	<h1 style="text-align: center;">SPIRE Procedure</h1>	Ref: SPIRE-RAL-PRC-002729 Issue: 1.0 Date: 06/10/06 Page: 1 of 21
SPIRE Short Functional Test (SFT) Procedure for STM2 Test A.A.Aramburu		

Introduction

This document describes the Short Functional Test (SFT) procedures to be executed on the SPIRE CQM at ESTEC during the STM2 test. These procedures are a subset of those appearing in **RD01** and were successfully validated during the EQM test campaign as described in **RD02**.

Scope

All the procedures in this document can be run with the instrument either warm or cold (He I and He II conditions). This procedure is only applicable to the STM2 tests.

Change Record

Issue 1.0, 06/10/2006 – First version.


Applicable Documents

Reference Documents

Ref#	Document Title	Issue nb.	Date
RD01	SPIRE Warm Functional Test Procedures for the SCOS	1.4	15/07/2005
RD02	SPIRE 3 rd Warm Functional Test Report HP-2-ASED-TR-0077_1_0	1.0	19/07/2005
RD03			

Constrains

Some procedures can only be run after integration – where appropriate this is clearly indicated in the preconditions section of each procedure.

	<h1>SPIRE Procedure</h1>	Ref: SPIRE-RAL-PRC-002729 Issue: 1.0 Date: 06/10/06 Page: 2 of 21
SPIRE Short Functional Test (SFT) Procedure for STM2 Test A.A.Aramburu		

Test Configuration

The STM2 SPIRE Warm Units consist of the SPIRE AVM1 DPU and the DRCU QM2 electronics. The WU will be commanded using an ILT like configuration where the ground station SCOS2000 sends TCs via TestControl to the CDMS simulator and this forwards the commands to the SPIRE WU. The following sections give a description of the required HW/SW configuration for these tests.

Hardware configuration

- DPU MAIN Power (HSDPU J01) is connected to power supply.
- DRCU MAIN Power (HSFCU J05) is connected to power supply.
- SPIRE AVM1 DPU is interconnected with SPIRE QM2 DRCU.
- SPIRE CQM FPU is connected to the DRCU QM2 electronics.
- SPIRE DPU AVM1 is to CDMS simulator on HSDPU J03. (1553 Mil Bus)
- CDMS Simulator is connected via LAN to I-EGSE
- I-EGSE workstations are interconnected via LAN.

Software configuration

- OBSW 2.0.C Resident on SPIRE AVM1 DPU EEPROM.
- BSW 2.0 Resident on SPIRE AVM1 PROM.
- CDMS Simulator v2.5 installed on CDMS Simulator NT 4.0 workstation.
- SPIRE Build #195 (HCSS build #691) installed on HOSQLA4-2
- SCOS2.3eP5 installed on HOSS2K4-2
- Versant 6.0.5 installed on HOSQLA4-2
- Java runtime 1.4.2 installed on HOSQLA4-2

Prerequisites for starting the tests:

On HOSQLA4-2 the following applications must be running/ installed:

- Router and Gateway are running.
- SPIRE build of the HCSS and QLA installed.
- Test Database has been created on data server.
- Test Control Server is running.
- Telemetry ingestion is running.
- Packet Display running.
- QLA running and connected to the router.


On HOSS2K4-2 the following applications must be running/ installed:

- SCOS is running on I-EGSE.
- Manual Stack Task started on SCOS
- TOPE is running

On CDMS Simulator workstation the following applications must be running/ installed:

- CDMS Simulator executable is installed.
- CDMS Simulator is running. SPIRE Nominal Bus List selected.

Indications on how to start up these several applications are given in next section.

	<h1>SPIRE Procedure</h1>	Ref: SPIRE-RAL-PRC-002729 Issue: 1.0 Date: 06/10/06 Page: 3 of 21
SPIRE Short Functional Test (SFT) Procedure for STM2 Test A.A.Aramburu		

Instrument EGSE (I-EGSE) set up (ON THIS ORDER):

HOSQLA4-2:

- **Router start up:** type *router R* on a console. (open a console by clicking on the shell symbol icon on the task bar on the bottom of the screen)
- **Gateway start up:** type *router S - - scosapids 1280,1282,2038* on another console.
- **Packet Display start up:** type *PacketDisplay* in another console.
- **Telemetry ingestion start up:** type *tmingestion* in another console.
- **Test Control Server start up:**
 - On a terminal of the same account (sops23e) where SCOS is running (on HOSS2K4-2) type *xauth list*
 - Take the first row (whole row) of the result of the previous command and paste it on the terminal where you are going to execute testcontrol (ON HOSQLA4-2) by typing: *xauth add "the first row of the result of xauth list"*
 - Then on the same terminal (on HOSQLA4-2) type *testcontrol-server* in another console.
- **QLA start up:** type *qla* on a console.
 - When the application has started on the *PacketReceiver* labelled window select type of connection *router*. Select the correct host for router connection (in this case is the same hosqla4-2).

