EADS Astrium GmbH	Incoming Inspection	Doc.-No.: HP-2-ASED-II-0171 Issue: Date: 23.05.06 Sheet: 1 of 1

Item: SPIRE FPU		Received Date: 23.05.06
Supplier: RAL	Model: CQ	Project: Herschel
Drwg.-No.: See EIDP	Serial-No.: CQ	Subsystem: SPIRE

No.		Item	Yes	No	Remarks
1		Transportation Container, Outer Packing			
	a	Packing undamaged ?	x		
	b	Seals and straps intact ?	x		
	c	Correct Labelling ?	x		
2		Transportation Container, Inner Packing			
	a	Correct Indentification (see heading) ?	x		
	b	Equipment correctly and safely packed ?	x		
	c	Equipment hermetically sealed ?	x		Inner transport bag on one area destroyed but second inner bag mounted undamaged
	d	Packed with desiccants ?		x	
	e	Packed with humidity-indicators ?	x		
	f	Packed with shock-indicators ?	x		-5 g shock indicator released in - X-direxion
	g	Packed with temperature-indicators?		x	
	h	Container reusable and stackable ?	x		
3		Equipment			
	a	Identification correct ?	x		CQ
	b	Screw sealings not broken ?	x		
	c	Surface finish undamaged and clean ?	x		
	d	Connector identification correct ?	x		
	e	Connector with protective caps ?	x		
	f	Connector pins clean and undamaged ?	x		
	g	Mounting area clean and undamaged ?	x		
	h	Accessories ? Bonding points ? Covers ?	x		
4		Documentation			
	a	Shipping documentation ?	x		See EIDP: shipping list, etc.
	b	Log Sheets / Historical Records ?	x		updated
	c	Handling, Packing, Transport, Procedures ?	x		see SPIRE RAL-PRC-001923
	d	End Item Data Package (ICD) ?	x		Delta SPIRE-RAL-PRJ-001898 issue 4/0
	e	Other Documentation		x	
5		Other notable defects ?		x	
6		Released for : Use on STM2	x		Molecular sampel to be evaluated

Remarks / Actions :
-UV light inspection performed successfully
-Detector for straylight tests also delivered with the CQM (JF3 319) and interated to the unit
-wipe test tbd planned for 24.05.06 Taken ✓

Distribution : See distribution list attached	Inspector : E. Lamprecht Department : ASQ 21	Date : 23.05.06

EADS Astrium GmbH	Incoming Inspection (Checklist for hi-rel space-application H/W)	Doc.-No.: HP-2-ASED-II-0171 Issue: Date: Sheet: 2 of 2
Item: SPIRE FPU		Received Date:
Supplier: RAL	Model: CQM	Project: Herschel
Drwg.-No.:	Serial-No.:	Subsystem:

Continuation-Sheet :

Status: The Instrument is ready for integration in terms of technical delivery status and NCR status as verified during handover meeting successfully performed, see SCI-PT/42316, dated 17.05.2006

related AI:
AI1: Check of delta DML/DPL- OK

AI2: Impact of flex links configuration on S/C temp sensor position: Open

Status: The incoming inspection has been performed as mentioned in this report, requested benchtest Activities have been performed successful by SPIRE the results are acceptable.

The sraylgt detector has been integrated by SPIRE and has been verified by SPIRE conclusion
The Instrument is ready for integration to the PLM STM.

Open work is the performance and evaluation of wipetest samples and accessment on thermal characteristics of photoconductor

SPIRE

ASED

ESA

AAS- FF

EADS Astrium GmbH	Incoming Inspection (Checklist for hi-rel space-application H/W)	Doc.-No.: HP-2-ASED-II-0171 Issue: Date: Sheet: 2 of 2
Item: SPIRE FPU		Received Date:
Supplier: RAL	Model: CQM	Project: Herschel
Drwg.-No.:	Serial-No.:	Subsystem:

Continuation-Sheet :

Status: The Instrument is ready for integration in terms of technical delivery status and NCR status as verified during handover meeting successfully performed, see SCI-PT/42316, dated 17.05.2006

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The Instrument is ready for integration to the PLM STM.

Open work is the performance and evaluation of wipetest samples and assessment on thermal characteristics of photoconductor

SPIRE

ASED

ESA

AAS- FF

esa

MINUTES OF MEETING

HERSCHEL / Planck Project

date	17.5.2006	reference	SCI-PT/ 42316	page	1/3
meeting date	17.5.2006	meeting place	Teleconference ESA/SPIRE/ASED/AAS		
chairman	J. Rautakoski				
participants	J. Rautakoski, ESTEC C. Scharmberg, ESTEC E.Sawyer, RAL D. Hendry, ASED S. Idler, ASED R. Hohn, ASED C. Schlosser, ASED J. Lang, ASED G. Doubrovik, AAS	copy	Participants G. Crone, ESTEC U.Gageur, ESTEC P. Olivier, ESTEC T. Passvogel, ESTEC		

subject **Herschel SPIRE CQM FPU handover for straylight tests**

Description	action	due date
Agenda ❑ **Establish the status of changes with respect to the previously delivered model:** • **As built status** • **Applicable NCR and RFW status** • **Applicable parts, materials, and processes related to the change** ❑ **Cleanliness status including:** • **Inspections** • **Materials and processes impact on cleanliness** ❑ **Documentation** • **Procedures for packaging, handling, integration, testing** • **Logbook** • **I/F documentation: ICD, I/F Drawings and definition, mating of non flight parts to flight connectors, termination of un used connectors, connector savers etc.** ❑ **AOB** ❑ **Conclusion**		
SPIRE will be powered on during straylight tests only. During		

a

ESTEC
Keplerlaan 1 - NL 2201 AZ Noordwijk ZH - The Netherlands
Tel (31) 71 565 3473 - Fax (31) 71 565 5244 - http://sci.esa.int/home/herschel/ -- http://sci.esa.int/planck

Description	action	due date
thermal tests SPIRE is off.		
As built status Changes to the previously tested CQM		
❑ Black absorbing surface in the baffle		
❑ Rewiring of the BSM thermal mass dummy		
❑ The feet of the FPU are now flight standard		
❑ Addition of one extra straylight detector		
❑ All changes are described in the delta ABCL		
❑ All interface connectors of SPIRE FPU/JFETs are of flight quality standard. • Can be connected directly to the flight cryoharness		
❑ The JFET safing plugs are provided with the instrument		
❑ Pending ongoing activities with the additional photoconductor, the photoconductor may not be included in the FPU/JFETs shipment. In this case Eric Sawyer will bring the photoconductor when he will arrive to support the mechanical integration • This can be integrated as part of the incoming inspection		
❑ The CQM is built to FS standard, and will be used as FS		
Applicable NCR and RFW status		
❑ No applicable NCRs or RFW directly related to this change • Updated NCR and RFW lists are included in the delta EIDP		
❑ There is an ASED NCR-1340 on the jack-posts that needs to be checked during electrical integration		
Applicable parts, materials, and processes related to the change		
❑ SPIRE will provide "delta DML/DPL" covering the additional photoconductor including harness		
❑ The version of the applicable DML/DPL is 3.1		
❑ The original and the delta DMLs/DPLs to be checked before integration of SPIRE into the cryostat	AI-1, All	Integration
Cleanliness status including: Inspections		
❑ Visual inspection (with UV light) will be performed by RAL prior to packing		
❑ All SPIRE CQM FPU/JFETs components are baked out, with the exception of the additional photoconductor. In particular, the new added black paint in the entrance area has been baked out		
❑ The unit has been baked out at part level and not as a full unit since it was returned from ASED		
Materials and processes impact on cleanliness		

Description	action	due date
z.H. Dr. W. Fricke/R. Hohn/S. Idler/Werk 1 **Anlieferstelle: Halle 6052/Aloys Weber** **Claude-Dornier-Strasse** **D-88090 Immenstaad**		
❑ SPIRE CQM FPU/JFET delivery to ASED-FN by 22/05/2006		
❑ Incoming inspection and bench test on 23/05/2006 (supported by SPIRE team)		
❑ Mechanical integration on 24/0502006 (supported by SPIRE team)		
❑ Schedule for electrical integration will be confirmed by ASED		
Conclusion		
❑ Accepted for shipment. ❑ By the time of the incoming inspecting the open points and actions shall be closed out, including review of the delta EIDP, prior to integration.		

Description	action	due date
❑ See action above		
Documentation: Procedures for packaging, handling, integration, testing		
❑ SPIRE FPU/JFETs will be properly bagged inside the transport container.		
Delta EIDP ❑ Delta DPL/DML ❑ Cleanliness Inspection Report ❑ Integration Procedure ❑ Logbook ❑ Bench Test Procedure		
❑ RAL will send out the Delta documentation that is not included in the previous EIDP after this meeting		
❑ The EIDP change record is attached to these minutes		
❑ The bases of the integration procedure has not changed, but a new document has been generated for this model SPIRE-RAL-PRC-002642 issue 1		
❑ The Delta EIDP will be reviewed by all parties		
Logbook		
❑ There will be an updated logbook in the delta EIDP including the history record		
I/F documentation: ICD, I/F Drawings and definition, mating of non flight parts to flight connectors, termination of un-used connectors, connector savers etc.		
❑ ICD has been updated to reflect the new feet, and is included in IID-B v 4.0 (not yet formally issued)		
❑ I/F drawings and definition are included in the IID-B		
❑ The configuration of the flex links is similar to the flight links, but the detector box level 0 strap has an extra electrical isolation joint. This has the effect of moving the position of the S/C temperature sensor • ASED to assess the impact of this	AI-2, ASED	Integration
❑ All SPIRE connectors are flight standard		
❑ All connectors will be connected to the cryo-harness		
❑ Savers will not be used – the mate/demate log will give the history of the connections		
❑ There is a red tag item fitted on the aperture cover that needs to be removed • Covered in the red tag item list		
❑ The alignment mirror is not fitted		
AOB		
❑ Delivery address has been provided to SPIRE: **EADS Astrium GmbH** **Projekt Herschel**		

Shipping list
Delivery of SPIRE CQM for stray light tests
Part of SPIRE CQM EIDP

The following equipment will be delivered to:-

EADS Astrium GmbH
Projekt Herschel
Anlieferstelle: Halle 6052/Aloys Weber
Claude-Dornier-Strasse
D-88090 Immenstaad

Contact persons at Astrium
Dr. W. Fricke/R. Hohn/S. Idler/Werk 1

Box No	Contents	Model	Size (LxWxH) Meters	Weight Kg
1	FPU Fitted with:- Aperture cover (red tag item) Alignment cube N/A Spectrometer JFET assembly Photometer JFET assembly JFET fixation hardware Isolation washers, special screws and studs. Photo detector	CQM CQM ✓ CQM GSE	1.2x1.2x1.0	170
2	FPU lifting frame (MGSE) MGSE parts (straps, shackles etc.) Documentaion Tools	MGSE ✓	0.6x0.5x0.5	45Kg
Loose	HOB plate lifting frame.	MGSE ✓	1.0x1.0x0.2	5Kg

Rutherford Appleton Laboratory
Chilton, Didcot, Oxfordshire OX11 0QX
Switchboard +44 (0)1235 821900
Telephone +44 (0)1235 445100/445412

COUNCIL FOR THE CENTRAL LABORATORY OF THE RESEARCH COUNCILS

DESPATCH INSTRUCTION
UK/EXPORT MOVEMENT
To Stores Despatch Bldg R56

CONSIGNEE **EADS Astrium GmbH**
Projekt Herschel
Anlieferstelle: Halle 6052/Aloys Weber
Claude-Dornier-Strasse
D-88090 Immenstaad

Contact persons :
Dr. W. Fricke
R. Hohn
S. Idler 00 49 75 458 4671
Werk 1

SECTION WITHIN HEAVY LINE FOR STORES USE	
CONSIGNMENT/ EXPORT No	This Copy **Stores File** 1 **Accounts** 2 **Packing Note** 3 **Consignee Postal Advice** 4 **Demanding Officer** 5
DETAILS OF DESPATCH, FLIGHT No, MAWB	
No & Type of packages	Gross weight Tonnes/Kilo
DESPATCHED BY: / CARRIERS REF NO / DATE DESPATCHED	
COLLECTED BY	
Signature / Vehicle No.	

