problem.

- PLF.DAT

  (HPSDB NCR 474) error when loading/generating SCOS TM packets has fixed and variable but with diferent definitions, (the following packet has the

parameter repeated 16 times on plf.dat, and repeated 0 times (variable) on the vpd.dat table)

The vpd.dat is corrected generated but not the plf.dat

replace the line (manual)

HM057190 80044289 0 0 1 0 0 0

by

HM056190 80044289 16 0 1 0 0 0

HM057190 80044289 17 0 64 0 0 0

- TCD.DAT

  Generated empty by HPSDB, NCR 497 replaced by the one used on the tests week 28

- SCO.DAT

  replaced by the one used on the tests week 28. This file shall be discussed with S. Ilsen because of the SCOE's names, HPSDB generates the names of the real elements.

- TMD.DAT

  Add packets sent by SPIRE team by email on 31/08/2005

- PCF.DAT

  Change PCF_VALPAR=0 on the parameter HU035197 inside of the pcf.dat. This was ok on HIFI, but not done on the XML file loaded

  Add_Parameter_HU035197.xml

- PLF.DAT

  Change the field PLF_LOGCC from NULL to 32 bits (see email from Luc Dubbeldam- HIFI on 06/09/2005)

  HM057190 80044289 17 0 64 32 0 0

The following files have been changed manually by ASED OTN (Stijn Ilsen):

- CAP.DAT – The decimal separator for the EQM CRYO SCOE calibration is manually changed from “,” to “.”. This also to solve problems with the EQM CRYO SCOE calibrations. EQM CRYO SCOE MIB will be updated by ASED to avoid this problem in the future.
- TMD.DAT – The EQM CRYO packets have been added to the tmd.dat file on the CCS to make sure all EQM CRYO SCOE packets are forwarded to the IEGSE.

Remark: Because of NCR 1482, a MIB change was necessary after the first day of IMT. The CDF.DAT file is changed. Command PC162420 allows 8 entries for parameter PP067420, this is changed into 9.

5 Step by Step Procedure: Configure CCS and EGSE

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution - steps 1 to 9)**

Step #	Action	Comments	Check
1	Note Testsession	2005_09_26_06_36_ilsens_hpws42_REALTIME_S_SFT_C2	**OK**
2	Power on CDMU DFE platform		**OK**
3	Power on PLM SCOE platform		**OK**
4	Power on the CDMU DFE workstation and wait for the BIST to finish.	Check: BIST successful?	**OK**
5	Power on the PLM SCOE workstation and wait for the BIST to finish.	Check: BIST successful?	**OK**
6	Execute “EGSE_CONFIG_AUTO.tcl” (see log in Appendix 2)	Check: PLM SCOE HK packets arriving	**OK**
		Check: CDMU DFE HK packets arriving	**OK**
		Check: Check name of bus profile (PST) in CDMU DFE HK or on CDMU DFE workstation **Result: SPIRE_prime_inst.pst** **This is done because the OBSW upload with HIFI as standby would be too slow.**	**OK**
7	Execute “SubscribeParams.tcl”	Check: Wait until status of TCL file has changed to WAITING. This can take up to 10 minutes.	**OK**
8	Execute “Connect HIEGSE”	Check with IEGSE operators if IEGSE is connected.	**OK**
9	Execute “WARNING_LAMP_POWER_ON.tcl”	**Not done since warning lamp is broken.**	**N/A**
extra	Execute “connect EQMCRYO”		**OK**

6 Step by Step Procedure: Power On SPIRE

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 10)**
- **SPIRE-RAL-PRC-002494 (Issue 1.3 – 23/09/05)**

Step #	Action	Comments	Check
1	CCS 28V Power Supply to the DPU is available		**OK**
2	SPIRE MIB is imported in the CCS database.		**OK**
3	CCS is up and running (SCOS, TOPE and the CDMU Simulator)		**OK**
4	DPU AND OBS PARAMETERS display is selected on the CCS		**OK**

6.1.1 SFT-SPIRE-CCS-DPU-ON

Purpose: To switch on the SPIRE DPU and start generating housekeeping

Step #	Action	Comments	Check
1	Power on the SPIRE DPU using the CCS 28V Power Supply	**This action is performed from INSTR_POWER_ON.tcl (see Appendix 3)** **Result:** • **Voltage: 27.8 V** • **Current: 0.45 A** **(5,2) packet received**	**OK**
2	Execute TCL script SFT-SPIRE-CCS-DPU-ON.tcl		**OK**
3	Check that THSK parameter on the DPU AND OBS PARAMETERS display on SCOS is refreshing every second	THSK incrementing every second	**OK**
4	Check that TM2N parameter on the DPU AND OBS PARAMETERS display on SCOS is incrementing every second	TM2N incrementing every second	**OK**