HOSS2K4-2:

- **SCOS2000 start up:**
 - type *s2k.start* on a console. (open a console by clicking on the shell symbol icon on the task bar on the bottom of the screen)
 - On the main SCOS window select the *EGSEsrv* labelled button and press start on the bottom left of the SCOS main window, then continue on the pop-up window.
 - Several tasks will start, wait for a bar to appear on the top and bottom of the screen and all selected tasks to go to green.
 - On that bar press the Users button and on the pop-up window log in as User: Matt password : Matt Role: SOFT_001 (drop menu on the role button)
 - Then Select the *EXIF* labelled button and press start on the bottom left of the SCOS main window, then continue on the pop-up window.
 - A new window will appear .On this window, select tasks labelled EXIF_TMM,EXIF_CHM,EXIF_TM1,EXIF_CH1,TOPE1 and button and press start on the bottom left of the SCOS main window, then continue on the pop-up window.
 - Wait for TOPE window (elongated window) to appear.
 - On the main SCOS window select the MON1 and MON2 tasks and press start on the bottom left of the SCOS main window, then continue on the pop-up window.
 - On the MON2 task select the CDMS Simulator HK display and verify that the numbers displayed are refreshing. This proves that there is telemetry arriving at SCOS from the router.
 - On the main SCOS window select MSTK1 task and press start on the bottom left of the SCOS main window, then continue on the pop-up window.

On CDMS Simulator NT workstation:

- **CDMS Simulator start up:** double click over the CDMS Labview icon on the desktop
- When the CDMS Sim gui appears single click over the *Launch Command Router Interface* labelled button.
- On the pop-up window enter the IP (192.168.202.110) + port (9877) setting for the router (defaults should appear)
- On the next pop-up window enter on the blank window the name CDMS_SIM then single click the send command labelled button



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 4 of 21

SPIRE Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

- On the drop down menu labelled NAME_CLIENT select ADD_CLIENT and on the blank window enter first: 0x500 then single click the send command labelled button and then clear this number and enter 0x7F6 and repeat action.

General instructions for executing test procedures

- This document gives step-by-step instructions on how to perform each test on the sections below.
- The procedures are listed here in the order in which they are expected to be performed. They start with procedures for switching on SPIRE and carrying out SFTs before finally switching off SPIRE at the end of the tests.
- The procedure tables 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.

Duration of SFTs

The total duration for execution of these SFTs is ~ **30-45 minutes**.

SPIRE Switch On and Switch Off procedures

The appendices at the end include specific switch on and switch off sequences for the SPIRE instrument. To switch off from standby mode without performing any SFTs, or in the case of a cryostat anomaly, the sequence of procedures listed in Appendix 2 should be executed.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 5 of 21

SPIRE Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Detailed Test Procedures

Procedure: SPIRE-STM2-DPU-ON

Version: 1.0

Date: 6th October 2006

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

Duration: ~ 1 minute

Pass/Fail Criterion: SPIRE OBS starts and Nominal and Critical HK reports are generated at nominal rates (1Hz and 0.5Hz respectively).

Preconditions:

- 28V Power Supply to the DPU is available
- SPIRE MIB is imported in the SCOS database.
- SCOS, TOPE and the CDMS Simulator are up and running
- DPU AND OBS PARAMETERS display is selected on SCOS

Initial Configuration: SPIRE Warm Electronics (DPU and DRCU) are switched off

Procedure Steps:

Step	Description	Parameter	Expected Values Before/After	Actual Values Before/After	Pass/Fail
1	Power on SPIRE DPU AVM1	—	—	—	
2	After the DPU is switched on, (5,1) event reports are produced every 10 seconds by the boot software. <ul style="list-style-type: none"> ➤ On PacketDisplay check the reception of these packets. ➤ On SCOS select BootROMMemoryCheck display and check that there are no errors reported on these event packets. 	NERRORS	0/0	—	
3	Execute TCL script SPIRE-STM2-DPU-ON.tcl	—	—	—	
4	Press the RED reset button located on the DPU AVM1. See Figure 1 below				
5	Check that THSK parameter on the DPU AND OBS PARAMETERS display on SCOS is refreshing every second	THSK	-/refreshing every second	—	
6	Check that TM2N parameter on the DPU AND OBS PARAMETERS display on SCOS is incrementing every second	TM2N	-/Incrementing by one every second	—	