TERMS OF ISSUE (TICK BOX)			
EMBODIMENT LOAN	☐	RAL CONTRACT REF No	Is any material RADIOACTIVE OR CONTAMINATED? /NO If 'Yes' attach Shipping Instructions (N184) Shippers Cert. Ref No
CONTRACT/REPAIR LOAN	☐		
REPAYMENT	☐		
RETURN TO ORIGIN AFTER LOAN	☐	DISCREPANCY/REJECT REPORT No	Are there any other HAZARDS? /NO
PREPAYMENT	☐	FIRM'S REF:	If 'Yes' please state
DISCREPANCY REPORT	☐	IS THIS CONSIGNMENT CCLRC PROPERTY? YES	
MISC (please user remarks box below) yes		COUNTRY OF ORIGIN OF GOODS ?	

Description of goods (details of any returnable containers to be noted)

Container No	Description (Name manufacturer and include serial numbers)	Quantity	Declared Value
1	SPIRE CQM Focal Plane Unit with JFETS	1	£120,000 total.
2	MGSE lifting equipment	1	
loose	MGSE lifting beam	1	

IMPORTANT: Unless otherwise requested consignments will be despatched by the most economical means available.

REMARKS	SPECIAL PACKING/TRANSIT REQUIREMENTS
T is a deliverable item, part of the Herschel plank project. This equipment will be returned in approximately 6 months time.	To be carried by MSSL transport SUGGESTED METHOD OF DESPATCH FOR EXPORT : AIR SEA/ROAD COURIER Is carriage chargeable to consignee? /NO

FOR THE ATTENTION OF THE CONSIGNEE: Goods have been despatched as indicated above. Copy Advice Note forwarded by post and copy packed with goods. **DAMAGE, SHORTAGE OR NON-DELIVERY** must be reported to the consignor for the attention of Despatch Dept., R56 and to the carrier as follows: Damage or shortage within 3 days of receipt, non-delivery within 21 days of despatch.

Project & ORG Unit	Loan Application No (if applicable)	Demanding Officer	Group SSTD / Building No. / Ext No
SBB 2100 SI0		E Sawyer	R 25 / 6385

TO BE COMPLETED BY FINANCE AND ACCOUNTS		AUTHORISING OFFICER	
Certified that appropriate action has been taken and issue is in according with terms of consignment		Signature	
Invoice No. and Date		Band 3	Date 16.8.06
Signature	Date	Note: Authorising Officer must have appropriate signing powers covering the value of the goods being despatched	

PROFORMA INVOICE/DESPATCH NOTE

Exporter

CCLRC, Rutherford Appleton Laboratory,
Chilton, Didcot, Oxfordshire UK
OX11 0QX
Tel: +44 (0)1235 446663
Fax: +44 (0)1235 445775
VAT: 618 367325 500

CPC | Tariff 1 | Exporter's Ref

Tariff 2: 880390200 | Tariff 3: 7EX 78

Country of Origin of Goods | Country of Destination

Contract Reference: UK | Project: EC-DE

Consignee

EADS ASTRIUM GmbH

FAO: DR W.FRICKE/R.HOHN/S.IDLER
PROJEKT HERSCHEL
ANLIEFERSTELLE: HALLE 6052/ALOYS WEBER
CLAUDE-DORNIER-STRASSE
D-88090 IMMENSTAAD GERMANY

Terms of Supply: 10 | SBB2100SIO

PART OF HERSCHEL PLANK PROJECT

Tel: | Fax: | Telex: | Contact:

U.K. Export Licence Ref/No

Clearing Agent & Destination (NOTIFY ARRIVAL): 00497541584671 SEE ABOVE

Please Insure for:

U.K. Forwarding Agent: MSSL

Vessel/Aircraft etc.: MSSL | Port/Place of Loading

**IATA/IMDG. DANGEROUS GOODS | FP °C

Port/Place of Discharge: ROAD/SURFACE | Place of Delivery by Carrier: RAL

UN Number | Class/Dvn. | Label Type | Packing Instr.

GERMANY

Marks & Nos.	No. and Kind of Packages; Description of Goods
7EX 78	1 LOAD EADS ASTRIUM

Tariff	Description of Goods	Quantity	Value for customs (£)
880390200	SPIRE CQM FOCAL PLANE UNIT, LIFTING EQUIP & BEAM	1	120000

Notes

EC STATUS
TRANSPORTED BY MSSL TRANSPORT 19/5/06

Type of Signatory

Freight Paid (at) | Invoice Total

Place and Date of Issue: A.NAPPER

Total Gross (Kg): PRE PAID | Total Volumetric: 120000

Signature: CHILTON, OXON.17/05/2006

0.00 0.00

N330 (06/03)

SPIRE / CQM "WARM Electronics + Instrument" EIDP Contents List

Main Sect	Sub sec	Document Title	Document Number	Issue	Comments / Required etc.	Paper Copy	Responsibility	Issued Copy ??	Date
0		EIDP Preparation			Warm Electronics EQM to be added	Vol			ISSUE 4
0		Sign off Sheet Disclaimer	Sign on Acceptance		On Delivery of ITEM	1	EC		01-May-06
0		Change Record	Issue 3 (15 Jan 06)	4	Up dated for Issue 4 EIDP	1	ECS/EC		
0		Table of Contents	This Document		Click on links (Title) to access Document	1	EC		
1		Shipping Documents				1			
1		Delivered Item List	1st delivery	1		1		Electronic & Paper	
1		Redelivered Item List	Redelivered Jan 06		Up date for delivery to EADS		ECS	Electronic & Paper	
1		Despatch Note	1st delivery			1		Electronic & Paper	
1		Despatch Note Redelivered	Redelivered Jan 06		Up date for delivery to EADS		ECS	Electronic & Paper	
1		Return Outgoing Inspection	SPIRE-RAL-REP-002303	1	Re-delivery (Also FPU Bench test issue 5)	1		Electronic & Paper	
1		Incoming Inspection Redelivered	SPIRE-RAL-REP-002317					Added After Delivery	
1		Outgoing Inspection	SPIRE-RAL-REP-002214	1	See Also FPU Bench Test report	1		Electronic & Paper	
1		FPU Bench Test Procedure & Report	SPIRE-RAL-NOT-002216	5	This Document is a historical record of each test and includes the procedure.	1		Electronic & Paper	
		FPU Bench Test Procedure & Report	SPIRE-RAL-NOT-002216	6	This Document is a historical record of each test and includes the procedure.				
1		Detector and harness checkout procedure	SPIRE-RAL-NOT-002660		For Stray light testing				
1		FPU Incoming inspection rep	SPIRE-RAL-REP-002235	1		1		Electronic & Paper	
1		FCU Incoming inspection rep	SPIRE-RAL-REP-002236	1		1		Electronic & Paper	
1		DPU Incoming inspection rep	SPIRE-RAL-REP-002237	1		1		Electronic & Paper	
1		DCU Incoming inspection rep	SPIRE-RAL-REP-002238	1		1		Electronic & Paper	
1		Outgoing inspection	SPIRE-RAL-REP-002668	1	Completed	1			
1		Incoming inspection EADS	SPIRE-RAL-REP-002669	1	Awaiting completion at EADS	1		Electronic	
1		MGSE Verification Document	MSSL/SPIRE/PA0216.01			1		Electronic & Paper	
1	.1	Warm Electronics				1			
1	.1	WE Re-delivered Item List	Shipping List		For Delivery April 2005	1		Electronic & Paper	
1	.1	WE Despatch Note	Despatch note April 05		For Delivery April 2005	1		Electronic & Paper	
1	.1	FCU Redelivered OIR	SPIRE-RAL-REP-002389	1	For Delivery April 2005	1		Electronic & Paper	
1	.1	DPU Redelivered OIR	SPIRE-RAL-REP-002390	1	For Delivery April 2005	1		Electronic & Paper	
1	.1	DCU Redelivered OIR	SPIRE-RAL-REP-002391	1	For Delivery April 2005	1		Electronic & Paper	
1	.1	4 K Strap OIR	SPIRE-RAL-REP-002400	1	For Delivery April 2005	1		Electronic & Paper	
1	.1	WE Harness & P Bench OIR	SPIRE-RAL-REP-002401	1	For Delivery April 2005	1		Electronic & Paper	
1	.1	FCU Redelivered IIR	SPIRE-RAL-REP-002394	1	For completion on Delivery April 2005	1		Electronic	
1	.1	DPU Redelivered IIR	SPIRE-RAL-REP-002392	1	For completion on Delivery April 2005	1		Electronic	
1	.1	DCU Redelivered IIR	SPIRE-RAL-REP-002393	1	For completion on Delivery April 2005	1		Electronic	
1	.1	4 K Strap IIR	SPIRE-RAL-REP-002403	1	For completion on Delivery April 2005	1		Electronic	
1	.1	WE Harness & P Bench IIR	SPIRE-RAL-REP-002404	1	For completion on Delivery April 2005	1		Electronic	
2		Transportation, Packing, Handling and Integration Procedures			CQM Test Procedures Sub Folder added	1			
2		SPIRE FPU Handling & Integration Procedure	SPIRE-RAL-PRC-001923	3		1		Electronic & Paper	
2		SPIRE FPU Handling & Integration Procedure	SPIRE-RAL-PRC-002642	1	Specific procedure for Stray light test model				
2		SPIRE Warm Electronics Integration Procedure	SPIRE-RAL-PRC-002181	3	Up Dated for April 05 W E Delivery	1		Electronic & Paper	
2		Making SPIRE ESD Safe	SPIRE-RAL-NOT-002028	2	new document added for reference	1		Electronic & Paper	
2	.1	EQM Test Procedures				1			
2	.1	Instrument Module Test (IMT)	SPIRE-RAL-NOT-002284	2	Formaly SPT To be updated	1		Electronic & Paper	
2	.1	Instrument EMC Test (EMC)	SPIRE-RAL-NOT-002402	1	new document	1			
2	.1	Functional Check (Warm)	SPIRE-RAL-NOT-002396	0.1	DPU, DCU, FCU No FPU or Simulator	1		Electronic & Paper	
2	.1	SPIRE Functional check (WFT)	SPIRE-RAL-NOT-002397	0.1	DPU, DCU, FCU, FPU & Cryoharness	1		Electronic & Paper	
2	.1	Short Functional test (SFT)	SPIRE-RAL-NOT-002398	0.1	Added to Issue 3 of EIDP	1		Electronic & Paper	
3		Certificate of Conformance / Delivery Review Board MoM A-Lists				1			
3		C of C				1		Electronic & Paper	
3		DRB Minutes	H-P-ASP-MN-5813	1		1		Electronic & Paper	
3		DRB Minutes - EADS			TBD	1	ECS		
3		Re Delivery/Integ FPU & LWFEs MoM's	SPIRE-RAL-MoM-002316	1	Added After 1st Delivery			Added After Delivery	
3		Delivery at Index at EADS	SPIRE-RAL-MON-002230	1		1		Electronic & Paper	
3		Integration Readiness Review Minutes	SPIRE-AST-MOM-002266	1	H-P-2-ASED-MN-0836 Issue 1			Electronic & Paper	
3		SPIRE WE PDR MOM .pdf	SCI-PT-36045	1	12_04_2005 MOM added after Delivery	N.A.		Electronic only	
4		As Built Configuration Status List				1			
4		CCB	SPIRE-RAL-PRJ-001134	2.0		1		Electronic & Paper	
4		ASCIDL (As Built Config Item Data List)	SPIRE-RAL-DOC-001971	4	Updated for Stray light Test		ECS	Electronic & Paper	12-May-06

