CCLRC Rutherford Appleton Laboratory	**Post Test Review (PTR) CHECKLIST & MoM** **STM2 Grounding Violation Investigation PTR**	**PRODUCT ASSURANCE** **Space Science and Technology Department**

PTR MoM	Date:	Fri. 10 November 2006	NUMBER	SPIRE-RAL-MOM-002773 – Issue 1

Attendees

J. Lang - ASED
R. Langenstein – ASED PA
D. Griffin – RAL SPIRE
A. Grasl - ASED
C. Scharmberg - ESA

1. Introduction

The test was carried out between 09-11-2006 and 10-11-2006
The TRR Minutes are included in SPIRE-RAL-MOM-002772
The test was carried out to investigate HR-SP-RAL-NCR-163

2. Identification of Test Item

- As per TRR

3. Review of Procedure Variations

- The as run procedure is attached as Annex 1

4. Preliminary Assessment of Data

- It has been verified that the grounding configuration of the thirteen SIH-IS-XX harnesses is correct.
- There is a short between the Analogue Ground and the cryostat within the cryostat and almost certainly localized within the instrument
- There is a short between the Chassis of the instrument (identified within the cryoharness as FCR) and the cryostat. The short is almost certainly localized near an instrument to S/C mechanical interface

5. Review of NCR Status

- The NCR-163 to be updated to include references to the documentation from this test
- No other notes

6. Open Work

- Update NCR-163 with references

7. Conclusion

- The test was successful in isolating the grounding violation to be inside the cryostat thereby excluding the SIH-IS-XX harenesses
- Need to plan the activities after the warm up and opening of the cryostat (probably Q1 2007 at FN) to investigate the NCR further and determine the exact location of the shorts

Location : ESTEC & FN	Title: INVESTIGATION OF SPIRE GROUNDING CONFIGURATION AFTER STM2 STRAYLIGHT AND EMC TEST		
Facility : Class 100.000	Model: PFM	Subsystem: SVM CCH	Date: 09.10.06
CI No 151432-03	Test Conductor:	U. Wössner, A. Grasl, J. Lang	NCR Ref:
	Prepared By:	RAL / Doug Griffin	CIL No:

Scope: This Procedure covers investigations of the violation of the SPIRE grounding configuration discovered during the de-integration of the SPIRE WE after the STM2 stray-light and EMC tests	**Procedures and reference documents:-** NA

Facilities required:	– Clean-room 100.000 at ESTEC	**Documents, Drawings& Routing Design** Ref.1: Ref.2: HP-2-ASED-ID-0083-04-0B SVM internal SIH & CCH Ref.3: HP-2-ASED-ID-0094-01-0C, SPIRE EQM Interconnection Diagram Ref45: SPIRE-RAL-NOT-002028 Draft 0.2, Making SPIRE ESD Safe Ref.5: HP-2-ASED-IC-0016 Issue: 2.1 PFM SPIRE SIH EICD Ref.6: SPIRE-RAL-NOT-002770: STM2 Grounding Violation Investigation, Issue 1.0 Ref.7: HR-SP-RAL-NCR-163 (Shorted contacts measured on SVM-CB (312100 J04) Ref.8: Ref.9: Ref.10:
Personnel required:	3 Harness -; 2 AIT- and 1 PA – engineer 1 Instrument Engineer (SPIRE)	**MASS:**
Safety and Hazards:	SPIRE ESD requirements to be followed	
Constraints:	Class 100.000 clean room	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
1.	Verify the integrity of the personal ESD wrist strap for the personnel involved in the activities.		Completed 09/11/2006 16:08	
2.	Prepare convenient locations around the work area where the operators can connect their wrist straps		Completed 09/11/2006 16:08:05	

Release AIT:	Release SE:	Release PA/Safety:	Sign off (PA/QC/Team Leader)