Final Configuration: SPIRE DPU is on but the DRCU is still off

6.1.2 SFT-SPIRE-CCS-DRCU-ON

Purpose: To switch on the SPIRE DRCU and start generating housekeeping

Step #	Action	Comments	Check
1	Execute TCL script SFT-SPIRE-CCS-DRCU-ON-STEP1.tcl	**HK stopped as expected**	**OK**
2	Check that THSK parameter is not refreshing anymore		**OK**
3	Check that TM2N parameter is not incrementing anymore		**OK**
4	Ensure the SPIRE Power Bench is connected to the mains – see Figure 2.		**OK**
	Ensure all 5 remote DCU switches are in the off position – see Figures 3 & 4 below.		**OK**
	Switch on the Primary Power on the back of the SPIRE Power Bench (Figure 2).	**Prime power led becomes orange** **Main power led becomes green**	**OK**
	Switch on the Secondary Power on the front of the SPIRE Power Bench by pulling out and lifting up the switch (shown in yellow circle in Figure 5)	**Secondary power led becomes red**	**OK**
5	Execute TCL script SFT-SPIRE-CCS-DRCU-ON-STEP2.tcl		**OK**
6	Manual Switch on of the DRCU by the CCS staff step 2: • Switch on all 5 remote DCU		**OK**

	switches		
7	Check that THSK parameter is again refreshing every second	**THSK incrementing every second**	**OK**
8	Check that TM2N parameter is again incrementing every second	**TM2N incrementing every second**	**OK**

Final Configuration:

- SPIRE DPU and DRCU are both on
- HK generation is on

7 Step by Step Procedure: SPIRE SFT Cold He 2 results

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 11)**
- **SPIRE-RAL-PRC-002494**

7.1 SFT-SPIRE-CCS-FUNC-SCU-01

Purpose: SCU science packet generation check

Preconditions:

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments			Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-01.tcl	Check if the following parameters change value:			
		Parameter	**Original Value**	**End Value**	
		SCUFRAMECNT[1]	0	31	**OK**
		Observed values	**0**		
		TM5N[2]	00003FFF	1	**OK**
		Observed values	**00003FFF**	**1**	

With respect to last SFT, the procedure is adapted to correct NCR 1276. This NCR can now be closed.

Final Configuration: Unchanged

[1] AND SA_4_559 (SCU Parameters)
[2] AND SA_1_559 (DCU and OBS parameters)

7.2 SFT-SPIRE-CCS-FUNC-DCU-01

Purpose: DCU science packet generation check for all Photometer and Spectrometer packet types (PF, PSW, PMW, PLW, SF, SSW and SLW)

Preconditions:

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- DCU PARAMETERS display is selected on the CCS

Step #	Action	Comments			Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-DCU-01.tcl	Check if the following parameters change value:			
		Parameter	**Original Value**	**End Value**	
		DCUFRAMECNT	0	700	**OK**

Final Configuration: Unchanged

7.3 SFT-SPIRE-CCS-FUNC-DCU-04-PS-ON

Purpose: Spectrometer and Photometer LIAs switch on

Preconditions: The Photometer and Spectrometer LIAs are switched off

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments			Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-DCU-04-PS-ON.tcl	Check if the following parameters change value:			
		Parameter	**Original Value**	**End Value**	
		SCUDCDCSTAT[3]	0	1	**OK**
2	**Manual step for the CCS staff: Check if the Over Current Limiter for the LIAs has triggered on the SPIRE Warm Electronics Power Bench. If it has, it will have to manually reset.**	Checked by S. ILSEN and A. Arambura			**OK**

Final Configuration: The Photometer and Spectrometer LIAs are on.

[3] AND SA_4_559 SCU PARAMETERS

7.4 SFT-SPIRE-CCS-FUNC-SCU-04

Purpose: SCU Photometer PCAL check

Preconditions: SPIRE CQM is electrically integrated with the Herschel EQM

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments				Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-04.tcl The expected values during the test should be monitored when parameter BBFULLTYPE in the SCU PARAMETERS display is set to PCAL_Check This usually happens about 30 seconds from the start of test execution.	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		PCALCURR – mA **Observed**	0.0 **0.0**	0.1 **0.1**	0.0 **0.0**	**OK**
		PCALV – V **Observed**	0.0 **0.0**	0.026 **0.025**	0.0 **0.0**	**OK**

Final Configuration: Unchanged

Remark: At this point SPIRE asked to change to order of execution (with respect to the order of execution in the SFT procedure). As a result of that, the following 2 scripts are executed now.

7.5 SFT-SPIRE-CCS-FUNC-SCU-03

Purpose: SCU DC thermometry check

Step #	Action	Comments	Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-03.tcl		**OK**

2	Wait for the parameter BBFULLTYPE to get set to SCU_DC_Therm					**OK**
3	A few seconds later record the value of parameter SCUTEMPSTAT	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SCUTEMPSTAT **Observed**	0 **0000000**	FFFF **0000FFFF**	FFFF **0000FFFF**	**OK**
4	Record the RAW values of SCU temperatures	**Parameter**	**Value**			**OK**
		PUMPHTRTEMP **PUMPHSTEMP** **EVAPHSTEMP** **SHUNTTEMP** **SOBTEMP** **SL0TEMP** **PL0TEMP** **OPTTEMP** **BAFTEMP** **BSMIFTEMP** **SCAL2TEMP** **SCAL4TEMP** **SCALTEMP** **SMECIFTEMP** **SMECTEMP** **BSMTEMP**	**4.64** **7.22** **6.76** **1.66** **10.07** **1.98** **2.05** **9.64** **9.65** **8.99** **7.61** **9.67** **9.86** **9.86** **10.24** **9.12**			