SPIRE / CQM "WARM Electronics + Instrument" EIDP Contents List

Main Sect	Sub sec	Document Title	Document Number	Issue	Comments / Required etc.	Paper Copy	Responsibility	Issued Copy ??	Date
16		Test Reports etc	Group together for each test. Test Readiness Reviews, Test Reports, Post Test Reviews, Test Specification/ Requirements			3			
16	.0	Interface Measurement Reports				3			
16	.0.1	SPIRE CQM FPU Mechanical interface verification	SPIRE-RAL-DOC- 002166	2		3		Electronic & Paper	
						3			
16	.1	Qualification / Acceptance				3			
16	.1.1	Vibration Test				3			
16	.1.1	FPU and JFETs test procedure	SPIRE-RAL-PRC-001956	3		3		Electronic & Paper	
16	.1.1	FPU & JFETs TRR	SCI-PT-25866	na		3		Electronic & Paper	
16	.1.1	FPU Test Report	SPIRE-MSS-REP-002049	1.5		3		Electronic & Paper	
16	.1.1	FPU & JFETs PTR	SPIRE-RAL-MoM-002074	na		3		Electronic & Paper	
16	.1.1	DCU test procedure			To be Done on QM2	3			
16	.1.1	DCU TRR			To be Done on QM2	3			
16	.1.1	DCU Test Report			To be Done on QM2	3			
16	.1.1	DCU PTR			To be Done on QM2	3			
16	.1.1	FCU test procedure			To be Done on QM2	3			
16	.1.1	FCU TRR			To be Done on QM2	3			
16	.1.1	FCU Test Report			To be Done on QM2	3			
16	.1.1	FCU PTR			To be Done on QM2	3			
16	.1.1	DPU test procedure			To be Done on QM	3			
16	.1.1	DPU TRR			To be Done on QM	3			
16	.1.1	DPU Test Report			To be Done on QM	3			
16	.1.1	DPU PTR			To be Done on QM	3			
16	.1.2	Thermal Test				3			
16	.1.2	FPU&JFETS test procedure	SPIRE-RAL-DOC-001888	1	CQM Cold Verification 1 Master Procedure	3		Electronic & Paper	
16	.1.2	FPU & JFETs TRR 1st	SPIRE-RAL-MoM-001902	1	1st Cold verification TRR	3		Electronic & Paper	
16	.1.2	FPU & JFETs TRR 2nd	SPIRE RAL MoM 002121	1.1	2nd Thermal Verification TRR	3		Electronic & Paper	
16	.1.2	FPU Test Report	SPIRE-RAL-REP-002078	1		3		Electronic & Paper	
16	.1.2	FPU & JFETs PTR				3	????		
16	.1.2	DCU test procedure			To be Done on QM2	3			
16	.1.2	DCU TRR			To be Done on QM2	3			
16	.1.2	DCU Test Report			To be Done on QM2	3			
16	.1.2	DCU PTR			To be Done on QM2	3			
16	.1.2	FCU test procedure			To be Done on QM2	3			
16	.1.2	FCU TRR			To be Done on QM2	3			
16	.1.2	FCU Test Report			To be Done on QM2	3			
16	.1.2	FCU PTR			To be Done on QM2	3			
16	.1.2	DPU test procedure			To be Done on QM	3			
16	.1.2	DPU TRR			To be Done on QM	3			
16	.1.2	DPU Test Report			To be Done on QM	3			
16	.1.2	DPU PTR			To be Done on QM	3			
16	.1.3	Warm Electronics tests				3			
16	.1.3	DCU test procedure			To be Done on QM2	3			
16	.1.3	DCU TRR			To be Done on QM2	3			
16	.1.3	DCU Test Report			To be Done on QM2	3			
16	.1.3	DCU PTR			To be Done on QM2	3			
16	.1.3	FCU test procedure			To be Done on QM2	3			
16	.1.3	FCU TRR			To be Done on QM2	3			
16	.1.3	FCU Test Report			To be Done on QM2	3			
16	.1.3	FCU PTR			To be Done on QM2	3			
16	.1.3	DPU test procedure			To be Done on QM	3			
16	.1.3	DPU TRR			To be Done on QM	3			
16	.1.3	DPU Test Report			To be Done on QM	3			
16	.1.3	DPU PTR			To be Done on QM	3			

SPIRE / CQM "WARM Electronics + Instrument" EIDP Contents List

Main Sect	Sub sec	Document Title	Number	Issue	Comments / Required etc.	Paper Copy	Responsibility	Issued Copy ??	Date
25		**Temporary Installation Record**			**Covered under section 17 Open Work**	3			
25		See Section 2 of EIDP			RED TAG Items. Detailed in	3			
27		**Reference List of EIDP's (Lower Level/Associated)**				4			
27		EIDP Log	SPIRE-RAL-NOT-001675	3	Extract from PA EIDP Log	4		*Electronic & Paper*	
28		**SOFTWARE**				4			
28	.0	HUA, HSIA Worksheets	SPIRE-RAL-NOT-001719	1.2		3		*Electronic & Paper*	
28	.0	FDIR Procedure Definition	SPIRE-RAL-PRJ-001976	1.0		3		*Electronic & Paper*	
28	.0	SPR,SCR,Log	SPIRE-RAL-DOC-002069	Draft 1	RAL have not added any new SPR's but some may have been Closed since this issue.	4		*Electronic & Paper*	
28	.1	**On-Board Software**				4			
28	.1	Software Installation Guide			Not included in this EIDP	2			
28	.1	URD	SPIRE-IFS-PRJ-000444	1.3		4		*Electronic & Paper*	
28	.1	SSD	SPIRE-IFS-PRJ-001036	1.1		3		*Electronic & Paper*	
28	.1	SVVP	SPIRE-IFS-DOC-001392	1.3		3		*Electronic & Paper*	
28	.1	Software User Manual	SPIRE-IFS-PRJ-001391	1.1	Updated for issue 3 of EIDP	3		***Electronic & Paper***	
28	.1	Data ICD	SPIRE-RAL-PRJ-001078	2.0	Updated for issue 3 of EIDP	3		***Electronic & Paper***	
28	.1	Software Acceptance Test Report	SPIRE-IFS-REP-001393	1.3		4		*Electronic & Paper*	
28	.1	SCIDL Software Config. Item			Not supplied at time of Re-delivery	4	Massimo C		
28	.1	MIB Mission Information Base			**Already delivered not included in EIDP. Base lined for SPIRE CQM, but updates in response to ESA software Development**				
28	.2	**Basic Software**				4			
28	.2	TM User Manual	SPIRE-CGS-DOC-001783	D2	DPU-MA-CGS-004	4		*Electronic & Paper*	
28	.2	SVVP	SPIRE-CGS-DOC-001776	1	DPU-PL-CGS-002	4		*Electronic & Paper*	
28	.2	SRD	SPIRE-IFS-PRJ-001030	2	DPU-SQ-CGS-001	4		*Electronic & Paper*	
28	.2	ADD	SPIRE-IFS-PRJ-001029	1	DPU-AD-CGS-001	4		*Electronic & Paper*	
28	.2	S/W User Manual	SPIRE-CGS-PRJ-001777	1	DPU-MA-CGS-003	4		*Electronic & Paper*	
28	.2	Switch on Procedure	SPIRE-IFS-PRJ-000594	1	CNR IFSI 2001TR 01	4		*Electronic & Paper*	
28	.2	Test Report	SPIRE-IFS-PRJ-002196	1	DPU-RP-CGS-030	4		*Electronic & Paper*	
29		**Other Useful Information**				4			
						4			
29	.1	Photographs				4			
						4			

CHANGE RECORD

Issue	Section	Date	Changes
1.0	all	22 Mar 04	First issue
Changes from this point until issue 2.0 are in the Electronic version of the EIDP only.			
1.1		**15 Nov 04**	**Incorporate the following phased changes from DRB**
1.1	1	15 Nov 04	Proforma copy of RAL Incoming inspection report added
1.1	1	15 Nov 04	Outgoing Inspection Report with electrical test added
1.1	1	15 Nov 04	Updated Delivered Items List
1.1	17	15 Nov 04	Add list of OPEN work ref DRB MoM's
1.1	27	15 Nov 04	EIDP log with Ser No's of items included (i.e. JFETs).
1.2		**17 Nov 04**	**Incorporate the following phased changes from DRB**
1.2	1	17 Nov 04	ADD MSG Doc, Description, Proof Load Certificate etc.
1.2	1	25 Nov 04	Add FPU Bench Test Procedure
1.2	22	17 Nov 04	Add Mate Demate log blanks for Spire to Spacecraft interface connectors
1.3		**22 Nov 04**	**Incorporate the following phased changes from DRB**
1.3	4	03 Dec 04	ABCL updated (ref Actions 8 & 20)
1.3		25 Nov 04	Add Verification Control documentation
1.3	15	22 Nov 04	Update SPIRE QM qualification Matrix (ref action 12)
1.4		**26 Nov 04**	**Incorporate the following phased changes from DRB**
1.4	16.2	10 Dec 04	Add Warm Electronics bench Test Procedure
2.0	**ALL**	**18 Jan 05**	**Issue 2 of EIDP released. 2 paper copies, 5 CD's (CD's to include subsystem EIDP's where available.**
2.0	13	23-Nov-04	DML, DPL. DMPL. & EEE parts list included.
2.0	22	18-Jan-05	Mate Demate Logs updated with pre shipment Logs.
2.0	19	17-Jan-05	Historical Records.
2.0	2	12-Jan-05	FPU Handling and Integration procedure raised to issue 3
2.0	3	12-Jan-05	Integration Readiness Review minutes added
2.0	17	12-Jan-05	Open work list updated
2.0	24	12-Jan-05	Cleanliness statement/certificate added.
2.0	2	17-Jan-05	Making SPIRE ESD safe SPIRE-RAL-NOT-002028 added
2.0	1	18-Jan-05	FPU Bench test updated to issue 5
			Issue 3 updates and additions on next page