No:	Activity	Proc/Drwg	Remarks/Results	sign off
3.	Record the type of safeing plugs mated to each of the SVM-CB connectors. (Expect the following) • SIH-IS-01: 312200 J06: Type-VI • SIH-IS-02: 312200 J05: Type-VII • SIH-IS-03: 312100 J04: Type-V • SIH-IS-04: 312100: J03: Type-VII • SIH-IS-05: 312100: J02: Type-VII • SIH-IS-06: 312200: J03: Type-VII • SIH-IS-07: 312200: J04: Type-VII • SIH-IS-08: 312200: J01: Type-VII • SIH-IS-09: 312200: J02: Type-VII • SIH-IS-10: 312300: J06: Type-VII • SIH-IS-11: 312300: J04: Type-VIII • SIH-IS-12: 312300: J05: Type-VII 1. SIH-IS-13: 312300: J03: Type-VIII		All safeing plugs present with the exception of the Type-VII on SIH-IS-12 312300 J05 not mated The connector had a different type of EMI cap on it which is functionally the same as the Type-VII cap but not labelled as such This has no impact on the investigation since this connector has no electrical terminations (EMC cap only) 09/11/2006 16:17	
4.	Set ESD ionizer fan to neutralise the area around 312100 J04 (Phot. Bias) for at least 120 seconds		Completed 09/11/2006 16:19 Fan left on	
5.	Connect the contacts of a 128-way BOB to S/C chassis via a shorting plug to ensure that there is no residual charge on the unit		Completed	
6.	Remove the safeing plug from 312100 J04		16:35 Waited for 120 seconds with the ionizer fan on the exposed contacts	
7.	Remove the shorting plug from the 128-way BOB and mate to 312100 J04		Completed	
8.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
9.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.8 Ohm,	
10.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 900.		Go to step 100	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
100.	**Second phase of investigations**			
101.	Remove safeing plug from 312300 J03 (SIH-IS-13)		Completed	
102.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
103.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
104.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 900.		Go to step 105	
105.	Remove safeing plug from 312300 J04 (SIH-IS-11)		Completed	
106.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
107.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
108.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 900.		Go to step 109	
109.	Remove safeing plug from 312200 J06 (SIH-IS-01)		Completed 16:33	
110.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
111.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.83 Ohm	
112.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 900.		Go to step 200	
200.	**Third Phase of investigations**		Moved air ionizer to 211121 P32 and left for > 120 sec	
201.	Demate 211121 P32 (SIH-IS-01)		16:44 Completed	
202.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
203.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
204.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to step 205	
205.	Demate 211121 P31 (SIH-IS-02)		Completed	
206.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
207.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
208.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to step 209	
209.	Demate 211121 P22 (SIH-IS-04)		Completed	
210.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.91 Ohm	
211.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
212.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 213	
213.	Demate 211121 P23 (SIH-IS-05)		Completed	
214.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
215.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82Ohm	
216.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 217	
217.	Demate 211121 P25 (SIH-IS-07)		Completed	
218.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
219.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82Ohm	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
220.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Completed	
221.	~~Demate 211121 P25 (SIH-IS-07)~~			
222.	~~Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm~~			
223.	~~Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm~~			
224.	~~If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.~~			
225.	Demate 211121 P27 (SIH-IS-08)		Completed	
226.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
227.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
228.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 229	
229.	Demate 211121 P28 (SIH-IS-09)		Completed	
230.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
231.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
232.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 233	
233.	Demate 211121 P34 (SIH-IS-10)		Completed	
234.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
235.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
236.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 237	
237.	Demate 211121 P30 (SIH-IS-11)		Completed	
238.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.89 Ohm	
239.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.81 Ohm	
240.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 241	
241.	Demate 211121 P33 (SIH-IS-12)		Completed	
242.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.90 Ohm	
243.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
244.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 245	
245.	Demate 211121 P29 (SIH-IS-13)		Completed	
246.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.90 Ohm	
247.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.82 Ohm	
248.	If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.		Go to Step 245	
249.	Neutralise the area around 211121 P24 (SIH-IS-06) for > 120 sec with ionizer fan then demate 211121 P24		Completed (left fan on for ~ 10 sec)	
250.	Measure the isolation between 312100 J04 contact 128 (Analogue ground) and chassis. Was 13 Ohm		8.90 Ohm	
251.	Measure the isolation between 312100 J04 contact 2 (FPU FS) and chassis. Was 22.68Ohm		16.81 Ohm	

