

TRR MoM	Date:	14/1/05	NUMBER	SPIRE-RAL-MoM- 002306
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Spacecraft / Project	Herschel / SPIRE
Instrument / Model	<i>PFM 1</i>
Sub System/ Serial No.	NA

Type of Test	<i>Cold functional and performance test</i>
AIV Facility Test No.	NA
Location & Date(s) of Testing	<i>From 14/1/05</i>
Applicable Test Specification <i>(Document No. & Issue)</i>	<i>Test Plan SPIRE-RAL-DOC-2055 issue 1</i>
Applicable Test Procedure <i>(Document No. & Issue)</i>	<i>SPIRE-RAL-PRC-02223 issue 0.2</i>
AIV Facility Test Plan <i>(if applicable?)</i>	NA

Documentation / Inspection Status	
<ul style="list-style-type: none"> As Built Status? <i>List of all items /Parts</i> 	To be completed
<ul style="list-style-type: none"> Special Instructions 	
Inspection Status and Records:	
<ul style="list-style-type: none"> Hazards Identified 	Ref SPIRE risk assessment ESD precautions to be observed.
<ul style="list-style-type: none"> Cleanliness 	Inspected in G56 Test facility to be class 6 (old 1000) to be tested before FPU integration
<ul style="list-style-type: none"> Unit/Item Bagged 	NA
<ul style="list-style-type: none"> Screws Locked 	NA
<ul style="list-style-type: none"> Connector Savers 	To be agreed
<ul style="list-style-type: none"> Other 	

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

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CONTINUATION SHEET

As Built Status <i>(Will the following have an impact on the test performance / results?)</i>	
Review of all "NCR's"	
Review of all "Waiver's"	
"Open Work"	Facility: Electrical safety checks Fit mass spec External heaters Issue performance test procedure and master procedure Harness integration procedure to be updated QLA update See FPU status
Other	
MIP's or KIP's	KIP final inspection of FPU, 17/1/05 MIP before closing tank, final TRR 27/1/05

ACTIONS / COMMENTS / OBSERVATIONS:

Facility

NCRs
 0084, heaters failed, now repaired.
 0085, turbo pump failure, use as is. Monitor during test
 0086, cryostat thermometers failure, repaired wires.
 Helium leak, mass will be fitted to monitor helium.

FPU status

Open work.

JFETS, test and fit.
 Fit Detector harness
 Fit PTC
 Fit BSM
 Remove mirror covers
 Final inspection
 Fit instrument covers
 Fit to HOB
 Connect JFETS
 Electrical check
 Fit thermal straps
 Alignment cubes
 Hob frame
 MGSE. Bag and move to cryolab
Bruce to check the LASER

MCU and mechanism status

Test status, the following tests have been completed.
 Interface check
 Inrush current
 No telemetry due to EGSE problem
 Command to 060 (PFM now FS)
 Motor coil parameter -1 or +1 is causing some confusion.
 Software change (MCU) may be required.

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Sensor on redundant Jiggle has low sensitivity.
 Now repeat tests on 070
 Test with cryostat harness.
 Tests with DPU outstanding, these need to be done at latest during warm functional test.
 Warm testing can be done open loop if software update is required and not available.
 EIDP required for 070.
Calibration data to be sent from ATC.
 Didier to return to RAL for further tests.
 Non linear control system will not be implemented.
 SMEC commanding scenario to be discussed.

Warm units and OBS status.

MCU is now separate.
 All warm units to be grounded.
 More earth straps required.
 Test on MCU, DCU, DPU to be powered up from Power Bench.
 Updated OBS received, and some tests completed.
 Essential to do WFT using FPU simulator.
 QLA update complete, testing required.
 HCSS acceptance tests outstanding.
 To be done before WFT.

NOTE

Launch latch not to be operated cold
BSM not to be used in closed loop before software update
These features to be included in the main test procedure.

All test procedures to be signed off by interested parties.

Flash, chop and jiggle map command lists have been written.
 SCAL control, outstanding. Two PIDs parameter required after tests.
 PTC, PID parameters and procedure needed by Ken. Doug has written a note on this.
 Temperature data should be copied across to the HK. This needs to be checked.

Cooler recycle to be written as command script.
 Cooler procedure to be checked.

Mode switching.

CUS scripts are available.

Master test procedure, Dave needs comments back.
 Cold functional test to follow Samuels test plan
 Mechanism test to be done before detectors tests, mechanisms need to be in home positions.
 Detailed mechanism detailed test plan is still required. Bruce will discuss with Didier.
 SCAL, PCAL. Pete required.

Action on Pete to review the test procedure for PCAL and SCAL, warm functional test.

Alignment procedure. Yes existing

Cold test procedures. Needs updating, all inputs received, some SMEC input needs refining.
 No redundancy testing, warm electronics will not support this
 Observation test not yet defined. Needs discussion between Ken and Dave Clements.

Scripts status

BDA's done, SCAL almost done. PCAL almost done. BSM and SMEC still need some work.

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Basic operating procedures to be tidied up.
Hard copies to be provided, Dave to do.

Phase two of TRR to be held on 27/1/05

17/1/05 Continuation of TRR with JPL

- Eric
- Bruce
- Marty
- Pegg
- Jamie
- Dave
- Carsten
- Eric C

NCRs

Helium leak will be monitored using a mass spec.
Pumping will be continuous.
Switch on and running procedure.
Concern about cooler heater is not founded and we will see if this happens.
Vss first then Vdd
Off Vdd first and then Vss
Heater procedure, start at 2v and do not exceed 3v. (2v is thought to be sufficient to turn on the JFETS)
Time constant is 20sec.
Failure modes doc to be sent to RAL from JPL in a few days.
Test to switch on LIAs is now planned for Friday, also test for voltage transient when DCU is powered on.
QM1 electronics will be used, no test equipment for DC load curves.
Grounding will be checked and tidied up
Do power cycles of JFETS have to be minimized? i.e. optimize the power cycles. Yes we will do that.
Function test 7/2/05. first power up of JFETS. (earliest)
Tests at JPL need to mimic the tested and approved switch on procedure.
First switch on shall only happen when detectors are cold, existing order satisfies this restriction. Amend procedure to make this a condition.
Remove DCU 06 from procedure.
JPL to review test procedure.

Decision for test continuation:		YES / NO / REVIEW	Review Date :	27/1/05
Company	Name			
ESTEC	Carsten Scharmberg Phone			
LAM	Dominique Pouliquen Phone Didier Ferrand			
RAL	Eric Sawyer Dave Smith Ken King Bruce Swinyard		Tanya Lim Doug Griffin Samuel Sunil Sider	
Cardiff	Tim Waskett Pete hargrave			
IC	Davide Rizzo			
ATC	Phil Parr-Burnham Brian Stobie			