ADDITIONS AFTER REDELIVERY

Issue	Section	Date	Changes
3.0	1.1	19-Apr-05	L0 Straps IIR added in Ottobrun
3.0	1.1	19-Apr-05	WE Harnesses & Power Bench IIR added in Ottobrun
3.0	1.1	19-Apr-05	FCU IIR added in Ottobrun
3.0	1.1	19-Apr-05	DPU IIR added in Ottobrun
3.0	1.1	19-Apr-05	DCU IIR added in Ottobrun
3.0	3.0	22 Apr 05	DRB MoMs from 12/04/05 Added (Electronic copy only)
			For Delivery to EADS May 2006
4.0	0,0	17/5/06	Table of Contents
4.0	0.0	17/5/06	Change Record
4.0	1.0	17/5/06	Redelivery List to EADS
4.0	1.0	17/5/06	Despatch note
4.0	1.0	11/5/06	FPU Bench test and report SPIRE-RAL-NOT-002216 issue 7
4.0	1.0	17/5/06	Detector and harness checkout procedure SPIRE-RAL-NOT-002660
4.0	1.0	17/5/06	Outgoing Inspection Report
4.0	1.0		Incoming Inspection Report (when delivered to EADS)
4.0	2.0	28/4/06	SPIRE FPU handling and integration procedure for stray light tests SPIRE-RAL-PRC-002642 issue 1
4.0	3.0	17/5/06	DRB MoM's
4.0	4.0	12 May 06	ABCIDL SPIRE-RAL-DOC-001971 issue 5
4.0	6.0	16-May-06	NCR Status List SPIRE-RAL-PRJ-001079 issue 9
4.0	6.0	16-May-06	New Major NCR's Added
4.0	13.0	17/5/06	Detector declared materials list
4.0	17.0	16/5/06	Open Work Status
4.0	19.0	17/5/06	Historical Record
4.0	24	17/5/06	Cleanliness certificate

Background detector harness wiring and checkout
B. Swinyard/ E Sawyer

The wiring for background detector to be used for the stray light tests within the STM/PFM Herschel cryostat is described her.

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. For reference only

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 continuity checks to be carried out as part of the SPIRE integration procedure. 23/5/06

Description	Pins	Measured Resistance One way round	Expected value	The other way round	Expected value
Heater to VDD	22 – 32	6.17K	6.28 kΩ	6.18K	Same
Sigout-VDD	13 - 32	50.85K	50.4 kΩ	50.58K	Same
Sigout - VSS	13 - 35	48.85K	50.3 kΩ	50.75K	Same
Reset-Gnd	26-17	OC	850 Ω	OC	O/C

No functional tests can be carried out warm.

Notes

Below is the test procedure for carrying out the SPIRE Electrical Interface Checkout

Each time the test is carried out, the excel speadsheet "CQM Electrical IF Checkout 2216 Issue X.xls" is to be updated
Once the test is completed, the document is re-issued by RAL. The spreadsheet will become a historical log of the interface staus.
As it is foreseen that only RAL person will perform these test, RAL will maintain the configuration control of the spreadsheet.

Procedures

FPU	1	Ensure that the FPU Chassis is connected to laboratory ground via grounding strap
	2	Ensure that all personel wear ESD wrist straps
	3	Update the Test Details
	4	Sequentially mate a 37-Way MDM breakout box to each of the connectors listed on the "FPU" worksheet
	5	Measure and record the impedances listed in the "FPU" Worksheet
	6	Update Cover Sheet or proceed to the next test
JFP/JFS	1	Ensure that the FPU Chassis is connected to laboratory ground via grounding strap
	2	Ensure that all personel wear ESD wrist straps
	3	Update the Test Details
	4	Ensure that the detector box is electrically isolated from the chassis of the FPU (e.g. is the electrical isolation on the Spect. Det. Box L0 Strap correct?)
	5	Remove ESD Safeing plugs from JFET Bias connectors
	6	Sequentially mate a 37-Way MDM breakout box to each of the connectors listed on the "JFP-PSW" and "JFP-PLW-PMW" worksheets
	7	Measure and record the impedances listed in the worksheets
	8	Replace ESD Safeing plugs to the JFET bias connectors
	9	Update Cover Sheet or proceed to the next test
DCU	1	Ensure that the DCU Chassis is connected to laboratory ground via grounding strap
	2	Ensure that all personel wear ESD wrist straps
	3	Update the Test Details
	4	Sequentially mate a breakout box to each of the connectors listed on the "DCU" worksheet
	5	Measure and record the impedances listed in the worksheets
	6	Update Cover Sheet or proceed to the next test
Overall Grounding	1	Ensure ESD straps are worn by personel
	2	Ensure FPU grounding strap is not present
	3	Measure and record isolation as per "Overall Grounding" sheet

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

DOCUMENTATION CHECK LIST

Check	REMARKS	RESULTS
End Item Data Pack		Yes
Transportaion Documents		Yes
Packing un- Packing instructions		Yes
Additional Comments		

Verification of Interfaces

Mechanical interface: dimensions specified in the interface control documents such as mass, flatness of surfaces, location of fixing holes and overall dimensions should be measured accurately and recorded. Record Test Report Number, or confirm that measurement result is included in delivery documentation. (EIDP).

INSPECTION / TEST REPORT NUMBER		CHECKED	To be preformed at integration

Electrical interfaces: verifying the location and types of connectors against interface control document is normally carried as part of mechanical verification, confirm this has been done. Functional testing: final functional test report number should be noted.

INSPECTION / TEST REPORT NUMBER	SPIRE-RAL-NOT-002216	CHECKED	Yes

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP- 002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

INCOMING INSPECTION REPORT

FROM	TO
RAL Incoming Inspection at EADS	EADS Incoming Inspection at EADS

Applicable sections	
Containers	Yes
External Visual Inspection	Yes
External Connector	Yes
Documentation	Yes
Verification of Interfacess	No
Extra Comments Sheets	No

Drawings / Documents Attached

INSPECTION CONDUCTED BY

NAME	DATE
Eric Sawyer	23.05.2006

WITNESS BY

NAME	DATE
Alan Pearce	23.05.2006

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

CONTAINER INSPECTION

TRANSPORT CONTAINERS EXTERNAL CONDITION	REMARKS	Status
Mechanical damage to container fasteners, locks, clips or handling provisions		Checked
Security / Locking Fitted		None
Markings for destination and description		Checked
Warning labels relating to handling lifting and stacking limits		Checked
Any additional Comments		

TRANSPORT CONTAINERS INTERNAL CONDITION	REMARKS	Status
Check Mounting fixtures fitted internal packaging		Checked
Internal padding / packaging required		Checked
Mounting provisions secure		Checked
Any additional Comments		

ENVIROMENTAL MONITORS

Temp Monitors

Fitted: No

Condition:

Humiditiy Monitors

Fitted: Yes

Condition: Satisfactory

Shock Sensors Triggerd Information

	5g	10g	15g	25g	50g
X Axis	Minus	OK	OK		
Y Axis	OK	OK	OK		
Z Axis	OK	OK	OK		

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

INSTRUMENT VISUAL INSPECTION

CHECK LIST	REMARKS	RESULTS
Contents against shipping list		Correct
Instrument label		Correct
Note status of external contamination		Correct
Degradation of paintwork or Coating?		Correct
Fasteners correctly locked?		Correct
Check protective covers are correctly labelled and fitted?		Correct
Additional Comments		

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

INSPECTION OF ALL CONNECTORS

CHECK LIST	REMARKS (LIST CONNECTOR NUMBERS)	RESULTS
Pin Alignment		Pass
Damaged Sockets		Pass
Internal Debris		Pass
Connector Covers fitted		Pass
Connector Savers Fitted		None
EMC Covers Fitted		Pass
RED Tag Item / Green Tag Items fitted	Aperture cover fitted, no alignment cube	Pass
Additional Comments		

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

DOCUMENTATION CHECK LIST

Check	REMARKS	RESULTS
End Item Data Pack		Yes
Transportaion Documents		Yes
Packing un- Packing instructions		Yes
Additional Comments		

Verification of Interfaces

Mechanical interface: dimensions specified in the interface control documents such as mass, flatness of surfaces, location of fixing holes and overall dimensions should be measured accurately and recorded. Record Test Report Number, or confirm that measurement result is included in delivery documentation. (EIDP).

INSPECTION / TEST REPORT NUMBER		CHECKED	To be preformed at integration

Electrical interfaces: verifying the location and types of connectors against interface control document is normally carried as part of mechanical verification, confirm this has been done. Functional testing: final functional test report number should be noted.