Final Configuration: Unchanged

7.6 SFT-SPIRE-CCS-FUNC-SCU-06

Purpose: SCU AC thermometry check

Preconditions: SPIRE CQM is electrically integrated with the Herschel EQM

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments	Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-06.tcl		**OK**

2	Wait for the parameter BBFULLTYPE to get set to SCU_AC_Therm					**OK**
3	A few seconds later record the value of parameter SUBKSTAT	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SUBKSTAT	0	1	1	**OK**
		Observed values	**0**	**1**	**1**	
4	Record the RAW value of SUBKTEMP	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SUBKTEMP	?		?	**OK**
		Observed values	**-**	**-**	**2.31**	
5	Note down the value of the MODE parameter on the DPU AND OBS PARAMETERS display	**Parameter**	**Start**	**During**	**End**	**OK**
		MODE	-	-	REDY	
		Observed values	**-**	**-**	**REDY**	

Final Configuration: Unchanged

7.7 SFT-SPIRE-CCS-FUNC-SCU-05

Purpose: SCU Photometer SCAL4 and SCAL2 check

Preconditions: SPIRE CQM is electrically integrated with the Herschel EQM

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments				Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-05.tcl					**OK**
2	Wait for the parameter BBFULLTYPE to get set to SCAL4_Check					**OK**
3	A few seconds later record the value of parameters SCAL4CURR and SCAL4V These parameters are set back to 0 after ~60 seconds	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SCAL4CURR – mA **Observed**	0.0 **0.0**	0.1 **0.1**	0.0 **0.0**	**OK**
		SCAL4V – V **Observed**	0.0 **0.0**	0.05 **0.05**	0.0 **0.0**	**OK**
4	Wait for the parameter BBFULLTYPE to get set to SCAL2_Check					**OK**
5	A few seconds later record the value of parameters SCAL4CURR and SCAL4V These parameters are set back to 0 after ~60 seconds	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SCAL2CURR – mA **Observed**	0.0 **0.0**	0.1 **0.1**	0.0 **0.0**	**OK**
		SCAL2V – V **Observed**	0.0 **0.0**	0.05 **0.05**	0.0 **0.0**	**OK**

Final Configuration: Unchanged

7.8 SFT-SPIRE-CCS-FUNC-SCU-07

Purpose: SCU cooler heaters check

Preconditions: SPIRE CQM is electrically integrated with the Herschel EQM

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments				Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-SCU-07.tcl					**OK**
2	Wait for the parameter BBFULLTYPE to get set to Cooler_Htr_Chk					**OK**
3	A few seconds later record the value of parameter EVHSV – the Evaporator Heat Switch Voltage. This voltage stays on for ~45 seconds.	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		EVHSV – mV **Observed**	0 **0**	~323 **325**	0 **0**	**OK**
4	A few seconds after the EVHSV parameter has been set back to 0, record the value of parameter SPHSV – the Sorption Pump Heat Switch Voltage. This voltage stays on for ~45 seconds.	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SPHSV – mV **Observed**	0 **0**	~323 **325**	0 **0**	**OK**
5	A few seconds after the SPHSV parameter has been set back to 0, record the value of parameter SPHTRV – the Sorption Pump Heater Voltage. This voltage stays on for ~45 seconds.	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SPHTRV – V **Observed**	0 **0**	~8.8 **8.77**	0 **0**	**OK**

Final Configuration: Unchanged

8 Step by Step Procedure: Switch Off SPIRE

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 10)**
- **SPIRE-RAL-PRC-002494 (Issue 1.3 – 25/09/05)**

Remark: This step is not done since the instrument is left in the current state for IMT

9 Step by Step Procedure: Set EGSE to OFFLINE

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 13 to 15)**

Remark: This step is not done since the instrument/CCS/EGSE is left in the current state for IMT

Step #	Action	Comments	Check
1	Execute: "WARNING_LAMP_POWER_OFF.tcl"		**N/A**
2	Execute: "EGSE_OFFLINE_AUTO.tcl" The log of this script can be found in **Error! Reference source not found.**	Check: PLM SCOE HK packets stopped	**N/A**
		Check: CDMU DFE HK packets stopped	**N/A**
3	Shut down PLM EGSE		**N/A**

10 Summary Sheets

10.1 Procedure Variation Summary

	Test Change	Curr. No.: Date Page of	
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 10.1-1: Procedure Variation Sheet

10.2 Non Conformance Report (NCR) Summary

NCR - No.	NCR - Title	Date	Open Closed	PA sig.

