EADS astrium

Procedure

Herschel

Title: **Herschel Instrument Power ON-OFF and Mode Switching Procedure for Functional Testing**

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1.0	07.01.2008		Initial version	

Table of Content

1   Scope

1.1   Objective

This document details the Instrument (PACS, SPIRE & HIFI) procedures provided to support primarily SVM oriented IST activities. The procedures can be used where appropriate to support other non-specific instrument tests (e.g. EMC, shipping health check). The procedures cover the following basic activities:

- Instrument (Prime & Redundant) Switch ON/OFF to/from Standby* mode
- Configuration of, and connection to, the Instrument EGSEs (I-EGSEs)
- Transition from "Standby" to dummy** Science producing mode

"Standby" is an artificial mode which cannot be characterised by one particular parameter for any instrument. Each instrument also uses an alternative name to indicate "Standby" mode; for PACS this is SAFE and for SPIRE it is REDY, HIFI does not use a specific name.

**** Dummy Science is sufficient for the needs of non-specific instrument IST activities and is representative in terms of APID allocation and bandwidth but not data content.*

This document will, where necessary, evolve during the system level AIT activities in order to reflect the configuration of the instruments (completion of integration activities) and the Herschel satellite (the latter in order to handle operation of the instruments in warm, HeI and HeII conditions)

1.2   Operational Flow

Chapter 7 provides the detailed step-by-step procedures for each instrument, which are summarised below:

PACS
- EGSE Configuration & Connection
- PACS Prime OFF to Standby (SAFE)
- PACS Prime Standby (SAFE) to OFF
- PACS Redundant OFF to Standby (SAFE)
- PACS Redundant Standby (SAFE) to OFF
- PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)
- PACS Standby (SAFE) to Burst Mode (to Standby)

- EGSE Disconnection

SPIRE

- EGSE Configuration & Connection
- SPIRE Prime OFF to Standby (REDY)
- SPIRE Prime Standby (REDY) to OFF
- SPIRE Redundant OFF to Standby (REDY)
- SPIRE Redundant Standby (REDY) to OFF
- EGSE Disconnection

HIFI

- EGSE Configuration & Connection
- HIFI Prime OFF to Standby
- HIFI Prime Standby to OFF
- HIFI Redundant OFF to Standby
- HIFI Redundant Standby to OFF
- EGSE Disconnection

2 Documents/Drawings

This document incorporates, by dated or undated references, provisions from other publications. These normative references are cited at appropriate places in the text and publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these apply to this document only when incorporated into it by amendment or revision. For undated references, the latest edition of the publication referred to apply.

2.1 Applicable Documents

AD-1	Herschel SAT Emergency Switch Off Procedure	H-P-2-ASED-PR-071

2.2 Reference Documents

RD-1	Herschel PCDU & CDMS nominal switch on / off procedure	HP-2-ASED-PR-0070
RD-2	HIFI Switch On Procedure, Issue 1.5.3	SRON-G/HIFI/PR/200707
RD-3	PACS Switch On/Off, ref. email Helmut Feuchtgruber	17. April 2007 11:58
RD-4	SPIRE Integration System Test Debugging Procedures, Issue 1.3	SPIRE-RAL-PRC-002880
RD-5	PACS I-EGSE User Manual, Issue 1, 19-Jul-2007	PICC-ME-MN-010
RD-6	HIFI IEGSE setup procedure	SRON-U/HIFI/PR/2007-005
RD-7	SPIRE I-EGSE Set-Up, Issue 2.2	SPIRE-RAL-DOC-002841
RD-8	FIRST/PLANCK Instrument Interface Document part A	PT-IID-A-04624
RD-9	FIRST/PLANCK Instrument Interface Document part B (HIFI)	PT-IIDB/HIFI-02125
RD-10	FIRST/PLANCK Instrument Interface Document part B (PACS)	PT-IIDB/PACS-02126
RD-11	FIRST/PLANCK Instrument Interface Document part B (SPIRE)	PT-IIDB/SPIRE-02124
RD-12	LO SFT Procedure using LO Dummy, Issue 1.01	MPIfR/HIFI/PR/2006-565

2.3 Other Documents

N/A

2.4 Acronyms

See calling procedure.

3 Requirements to be verified

N/A

4 Configuration

4.1 Herschel S/C Configuration

4.1.1 Hardware Configuration

See relevant TRR MoM

4.1.2 Software Configuration

See relevant TRR MoM

4.1.3 Test Configuration

4.1.3.1 SVM

See relevant TRR MoM

4.1.3.2 HIFI

All warm units & FPU integrated, LOU dummy fitted, waveguides suitably terminated. Warm conditions only.