INSPECTION / TEST REPORT NUMBER	SPIRE-RAL-NOT-002216	CHECKED	Yes

SSTD Incoming Inspection Report

Spacecraft/Project	HERSCHEL / SPIRE	Document Number	SPIRE-RAL-REP-002659	Issue	1
Sub System	SPIRE CQM	Date	23. Mai 06	Model	CQM

EXTRA COMMENT SHEET

SPIRE

SUBJECT:	Non-Conformance Reports Status Report	
PREPARED BY:	E A Clark	
DOCUMENT No:	SPIRE-RAL-PRJ-0001079	
APPROVED BY:	Name	Signature & Date
Project Manager	K.J. King	
Instrument Development Manager	E. Sawyer	
Product Assurance Manager	Eric Clark	Digitally signed by Eric Clark Date: 2006.05.16 13:13:16 +01'00'

Distribution

Live Link

Spacecraft/Project: Herschel	Originator: RAL/SSTD/PA
Instrument: SPIRE Model: All	Document No: SPIRE-RAL-PRJ-001079 Issue : 9.0
Subsystems:	Date: 16-May-06

NCR Serial No	Level	Subsystem Assembly/ Part	Model	NCR Title	Issue Date	Disposition/Corrective Actions	References	Close Out Date
(CEA) LAM.QUA.SPI.NC 30045.1	Major	CM3 mirror	STM STM STM	iscrepancy on CM3 optical surface orientation with respect to spigot axis	25-Apr-03	See NCR		14-Nov-03
(CEA) LAM.QUA.SPI.NC 30047.1	Major	SM7 Mirror M	STM STM STM	Orientation of the SM7 Mirror	14-Jul-03	See NCR HR-SP-MSSL-ECR-002 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly		07-Oct-03
(CEA) LAM.QUA.SPI.NC 30048.1	Major	SM8_a Mirror	STM STM STM	SM8 Mirror Orientation	11-Sep-03	See NCR HR-SP-MSSL-ECR-001 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly		07-Oct-03
(CEA) NCR_DCU_ 104	Major	Warm FCU/MCU	QM1	MCU QM0 J01/J39 position swapped	15-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 105	Major	Warm FCU/MCU	QM1	MCU QM0 Board position and connector position not representative of flight model	15-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 109	Major	Warm DCU Backplane	QM1	DCU photometer and spectrometer supplies merged	27-Aug-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 110	Major	Warm DCU	QM1	DCU photometer and spectrometer noise allocation	27-Aug-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 118	Major	Warm FCU/SCU CCHK	QM1	J03 pin out not consistant with DRCU ICD	10-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04

Spacecraft/Project: Herschel		Originator: RAL/SSTD/PA	
Instrument: SPIRE	Model: All	Document No: SPIRE-RAL-PRJ-001079	Issue: 9.0
Subsystems:		Date: 16-May-06	

NCR Serial No.	*Level*	*Subsystem Assembly/ Part*	*Model*	*NCR Title*	*Issue Date*	*Disposition/Corrective Actions*	*References*	*Close Out Date*
(CEA) NCR_DCU_ 129	Major	Warm DCU LIAS	QM1	6 DCU LIAS channels show none reproducible behaviour	15-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 130	Major	Warm FCU/SCU CCHK-IF	QM1	Position of the parameters in the telemetry data frame	15-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 132	Major	Warm DCU	QM1	DCU J03 Connector missing pin 13	18-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 134	Major	Warm DCU Bias	QM1	Heater PMW2 channel not functional	24-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 138	Major	Warm FCU/SCU CCHK-IF	QM1	TC_heater voltage inconsistancy between Sap & SEDI measurements	24-Sep-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 147	Major	Warm DCU LIAP	QM1	LIAP No 5 Shows bad gain on channel 30	29-Oct-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 148	Major	Warm DCU LIAP	QM1	LIAP No 6 Shows bad gain on channel 9	29-Oct-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04
(CEA) NCR_DCU_ 149	Major	Warm DCU LIAS	QM1	LIAS cut-off frequency non-conformance	29-Oct-03	See NCR Supplied as part of the Warm Electronics EIDP.		04-Nov-04

Spacecraft/Project: Herschel Instrument: SPIRE Model: All Subsystems:	Originator: RAL/SSTD/PA Document No: SPIRE-RAL-PRJ-001079 Issue: 9.0 Date: 16-May-06

NCR Serial No.	Level	Subsystem Assembly/ Part	Model	NCR Title	Issue Date	Disposition/Corrective Actions	References	Close Out Date
(CEA) NCR_DCU_ 368	Major	Warm DCU	QM2	DCU QM2 RAL. Noise at LIA input exceeds budget	22-Jun-05	See NCR Supplied as part of the Warm Electronics QM2 EIDP.		
(CEA) NCR_DCU_ 369	Major	Warm DCU/FCU	QM2	DCU & FCU QM2 RAL, not compliant with FM type MICD	22-Jun-05	See NCR Supplied as part of the Warm Electronics QM2 EIDP.		
(CEA) NCR-DPU-CGS-B- 24	Minor	DPU	EM	A spike on the read signal of the FIFOs occurs in correspondence with a write cycle on Board DPU-EM-210.00-0 S/N 01&02	23-Jan-04	See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004		
(CEA) NCR-DPU-CGS-B- 25	Minor	DPU	EM	Loss of communication on 1355	23-Jan-04	See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004		
(CEA) NCR-DPU-CGS-B- 27	Minor	DPU	EM	Misalignment of the bytes composing the words read from the FIFOs on board DPU-EM-210.00.0 S/N 05 & 06	26-Jan-04	See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004		
(CEA) NCR-DPU-CGS-B- 28	Minor	DPU	EM	DPU Boot failure	18-Feb-04	See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004		
HP-11100G-ASED-NC- 1340	Minor		EQM	HIFI FPU: SIH connectors not fully fixed after fastening of fix. Screws	08-Aug-05	See NCR Information only		
HP-11200G-ASED-NC- 1248	Major		EQM	SPIRE SIH PSW_JFETV Gnd open line	11-Jul-05	See NCR		

Spacecraft/Project: Herschel	Originator: RAL/SSTD/PA
Instrument: SPIRE Model: All	Document No SPIRE-RAL-PRJ-001079 Issue : 9.0
Subsystems:	Date: 16-May-06

NCR Serial No.	Level	Subsystem Assembly/ Part	Model	NCR Title	Issue Date	Disposition/Corrective Actions	References	Close Out Date
HP-121432-ASED-NC-896	not list	SIH CVV Inter	Information only	Error in Spire CVV Internal Harness Definition	06-Apr-05	See NCR Information only		
HP-121432-ASED-NC-896	not list	SIH CVV Exte	Information only	Spire SIH CVV External Harness C4 to C9 Pin 47 connection	06-Apr-05	See NCR Information only		
HP-121432-ASED-NC-912	Major	Scientific instr	Information only	Discrepancy in SPIRE Harness Definition shielding of Gnd wire	05-Apr-05	See NCR Information only		
HP-121432-ASED-NC-941	Major	SIH SVM Inter	Information only	SPIRE SIH Double Pin allocation Pin 7 bundle C3	11-Apr-05	See NCR Information only		
HP-153300-ASED-NC-210	Major	DPU SN 153300	PACS	PACS DPU anomalous behaviour during first test at ASED	06-Apr-04	See NCR Information only NCR from ESTEC		
HP-2-SEN-NC-6	Minor	Optical Bench Plate	PFM EQM	out of position holes mismatch FPU to OBP	30-Jun-04	Use as is NCR Accepted and agreed by Spire Email sent 30 July 04		30-Jul-04
HP-2-SEN-NC-7	Minor	Optical Bench Plate	EQM	Flatness of FPU mounting Pads out of tolerence	30-Jun-04	Use as is NCR Accepted and agreed by Spire Email sent 30 July 04		30-Jul-04
HR-MSSL-SPIRE-NCR-1	Major	Structure Photometer c	CQM	Baffel panel damaged	13-Aug-02	Implement recovery procedure once it has been appr ITEM Scrapped due to other damage NCR closed		17-Apr-03

Spacecraft/Project:	Herschel			Originator:	RAL/SSTD/PA
Instrument:	SPIRE	Model	All	Document No:	SPIRE-RAL-PRJ-001079
Subsystems:				Date:	16-May-06

Issue : 9.0

NCR Serial No	Level	Subsystem Assembly/ Part	Model	NCR Title	Issue Date	Disposition/Corrective Actions	References	Close Out Date
HR-SP-JPL-NCR-6	Minor	JFET's	PFM	Yield Degradation of JFET Module	31-May-05	See JPL PFR attached to NCR Preliminary NRB held during JPL Weekly telecon of 31-May-2005 . (See attached) JPL PFR attached 21/12/05		21-Dec-05
HR-SP-JPL-NCR-7	Minor	BDA PMW and PS	PFM FS	PMW and PSW focal position shift	01-Jul-04	TBW Formall raised as TBD allocated as number 006 by JPL re-allocated as 007 by RAL due to duplication of numbers Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05
HR-SP-JPL-NCR--NCR 1	Minor	JPL RF Filter Mod	CQM	RF Filters over Max Mass Limit	14-Aug-03	Use as Delivered re-allocated Mass budget. NCR Closed Action 1 JPL Note Should be added to the EIDP Regarding the increased Mass allowance as of 3/2/2003. Action 2 JPL Request for Waiver should be submitted, to		14-May-04
HR-SP-JPL-NCR--NCR 2	Minor	JPL PLWBDA PLW Filter	CQM	PLW FILTER BOWING	03-Sep-03	Use as is deos not affect detector performance. UWC to comment and complete Cause & Action sections of NCR form		14-May-04
HR-SP-JPL-NCR--NCR 3	Minor	JPL PLW BD. SL	CQM	Array Process Change	06-Oct-03	Recommend 'Use as is' for the P/LW on CQM only S/LW Recommend 'Use as is' for the P/LW on CQM only S/LW use on PFM 1 build - NOT SUITABLE FOR FLIGHT -- review situation for flight spare		18-Oct-04
HR-SP-JPL-NCR--NCR 4	Minor	JPL	CQM	Performance criteria not met	06-Oct-03	See NCR NCR CLOSED Corrective Action accepted by SPIRE Project Team.		18-Oct-04
HR-SP-MSSL-NCR-1	Minor	Structure	GSE	Gold Plating	25-Mar-03	see NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717		17-Jun-03
HR-SP-RAL-NCR-1	Minor	EGSE	GSE	Double Click Error	27-Sep-01	Complete the removal. Whole packets are now displayed via the log file display. Awaitng Acceptance test before closing		14-Feb-03

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HR-SP-RAL-NCR-10	Minor	MGSE Rear Frame a	GSE	Spire MGSE rear frame assy	26-Sep-02	Return to manufacturer for re-work Manufacturer corrected problem but other holes found missing corrected in house		07-May-03
HR-SP-RAL-NCR-10.1	Minor	MGSE Rear Frame a	GSE	Spire MGSE rear frame assy	26-Sep-02	Return to manufacturer for re-work Reworked by manufacturer when returned holes were found to be missing corrected in house Use as is		09-May-03
HR-SP-RAL-NCR-11	Minor	MGSE Support Fram Frame Parts	GSE	Aluchrome Finish on support rails	23-Sep-02	Components to be cleaned to remove bead blasting r Components to be cleaned to remove bead blasting residue and re-aluchromed to DEF 1200 Reworked finish still poor USE As IS.		09-May-03
HR-SP-RAL-NCR-12	Minor	MGSE Trolley Bridge rails	GSE	Mismatch on Rail Cross Section	23-Sep-02	TBD Closed at NCR MRB Number SPIRE-RAL-MoM-001863		14-Nov-03
HR-SP-RAL-NCR-13	Minor	HDPE Windo	GSE	Surface finish	30-Sep-02	Use as is. Has been found to be leak tight during cold test NCR closed re SPIRE-RAL-MoM-002013		14-May-04
HR-SP-RAL-NCR-14	Minor	MGSE HOB Plate	GSE	Hob Plate material to soft	09-Oct-02	Have new plate made from harder material Use exist Existing plate will be used for the Cryostat cold tests and MGSE fit checks		23-Oct-02
HR-SP-RAL-NCR-15	Minor	MGSE Support Fram	GSE	MGSE Support Frame Dimension incorrect	10-Oct-02	Dimensions were checked against the drawings and w Dimensions were checked against the drawings and were found to be correct. Therefore there is no problem NCR can be closed without further action		23-Oct-02
HR-SP-RAL-NCR-16	Minor	MGSE Trolley	GSE	MGSE Trolley Tolerance stack up	10-Oct-02	see NCR		23-Oct-02