Table 10.2-1: Non-Conformance Record Sheet

10.3 Sign-off Sheet

	Name	Date	Signature
Test Manager	S. Idler	26.09.05	
Operator	S. ILSEN	26.09.05	
PA Responsible	D. HENDRY	26/9/05	

Appendix 1: SPIRE Nominal Bus Profile (SPIRE_prime_inst.PST)

```
;Nominal HERSCHEL/SPIRE Prime bus profile
;SPIRE is RT 21: 25TM, 2TC
;PACS is RT 25: 2TM, 1TC
;HIFI is RT 16: 2TM, 1TC

[Config]
NumberOfSubFrames=64

[SubFrame1]
1=RTaccessSA

[SubFrame2]
1=RTaccessSA

[SubFrame3]
1=RTaccessSA

[SubFrame4]
1=TMpoll,25     ;TM poll from: PACS
2=RTaccessSA

[SubFrame5]
1=TMpacket,25  ;TM packet from: PACS
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA

[SubFrame6]
1=TMpacket,16  ;TM packet from: HIFI
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame7]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame8]
1=TMpacket,25  ;TM packet from: PACS
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA

[SubFrame9]
1=TMpacket,16  ;TM packet from: HIFI
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame10]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame11]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame12]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame13]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame14]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame15]
```

```
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame16]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame17]
1=TCpacket     ;TC packet to: SPIRE
2=RTaccessSA

[SubFrame18]
1=TCpacket     ;TC packet to: PACS
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame19]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame20]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame21]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame22]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame23]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame24]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame25]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame26]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame27]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame28]
1=TMpacket,25  ;TM packet from: PACS
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame29]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame30]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame31]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA
```

```
[SubFrame32]
1=TMpacket,16  ;TM packet from: HIFI
2=RTaccessSA

[SubFrame33]
1=TimeSync     ;Time distribution broadcast
2=TCpacket     ;TC packet to: SPIRE
3=TMpoll,21    ;TM poll from: SPIRE
4=RTaccessSA

[SubFrame34]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame35]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame36]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame37]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame38]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame39]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame40]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame41]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame42]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame43]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame44]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame45]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame46]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame47]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame48]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame49]
```

```
1=TCpacket  ;TC packet to: HIFI
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame50]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame51]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame52]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame53]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame54]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame55]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame56]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame57]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame58]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame59]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame60]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame61]
1=RTreadSA,21,1 ;RT status from: SPIRE
2=TMpoll,21    ;TM poll from: SPIRE

[SubFrame62]
1=RTreadSA,25,1 ;RT status from: PACS
2=TMpacket,21  ;TM packet from: SPIRE

[SubFrame63]
1=RTreadSA,16,1 ;RT status from: HIFI
```