4.1.3.3 PACS

All warm units and FPU is integrated and connected to the warm units. Warm or Cold HeI/HeII conditions.

4.1.3.4 SPIRE

All warm units integrated. Warm conditions only.

4.1.4 Simulated Equipments

N/A

5 Conditions

5.1 Personnel

See relevant TRR MoM

5.2 Environmental

See relevant TRR MoM

5.3 General Precautions and Safety

5.3.1 General Safety Requirements, Precautions

- For HIFI, Handling precautions according to RD-8 and RD-9 are applicable.
- For PACS, Handling precautions according to RD-8 and RD-10 are applicable.
- For SPIRE, Handling precautions according to RD-8 and RD-11 are applicable.

5.3.2 Special condition and hazards

The following Operational restrictions shall be carefully taken into account:

- In case of any failure, the activities shall be stopped until troubleshooting plan is generated and approved.

5.3.2.1 HIFI

Activity	Confirmed Completed	PA Sign Off	Date
Waveguide outputs must be covered with kapton tape (to prevent from dust contamination)			
For ultimate personnel safety 1 could stay 1 m away from the waveguides once the LSU output power is on.	N/A		

5.3.2.2   PACS

None

5.3.2.3   SPIRE

None

5.3.3   ESD constraints

See the Lead Procedure for the test concerned and the following:

- For HIFI, ESD precautions according to RD-8 and RD-9 are applicable.

- For SPIRE according to nominal ESD protection

- For PACS according to nominal ESD protection

5.3.4   *Special QA Requirements*

N/A

5.4 GSE

5.4.1 MGSE

N/A

5.4.2 CVSE

N/A

5.4.3 EGSE

5.4.3.1 EGSE Hardware Configuration

See TRR MoM for test concerned.

5.4.3.2 EGSE User Software

See TRR MoM for test concerned.

5.4.3.3 Grounding Configuration

N/A

5.4.3.4 Test Equipment

N/A

5.4.3.5 Data Acquisition System

N/A

5.4.4 OGSE

N/A

5.4.5 Special Equipment

N/A

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6 Verification Requirements and Test Criteria

No specific requirements are verified by this procedure, it is purely acts as a supporting procedure to the main lead test procedure where the overall test criteria and verification requirements are defined.

Enter Date	Time:		Test Location:	

7 Step-by-Step Procedures

7.1 PACS Instrument Procedures

7.1.1 PACS I-EGSE Configuration/Connection

The following procedure is used when it is required to use the PACS IEGSE to support the test being performed, either for monitoring of PACS specific TM on the IEGSE or for commanding the instrument above SAFE mode using a handshaking protocol between the HPCCS and the I-EGSE (i.e. Instrument specific testing such as SFTs). It is NOT normally required for switching PACS ON or OFF. This procedure is independent of PACS redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure PACS I-EGSE i.a.w. **RD-5**					
2.	From HPCCS Test Conductor console issue command to connect to PACS I-EGSE **connect HPACSEGSE**	YES28940== CONNECTED		**AND: SYS_PARS**		
	Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.					

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: **ALL_SubscribeParams**					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: **YC00X964**	OK				
5.	**Return to calling Procedure**					

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

7.1.2 PACS Prime OFF to Standby (SAFE)

The following will switch ON and configure PACS Prime instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold He1/He11). HKTM packets will be generated on APIDs 1152 dec and 1154 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power PACS Prime to SAFE: **Z102999SCVT010_ASDGEN_PACSPWRON_P**					
2.	On HPCCS when prompted: `"FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"`	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If **YES** is selected the test script will go on to automatically power on all PACS warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode) as per PACS test script: PACS_Switch_On_CCS_Nominal.tcl					
5.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT010_ASDGEN_PACSPWRON_P** it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
6.	Select **YES** if it is likely that other non-PACS instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	Verify HK TM packets are being received on APIDs 1152 & 1154					
9.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DP_SPS_LINK = "ON" DP_SPL_LINK = "ON" DP_DMC_LINK = "ON" DP_SPUS_CMD = "SS ENABLED" DP_SPUL_CMD = "SS ENABLED" DP_DMC_CMD = "SS ENABLED" DP_SPUS_HK = "NEW HK" DP_SPUL_HK = "NEW HK" DP_DMC_HK = "NEW HK" SPL_DMC_LINK = "LINK ON" SPS_DMC_LINK = "LINK ON" DM_BOL_REC_PAC = incrementing	OK		AND: PA000380 PA003390 PA206400 PA019420 PA001380		

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date | Time:			Test Location:				