<table>
<tr><th>No:</th><th>Activity</th><th>Proc/Drwg</th><th>Remarks/Results</th><th>sign off</th></tr>
<tr><td>252.</td><td>If isolation of both FPU FS and analogue Ground is > 25kOhm then go to step 800.</td><td></td><td>• Finished activities for the day.
• Covered the 12 exposed CVVUCR 128-way connectors with ESD caps for over night.</td><td></td></tr>
<tr><td>300.</td><td>Fourth Phase of investigations</td><td></td><td>Recommenced activities 10/11/2006 08:27:31</td><td></td></tr>
<tr><td>301.</td><td>Neutralise the area around 312100J04 for > 120 sec with ionizer fan then demate BOB</td><td></td><td>Completed 10/11/2006 08:31:43</td><td></td></tr>
<tr><td>302.</td><td>Mate Type-V Safeing plug to 312100 J04</td><td></td><td>Completed 10/11/2006 08:32:05</td><td></td></tr>
<tr><td>303.</td><td>Move 128-way BOB close to 211121 J26 (SIH-IS-03)</td><td></td><td>Completed 10/11/2006 08:32:26</td><td></td></tr>
<tr><td>304.</td><td>Connect the contacts of a 128-way BOB to S/C chassis via a shorting plug to ensure that there is no residual charge on the unit</td><td></td><td></td><td></td></tr>
<tr><td>305.</td><td>Demate (SIH-IS-03) 211121 P26 and mate 128-way BOB</td><td></td><td>Used air ioniser for > 120 sec prior to commencing activities</td><td></td></tr>
<tr><td>306.</td><td>Measure the isolation between ~~312100 J04~~ 211121 J026 contact 128 (Analogue ground) and chassis. Was 13 Ohm</td><td></td><td>5.58 Ohm !</td><td></td></tr>
<tr><td>307.</td><td>Measure the isolation between 211121 J026 ~~312100 J04~~ contact 2 (FPU FS) and chassis. Was 22.68Ohm</td><td></td><td>0.51 Ohm !</td><td></td></tr>
<tr><td>308.</td><td>Mate Safeing plug Type-V (Phot. Bias) to 211121 J026</td><td></td><td>Completed</td><td></td></tr>
<tr><td>309.</td><td>Removed safeing plug from 211121 J026</td><td></td><td>Completed</td><td></td></tr>
<tr><td>310.</td><td>Mated BOB to 211121 J026</td><td></td><td>Completed</td><td></td></tr>
<tr><td>311.</td><td>Removed the bridging contacts in the following sequence and measured the isolation on 211121 J026 Pin 2 (FCR)</td><td></td><td>Starting resistance Pin 2 to Chassis: 0.5 Ohm
<table><tr><th>Contact</th><th>Function</th><th>Pin 2 – Chassis (Ohm)</th></tr><tr><td>3</td><td>FCR</td><td>0.5</td></tr><tr><td>4</td><td>FCR</td><td>0.5</td></tr><tr><td>5</td><td>FCR</td><td>0.5</td></tr></table></td><td></td></tr>
</table>

No:	Activity	Proc/Drwg	Remarks/Results	sign off
			8 FCR 0.5 15 FCR 0.51 25 FCR 0.52 47 FCR 0.53 65 FCR 0.55 82 FCR 0.57 93 FCR 0.58 94 FCR 0.58 105 FCR 0.58 114 FCR 0.59 115 FCR 0.60 121 FCR 0.60 122 FCR 0.62 123 FCR 0.63 124 FCR 0.65 125 FCR 0.70 126 FCR 0.83 127 FCU 2.37 105 A GND 2.4 001 A GND 2.58 064 A GND 2.77 006 A GND 3.12 091 A GND 3.58 036 A GND 5.89 Resistance across 128 at the end: 10.18 Ohm Note: There were two DVMs interconnected across the short, so they interfered with each other. (i.e. removing one from the circuit changes the other) When they are measured one at a time in this configuration, Pin 128 measures 7.81 Ohm and Pin 2 measures 3.48 Ohm. Replace all bridging contacts	
312.	Remove BOB from 211121 J026		Completed	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
313.	Replace the ESD cap on 21121 J026		Completed	
314.	Remove the ESD cap from 211121 J024 (SIH-IS-06)		Completed	
315.	Mate 128-way BOB to 211121 J024		All grey contacts bridges on the BOB in place. The following were removed after mating BOB. 36 AGND 128 AGND 47 AGND 04 AGND 01 FCR 03 FCR 05 FCR 06 FCR 07 FCR 08 FCR 14 FCR 15 FCR 24 FCR 25 FCR 35 FCR 82 FCR 93 FCR 94 FCR 104 FCR 105 FCR 114 FCR 115 FCR 121 FCR 122 FCR 123 FCR 124 FCR 125 FCR 126 FCR 127 FCR	