Test Result (Pass/Fail):

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

Contingency: Power OFF SPIRE DPU. Wait for 1 minute and then repeat the process.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 6 of 21

SPIRE Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu



Figure 1 SPIRE AVM1 DPU. The DPU red reset button is located on the front panel near to J09 connector, indicated by the green arrow.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 7 of 21

SPIRE Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-DRCU-ON

Version: 1.0

Date: 6th October 2006

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

Duration: ~ 5 minutes

Pass/Fail Criterion: SPIRE DRCU QM2 voltages are nominal.

Preconditions:

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched off
- DPU and OBS PARAMETERS display is selected on SCOS

Procedure Steps:

Step	Description	Parameter	Expected Values Before/After	Actual Values Before/After	Success/Failure
1	Execute TCL script SPIRE-STM2-DRCU-ON-STEP1.tcl	—	—	—	
2	Check that THSK parameter is not refreshing anymore	THSK	Refreshing/Not refreshing	—	
3	Check that TM2N parameter is not incrementing anymore	TM2N	Incrementing/Not incrementing	—	
4	Power ON SPIRE DRCU electronics.	—	—	—	
5	Execute SPIRE-STM2-DRCU-ON-STEP2.tcl	—	—	—	
6	Check that DRCU (FCU/DCU) voltages are nominal Correspondent parameters are located on SCU PARAMETERS and BIAS PARAMETERS displays.	SCUP5V SCUP9V SCUM9V BIASP5V BIASP5V BIASP5V	-/~5V -/~9V -/~9V -/~5V -/~5V -/~9V		
7	Check that THSK parameter is again refreshing every second	THSK	Not refreshing/ Refreshing	—	
8	Check that TM2N parameter is again incrementing every second	TM2N	Not incrementing/incrementing by one @ 1Hz	—	

Test Result (Pass/Fail):

Final Configuration:

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



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 8 of 21

SPIRE Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-01

Version: 1.0

Date: 6th October 2006

Purpose: SCU science packet generation check

Duration: ~ 1 minute

Pass/Fail Criterion: 31 SCU Nominal Science Frames are received at SCOS.

Preconditions:

Initial Configuration:

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

Procedure Steps:

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-01.tcl	SCUFRAMECNT TM5N	0/31 3FFF/1		

Test Result (Pass/Fail):

Final Configuration: Unchanged



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 9 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-DCU-01

Version: 1.0

Date: 6th October 2006

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

Duration: ~ 3 minutes

Pass/Fail Criterion: 700 DCU Nominal Science Frames are received in SCOS

Preconditions:

Initial Configuration:

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

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-DCU-01.tcl	DCUFRAMECNT	0/700		

Test Result (Pass/Fail):

Final Configuration: Unchanged

Procedure: SPIRE-STM2-FUNC-DCU-04-PS-ON

Version: 1.0



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 10 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Date: 6th October 2006

Purpose: Photometer LIAs switch on

Duration: ~ 1 minute

Pass/Fail Criterion: Photometer LIA boards show a rise in their temperature while 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 SCOS

Step	Description	Parameter	Expected Values Before/After	Actual Values Before/After	Success/Failure
1	Execute TCL script SPIRE-STM2-FUNC-DCU-04-PS-ON.tcl	SCUDCDCSTAT	0/1		

Test Result (Pass/Fail):

Final Configuration: The Photometer and Spectrometer LIAs are on.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 11 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-04

Version: 1.0

Date: 6th October 2006

Purpose: Photometer Calibrator check

Duration: ~ 2 minutes

Pass/Fail Criterion: Measured PCAL voltage/current agrees with expected values (+/- 10%).

Preconditions: SPIRE CQM is electrically integrated with the cryostat.

Initial Configuration:

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

Step	Description	Parameter Name - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-04.tcl	PCALCURR - mA PCALV - V	0.0/0.1/0.0 0.0/0.026/0.0		

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.

Test Result (Pass/Fail):

Final Configuration: Unchanged



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 12 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-05

Version: 1.0

Date: 6th October 2006

Purpose: Spectrometer Calibrators check

Duration: ~ 3 minutes

Pass/Fail Criterion: Measured SCAL2/SCAL4 voltage/current agrees with expected values (+/- 10%).