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	- Counters for TM(1,2), TM(1,8) and NACKs shall be 0 DP_1_8_REJECTED = 0 DP_1_2_REJECTED = 0 DP_COM_DMC_NACK = 0 DP_COM_SPL_NACK = 0 DP_COM_SPS_NACK = 0 - HK parameter DP_UNIT indicates "NOMINAL DPU"					
10.	**PACS in SAFE mode. Return to calling Procedure**					

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

7.1.3   PACS Prime Standby (SAFE) to OFF

The following procedure will switch PACS Prime from SAFE to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Prime from SAFE: **Z102999SCVT011_ASDGEN_PACSPWROFF_P**					
2.	On HPCCS when prompted: `"FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"`	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all PACS warm units as per PACS test script: PACS_Switch_Off_CCS_Nominal.tcl					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Note: During switch off of PACS (5,2) TM event packets are expected					
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT011_ASDGEN_PACSPWROFF_P** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
7.	Select **YES** if it is likely that other non-PACS instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	**PACS OFF.** **Return to calling Procedure**					

Enter Date | Time:			Test Location:	

7.1.4 PACS Redundant OFF to Standby (SAFE)

The following will switch ON and configure PACS Redundant instrument in SAFE mode in any satellite configuration (i.e. warm, or Cold: He1/He11). HKTM packets will be generated on APIDs 1153 dec and 1155 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at any one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power PACS Redundant to SAFE: **Z102999SCVT012_ASDGEN_PACSPWRON_R**					
2.	On HPCCS when prompted: ```"FM PACS Switch ON in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"```	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:				

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If **YES** is selected the test script will go on to automatically power on all PACS redundant warm units, force boot the DPU ASW and configure the instrument to SAFE (Standby mode) as per PACS test script: PACS_Switch_On_CCS_Redundant.tcl					
5.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT012_ASDGEN_PACSPWRON_R** it will prompt: *"Set Bus Profile Back to Original Setting?"*	NO				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	Select **YES** if it is likely that other non-PACS instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
7.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	Verify HK TM packets are being received on APIDs 1153 & 1155					
9.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that PACS is in SAFE mode: DP_SPS_LINK = "ON"	OK		AND: PA000380 PA003390 PA206400 PA019420 PA001380		

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	*Test-Step-Description*	*Nominal Value*	*Actual Value*	*Remarks*	*P*	*N*
	DP_SPL_LINK = "ON" DP_DMC_LINK = "ON" DP_SPUS_CMD = "SS ENABLED" DP_SPUL_CMD = "SS ENABLED" DP_DMC_CMD = "SS ENABLED" DP_SPUS_HK = "NEW HK" DP_SPUL_HK = "NEW HK" DP_DMC_HK = "NEW HK" SPL_DMC_LINK = "LINK ON" SPS_DMC_LINK = "LINK ON" DM_BOL_REC_PAC = incrementing - Counters for TM(1,2), TM(1,8) and NACKs shall be 0 DP_1_8_REJECTED = 0 DP_1_2_REJECTED = 0 DP_COM_DMC_NACK = 0 DP_COM_SPL_NACK = 0 DP_COM_SPS_NACK = 0 - HK parameter DP_UNIT indicates "NOMINAL DPU"					
10.	**PACS in SAFE mode. Return to calling Procedure**					

Enter Date	Time:		Sign Off	TD:	PA:	

Enter Date | Time:			Test Location:	

7.1.5   PACS Redundant Standby (SAFE) to OFF

The following procedure will switch PACS Redundant from SAFE to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Prime from SAFE: **Z102999SCVT013_ASDGEN_PACSPWROFF_R**					
2.	On HPCCS when prompted: "FM PACS Switch OFF in Warm or Cold conditions, FPU connected - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all PACS Redundant warm units as per PACS test script: PACS_Switch_Off_CCS_Redundant.tcl					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time: | | **Test Location:**

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	Note: During switch off of PACS (5,2) TM event packets are expected					
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT013_ASDGEN_PACSPWROFF_R** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
7.	Select **YES** if it is likely that other non-PACS instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "*Bus Profile left unchanged, as original setting 0 (Launch)*"	OK				

Enter Date | Time: | | **Sign Off** | **TD:** | **PA:**

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	**PACS OFF.** **Return to calling Procedure**					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

7.1.6   PACS Standby (SAFE) to Nominal Spectroscopy (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Nominal Spectroscopy for a period of 60mins. TBC which APIDs are generated and duration!! The test script will autonomously return PACS to SAFE after the allotted time.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: **P102999SCVT904_ASDGENPACS_NomSpect**					
2.	PACS in Simulated Nominal Spectroscopy for 60 mins.					
3.	**Return to or synchronise with calling Procedure**					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

7.1.7 PACS Standby (SAFE) to Burst Mode (to Standby)

Running the following procedure will configure PACS from SAFE to Simulated Burst mode for a period of 60mins. TBC which APIDs are generated!! The test script will autonomously return PACS to SAFE after the allotted time.