<table>
<tr><th>No:</th><th>Activity</th><th>Proc/Drwg</th><th>Remarks/Results</th><th>sign off</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>316.</td><td>Measure isolation between 211121 J024 Pin 036 (PLW Analogue Ground) and chassis</td><td></td><td>6.27 Ohm</td><td></td></tr>
<tr><td>317.</td><td>Measure isolated between 211121 J024 Pin 127 (FCR) and Chassis</td><td></td><td>4.26 Ohm</td><td></td></tr>
<tr><td>318.</td><td>Remove ESD Cap from 211121 J026 and mate P026</td><td></td><td>Completed (Type V already mated on the SVM)</td><td></td></tr>
<tr><td>319.</td><td>Demate 128-way BOB from 211121 J024</td><td></td><td>Completed</td><td></td></tr>
<tr><td>320.</td><td>Mate ESD cap to 211121 J024</td><td></td><td>Completed</td><td></td></tr>
<tr><td>400.</td><td>Fifth Phase of investigations</td><td></td><td>According Annex 1
All SIH-IS disconnected at SVM-CB and CVVUCR for this</td><td></td></tr>
<tr><td>401.</td><td>Check interconnection of FCR on SIH-IS-03
On 211121 P26</td><td></td><td>
<table>
<tr><th>Pin A</th><th>Pin B</th><th>Measurement (Ohm)</th></tr>
<tr><td>2</td><td>3</td><td>30</td></tr>
<tr><td>2</td><td>4</td><td>30</td></tr>
<tr><td>2</td><td>5</td><td>26</td></tr>
<tr><td>2</td><td>8</td><td>30</td></tr>
<tr><td>2</td><td>15</td><td>30</td></tr>
<tr><td>2</td><td>25</td><td>30</td></tr>
<tr><td>2</td><td>47</td><td>30</td></tr>
<tr><td>2</td><td>65</td><td>25.6</td></tr>
<tr><td>2</td><td>82</td><td>30.5</td></tr>
<tr><td>2</td><td>93</td><td>30.3</td></tr>
<tr><td>2</td><td>94</td><td>30</td></tr>
<tr><td>2</td><td>105</td><td>25.8</td></tr>
<tr><td>2</td><td>114</td><td>25.6</td></tr>
<tr><td>2</td><td>115</td><td>30.5</td></tr>
<tr><td>2</td><td>121</td><td>30.4</td></tr>
<tr><td>2</td><td>122</td><td>30.5</td></tr>
<tr><td>2</td><td>126</td><td>30.6</td></tr>
</table>
</td><td></td></tr>
<tr><td>402.</td><td>Check isolation between FCR and Analogue Ground
On 211121 P26</td><td></td><td>
<table>
<tr><th>Pin A</th><th>Pin B</th><th>Meas.</th></tr>
<tr><td>36</td><td>128</td><td>> 20 M</td></tr>
<tr><td>36</td><td>105</td><td>> 20 M</td></tr>
</table>
</td><td></td></tr>
</table>