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HR-SP-RAL-NCR-22	Minor	MGSE Cryostat HOB_SIM HA	GSE	HOB Simulator-8 Hole Dimensions	05-Mar-03	MSSL to Advize Use as is Closed at NCR MRB Number SPIRE-RAL-MoM-001717		17-Jun-03
HR-SP-RAL-NCR-23	Minor	MGSE Cryostat Foot Rail	GSE	Cryostat Rail Dimension incorrect	18-Mar-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Rail should have been 1,000mm long instead was 970mm datum hole therefore incorrectly positioned		14-Nov-03
HR-SP-RAL-NCR-24	Minor	MGSE Test Cryostat Main burst dis	GSE	Leak in Cryostat Drop Plate	28-Mar-03	See NCR 1.Inspect flange for flatness. If flange is not flat then plate cannot be used as it is. 2.Remount plate and carefully tighten bolts ensuring		10-Jun-03
HR-SP-RAL-NCR-25	Minor	MGSE HOB Simulato	GSE	Surface Damage to HOB simulator	28-Mar-03	Assess level of damage when removed from bake-out. If possible make minor repairs and measure flatness of damaged/repaired area If possible make minor repairs and measure flatness of		10-Jun-03
HR-SP-RAL-NCR-26	Minor	J-FET Rack fe	All	Not Thermally Isolated enough.	11-Apr-03	"Modifications have been implemented Problem resolved" NCR Closed. Ref NRB SPIRE-RAL-MoM-002013		14-May-04
HR-SP-RAL-NCR-27	Minor	FPU Spectrometer	SM	SM11b interferes with the optics bench	30-Apr-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717-On the STM the rib was modified by hand. The PFM rib to be modified. It is suggested that a 45degree chamfer		17-Jun-03
HR-SP-RAL-NCR-28	Minor	Structure RF Filter box	SM	Mechanical interference of the FR filter box	30-Apr-03	See NCR		03-Jul-03
HR-SP-RAL-NCR-28.2	Minor	Structure RF Filter box	SM	Mechanical interference of the FR filter box	30-Apr-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863.		07-May-04

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HR-SP-RAL-NCR-36	Major	Structure	SM	SPIRE Optical Bench BSM I/F Location	02-May-03	See NCR Can be Closed ref NCR MRB Number SPIRE-RAL-MoM-001863; ATC ICD is reissued is attached		12-Jul-04
HR-SP-RAL-NCR-37	Major	MGSE Flexible Pipe Co-Axial heat	Cryostat	Solder on co-axial heater melted	02-May-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; NCR copied to AS for comment		14-Nov-03
HR-SP-RAL-NCR-38	Minor	Structure 300mK Strap Photometer S	SM	300-mK Thermal Short during STM Programme	06-May-03	See NCR Superceded by 038v2		21-May-03
HR-SP-RAL-NCR-38.2	Minor	Structure 300mK Strap Photometer S	SM	300-mK Thermal Short during STM Programme	21-May-03	Item 1-Doug to issue a check list to cover Key integration See note in blue on NCR. Items 2 & 3 no longer valid Delete. NCR Closed		14-May-04
HR-SP-RAL-NCR-39	Minor	BSM position senso		BSM Jiggle Frame Clipping	29-May-03	Design change by ATC NCR closed Optical study by RAL not required as ATC implemented a design change		04-Jun-03
HR-SP-RAL-NCR-40	Minor	FPU Spectrometer	SM STM	SM11a interferes with the optics bench.	17-Jun-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717		17-Apr-03
HR-SP-RAL-NCR-41	Minor	MGSE Pumping Syst	Cryostat	Cryostat Pumping system shutdown	07-Jul-03	Superceded By 41v1		07-Jul-03
HR-SP-RAL-NCR-41.1	Minor	MGSE Pumping Syst	Cryostat	Cryostat Pumping system shutdown	30-Sep-03	No re-occurrence NCR Closed. Under investigatiog Suspected Glitch on Mains supply Mains Filter will be used in future.Mains Filter fitted(in place for sutdown 25/09/04)		14-May-04

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HR-SP-RAL-NCR-49	Minor	Structure FPU Connector Jac	CQM	RF Filter Connector Jack post thread length	20-Nov-03	Half returned for rework when done some still had to be re Half the Items returned to Taylor Embex for rework the remainder will be reworked at RAL		14-May-04
HR-SP-RAL-NCR-50	Minor	Structure pectrometer C	All	Harnes slot missing on Spectrometer cover baffle.	05-Dec-03	Flight Model Drawings updated NCR Closed		14-May-04
HR-SP-RAL-NCR-51	Minor	GSE: Cold Harness	GSE	Pins Bent on GSE Harness	22-Dec-03	Returned to Manufacturer for correction Ok when returned A pin straightening jig could be made. If the pin does not maintain the hermetic seal, the pins can be cut off or removed as they are both redundant ground pins. To be		14-May-04
HR-SP-RAL-NCR-52	Minor	GSE Warm Test Ha	GSE	Grounding Problems Warm test Harness	22-Dec-03	Harness will need modification Harness returned to Manufacturer for modification (hardware now consistent with Documentation that was correct) NCR closed. Ref SPIRE-RAL-MoM-002013		14-May-04
HR-SP-RAL-NCR-53	Minor	Calibration MGSE Support Fram	GSE	Brass Wheels Worn on MGSE Frame	07-Jan-04	Wheels changed to Delrin Brass wheels replaced with Delrin wheels. The frame now moves on the cryostat rails more freely.		15-Jan-04
HR-SP-RAL-NCR-54	Minor	Tekdata SLW PFM Incoming insp	PFM/FS	PFM SLW Harness different to FS on inspection Rep	07-Jan-04	See NCR SLW FS Harness correct but incoming inspection report indicates SLW PFM is incorrect. Error on incoming inspection Report		18-Mar-04
HR-SP-RAL-NCR-55	Minor	CEA Sap DCU Connectors	QM1	Pins incorrectly inserted	08-Jan-04	TBD Superceded By V2		26-Jan-04
HR-SP-RAL-NCR-55.2	Minor	CEA Sap DCU Connectors	QM1	Pins incorrectly inserted	08-Jan-04	See NCR Corrective actions specified on NCR Repaired at RAL NCR Closed		04-Feb-04

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HR-SP-RAL-NCR-062.1	Minor	Cooler SCO Evaporator H	CQM	Response time of SPIRE CQM Evaporator Heat Switch	19-Feb-04	See NCR The NCR has been raised to report and track the issue. A slow switch would be troublesome in flight. The performance of the switch will be monitored during the		02-Nov-04
HR-SP-RAL-NCR-063	Minor	Cooler, FPU Evaporator H	CQM	Evaporator HS & Pump HS commands reversed.	19-Feb-04	See NCR When the instrument is removed from the cryostat after the end of the initial CQM cool down, the EGSE, DPU SCU and cryoharness will be tested to see if there		28-May-04
HR-SP-RAL-NCR-063.1	Minor	Cooler, FPU Evaporator H	CQM	Evaporator HS & Pump HS commands reversed.	28-May-04	Check when removed from Cryostat Tests need to be carried out on the Cooler and FPU F16 and F17 to determine if the fault lies in either of these two components		15-Jun-04
HR-SP-RAL-NCR-063.2	Minor	Cooler, FPU Evaporator H	CQM	Evaporator HS & Pump HS commands reversed.	19-Feb-04	Update Harness definition The cooler ICD should remain the same, as any change would propagate to the PACS instrument. The Harness Definition Document Issue 1.1 and the DRCU / DPU		02-Nov-04
HR-SP-RAL-NCR-063.3	Minor	Cooler, FPU Evaporator H	CQM	Evaporator HS & Pump HS commands reversed.	19-Feb-04	See NCR See NCR		02-Nov-04
HR-SP-RAL-NCR-064	Minor	SCAL Prime 4% sou	CQM	Apparent failure of CQM S-Cal 4% source	19-Feb-04	See NCR Superseded by issue of HR-SP-RAL-NCR-064v1		13-May-04
HR-SP-RAL-NCR-064.1	Minor	SCAL Prime 4% sou	CQM	Apparent failure of CQM S-Cal 4% source	09-Mar-04	Review instrument commanding and telemetry streams to Superseded by issue of HR-SP-RAL-NCR-064v2 HSO-CDF-RP-065 attached report from P Hargrave		18-Jun-04
HR-SP-RAL-NCR-064.2	Minor	SCAL Prime 4% sou	CQM	Apparent failure of CQM S-Cal 4% source	18-Jun-04	See NCR		02-Nov-04

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HR-SP-RAL-NCR-0073	Minor	BDA-JFET M	CQM	Cracking of elastomer in BDA-JFET MDM 51S connector	12-May-04	see remarks The seal is not necessary in SPIRE and is to be removed. It is noted that the same seal is present also in the following connectors and is to be removed. PFM JFP		05-Nov-04
HR-SP-RAL-NCR-0074	Minor	JFET Back harness	CQM	Heat Shrink on JFET back Harnesses	12-May-04	See NCR The all existing Kynar heat shrink is to be removed from the Backharness. Adhesive Kapton tape is to be used to substitute the Heat Shrink. (Note: The braid is		02-Nov-04
HR-SP-RAL-NCR-0075	Major	Instrument	CQM	During Cold vibration test the sine test went to 200Hz	12-May-04	See NCR Closed Ref SPIRE CQM DRB Ref (H-P-ASP-MN-5613)		12-Oct-04
HR-SP-RAL-NCR-0076	Major	FPU Phot Detector	PFM	Poor Alachrome on photometer Detector box	10-Jun-04	See NCR Alachrome cleaned off and unit made clean to flight standard. Closed ref 076v1 Use as is for current alignment integration activities		20-Sep-04
HR-SP-RAL-NCR-0076.1	Major	Phot Detector	PFM	Poor Alachrome on photometer Detector box	10-Jun-04	See NCR Closed ref SPIRE-RAL-MoM-002131 NRB MoM's		23-Sep-04
HR-SP-RAL-NCR-0077	Minor	MSSL FPU Belville washe	PFM	Two sizes of Belville washers with the same assembly number	11-Jun-04	Checks will be made during the bagging of the fixings to e Walton plating (not the original company). They think that some agent has attacked the alocrom! This is due to the fact that it was patchy.		23-Sep-04
HR-SP-RAL-NCR-0078	Minor	BSMOGSE	OGSE	Modifications to BSM OGSE	17-Jun-04	See NCR		21-Dec-04
HR-SP-RAL-NCR-0079	Minor	FPU 300mk strap	CQM CQM	Minimal clearence between Spect Det Box SLB and 300mk split clamp	01-Jul-04	Examine a copy of the drawings and the asembled compo Reference ECR 075		02-Nov-04