Preconditions: SPIRE CQM is electrically integrated with the cryostat

Initial Configuration:

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

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-05.tcl	—	—	—	
2	Wait for the parameter BBFULLTYPE to get set to SCAL4_Check	—	—	—	
3	A few seconds later record the value of parameters SCAL4CURR and SCAL4V <i>These parameters are set back to 0 after ~60 seconds</i>	SCAL4CURR – mA SCAL4V – V	0.0/0.10/0.0 0.0/0.05/0.0		
4	Wait for the parameter BBFULLTYPE to get set to SCAL2_Check	—	—	—	
5	A few seconds later record the values of parameters SCAL2CURR and SCAL2V <i>These parameters are set back to 0 after ~60 seconds</i>	SCAL2CURR – mA SCAL2V – V	0.0/0.10/0.0 0.0/0.05/0.0		

Final Configuration: Unchanged



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 13 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-07

Version: 1.0

Date: 6th October 2006

Purpose: SCU cooler heaters check

Duration: ~ 3 minutes

Pass/Fail Criterion: Measured Cooler Heat Switch voltages agree with expected values (+/- 10%).

Preconditions: SPIRE CQM is electrically integrated with the cryostat

Initial Configuration:

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

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-07.tcl	—	—	—	—
2	Wait for the parameter BBFULLTYPE to get set to Cooler_Htr_Chk				
3	A few seconds later record the value of parameter EVHSV – the Evaporator Heat Switch Voltage. <i>This voltage stays on for ~45 seconds.</i>	EVHSV - mV	0/~323/0		
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. <i>This voltage stays on for ~45 seconds.</i>	SPHSV - mV	0/~323/0		
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. <i>This voltage stays on for ~45 seconds.</i>	SPHTRV - V	0/~8.8/0		

Final Configuration: Unchanged



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 14 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-03

Version: 1.0

Date: 6th October 2006

Purpose: SCU DC thermometry check

Duration: ~ 2 minutes

Pass/Fail Criterion: ALL temperature sensors show expected reading according to FPU temperature

Preconditions: SPIRE CQM is electrically integrated with the cryostat

Initial Configuration:

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

Step	Description	Parameter - Unit	Expected values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-03.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/FFFF/FFFF		
4	Only execute this step if the instrument is WARM Record the RAW values of SCU temperatures at the end of the test.	PUMPHTRTEMP PUMPHSTEMP EVAPHSTEMP SHUNTTEMP SOBTEMP SL0TEMP PL0TEMP OPTTEMP BAFTEMP BSMIFTEMP SCAL2TEMP SCAL4TEMP SCALTEMP SMECIFTEMP SMECTEMP BSMTEMP	//-32768 //-32768 //-32768 //-32768 //~ 20000 //-32768 //-32768 //-32768 //-32768 //-32768 //-32768 //-32768 //-32768 //-32768 //~ -2325 //~ -7125 //-32768		



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 15 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

5	<p>Only execute this step if the instrument is COLD (He I or He II conditions)</p> <p>Note down the cryostat temperature (He I or He II)</p> <p>Record the CONVERTED values of SCU temperatures at the end of this test.</p>	<p>PUMPHTRTEMP</p> <p>PUMPHSTEMP</p> <p>EVAPHSTEMP</p> <p>SHUNTTEMP</p> <p>SOBTEMP</p> <p>SL0TEMP</p> <p>PL0TEMP</p> <p>OPTTEMP</p> <p>BAFTEMP</p> <p>BSMIFTEMP</p> <p>SCAL2TEMP</p> <p>SCAL4TEMP</p> <p>SCALTEMP</p> <p>SMECIFTEMP</p> <p>SMECTEMP</p> <p>BSMTEMP</p>	<p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p>		
Test Result (Pass/Fail):					

Final Configuration: SCU DC thermometry on.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 16 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-SCU-06

Version: 1.0

Date: 6th October 2006

Purpose: SCU AC thermometry check

Duration: ~ 1 minute

Pass/Fail Criterion: SUBKSTAT parameters changes from 0 to 1

Preconditions: SPIRE CQM is electrically integrated with the cryostat

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on SCOS
- DPU AND OBS PARAMETERS display is selected on SCOS

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-SCU-06.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		
4	Only execute this step if the instrument is WARM	SUBKTEMP	~31915//~31904		
5	Record the RAW value of SUBKTEMP only if the Only execute this step if the instrument is COLD (He I or He II conditions)	SUBKTEMP - K	—		

Note down the cryostat temperature (He I or He II)

Record the CONVERTED values of SUBKTEMP at the end of this test.