Appendix 2: Log of EGSE_CONFIG_AUTO.tcl

```
********************************************************************************
2005.269.06.43.38.195171 EGSE CONFIG Sequence
********************************************************************************
2005.269.06.43.38.195645
********************************************************************************
2005.269.06.43.38.196245 Check of CDMU DFE and PLM SCOE
********************************************************************************
2005.269.06.43.38.196557
2005.269.06.43.38.196787
2005.269.06.43.38.197019 Connecting to CDMU DFE
2005.269.06.43.40.202525 Attaching to CMDU DFE
2005.269.06.43.41.208028
2005.269.06.43.41.208397 Checking if CDMU DFE BIST was OK
2005.269.06.43.43.213194
2005.269.06.43.43.306050 >>> RESULT : CDMU DFE BIST OK, continuing EGSE_CONFIG.
2005.269.06.43.45.308447
2005.269.06.43.45.308816 Connecting to PLM SCOE
2005.269.06.43.47.312237 Attaching to PLM SCOE
2005.269.06.43.48.315867
2005.269.06.43.48.316244 Checking if PLM SCOE BIST was OK
2005.269.06.43.50.319105
2005.269.06.43.50.406378 >>> RESULT : PLM SCOE BIST OK, continuing EGSE_CONFIG.
********************************************************************************
2005.269.06.43.52.408801 Configuring CDMU DFE
********************************************************************************
2005.269.06.43.52.409202
2005.269.06.43.52.409726 Switching CDMUDFE to ONLINE mode
2005.269.06.43.53.470363
2005.269.06.43.53.470755
2005.269.06.43.53.471350
2005.269.06.43.53.471888 Available PST tables:
2005.269.06.43.53.472446 1. HIFI_prime_inst.PST
2005.269.06.43.53.473079 2. SPIRE_prime_inst.PST
2005.269.06.43.53.473660 3. PACS_prime_inst.PST
2005.269.06.43.53.474252 4. PACS_burst_mode.PST
2005.269.06.43.53.474841 5. PACS_SPIRE_par.PST
2005.269.06.43.53.475416
2005.269.06.43.53.510097  >>> Please enter the number of the required PST table. Enter 0 for
an unlisted.
2005.269.06.43.58.563949
2005.269.06.43.58.564319 You have selected 2 : SPIRE_prime_inst.PST
2005.269.06.43.58.564928
2005.269.06.43.58.565730 Loading SPIRE_prime_inst.PST file on CDMU DFE
2005.269.06.43.58.566333
2005.269.06.44.03.683187 The PST table is loaded on the CDMU DFE.
2005.269.06.44.03.683616
2005.269.06.44.03.684262 Enabling PST file execution.
2005.269.06.44.04.716802
2005.269.06.44.04.717170 Enabling TM Queue.
2005.269.06.44.05.749592
2005.269.06.44.05.749957 Enabling TM Polling.
2005.269.06.44.06.784415
2005.269.06.44.06.784781 Enabling TC Queue.
2005.269.06.44.07.858310
2005.269.06.44.07.858685 Enabling SA Queue.
2005.269.06.44.08.961460
2005.269.06.44.08.961828 Enabling SA Reading.
2005.269.06.44.09.994276
2005.269.06.44.09.994643 Enabling Low Level Time Synchronisation.
2005.269.06.44.11.029105
2005.269.06.44.11.064204 ******************* USER INFORMATION *******************
2005.269.06.44.11.064961 User Info>: >>> Please Enable the Busmonitor (Set Online Mode and
Start New Acquisition) and press OK.
2005.269.06.44.11.065578 ********************************************************
2005.269.06.44.54.239882 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.06.44.54.240271 >>>>>>>>  Reading out CDMUDFE Settings
2005.269.06.44.54.240860 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
```

```
2005.269.06.44.54.241449
2005.269.06.44.54.243401 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.269.06.44.54.245137 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.269.06.44.54.246860 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.269.06.44.54.248629 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.269.06.44.54.250357 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.269.06.44.54.252094 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.269.06.44.54.253213 Status_CDMU_PSTfileName is SPIRE_prime_inst... (extracted from TLM
YM809944)
2005.269.06.44.54.254952 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
********************************************************************************
2005.269.06.44.57.258909 Configuring PLM SCOE
********************************************************************************
2005.269.06.44.57.259360
2005.269.06.44.57.259976 Switching PLM SCOE to ONLINE mode
2005.269.06.44.58.357643
2005.269.06.45.03.361888 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.06.45.03.362272 >>>>>>>>  Reading out PLM SCOE Settings
2005.269.06.45.03.362884 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.06.45.03.363484
2005.269.06.45.03.365449 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.269.06.45.03.367239 Status_PLM_PSU1_Master is currently 0 (extracted from TLM YM129942)
2005.269.06.45.03.369013 Status_PLM_PSU1_Slave is currently 0 (extracted from TLM YM145942)
2005.269.06.45.03.370768 Status_PLM_PSU2_Master is currently 0 (extracted from TLM YM177942)
2005.269.06.45.03.372536 Status_PLM_PSU2_Slave is currently 0 (extracted from TLM YM193942)
2005.269.06.45.03.375521 Status_PLM_LCL1_V is currently 0.00697093131021 (extracted from TLM
YM228942)
2005.269.06.45.03.378407 Status_PLM_LCL1_I is currently 0.000101930265373 (extracted from TLM
YM232942)
2005.269.06.45.03.381867 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.269.06.45.03.384550 Status_PLM_LCL2_I is currently 0.000506599550135 (extracted from TLM
YM248942)
2005.269.06.45.03.387586 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.269.06.45.03.390175 Status_PLM_LCL3_I is currently 0.000506599550135 (extracted from TLM
YM264942)
2005.269.06.45.03.393277 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.269.06.45.03.395929 Status_PLM_LCL4_I is currently 0.000506599550135 (extracted from TLM
YM280942)
2005.269.06.45.03.400610 Status_PLM_LCL5_V is currently 0.0302073694766 (extracted from TLM
YM292942)
2005.269.06.45.03.403355 Status_PLM_LCL5_I is currently 0.000253299775068 (extracted from TLM
YM296942)
2005.269.06.45.03.406551 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.269.06.45.03.409297 Status_PLM_LCL6_I is currently 0.000253299775068 (extracted from TLM
YM312942)
2005.269.06.45.03.412859 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.269.06.45.03.419474 Status_PLM_LCL7_I is currently 0.000506599550135 (extracted from TLM
YM328942)
2005.269.06.45.03.422759 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.269.06.45.03.425430 Status_PLM_LCL8_I is currently 0.000506599550135 (extracted from TLM
YM344942)
2005.269.06.45.03.428588 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.269.06.45.03.431310 Status_PLM_LCL9_I is currently 0.00101319910027 (extracted from TLM
YM360942)
2005.269.06.45.03.434469 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.269.06.45.03.437153 Status_PLM_LCL10_I is currently 0.000253299775068 (extracted from TLM
YM376942)
2005.269.06.45.03.440428 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.269.06.45.03.443226 Status_PLM_LCL11_I is currently 0.000506599550135 (extracted from TLM
YM392942)
2005.269.06.45.03.446453 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
```

```
2005.269.06.45.03.449178 Status_PLM_LCL12_I is currently 0.000506599550135 (extracted from TLM
YM408942)
2005.269.06.45.03.452386 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.269.06.45.03.455159 Status_PLM_LCL13_I is currently 0.000506599550135 (extracted from TLM
YM424942)
2005.269.06.45.03.458413 Status_PLM_LCL14_V is currently 0.0952693969011 (extracted from TLM
YM436942)
2005.269.06.45.03.461330 Status_PLM_LCL14_I is currently 0.000253299775068 (extracted from TLM
YM440942)
```