No:	Activity	Proc/Drwg	Remarks/Results	sign off
			36 001 > 20 M 36 005 > 20 M 36 064 > 20 M 36 114 > 20 M 36 006 > 20 M 36 065 > 20 M 36 091 > 20 M	
403.	Check isolation of A Ground and Chassis On 211121 P26		036 – OK 105 – OK 001 – OK 005 – OK 064 – OK 114 – OK 006 – OK 091 – OK	
404.	Measure continuity of Analogue Ground from 211121 P026 and 312100 P004		036 – 3.0 Ohm 128 – 3.1 Ohm 105 – 26.7 Ohm 001 – 3.0 Ohm 005 – 13.4 Ohm 064 – 3.1 Ohm 114 – 26.4 Ohm 006 – 3.0 Ohm 065 – 12.2 Ohm 091 – 3.1 Ohm	
405.	Bridged FCR contacts 3 and 4 on 211121 P026 and FCR contacts 3 and 4 on 312100 P004 and measured continuity along the length of the harness		16.4 Ohm	
~~401.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-01 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~402.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-01 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~403.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-01 (Contact X)		Completed	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
~~404.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-02 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~405.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-02 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~406.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-02 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~407.4~~	~~Verify isolation between FPU FS and connector back shell of SIH-IS-03 (Contact X)~~			
~~408.4~~	~~Verify isolation between Analogue Ground and connector back shell of SIH-IS-03 (Contact X)~~			
~~409.4~~	~~Verify isolation between Analogue Ground and FPU FS of SIH-IS-03 (Contact X)~~			
~~410.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-04 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~411.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-04 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~412.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-04 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~413.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-05 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~414.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-05 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~415.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-05 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~416.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-06 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~417.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-06 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~418.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-06 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~419.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-07 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
~~420.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-07 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~421.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-07 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~422.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-08 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~423.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-08 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~424.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-08 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~425.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-09 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~426.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-09 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis	
~~427.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-09 (Contact X)		Completed Mated Type-VII Safeing Plug	
~~428.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-10 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis Mated Type-VII Safeing Plug	
~~429.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-10 (Contact X)		No analogue ground on this connector!	
~~430.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-10 (Contact X)		No analogue ground on this connector!	
~~431.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-11 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis Mated Type-VIII Safeing Plug	
~~432.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-11 (Contact X)		No analogue ground on this connector!	
~~433.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-11 (Contact X)		No analogue ground on this connector!	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
~~434.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-12 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis Mated Type-VII Safeing Plug	
~~435.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-12 (Contact X)		No analogue ground on this connector!	
~~436.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-12 (Contact X)		No analogue ground on this connector!	
~~437.4~~	Verify isolation between FPU FS and connector back shell of SIH-IS-13 (Contact X)		Completed by daisy chaining all contacts then verifying isolation of star point from SVM Chassis Mated Type-VIII Safeing Plug	
~~438.4~~	Verify isolation between Analogue Ground and connector back shell of SIH-IS-13 (Contact X)		No analogue ground on this connector!	
~~439.4~~	Verify isolation between Analogue Ground and FPU FS of SIH-IS-13 (Contact X)		No analogue ground on this connector!	
800.	~~Note:~~ **Remating of harness to CVVUCR**		All safing plugs mated at SVM-CB prior to carrying out this procedure	
801.	Verify that SIH-IS-01 P32 is mated to 211121 J32. If not then mate.		Completed	
802.	Verify that SIH-IS-02 P31 is mated to 211121 J31. If not then mate.		Completed	
803.	Verify that SIH-IS-03 P26 is mated to 211121 J26. If not then mate.		Completed	
804.	Verify that SIH-IS-04 P22 is mated to 211121 J22. If not then mate.		Completed	
805.	Verify that SIH-IS-05 P23 is mated to 211121 J23. If not then mate.		Completed	
806.	Verify that SIH-IS-06 P24 is mated to 211121 J24. If not then discharge with ionizer air flow for >= 120 sec and mate.		Completed	
807.	Verify that SIH-IS-07 P25 is mated to 211121 J25. If not then mate.		Completed	
808.	Verify that SIH-IS-08 P27 is mated to 211121 J27. If not then		Completed	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
	mate.			
809.	Verify that SIH-IS-09 P28 is mated to 211121 J28. If not then mate.		Completed	
810.	Verify that SIH-IS-10 P34 is mated to 211121 J34. If not then mate.		Completed	
811.	Verify that SIH-IS-11 P30 is mated to 211121 J30. If not then mate.		Completed	
812.	Verify that SIH-IS-12 P33 is mated to 211121 J33. If not then mate.		Completed	
813.	Verify that SIH-IS-13 P29 is mated to 211121 J29. If not then mate.		Completed	
814.				
900.	~~Note:~~ **Remating of Safeing plugs to SVM-CB**			
901.	Verify that SIH-IS-01 312200 J06 is safed with Type-VI. If not then mate.		Verified	
902.	VERIFY THAT SIH-IS-02: 312200 J05 is safed with Type-VII. If not then mate.		Verified	
903.	VERIFY THAT SIH-IS-03: 312100 J04 is safed with Type-V. If not then mate.		Verified	
904.	VERIFY THAT SIH-IS-04: 312100: J03 is safed with Type-VII. If not then mate.		Verified	
905.	VERIFY THAT SIH-IS-05: 312100: J02 is safed with Type-VII. If not then mate.		Verified	
906.	VERIFY THAT SIH-IS-06: 312200: J03 is safed with Type-VII. If not then mate.		Verified	
907.	VERIFY THAT SIH-IS-07: 312200: J04 is safed with Type-VII. If not then mate.		Verified	
908.	VERIFY THAT SIH-IS-08: 312200: J01 is safed with Type-VII. If not then mate.		Verified	