Note HPCCS does not acquire the science packets in SCOS but archives them into TMDUMP files instead. However, it will route the packets to the IEGSE if the link is enabled.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to put PACS in simulated Nominal Spectroscopy from SAFE: **P102999SCVT913_ASDGENPACS_BurstMode**					
2.	PACS in Simulated Burst mode for 60 mins.					
3.	**Return to or synchronise with calling Procedure**					

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7.1.8 PACS I-EGSE Disconnection

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE **disconnect HPACSEGSE**	DISCONNECTED		**AND: SYS_PARS**		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: **ALL_SubscribeParams**					
3.	**Return to calling Procedure**					

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

7.2 SPIRE Instrument Procedures

7.2.1 SPIRE I-EGSE Configuration/Connection

The following procedure is used when it is required to use the SPIRE IEGSE to support the test being performed, either for monitoring of SPIRE specific TM on the IEGSE or for commanding the instrument above REDY mode using a handshaking protocol between the HPCCS and the I-EGSE (i.e. Instrument specific testing such as SFTs). It is NOT normally required for switching SPIRE ON or OFF. This procedure is independent of SPIRE redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	If not already on, Switch on & configure SPIRE I-EGSE i.a.w. **RD-7**					
2.	From HPCCS Test Conductor console issue command to connect to SPIRE I-EGSE **connect HSPIREEGSE**	YES29940= CONNECTED		**AND SYS_PARS**		
	Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.					

Enter Date | Time:			Sign Off	TD:		PA:	

| Enter Date | Time: | | | Test Location: | |

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If not already running from the HPCCS test conductor console execute the test script: **ALL_SubscribeParams**					
4.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: **YC00X966**	OK				
5.	**Return to calling Procedure**					

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7.2.2 SPIRE Prime OFF to Standby (REDY)

The following will switch ON and configure SPIRE Prime instrument in REDY (Standby) mode. HKTM packets will be generated on APIDs 1280 dec and 1282 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: **Z102999SCVT004_ASDGEN_SPIREPWRON_P**					
2.	On HPCCS when prompted: "SPIRE Switch ON for IST Debug only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
4.	If **YES** is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).					
5.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT004_ASDGEN_SPIREPWRON_P** it will prompt: "Set Bus Profile Back to Original Setting?"	NO				
6.	Select **YES** if it is likely that other non-SPIRE instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:				

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	Verify HK TM packets are being received on APIDs 1280 & 1282					
9.	Either using the ANDs indicated verify the correct status of the following SPIRE specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK OK SM00M500 = 0x0200 (REDY)		**AND: SA_1_559**		

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:			

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
10	**SPIRE powered and in REDY mode** **Return to calling Procedure**					

Enter Date | Time:			Sign Off	TD:	PA:

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7.2.3   SPIRE Prime Standby (REDY) to OFF

The following procedure will switch SPIRE Prime from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF SPIRE Prime from REDY: **Z102999SCVT005_ASDGEN_SPIREPWROFF_P**	OK				
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST Debug only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all SPIRE warm units.					

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1280 are expected and do not indicate a problem: a) EVID 1313 No_MCU_Response_Error b) EVID 21773 ALARM_LSMCU_DEAD					
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT005_ASDGEN_SPIREPWROFF_P** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
7.	Select **YES** if it is likely that other non-SPIRE instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	On HPCCS when prompted: "Set Bus Profile Back to Original Setting?" Select **NO**	NO				
10.	At prompt: "Bus Profile left unchanged" Select OK to continue	OK				
11.	**SPIRE OFF.** **Return to calling Procedure**					

Enter Date	Time:		Sign Off	TD:	PA:

Enter Date | Time:			Test Location:	

7.2.4   SPIRE Redundant OFF to Standby (REDY)

The following will switch ON and configure SPIRE Redundant instrument in REDY (Standby) mode. HKTM packets will be generated on APIDs 1281 dec and 1283 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

Step-No.	Test-Step-Description	Nominal Value	Actual Value Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power SPIRE Prime to REDY: **Z102999SCVT006_ASDGEN_SPIREPWRON_R**					
2.	On HPCCS when prompted: "SPIRE Switch ON for IST Debug only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value Value	Remarks	P	N
4.	If **YES** is selected the test script will go on to automatically power on all SPIRE warm units, force boot the DPU ASW and configure the instrument to REDY (Standby mode).					
5.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT006_ASDGEN_SPIREPWRON_R** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
6.	Select **YES** if it is likely that other non-SPIRE instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "`Bus Profile left unchanged, as original setting 0 (Launch)`"	OK				