Appendix 3: Log of INSTR_POWER_ON.tcl

```
2005.269.07.38.29.976482
********************************************************************************
2005.269.07.38.29.977413 Start of Instrument POWER ON sequence.
********************************************************************************
2005.269.07.38.29.977729
2005.269.07.38.29.977957  To run this script, the CDMU DFE and PLM SCOE should be
2005.269.07.38.29.978191  powered and configured.
2005.269.07.38.29.978418  To initiate, this script will connect and attach to the CDMUDFE
2005.269.07.38.29.978649  and PLM SCOE.
2005.269.07.38.29.978885
2005.269.07.38.29.979116 Connecting to CDMU DFE
2005.269.07.38.31.986362 Attaching to CMDU DFE
2005.269.07.38.32.993807
2005.269.07.38.32.994170 Connecting to PLM SCOE
2005.269.07.38.34.997102 Attaching to PLM SCOE
2005.269.07.38.36.001039 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.001517 >>>>>>>>  Reading out CDMUDFE Settings
2005.269.07.38.36.001950 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.002369
2005.269.07.38.36.096362 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.269.07.38.36.098144 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.269.07.38.36.099774 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.269.07.38.36.101390 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.269.07.38.36.103021 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.269.07.38.36.104709 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.269.07.38.36.106470 Status_CDMU_PSTfileName is SPIRE_prime_inst... (extracted from TLM
YM809944)
2005.269.07.38.36.108776 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.269.07.38.36.109442
2005.269.07.38.36.109950 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.110481 >>>>>>>>  Reading out PLM SCOE Settings
2005.269.07.38.36.111023 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.111556
2005.269.07.38.36.241369 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.269.07.38.36.243554 Status_PLM_PSU1_Master is currently 0 (extracted from TLM YM129942)
2005.269.07.38.36.245694 Status_PLM_PSU1_Slave is currently 0 (extracted from TLM YM145942)
2005.269.07.38.36.247915 Status_PLM_PSU2_Master is currently 0 (extracted from TLM YM177942)
2005.269.07.38.36.250076 Status_PLM_PSU2_Slave is currently 0 (extracted from TLM YM193942)
2005.269.07.38.36.253489 Status_PLM_LCL1_V is currently 0.00697093131021 (extracted from TLM
YM228942)
2005.269.07.38.36.256621 Status_PLM_LCL1_I is currently 0.000101930265373 (extracted from TLM
YM232942)
2005.269.07.38.36.259783 Status_PLM_LCL2_V is currently 0.0650620236993 (extracted from TLM
YM244942)
2005.269.07.38.36.262380 Status_PLM_LCL2_I is currently 0.000506599550135 (extracted from TLM
YM248942)
2005.269.07.38.36.265400 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.269.07.38.36.268002 Status_PLM_LCL3_I is currently 0.000506599550135 (extracted from TLM
YM264942)
2005.269.07.38.36.271040 Status_PLM_LCL4_V is currently 0.0325310118496 (extracted from TLM
YM276942)
2005.269.07.38.36.273722 Status_PLM_LCL4_I is currently 0.000506599550135 (extracted from TLM
YM280942)
2005.269.07.38.36.276736 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.269.07.38.36.279340 Status_PLM_LCL5_I is currently 0.000253299775068 (extracted from TLM
YM296942)
2005.269.07.38.36.282463 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.269.07.38.36.285179 Status_PLM_LCL6_I is currently 0.000253299775068 (extracted from TLM
YM312942)
2005.269.07.38.36.288317 Status_PLM_LCL7_V is currently 0.0371783003211 (extracted from TLM
YM324942)
2005.269.07.38.36.290982 Status_PLM_LCL7_I is currently 0.000506599550135 (extracted from TLM
YM328942)
```