No:	Activity	Proc/Drwg	Remarks/Results	sign off
909.	VERIFY THAT SIH-IS-09: 312200: J02 is safed with Type-VII. If not then mate.		Verified	
910.	VERIFY THAT SIH-IS-10: 312300: J06 is safed with Type-VII. If not then mate.		Verified	
911.	VERIFY THAT SIH-IS-11: 312300: J04 is safed with Type-~~VII~~VII. If not then mate.		Verified	
912.	VERIFY THAT SIH-IS-12: 312300: J05 is safed with Type-VI. If not then mate.		Verified	
913.	VERIFY THAT SIH-IS-13: 312300: J03 is safed with Type-VIII. If not then mate.		Verified	
1000.	Update mate/demate log			
1001.	**End**			

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	ASG22		Schweickert Gunn	ASG22
	Barlage Bernhard	AED13		Steininger Eric	AED32
	Bayer Thomas	ASA42	X	Stritter Rene	AED11
	Brune Holger	ASA45		Suess Rudi	OTN/ASA44
	Edelhoff Dirk	AED2		Thörmer Klaus-Horst Dr.	OTN/AED65
	Fehringer Alexander	ASG13		Wagner Klaus	ASG22
X	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	ASA42		Wöhler Hans	ASG22
X	Grasl Andreas	OTN/ASA44			
X	Grasshoff Brigitte	AET12			
	Hartmann Hans	AED32	X	Alcatel Alenia Space Cannes	ASP
	Hauser Armin	ASG22	X	ESA/ESTEC	ESA
X	Hendry David	Terma			
	Hengstler Reinhold	ASA42		**Instruments:**	
	Hinger Jürgen	ASG22		MPE (PACS)	MPE
X	Hohn Rüdiger	AED65	X	RAL (SPIRE)	RAL
	Hölzle Edgar Dr.	AED32		SRON (HIFI)	SRON
	Huber Johann	ASA42		**Subcontractors:**	
X	Hund Walter	ASE252		Air Liquide, Space Department	AIR
X	Idler Siegmund	AED312		Air Liquide, Space Department	AIRS
	Ilsen Stijn	Terma		Air Liquide, Orbital System	AIRT
	Ivády von András	FAE12		Alcatel Alenia Space Antwerp	ABSP
	Jahn Gerd Dr.	ASG22		Austrian Aerospace	AAE
X	Kalde Clemens	ASM2		Austrian Aerospace	AAEM
	Kameter Rudolf	OTN/ASA42		APCO Technologies S. A.	APCO
	Kettner Bernhard	AET42		Bieri Engineering B. V.	BIER
X	Knoblauch August	AET32		BOC Edwards	BOCE
X	Koelle Markus	ASA43		Dutch Space Solar Arrays	DSSA
	Koppe Axel	AED312		EADS Astrium Sub-Subsyst. & Equipment	ASSE
	Kroeker Jürgen	AED65		EADS CASA Espacio	CASA
	La Gioia Valentina	Terma		EADS CASA Espacio	ECAS
	Lamprecht Ernst	OTN/ASQ22		EADS Space Transportation	ASIP
X	Lang Jürgen	ASE252		Eurocopter	ECD
X	Langenstein Rolf	AED15		European Test Services	ETS
X	Langfermann Michael	ASA41		HTS AG Zürich	HTSZ
	Much Christoph	ASA43		Linde	LIND
	Müller Jörg	ASA42		Patria New Technologies Oy	PANT
X	Müller Martin	ASA43		Phoenix, Volkmarsen	PHOE
	Peltz Heinz-Willi	ASG13		Prototech AS	PROT
	Pietroboni Karin	AED65		QMC Instruments Ltd.	QMC
	Platzer Wilhelm	AED2		Rembe, Brilon	REMB
	Reichle Konrad	ASA42		Rosemount Aerospace GmbH	ROSE
	Runge Axel	OTN/ASA44		RYMSA, Radiación y Microondas S.A.	RYM
	Schink Dietmar	AED32		SENER Ingenieria SA	SEN
X	Schlosser Christian	OTN/ASA44		Stöhr, Königsbrunn	STOE
	Schmidt Rudolf	FAE12		Terma A/S, Herlev	TER