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date | Time:			Test Location:			

Step-No.	*Test-Step-Description*	*Nominal Value*	*Actual Value Value*	*Remarks*	*P*	*N*
7.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
8.	Verify HK TM packets are being received on APIDs 1281 & 1283					
9.	Either using the ANDs indicated verify the correct status of the following PACS specific TM parameters or if the IEGSE is connected request IEGSE Operator to confirm that: THSK (SM00T500) parameter refreshing @ 0.25 Hz TM1N and TM2N parameters are incrementing as indicated: TM1N (SMT0N500) by 2 every 4 secs TM2N (SMT1N500) by 1 every 4 secs MODE parameter is set to "REDY" mode (RAW value 0x0200)	OK OK SM00M500 = 0x0200 (REDY)		**AND: SA_1_559**		

Enter Date | Time:			Sign Off	TD:		PA:

Enter Date	Time:		Test Location:			

Step-No.	Test-Step-Description	Nominal Value	Actual Value Value	Remarks	P	N
10.	**SPIRE powered and in REDY mode** **Return to calling Procedure**					

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7.2.5 SPIRE Redundant Standby (REDY) to OFF

The following procedure will switch SPIRE Redundant from REDY to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script to power OFF PACS Redundant from SAFE: **Z102999SCVT007_ASDGEN_SPIREPWROFF_R**	OK				
2.	On HPCCS when prompted: "SPIRE Switch OFF for IST Debug only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all SPIRE warm units.					

| Enter Date | Time: | | | Sign Off | TD: | | PA: | |

Enter Date | Time:			Test Location:		

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N

5.	During Switch OFF of SPIRE the following (5,1) and (5,4) event messages on APID 1281 are expected and do not indicate a problem:
	
	   c) EVID 1313 No_MCU_Response_Error
	   d) EVID 21773 ALARM_LSMCU_DEAD					

6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT007_ASDGEN_SPIREPWROFF_R** it will prompt: *"Set Bus Profile Back to Original Setting?"*	NO				
7.	Select **YES** if it is likely that other non-SPIRE instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* *"Bus Profile left unchanged, as original setting 0 (Launch)"*	OK				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	**SPIRE OFF.** **Return to calling Procedure**					

Enter Date | Time:			Test Location:	

7.2.6   SPIRE I-EGSE Disconnection

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE **disconnect HSPIREEGSE**	DISCONNECTED		**AND:** **SYS_PARS**		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: **ALL_SubscribeParams**					
3.	**Return to calling Procedure**					

Enter Date | Time:			Sign Off	TD:	PA:

Enter Date	Time:		Test Location:	

7.3 HIFI Instrument Procedures

7.3.1 HIFI I-EGSE Configuration/Connection

The following procedure is used when it is required to use the HIFI IEGSE to support the test being performed, either for monitoring of HIFI specific TM on the IEGSE or for commanding the instrument above Standby mode using a handshaking protocol between the HPCCS and the I-EGSE (i.e. Instrument specific testing such as SFTs). It is NOT normally required for switching HIFI ON or OFF. This procedure is independent of HIFI redundancy configuration.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	Confirm LOU dummy connected to flight harness connector and configured for band 1a, and that drain resistances D1 & D2 on LOA dummy have been set correctly plus that LSU waveguide 1a is terminated with matched load as per section 4.1.3.2. Confirm that safety precautions have been applied as per section 5.3.2.1	Confirmed				

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Enter Date	Time:		Test Location:		

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
2.	If not already on, Switch on & configure HIFI I-EGSE i.a.w. **RD-6** Ensure HIFI I-EGSE up and running and configured according to RD-6. As part of the configuration in section 4.1, step 3 the configuration to be selected is "**Prime**" and "**FM FPU and dummy LOU**"	OK				
3.	If not already on, Switch on & configure HIFI I-EGSE i.a.w. **RD-6**					
4.	From HPCCS Test Conductor console issue command to connect to HIFI I-EGSE **connect HHIFIEEGSE**	YES27940== CONNECTED		**AND SYS_PARS**		
	Perform the following two steps if command parameter exchange is required between the IEGSE and HPCCS for the test concerned.					
5.	If not already running from the HPCCS test conductor console execute the test script: **ALL_SubscribeParams**					

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Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	Verify HPCCS-IEGSE connection by sending the following test command from manual command stack (repeater value 0) and verify received OK on IEGSE: **YC00X962**	OK				
7.	Patch HIFI synthetic parameters for warm conditions by executing the following scripts: **HIFIST_ASED_PatchPtvChecksum** **HIFIST_ASED_PatchTempLimits** *Note these scripts replace* HIFIST_CCS_conf_ptv_checksum due to NCR-3652	OK				
8.	**Return to calling Procedure**					