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HR-SP-RAL-NCR-085.2	Minor	Cryostat PUMP	GSE	Facility Vacuum Pump Failure during cool down	19-Apr-05	Monitor the vacuum pressure closely when filling the cryo		01-Mar-06
HR-SP-RAL-NCR-086	Minor	Cryostat Temp sensors	GSE	Temp sensor failures	08-Sep-04	TBD superseded by HR-SP-RAL-NCR-086v1		21-Dec-04
HR-SP-RAL-NCR-086.1	Minor	Cryostat Temp sensors	GSE	Temp sensor failure During cool down	21-Dec-04	New harness required for key interface thermometers (S2 Do not use wiring contractor in future		01-Nov-05
HR-SP-RAL-NCR-087	Major	JFET's	CQM	One JFET Turned on one did not during 2nd cold test.	18-Oct-04	Spare JFETS sent to replace damaged JFETS and the da JFET REPLACED ON CQM Progression of NRB's held SPIRE-RAL-MoM-002193, 002193v1, 002243, and 002243v1		
HR-SP-RAL-NCR-088	Major	300mk strap	CQM	300-mK strap clearance at cooler cold-tip	14-Sep-04	See NCR 1mm was removed from each of the straps to increase the clearance between the components to enable CQM-II testing to proceed. This needs to be formally reviewed		25-Oct-04
HR-SP-RAL-NCR-089	Minor	Cryostat	GSE	Cooler hold time anomally	21-Oct-04	TBD Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05
HR-SP-RAL-NCR-090	Minor	Cryostat Harness	GSE	Electrical Short on SPIRE Cryostat Harness	18-Oct-04	Update master procedure for PFM-I test to monitor groun Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05
HR-SP-RAL-NCR-091	Minor	FPU PCAL	CQM	Drive shorted to shield in FPU	10-Nov-04	USE as is for CQM, leave OPEN for PFM If, as assumed, this was always the case for the CQM it has no effect on the PCAL operation as the shield wire is not connected to chassis at any point in the system. We		

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HR-SP-RAL-NCR-99	Minor		PFM	Bores on the photometer harness connector plate need re-machining	22-Dec-04	Holes opened out to 25.10mm diameter Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05
HR-SP-RAL-NCR-100	Minor	BDA	PFM	Damage to PFM SSW BDA J06 and PFM F14 P06 Pin 26	25-Jan-05	For PFM-I test campaign – Temporary fix as per Figure 4 Needs updating to record fix		02-Nov-05
HR-SP-RAL-NCR-101	Minor	SSW BDA J06 / P06	PFM	Damage to PFM F14 JFS-P12 (Pin 1)	27-Jan-05	Straighten pin see r"emarks" Closed ref SPIRE-RAL-MoM-002462v1 NRB Gauge wire inserted into socket contact to protect it from buckling damage. The pin was carefully bent back into the		14-Jul-05
HR-SP-RAL-NCR-102	Minor	JFS	PFM	Incorrect labeling of connectors of JFS J11, J12, J13 and J14	31-Jan-05	Use as is for PFM-1 and re-work for PFM-II Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05
HR-SP-RAL-NCR-103	Minor	BSM	PFM	Inconsistent BSM position sensor signal polarity	31-Jan-05	Awaiting completion of cause and disposition sections		
HR-SP-RAL-NCR-104	Minor	JFS PTC	FS	Ground short on PTC	31-Jan-05	Use Flight Spare SN 002 on PFM Model and return faulty Awaiting Doug to sign to close		
HR-SP-RAL-NCR-105	Major	MCU CQM1	QM1 CQM	Simultaneous generation of BSM and SMEC frames leads to Frame ID error reports	03-Feb-05	See NCR Still have to check whether we can generate SMEC+BSM frames simultaneously. This will only be possible after we actually switch the MCU on!		
HR-SP-RAL-NCR-106	Minor	FPU	PFM	Electrical short between FPU and Cryostat Chassis	03-Feb-05	See NCR Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05

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HR-SP-RAL-NCR-115	Minor	Software	PFM 1	The TFTS rejected all commands from SCOS during PFM1 testing	19-Apr-05	1. Problem report SPR-0391 closed on the HCSS. 2. Prob Completed by Asier 20/10/05 not finally signed off until 23/02/06		20-Oct-05
HR-SP-RAL-NCR-116	Minor	BSM & MCU	PFM 1	BSM and MCU Oscillations	19-Apr-05	The board was returned to LAM and the component solde		23-Feb-06
HR-SP-RAL-NCR-117	Minor	Software Warm Electro	PFM 1	Anomalous HK Parameter Values are observed during DCU science generation at some bias and sampling frequencies	19-Apr-05	FPGA to be replaced on QM2-RAL Model During the DRCU QM2 tests at RAL on 9-10 Feb 2006 CEA demonstrated that the problem is fixed. These tests were done with their LTU but we need to verify this using		
HR-SP-RAL-NCR-118	Minor	Software	PFM 1	Separate Switch on commands for DRCU, MCU, SPEC & PHOT LIA's	19-Apr-05	Rejected by CEA NCR Closed NCR closed as the request was not part of the original requirements.		07-Mar-06
HR-SP-RAL-NCR-119	Minor	Software	PFM 1	The CDMS Simulator clock drifts with respect to system time of computer	19-Apr-05	None it is an expected situation during operations Can be withdrawn because this time drift is representative of the expected situation during operations. NOT APPROVED		07-Mar-06
HR-SP-RAL-NCR-120	Minor		PFM 1	PIXEL SWAP	19-Apr-05	Reminder sent 09/08/05 Allocated to Doug Griffin		
HR-SP-RAL-NCR-121	Minor	L0 Straps	CQM	L0 straps fouls on integration due to Slight distortion	20-Apr-05	See NCR Forwarded to MSSL for comment/action 18th Aug 2005		23-Feb-06
HR-SP-RAL-NCR-122	Minor	PCAL	PFM	Failure at incoming inspection due to soldering not to ESA spec.	20-Apr-05	Rework at RAL Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05

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HR-SP-RAL-NCR-131	Minor	MCU	PFM	MCU Boot failure	01-Nov-05	We have QM2 MCU now. The NCR was raised on QM1 M We have QM2 MCU now. The NCR was raised on QM1 MCU. To be tested during DRCU acceptance tests and PFM3.		
HR-SP-RAL-NCR-132	Minor	MCU	PFM	MCU switch off caused SCU and DCU to enter a hung status	01-Nov-05	TBD We have QM2 MCU now. The NCR was raised on QM1 MCU. To be tested during DRCU acceptance tests and PFM3.		
HR-SP-RAL-NCR-133	Minor	Cryostat Cryostat Instr	GSE	Cryostat Harness Short	01-Nov-05	After the test campaign ended, the cryoharness was inspe superseded by v1		21-Apr-06
HR-SP-RAL-NCR-133 1	Minor	Cryostat Cryostat Instr	GSE	Cryostat Harness Short	21-Apr-06	Issue 2		
HR-SP-RAL-NCR-134	Minor	Cryostat	GSE	Helium Transfer Line Blocked Sinter	01-Nov-05	Sinter removed for remainder of test campaign. NCR closed when actions comleted		
HR-SP-RAL-NCR-135	Minor	PTC	PFM	Bent pin on PTC	09-Nov-05	Allocated to Doug Griffin		
HR-SP-RAL-NCR-136	Major	FPU	PFM	Cryo-vibration test Z axis	05-Dec-05	See NCR Option 2 of corrective actions selected and all actions completed NCR closed circulated to ESA 24/02/06.		23-Feb-06
HR-SP-RAL-NCR-137	Major	DRCU/DPU	PFM	Intermittent failure of commands to flash PCAL during PFM2	09-Dec-05	See NCR Reviewed 07/03/06 Still under investigation		

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HR-SP-UCF-NCR-1	Minor	FPU 300mk parts Cooler Spec b	CQM	Cooler to Spectrometer Bus-Bar incorrect	08-Aug-03	See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Attempt to reform second Bus Bar supplied for correct functionality for CQM if OK reform CQM Bus-Bar		14-Nov-03
HR-SP-UCF-NCR-2	Major	SCAL	PFM	Prime & redundant connectors soldering not to ESA standard	20-Aug-04	Rework of the connectors by an ESA Qualified operator, a Corrected at Cardiff and Photo's inspected at RAL SCAL Can be accepted.		04-Nov-04
HR-SP-UCF-NCR-3	Minor	Light Baffle	PFM	Difficulty fitting light baffle to photometer box	29-Jun-05	See NCR Ref SPIRE-RAL-MoM-002458 NRB Closed ref SPIRE-RAL-MoM-002462v1 NRB		14-Jul-05

END OF LIST

CEA DAPNIA/SAP	1) NON CONFORMANCE REPORT/CHANGE REQUEST	N° 270 Issue 2	Page: 1/

2)PROJECT : Herschel	MODEL : QM2	FILLED OUT BY : J. FONTIGNIE	DATE : 07/09/05
EQUIPMENT : SPIRE N° :	SUB-ASSEMBLY : FCU/ SCU	BOARD(S) : TEMP N° :	N°OT : -- COMPAGNY :

OCCURUNCE PHASE
❑ CONTROL ❑ INTEGRATION ❑ IN SERVICE
❑ MANUFACTURING ❑ QUALIFICATION ❑ RECEIPT
■ DEVELOPMENT/VALIDATION ❑ OTHERS

INTEGRATION LEVEL
❑ PART ❑ SUB SYSTEM
■ SUB ASSEMBLY ❑ INSTRUMENT
❑ EQUIPMENT ❑ OTHER

ENVIRONMENTAL CONDITIONS
■ AMBIANT ❑ VACUUM
❑ VIBRATION ❑ ELECTRIC
❑ THERMAL VACUUM ❑ OTHER

TITLE : FCU temperature channels, reduced ranges

DESCRIPTION :
The following temperature channels of FCU have reduced ranges w.r.t. to specifications [RD1] :
T_BSSM : specified range from [RD1] is [3K;20K], expected temp range is [3K;12K]
T_FTSS : specified range from [RD1] is [3K;100K], expected temperature range is [3K;95K]
T_SOB : specified range from [RD1] is [3K;300K], expected temperature range is [3K;209K]
T_SCL4 : specified range from [RD1] is [4K;150K], expected temperature range is [3K;65K]
T_SCL2 : specified range from [RD1] is [4K;150K], expected temperature range is [3K;65K]
Estimation is based on PFM1 probe characteristics and QM1 electronics (including change as described in mail next page).