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2005.269.07.38.36.294110 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.269.07.38.36.296769 Status_PLM_LCL8_I is currently 0.000506599550135 (extracted from TLM
YM344942)
2005.269.07.38.36.300138 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.269.07.38.36.302895 Status_PLM_LCL9_I is currently 0.00101319910027 (extracted from TLM
YM360942)
2005.269.07.38.36.306126 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.269.07.38.36.308817 Status_PLM_LCL10_I is currently 0.000253299775068 (extracted from TLM
YM376942)
2005.269.07.38.36.312053 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.269.07.38.36.315219 Status_PLM_LCL11_I is currently 0.000506599550135 (extracted from TLM
YM392942)
2005.269.07.38.36.318436 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
2005.269.07.38.36.321225 Status_PLM_LCL12_I is currently 0.000506599550135 (extracted from TLM
YM408942)
2005.269.07.38.36.324423 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.269.07.38.36.327173 Status_PLM_LCL13_I is currently 0.000506599550135 (extracted from TLM
YM424942)
2005.269.07.38.36.330395 Status_PLM_LCL14_V is currently 0.090622112155 (extracted from TLM
YM436942)
2005.269.07.38.36.333164 Status_PLM_LCL14_I is currently 0.000253299775068 (extracted from TLM
YM440942)
2005.269.07.38.36.333896
2005.269.07.38.36.334551
*********************************************************************************
2005.269.07.38.36.335571 Power On Instruments
*********************************************************************************
2005.269.07.38.36.336390
2005.269.07.38.36.337036
2005.269.07.38.36.337653
2005.269.07.38.36.338431 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.339109 >>>>>>>>  Start Up Instruments
2005.269.07.38.36.339745 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.38.36.340406
2005.269.07.38.36.370448  Which instrument needs to be Powered? PACS, SPIRE, HIFI, CCU?
2005.269.07.38.42.312041  You have selected to power SPIRE.
2005.269.07.38.42.312632
2005.269.07.38.42.313316  The current power on order is:
2005.269.07.38.42.313940  --------------------------------
2005.269.07.38.42.315765  1. LCL 1    SPIRE HSDPU    Primary    Voltage: 0.00697093131021 V
Current: 0.000101930265373 A
2005.269.07.38.42.316613  2. LCL 0    N/A    Primary    Voltage: N/A V     Current: N/A A
2005.269.07.38.42.317275
2005.269.07.38.42.345510  Do you want to change this order? : Choose Yes or No
2005.269.07.38.43.943340  User has chosen NO
2005.269.07.38.45.946824
2005.269.07.38.45.975810  Do you want to enable the PSU(s)? : Choose Yes or No
2005.269.07.38.48.212310  User has chosen YES
2005.269.07.38.50.217012
2005.269.07.38.50.360778  Sending Telecommand YC036942
2005.269.07.38.50.361159  Synchronizing on SEV...
2005.269.07.38.50.362312  Synchronised on SEV for TC(s): YC036942
2005.269.07.38.50.362987
2005.269.07.38.50.363580  >>> Checking
2005.269.07.38.56.366187  PSU 1 Master status is currently 1 (from YM129942)
2005.269.07.38.56.366581  PSU 1 Slave status is currently 1 (from YM145942)
2005.269.07.38.56.367206
2005.269.07.38.56.396251 ******************** USER INFORMATION ********************
2005.269.07.38.56.397095 User Info>: Check Successful! PSU 1 has been enabled.
2005.269.07.38.56.397727 ************************************************************
2005.269.07.38.59.855586
2005.269.07.38.59.855996  >>> Start Enabling LCL's
2005.269.07.38.59.856615
2005.269.07.38.59.884251  Do you want to enable LCL 1? : Choose Yes or No
2005.269.07.39.00.949742  User has chosen YES
```

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2005.269.07.39.02.953132
2005.269.07.39.03.088246  Sending Telecommand YC040942 to Enable Limiter
2005.269.07.39.03.088632  Synchronizing on SEV...
2005.269.07.39.03.106900  Synchronised on SEV for TC(s): YC040942
2005.269.07.39.03.107301
2005.269.07.39.03.155379  Sending Telecommand YC043942 to Set Limiter
2005.269.07.39.03.155755  Synchronizing on SEV...
2005.269.07.39.03.192462  Synchronised on SEV for TC(s): YC043942
2005.269.07.39.03.193024
2005.269.07.39.03.193616  >>> Checking
2005.269.07.39.09.196308  LCL 1 has currently a voltage of 27.858165741.(from YM228942)
2005.269.07.39.09.196827  LCL 1 has currently a current of 0.46062284708.(from YM232942)
2005.269.07.39.09.197436
2005.269.07.39.09.227794 ******************** USER INFORMATION ********************
2005.269.07.39.09.228595 User Info>: Check Successful! LCL 1 has been enabled.
2005.269.07.39.09.229190 ************************************************************
2005.269.07.39.28.438103
2005.269.07.39.28.465013 ******************** USER INFORMATION ********************
2005.269.07.39.28.465717 User Info>: No LCL is selected to be switched on as second
2005.269.07.39.28.466313 ************************************************************
2005.269.07.39.29.122047
2005.269.07.39.29.122447
2005.269.07.39.29.123059  All selected LCL's for SPIRE are powered.
2005.269.07.39.29.123636
2005.269.07.39.29.151159  Do you want to power on another instrument? : Choose Yes or No
2005.269.07.39.31.271421  User has chosen NO
2005.269.07.39.33.276229
2005.269.07.39.33.276934 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.39.33.277552 >>>>>>>>  Reading out PLM SCOE Settings
2005.269.07.39.33.278136 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.269.07.39.33.278727
2005.269.07.39.33.279982 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.269.07.39.33.281268 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.269.07.39.33.282526 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.269.07.39.33.283824 Status_PLM_PSU2_Master is currently 0 (extracted from TLM YM177942)
2005.269.07.39.33.285094 Status_PLM_PSU2_Slave is currently 0 (extracted from TLM YM193942)
2005.269.07.39.33.286386 Status_PLM_LCL1_V is currently 27.8628120422 (extracted from TLM
YM228942)
2005.269.07.39.33.287690 Status_PLM_LCL1_I is currently 0.434222906828 (extracted from TLM
YM232942)
2005.269.07.39.33.289011 Status_PLM_LCL2_V is currently 0.0650620236993 (extracted from TLM
YM244942)
2005.269.07.39.33.290325 Status_PLM_LCL2_I is currently 0.00607919460163 (extracted from TLM
YM248942)
2005.269.07.39.33.291634 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.269.07.39.33.292944 Status_PLM_LCL3_I is currently 0.00709239346907 (extracted from TLM
YM264942)
2005.269.07.39.33.294319 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.269.07.39.33.295683 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.269.07.39.33.297013 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.269.07.39.33.298351 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.269.07.39.33.299687 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.269.07.39.33.301005 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.269.07.39.33.302315 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.269.07.39.33.303630 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.269.07.39.33.304953 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.269.07.39.33.306273 Status_PLM_LCL8_I is currently 0.000506599550135 (extracted from TLM
YM344942)
2005.269.07.39.33.307684 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
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2005.269.07.39.33.309013 Status_PLM_LCL9_I is currently 0.00101319910027 (extracted from TLM
YM360942)
2005.269.07.39.33.310345 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.269.07.39.33.312665 Status_PLM_LCL10_I is currently 0.000253299775068 (extracted from TLM
YM376942)
2005.269.07.39.33.314114 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.269.07.39.33.315458 Status_PLM_LCL11_I is currently 0.000253299775068 (extracted from TLM
YM392942)
2005.269.07.39.33.316793 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
2005.269.07.39.33.318134 Status_PLM_LCL12_I is currently 0.000506599550135 (extracted from TLM
YM408942)
2005.269.07.39.33.319575 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.269.07.39.33.321194 Status_PLM_LCL13_I is currently 0.000506599550135 (extracted from TLM
YM424942)
2005.269.07.39.33.322690 Status_PLM_LCL14_V is currently 0.092945754528 (extracted from TLM
YM436942)
2005.269.07.39.33.324042 Status_PLM_LCL14_I is currently 0.000253299775068 (extracted from TLM
YM440942)
2005.269.07.39.33.324766 <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
2005.269.07.39.33.325411 <<<<<<<  Power Sequence Ended!
2005.269.07.39.33.326045 <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
```