Enter Date	Time:		Test Location:	

7.3.2 HIFI Prime OFF to Standby

The following will switch ON and configure HIFI Prime instrument in Standby mode. HKTM packets will be generated on APIDs 1024 dec and 1026 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

NB: The WBS laser temperature (HM023193 HWH_Laser_T and HWV_Laser_T) may rise above a red limit in the MIB. If this occurs the test can continue. Logging is not required since the lasers will not be switched on in the CE test

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: **Z102999SCVT014_ASDGEN_HIFIPWRON_P**	OK		ANDs HA000289 HA004289		
2.	On HPCCS when prompted: `"FM HIFI Switch ON for Functional Tests only in warm conditions with LOU or dummy - Select NO to abort TS if not correct"`	YES				

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Enter Date	Time:		Test Location:	

Step-No.	*Test-Step-Description*	*Nominal Value*	*Actual Value*	*Remarks*	*P*	*N*
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby.					

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Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	See Remarks !! On HPCCS when prompted: "Press OK when IEGSE confirms LCU status OK" Request I_EGSE operator to run the command 'LCUtable/verifyreadback' using the OBSID retrieved in the previous step. If the word PASS does not appear on the screen at the end, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing At prompt to record OBS_ID_per_hk during execution of following script HIFIST_Startup_LCU_table_read record value if HM003190 = 900002A5 hex (Note: at start & end value is 90000000 hex)	OK		The HIFI instrument support responsible shall be connected remotely to observe the status of the HIFI. **So he should be contacted before this test step**		

Enter Date | Time:			Sign Off	TD:		PA:

Enter Date	Time:		Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT014_ASDGEN_HIFIPWRON_P** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
7.	Select **YES** if it is likely that other non-HIFI instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "Bus Profile left unchanged, as original setting 0 (Launch)"	OK				
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	Verify HK TM packets are being received on					

Enter Date	Time:		Sign Off	TD:	PA:

| Enter Date \| Time: | | | Test Location: | | | |

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	APIDs 1024 & 1026					
10.	**HIFI powered and in Standby mode Return to calling Procedure**	OK				

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7.3.3 HIFI Prime Standby to OFF

The following procedure will switch HIFI Prime from Standby to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: **Z102999SCVT015_ASDGEN_HIFIPWROFF_P**	OK				
2.	On HPCCS when prompted: "FM HIFI Prime Switch OFF for Functional Tests only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date	Time:		Sign Off	TD:	PA:

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	On HPCCS when prompted: "Press OK when IEGSE confirms LCU status OK" respond accordingly	OK				
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT015_ASDGEN_HIFIPWROFF_P** it will prompt: "Set Bus Profile Back to Original Setting?"	NO				

Enter Date | Time:			Test Location:				

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select **YES** if it is likely that other non-HIFI instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "`Bus Profile left unchanged, as original setting 0 (Launch)`"	OK				
8.	If **NO** selected then at the prompt: "`Bus Profile left unchanged`" Select OK to continue	OK				
9.	**HIFI OFF** **Return to calling Procedure**	OK				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

7.3.4 HIFI Redundant OFF to Standby

The following will switch ON and configure HIFI Redundant instrument in Standby mode. HKTM packets will be generated on APIDs 1025 dec and 1027 decimal (these can be observed using TMPH with corresponding filter – note however a limited number of TMPHs should be running at one time).

NB: The WBS laser temperature (HM023193 HWH_Laser_T and HWV_Laser_T) may rise above a red limit in the MIB. If this occurs the test can continue. Logging is not required since the lasers will not be switched on in the CE test

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: **Z102999SCVT016_ASDGEN_HIFIPWRON_R**	OK		ANDs HA000289 HA004289		
2.	On HPCCS when prompted: `"FM HIFI Switch ON for Functional Tests only in warm conditions with LOU or dummy - Select NO to abort TS if not correct"`	YES				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:			

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power on all HIFI warm units, force boot the DPU ASW and configure the instrument to Standby.					
5.	See Remarks !! On HPCCS when prompted: "Press OK when IEGSE confirms LCU status OK" Request I_EGSE operator to run the command 'LCUtable/verifyreadback' using the OBSID retrieved in the previous step. If the word PASS does not appear on the screen at the end, this is a nogo on this test procedure. If OK respond to prompt accordingly, otherwise contact SRON to investigate and resolve before continuing	OK		The HIFI instrument support responsible shall be connected remotely to observe the status of the HIFI. **So he should be contacted before this test step**		