Final Configuration: SCU AC thermometry on.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 17 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-THO

Version: 1.0

Date: 6th October 2006

Purpose: Switch off SCU DC and AC thermometry – if necessary

Duration: ~ 1 minute

Pass/Fail Criterion: Test passed if SCUTEMPSTAT parameter changes from 0xFFFF to 0 and SUBKSTAT parameter changes from 1 to 0.

Preconditions: SPIRE CQM is electrically integrated with the cryostat

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- SCU PARAMETERS display is selected on SCOS
- DPU AND OBS PARAMETERS display is selected on SCOS

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-THO.tcl	—	—	—	—
2	A few seconds later record the value of parameter SCUTEMPSTAT	SCUTEMPSTAT	FFFF/-/0		
3	A few seconds later record the value of parameter SUBKSTAT	SUBKSTAT	1/-/0		

Test Result (Pass/Fail):

Final Configuration:

- SCU DC and AC thermometry off.
- SPIRE in DRCU_ON mode.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 18 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-FUNC-DCU-04-PS-OFF

Version: 1.0

Date: 6th October 2006

Purpose: Photometer LIAs switch off

Duration: ~ 1 minute

Pass/Fail Criterion: Test passed if SCUDCDCSTAT parameter changes from 1 to 0.

Preconditions: The Photometer and Spectrometer LIAs are switched on, i.e. Procedure SPIRE-STM2-FUNC-DCU-04-PS-ON has been executed.

Initial Configuration:

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

Step	Description	Parameter	Expected Values Before/ After	Actual Values Before /After	Success/ Failure
1	Execute TCL script SPIRE-STM2-FUNC-DCU-04-PS-OFF.tcl	SCUDCDCSTAT	1/0		

Test Result (Pass/Fail):

Final Configuration: The Photometer and Spectrometer LIAs are off.



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 19 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-DRCU-OFF

Version: 1.0

Date: 6th October 2006

Purpose: Switch off the DRCU

Preconditions: Procedure SPIRE-STM2-FUNC-THO has been successfully executed if SPIRE CQM is electrically integrated with the cryostat.

Initial Configuration:

- SPIRE DPU is on and generating HK
- DRCU is switched ON
- DPU AND OBS PARAMETERS display is selected on SCOS

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Execute TCL script SPIRE-STM2-DRCU-ON-STEP1.tcl	—	—	—	
2	Check that THSK parameter is not refreshing anymore	—	—	—	
3	Check that TM2N parameter is not incrementing anymore	—	—	—	
4	Power off the SPIRE DRCU	—	—	—	

Test Result (Pass/Fail):

Final Configuration:

- DRCU is switched off
- SPIRE DPU is on but not generating HK



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 20 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Procedure: SPIRE-STM2-DPU-OFF

Version: 1.0

Date: 6th October 2006

Purpose: Switch off the DPU

Duration: ~ 1 minute

Preconditions: SPIRE-STM2-DRCU-OFF has been successfully executed.

Initial Configuration:

- SPIRE DPU is on *but not* generating any HK
- DRCU is switched OFF

Step	Description	Parameter - Unit	Expected Values Before/ During/ After	Actual Values Before/ During/ After	Success/ Failure
1	Power off the SPIRE DPU	—	—	—	

Test Result (Pass/Fail):

Final Configuration: SPIRE DPU is switched off



SPIRE Procedure

Ref: SPIRE-RAL-PRC-002729

Issue: 1.0

Date: 06/10/06

Page: 21 of 21

SPIRE
Short Functional Test (SFT) Procedure for STM2 Test
A.A.Aramburu

Appendix 1: SPIRE switch on sequence

The following procedures should be executed if it is necessary to just switch on SPIRE and leave it in the standby mode.

1. SPIRE-STM2-DPU-ON
2. SPIRE-STM2-DRCU-ON-STEP1
3. SPIRE-STM2-DRCU-ON-STEP2
4. SPIRE-STM2-FUNC-SCU-03
5. SPIRE-STM3-FUNC-SCU-06

In case of loss of power the switch on sequence can be executed without any constraints.

Appendix 2: SPIRE switch off sequence

The following procedures should be executed if it is necessary to switch off SPIRE from the standby mode:

1. SPIRE-STM2-THO
2. SPIRE-STM2-DRCU-OFF
3. SPIRE-STM2-DPU-OFF

This switch off sequence can be executed in an emergency or if there is a malfunction in the cryostat operations. There are no critical parameters to be monitored during execution.