11 Distribution List

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	AOE22		Sonn Nico	AOE51
	Barlage Bernhard	AED11		Steininger Eric	AED44
	Bayer Thomas	AOA52	X	Stritter Rene	AED11
	Brune Holger	AOA55		Thörmer Klaus-Horst Dr.	OTN/AED65
	Fehringer Alexander	AOE13		Wagner Klaus	AOE22
X	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	AOA52		Wöhler Hans	AOE22
	Gerner Willi	AED11		Wössner Ulrich	ASE442
X	Grasl Andreas	OTN/AOA54			
	Grasshoff Brigitte	AET12			
	Hauser Armin	AOE22			
X	Hendry David	Terma Resid.			
	Hengstler Reinhold	AOA 5			
	Hinger Jürgen	AOE22	X	Alcatel	ASP
	Hofmann Rolf	ASE442	X	ESA/ESTEC	ESA
X	Hohn Rüdiger	AED65		**Instruments:**	
	Huber Johann	AOA52		MPE (PACS)	MPE
	Hund Walter	ASE442	X	RAL (SPIRE)	RAL
X	Idler Siegmund	AED432		SRON (HIFI)	SRON
X	Ilsen Stijn	Terma Resid.		**Subcontractors:**	
	Ivády von András	FAE22		Air Liquide, Space Department	AIR
	Jahn Gerd Dr.	AOE22		Air Liquide, Space Department	AIRS
	Kalde Clemens	APE3		Air Liquide, Orbital System	AIRT
	Kameter Rudolf	OTN/AOA54		Alcatel Bell Space	ABSP
	Kettner Bernhard	AET42		Astrium Sub-Subsyst. & Equipment	ASSE
X	Knoblauch August	AET32		Austrian Aerospace	AAE
X	Koelle Markus	AOA53		Austrian Aerospace	AAEM
X	Kroeker Jürgen	AED65		APCO Technologies S. A.	APCO
	Kunz Oliver Dr.	AOE22		Bieri Engineering B. V.	BIER
X	Lamprecht Ernst	OTN/ASI21		BOC Edwards	BOCE
	Lang Jürgen	ASE442		Dutch Space Solar Arrays	DSSA
	Langenstein Rolf	AED15		EADS CASA Espacio	CASA
	Langfermann Michael	AOA51		EADS CASA Espacio	ECAS
X	Mack Paul	OTN/AOA54		EADS Space Transportation	ASIP
	Müller Jörg	AOA52		Eurocopter	ECD
	Müller Ralf	FAE22		European Test Services	ETS
	Peltz Heinz-Willi	AOE13		HTS AG Zürich	HTSZ
	Pietroboni Karin	AED65		Linde	LIND
	Platzer Wilhelm	AED22		Patria New Technologies Oy	PANT
	Reichle Konrad	AOA52		Phoenix, Volkmarsen	PHOE
	Reuß Friedhelm	AED62		Prototech AS	PROT
X	Rühe Wolfgang	AED65		QMC Instruments Ltd.	QMC
	Runge Axel	OTN/AOA54		Rembe, Brilon	REMB
	Sachsse Bernt	AED21		Rosemount Aerospace GmbH	ROSE
	Schink Dietmar	AED44		RYMSA, Radiación y Microondas	RYM

	Name	Dep./Comp.		Name	Dep./Comp.
X	Schlosser Christian	OTN/AOA54		SENER Ingenieria SA	SEN
	Schmidt Rudolf	FAE22		Stöhr, Königsbrunn	STOE
	Schweickert Gunn	AOE22		Terma A/S, Herlev	TER

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