Enter Date | Time:			Sign Off	TD:		PA:

Enter Date | Time:			Test Location:			

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
	At prompt to record OBS_ID_per_hk during execution of following script HIFIST_Startup_LCU_table_read record value if HM003190 = 900002A5 hex (Note: at start & end value is 90000000 hex)					
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT016_ASDGEN_HIFIPWRON_R** it will prompt: "*Set Bus Profile Back to Original Setting?*"	NO				
7.	Select **YES** if it is likely that other non-HIFI instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "`Bus Profile left unchanged, as original setting 0 (Launch)`"	OK				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
8.	If **NO** selected then at the prompt: "Bus Profile left unchanged" Select OK to continue	OK				
9.	Verify HK TM packets are being received on APIDs 1025 & 1027					
10.	**HIFI powered and in Standby mode** **Return to calling Procedure**	OK				

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7.3.5   HIFI Redundant Standby to OFF

The following procedure will switch HIFI Redundant from Standby to OFF.

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From the HPCCS test conductor console start the test script: **Z102999SCVT017_ASDGEN_HIFIPWROFF_R**	OK				
2.	On HPCCS when prompted: "FM HIFI Redundant Switch OFF for Functional Tests only in warm conditions - Select NO to abort TS if not correct"	YES				
3.	If in any doubt about the script being executed **NO** should be selected to abort the script. Before restarting consult the relevant instrument support engineer to confirm the correct script to be used for the test in question.					
4.	If **YES** is selected the test script will go on to automatically power off all HIFI warm units.					

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:			

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
5.	On HPCCS when prompted: "Press OK when IEGSE confirms LCU status OK" respond accordingly	OK				
6.	On HPCCS when all autonomous actions have been completed by the power on script **Z102999SCVT017_ASDGEN_HIFIPWROFF_R** it will prompt: "Set Bus Profile Back to Original Setting?"	NO				

Enter Date | Time:			Sign Off	TD:		PA:	

Enter Date | Time:			Test Location:	

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
7.	Select **YES** if it is likely that other non-HIFI instrument related activities are to be performed. *However note that if the original Bus Profile was 0 (launch) the script will automatically leave the Bus Profile unchanged as this profile is not compatible with instruments being powered in Standby:* "`Bus Profile left unchanged, as original setting 0 (Launch)`"	OK				
8.	If **NO** selected then at the prompt: "`Bus Profile left unchanged`" Select OK to continue	OK				
9.	**HIFI OFF** **Return to calling Procedure**	OK				

Enter Date | Time:			Test Location:	

7.3.6 HIFI I-EGSE Disconnection

Step-No.	Test-Step-Description	Nominal Value	Actual Value	Remarks	P	N
1.	From HPCCS Test Conductor console issue command to disconnect PACS I-EGSE **disconnect HHIFIEGSE**	DISCONNECTED		**AND:** **SYS_PARS**		
2.	If no longer required for other instrument activities, from the HPCCS test conductor console terminate the test script: **ALL_SubscribeParams**					
3.	**Return to calling Procedure**					

Enter Date | Time:		Sign Off	TD:	PA:

8 ANNEX

8.1 Script hierarchy

Detailed in the following sub-sections:

8.1.1 General

ALL_SubscribeParams

8.1.2 PACS

Z102999SCVT010_ASDGEN_PACSPWRON_P
->   P102999SCVT905_ASDISTPACS_PWR_ON_N
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT011_ASDGEN_PACSPWROFF_P
->   P102999SCVT906_ASDISTPACS_PWR_OFF_N
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT012_ASDGEN_PACSPWRON_R
    P102999SCVT907_ASDISTPACS_PWR_ON_R
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT013_ASDGEN_PACSPWROFF_R
->   P102999SCVT908_ASDISTPACS_PWR_OFF_R
->   ->   Z010999MMXX002UNITS_CHECK

P102999SCVT904_ASDGENPACS_NomSpect

P102999SCVT913_ASDGENPACS_BurstMode

8.1.3 SPIRE

Z102999SCVT004_ASDGEN_SPIREPWRON_P
->   S102999SCVT017_ASDGENSPIR_PWR_ON_P
->   ->   SPIRE-IST-DBG-OFF2DPUON-SP
->   ->   SPIRE-IST-DBG-DPUON2STBY
->   ->   SPIRE-IST-DBG-LOAD-VM-TABLES
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT005_ASDGEN_SPIREPWROFF_P
->   S102999SCVT019_ASDGENSPIR_PWR_OFF_P
->   ->   SPIRE-IST-DBG-STBY2OFF
->   ->   Z010999MMXX002UNITS_CHECK

