CCLRC Rutherford Appleton Laboratory	**TEST READINESS REVIEW (TRR) CHECKLIST & MoM**	**PRODUCT ASSURANCE Space Science and Technology Department**

TRR MoM	**Date:**	**11/09/03**	**NUMBER**	**SPIRE-RAL-MoM-001803**

Spacecraft / Project	HERSCEL
Instrument / Model	***SPIRE***
Sub System / Serial No.	***MTD TRR***

Type of Test	***Using the Mass Thermal Dummy (MTD) to verify Cryostat***
AIV Facility Test No.	
Date(s) of Testing	***Friday 12th to 29th Sep: subject to Open work completion.***
Applicable Test Specification *(Document No. & Issue)*	*SPIRE-RAL-DOC-001556 iss 0.5 Cryostat operating procedure* *SPIRE-RAL-PRC-001674 JFET*
Applicable Test Procedure *(Document No. & Issue)*	NOT-001808 Photodetector continuity check List Procedures for the use of the detector are in NOT-001805, & NOT-001806

Assignment of Personnel		
Function	**Name**	**Contact number**
Test Director	Dave Smith	Ext 5996
Project Manager	Eric Sawyer	Ext 6385
AIV Facility Manager	Dave Smith	Ext 5996
Safety Officer	Dave Smith	Ext 5996
Product Assurance	Eric Clark	Ext 5662

Documentation / Inspection Status	
Test Documentation available: • AIV Facility Test Plan (if applicable?) • Verification Procedures	 Yes Yes
Inspection Status and Records: • Cleanliness • Unit/Item Bagged • Screws Locked • Connector Savers • Hazards Identified • Other	 Not an issue for current test Cryostat etc to be cleaned after test in preparation for electronic CQM Testing. N/A N/A N/A Yes Listed in procedure i.e. Cryogenics & Vacuum.

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CONTINUATION SHEET

As Built Status (Will the following have an Impact on the test performance / results?)	
Outstanding "NCR's"	
Outstanding "Waiver's"	None
"Open Work"	Dave Smith to provide list, See Below
Other	

HARDWARE COMMENTS/ OBSERVATIONS:
Modifications to Cryostat mentioned at TRR.

1 Double up flexible straps from 10K shield to Hob Simulator.
2 Add Flexible thermal links from 10K shield to Support rail.
3 Includes Flexible link near base of 4K pot around 4k to level one interface.
4 All 13 Harnesses to be installed one departure C1 to SJFET re-routed to PJFET Harness clamp.
5 Filters Due in Friday Morning.
6 HDPE Window to be fitted.
7 Cold Black body is NOT included in this Test.
8 Electrical Isolation is currently Kapton tape as are Thermal clamps.
9 Stainless Steel bolts are to be used.
10 Feet to be changed on JFET Rack.

Delta TRR or continuation of this TRR to be re convened when List of OPEN Work etc has been checked off. Aim to do this Friday.

Unable to continue TRR on Friday as planned But Pump down started Monday TRR to be completed retrospectively due to time constraints re time to cool down Cryostat (Ref Monday 15th AIV meeting).

This is the list of open work that was to be done before closing the cryostat.

1. Fit flexibles to MTD
2. Load calibration curves for TVO thermometers
3. Check thermometry and heaters
4. Fit Detector
5. Harness Location
6. Clamp Instrument to rails
7. Route Harness on 10K shield
8. Fit 77K and 10K filters to cryostat
9. Make up O-ring for HDPE window
10. Mount HDPE window
11. Connect remaining heaters
12. Fit 77K shield end-caps
13. Close doors
14. Start pump down

All activities were performed before starting the pump down.

Dave

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Decision for test continuation		
Company	**Name**	**Signature**
RAL	**Eric Sawyer**	Signature Not Verified Digitally signed by Eric Sawyer Date: 2004.06.04 14:42:45 +01'00'
RAL	**Dave Smith**	Signature Not Verified Digitally signed by Dave Smith Date: 2004.06.09 10:16:39 +01'00'
RAL	**Eric Clark**	Digitally signed by Eric Clark Date: 2004.06.03 10:28:37 +01'00'

Continuity check on background detector harness
B. Swinyard

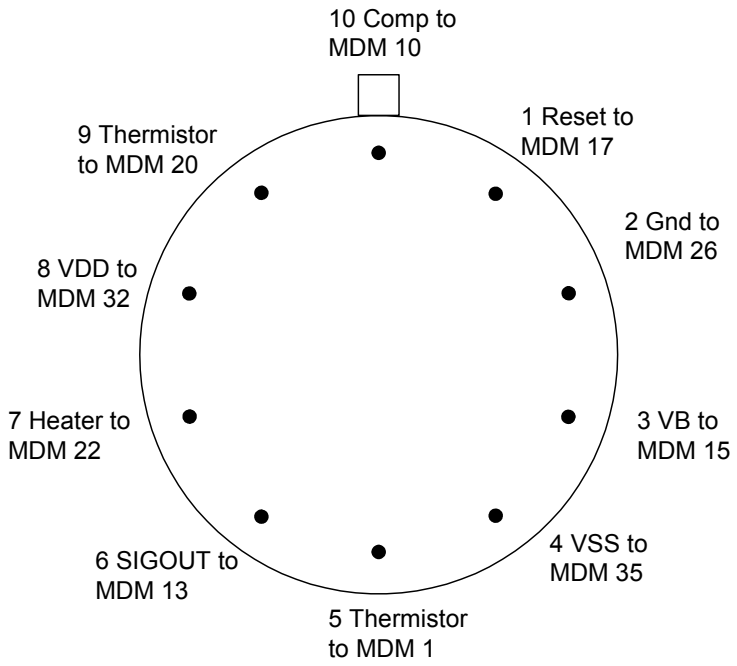
The background detector used for the ISOLWS cryostat has been fitted to the MTD to assess the FIR background in the SPIRE cryostat. The Spectrometer bias tail has been used to connect the existing JF4 amplifier through to the outside of the cryostat – see attached figures.

The table below is a record of the checks carried out when the detector was installed and connected to the cryoharness C1 P10 on 9 September 2003.

Connection Name	Pin on Detector Connector	Pin on MDM on detector lead	Pin on D-Type (after cryoharness installed)	Checked end to end on cryostat (S1 J32)
Reset	1	17	17	140 Ω
Gnd	2	26	26	7 Ω
VB	3	15	15	146 Ω
VSS	4	35	35	144 Ω
Thermometer	5	1	1	140 Ω
SigOut	6	13	13	141 Ω
Heater	7	22	22	141 Ω
VDD	8	32	32	144 Ω
Thermometer	9	20	20	148 Ω
Compensation	10	10	10	144 Ω
Screen	N/C	12	12	7 Ω

Pin to pin checks

Description	Pins	Measured Resistance One way round	The other way round
Heater to VDD	22 – 32	6.28 kΩ	Same
Sigout-VDD	13 - 32	50.4 kΩ	Same
Sigout - VSS	13 - 35	50.3 kΩ	Same
Reset-Gnd	26-17	850 Ω	O/C



Rear view of free socket fitted to back of photo-detector block. MDM referred to is the spectrometer bias tail on C1 P10 (see Harness definition documents SPIRE-RAL-PRJ-000608 v1.1 section 4.4.1)