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Z102999SCVT006_ASDGEN_SPIREPWRON_R
->   S102999SCVT018_ASDGENSPIR_PWR_ON_R
->   ->   SPIRE-IST-DBG-OFF2DPUON
->   ->   SPIRE-IST-DBG-DPUON2STBY
->   ->   SPIRE-IST-DBG-LOAD-VM-TABLES
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT007_ASDGEN_SPIREPWROFF_R
->   S102999SCVT020_ASDGENSPIR_PWR_OFF_R
->   ->   SPIRE-IST-DBG-STBY2OFF
->   ->   Z010999MMXX002UNITS_CHECK

8.1.4   HIFI

HIFIST_ASED_PatchPtvChecksum

HIFIST_ASED_PatchTempLimits

Z102999SCVT014_ASDGEN_HIFIPWRON_P
->   H102999SCVT005_ASDGENHIFI_PWR_ON_P
->   ->   HIFIST_Startup_force_boot
->   ->   HIFIST_Startup_OBS_SFT
->   ->   HIFIST_Startup_FCU_on
->   ->   HIFIST_Startup_WBS_lasertemp40
->   ->   HIFIST_Startup_WBSH_on
->   ->   HIFIST_Startup_WBSV_on
->   ->   HIFIST_Startup_HRS_on
->   ->   HIFIST_Startup_LCU_on
->   ->   HIFIST_Startup_LCU_table_load
->   ->   HIFIST_Startup_LCU_table_read
->   ->   HIFIST_Startup_LO_Nominal
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT015_ASDGEN_HIFIPWROFF_P
->   H102999SCVT006_ASDGENHIFI_PWR_OFF_P
->   ->   HIFIST_Startup_FPU_standby
->   ->   HIFIST_Startup_WBS_standby
->   ->   HIFIST_Startup_HRS_standby
->   ->   HIFIST_Startup_LCU_standby
->   ->   HIFIST_Startup_all_off
->   ->   Z010999MMXX002UNITS_CHECK

Z102999SCVT016_ASDGEN_HIFIPWRON_R
->   H102999SCVT007_ASDGENHIFI_PWR_ON_R
->   ->   HIFIST_Startup_force_boot
->   ->   HIFIST_Startup_OBS_SFT
->   ->   HIFIST_Startup_FCU_on

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->	->	HIFIST_Startup_WBS_lasertemp40
->	->	HIFIST_Startup_WBSH_on
->	->	HIFIST_Startup_WBSV_on
->	->	HIFIST_Startup_HRS_on
->	->	HIFIST_Startup_LCU_on
->	->	HIFIST_Startup_LCU_table_load
->	->	HIFIST_Startup_LCU_table_read
->	->	HIFIST_Startup_LO_Nominal
->	->	Z010999MMXX002UNITS_CHECK

Z102999SCVT017_ASDGEN_HIFIPWROFF_R

->	->	HIFIST_Startup_FPU_standby
->	->	HIFIST_Startup_WBS_standby
->	->	HIFIST_Startup_HRS_standby
->	->	HIFIST_Startup_LCU_standby
->	->	HIFIST_Startup_all_off
->	->	Z010999MMXX002UNITS_CHECK

8.2 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 8.2-1: Procedure Variation Sheet

8.3   Non Conformance Report (NCR) Summary

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

Table 8.3-1: Non-Conformance Record Sheet

8.4   Sign-off Sheet

	Date	Signature
Test Director		
Test Conductor		
PA Responsible		
ESA Representative		

E N D   O F   D O C U M E N T

	Name	Dep./Comp.		Name	Dep./Comp.
	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		Theunissen Martijn	Dutch Space
	Fehringer Alexander	ASG13		Wagner Klaus	ASG22 ·
X	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	ASA42		Wöhler Hans	ASG22
	Grasl Andreas	OTN/ASA44		Wössner Ulrich	ASE252
	Grasshoff Brigitte	AET12	X	Vascollo Riccardo	HE Space
X	Hamer Simon	Terma			
	Hendry David	Terma			
	Hengstler Reinhold	ASA42			
	Hinger Jürgen	ASG22			
X	Hohn Rüdiger	AED65			
	Hölzle Edgar Dr.	AED32			
	Huber Johann	ASA42			
	Hund Walter	ASE252			
X	Idler Siegmund	AED312			
	Ivády 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	X	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	X	MPE (PACS)	MPE
	Langenstein Rolf	AED15	X	RAL (SPIRE)	RAL
	Langfermann Michael	ASA41	X	SRON (HIFI)	SRON
X	Maukisch Jan	ASA43			
X	Much Christoph	ASA43			
	Müller Jörg	ASA42		**Subcontractors:**	
	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