REFERENCE DOCUMENT(S) :
DRCU subsystems specifications Sap-SPIRE-CCa-25-00

3)TECHNICAL INVESTIGATION : RESPONSIBLE(S) :
Discrepancies between specified range and expected range are due to the real characteristics of cernox temp probes. After discussion with RAL, SCAL2&SCAL4 upper range has to be increased to around 85K.
To achieve this range, R269, R272 to be changed to around 36KΩ/37KΩ.
C. Cara

ORIGINAL

4) CORRECTIVE ACTIONS (model concerned by NCR/CR) : RESPONSIBLE(S) :

Board n°3001 : (QM2 RAL board) action still TBD
Board n°3002 : (True qualification model) : use as is (no optimal range)

FINALE DECISION(S)
❑ USE AS IS
❑ WAIVER
❑ DOCUMENTATION CHANGE
❑ REPAIR
❑ SCRAP
■ MODIFICATION
❑ ACTION ON OTHER PRODUCT

PREVENTIVE ACTIONS (further models) : RESPONSIBLE(S) :

R269, R272 : change value to 36,5 kΩ PHR0805 0.01%

Reduced ranges will be agreed with RAL through a RFW

CLASS	CLEARANCE FOR ACTIONS	TECHNICAL MANAGER	PRODUCT ASSURANCE MANAGER	PROJECT MANAGER
❑ MINOR	Unit responsible of involved product :	C. CARA 7/09/05	FONTIGNIE 08/09/05	J.L. Augueres 9/09/05
■ MAJOR	Upper level manager :			

5)CLOSING DATE: BY: VISA:

6)INVOLVED PARAMETERS
❑ INTERFACES
■ PERFORMANCES
❑ RELIABILITY
❑ SAFETY
❑ OTHER

DIRECT CAUSES
❑ MATERIAL ❑ HARNESS ❑ TEST MEANS
❑ STRUCT.THERM. ❑ ELECTRONICS ❑ STORAGE/TRANSPORT
❑ MECANISM ❑ SOFTWARE ❑ HANDLING/OPERATIONS
❑ EEE PART ❑ OPTICS ❑ TESTS
❑ DOCUMENTATION ❑ CLEANLINESS ❑ UNKNOWN
❑ OTHER

ROOT CAUSES
❑ DOCUMENTATION ❑ PROCEDURE
❑ MANUFACTURING ❑ CONFIG
❑ CONTROL ❑ DESIGN
❑ OPERATION ❑ UNKNOWN
❑ OTHER

SCHEDULE IMPACT : + 0 weeks + 0 month + 0 month COST IMPACT : + 0 KEUR + 0 MF + 0 MF

7)1st DISTRIBUTION
Date to :

2nd DISTRIBUTION

CEA SAP/GERES	1) NON CONFORMANCE REPORT/CHANGE REQUEST	N°360 (English)	Page: 1/

2)PROJECT : HERSCH	MODEL :QM2	FILLED OUT BY : Pinsard	DATE : 1/6/2005
EQUIPMENT :SPIRE	SUB-ASSEMBLY : DCU	BOARD(S) :BIAS	N°OT :
N° :	N° :	N° : 3001	COMPAGNY :

OCCURENCE PHASE
- ☐ CONTROL
- ☐ MANUFACTURING
- ☐ DESIGN/VALIDATION
- ■ INTEGRATION
- ☐ QUALIFICATION
- ☐ OTHERS
- ☐ DESTOCKAGE
- ☐ RECETTE

INTEGRATION LEVEL
- ☐ PART
- ☐ SUB-ASSEMBLY
- ☐ EQUIPEMENT
- ☐ SUB SYSTEM
- ☐ INSTRUMENT
- ☐ OTHER

ENVIRONMENTAL CONDITIONS
- ☐ AMBIANT
- ☐ VIBRATION
- ☐ THERMAL VACOUM
- ☐ THERM
- ☐ EMI/EMC
- ☐ OTHER

TITLE : reset bias

DESCRIPTION :

Transients to FPU are still presents at power on.

REFERENCE DOCUMENT(S) :

SPIR-EQ140000--0

3) **TECHNICAL INVESTIGATION** : **RESPONSIBLE(S) :**

Bias board power-on reset too short

4) **CORRECTIVE ACTIONS (model concerned by NCR/CR)** . **RESPONSIBLE(S) :**

Change C235 (15nF- 2220 shape) for 2 times 100nF in // (shape 1206)
Change R355 (100 kΩ 0,01%) to 1Mohm 1%

CCloué (RESA)

Nota : Refer to test report SAp-SPIRE-FP-0236-05 test report, no transients to FPU at power ON, transients at power-off are present. Check with RAL before closing NCR.

PREVENTIVE ACTIONS (further models) . **RESPONSIBLE(S) :**

Changing C235/R355 approved for power-on transients. Situation w.r.t. power-off transients needs to be discussed with RAL.

FINALE DECISION(S)
- ☐ USE AS IS
- ☐ WAIVER
- ☐ DOCUMENTATION CHANGE
- ☐ REPAIR
- ☐ SCRAP
- ☐ MODIFICATION
- ☐ ACTION ON OTHER PRODUCT

CLASS	CLEARANCE FOR ACTIONS	TECHNICAL MANAGER	PRODUCT ASSURANCE MANAGER	PROJECT MANAGER
☐ MINOR	Unit responsible of involved product :	C. CARA [signature]	J FOURNIER [signature]	29/06/05 J. L. Auguères [signature]
■ MAJOR	Upper level manager :	[signature] E SAWYER	[signature] E CLARK 29/06/05	[signature]

5) **CLOSING DATE:** BY: VISA:

6) **INVOLVED PARAMETERS**
- ■ INTERFACES
- ☐ PERFORMANCES
- ☐ RELIABILITY
- ☐ SAFETY
- ☐ OTHER

DIRECT CAUSES
- ☐ MATERIAL
- ☐ STRUCT THERM.
- ☐ MECANISMS
- ☐ EEE PART
- ☐ DOCUMENTATION
- ☐ OTHER
- ☐ HARNESS
- ☐ ELECTRONICS
- ☐ SOFTWARE
- ☐ OPTICS
- ☐ CLEANLINESS
- ☐ TEST MEANS
- ☐ STORAGE/TRANSPORT
- ☐ HANDLING/OPERATIONS
- ☐ TESTS
- ☐ UNKNOWN

ROOT CAUSES
- ☐ DOCUMENTATION
- ☐ MANUFACTURING
- ☐ CONTROL
- ☐ OPERATION
- ☐ OTHER
- ☐ PROCEDURE
- ☐ CONFIG.
- ☐ DESIGN
- ☐ UNKNOWN

SCHEDULE IMPACT < 1 week < 1 month > 1 month COST IMPACT < 100K? < 1M? > 1M?

7) 1st DISTRIBUTION
Date to :

2nd DISTRIBUTION
Date to :

CEA DAPNIA/SAP	1) NON CONFORMANCE REPORT/CHANGE REQUEST	N° 368	Page: 1/

2)PROJECT : Herschel	MODEL : QM2RAL	FILLED OUT BY : J. Fontignie	DATE : 22/06/05
EQUIPMENT : SPIRE N° :	SUB-ASSEMBLY : N° :	BOARD(S) : N° :	N°OT : COMPAGNY :

OCCURENCE PHASE
- ☐ CONTROL
- ☐ MANUFACTURING
- ☐ DESIGN/VALIDATION
- ☐ INTEGRATION
- ☐ QUALIFICATION
- ☐ OTHERS
- ☐ DESTOCKAGE
- ■ ACCEPTANCE

INTEGRATION LEVEL
- ☐ PART
- ☐ SUB-ASSEMBLY
- ■ EQUIPEMENT
- ☐ SUB SYSTEM
- ☐ INSTRUMENT
- ☐ OTHER

ENVIRONMENTAL CONDITIONS
- ■ AMBIANT
- ☐ VIBRATION
- ☐ THERMAL VACCUM
- ☐ THERM
- ☐ EM/EMC
- ☐ OTHER

TITLE : DCU QM2 RAL, noise at LIA input exceeds budget

DESCRIPTION :

Refer to report [RD1], noise at LIAP input channel exceeds budget define by DRCU-REQ-32 of [RD2] (7nV/√Hz) :

- On LIA-P boards, noise is almost conform à 100.5Hz sampling frequency (~8nV/√Hz), but not conform à 20.5Hz (≤15nV/√Hz)
- On LIA-S boards, noise is not conform at 102.5 Hz sampling frequency as well as 68Hz (≤15nV/√Hz)

Also to notice that a few channels on LIAP remain above others LIAP2#19, LIAP3#29, LIAP7#17.

REFERENCE DOCUMENT(S) :

[RD1] : Technical note DCU QM2 RAL performance tests Sap-SPIRE-FP-0236-05

[RD2] : DRCU subsystem specification document Sap-SPIRE-CCa-25-00

3)**TECHNICAL INVESTIGATION :** **RESPONSIBLE(S) :**

Refer to [RD1] with noise spectrum on each input, CEA suggests to check impact at system level, including bolometers and JFETs characteristics.

4) **CORRECTIVE ACTIONS (model concerned by NCR/CR) :** **RESPONSIBLE(S) :**

—

PREVENTIVE ACTIONS (further models) : **RESPONSIBLE(S) :**

—

FINALE DECISION(S)
- ☐ CANCELLED
- ☐ USE AS IS
- ☐ WAIVER
- ☐ DOCUMENTATION CHANGE
- ☐ REPAIR
- ☐ SCRAP
- ☐ MODIFICATION
- ☐ ACTION ON OTHER PRODUCT

CLASS	CLEARANCE FOR ACTIONS	TECHNICAL MANAGER	PRODUCT ASSURANCE MANAGER	PROJECT MANAGER
☐ MINOR	Unit responsible of involved product :	E. CARA	J. FONTIGNIE	J.L. AUGUERES
■ MAJOR	Upper level manager :			

5)**CLOSING DATE:** **BY:** **VISA:**

6)**INVOLVED PARAMETERS**
- ☐ INTERFACES
- ■ PERFORMANCES
- ☐ RELIABILITY
- ☐ SAFETY
- ☐ OTHER

DIRECT CAUSES
- ☐ MATERIAL
- ☐ STRUCT.THERM.
- ☐ MECANISMS
- ☐ EEE PART
- ☐ DOCUMENTATION
- ☐ OTHER
- ☐ HARNESS
- ■ ELECTRONICS
- ☐ SOFTWARE
- ☐ OPTICS
- ☐ CLEANLINESS
- ☐ TEST MEANS
- ☐ STORAGE/TRANSPORT
- ☐ HANDLING/OPERATIONS
- ☐ TESTS
- ☐ UNKNOWN

ROOT CAUSES
- ☐ DOCUMENTATION
- ☐ MANUFACTURING
- ☐ CONTROL
- ☐ OPERATION
- ☐ OTHER
- ☐ PROCEDURE
- ☐ CONFIG.
- ☐ DESIGN
- ☐ UNKNOWN

SCHEDULE IMPACT : < 1 week | < 1 month | > 1 month

COST IMPACT : < 10K€ | < 1M€ | > 1M€

7)1st DISTRIBUTION

Date to :

2nd DISTRIBUTION

Date to :

CEA DAPNIA/SAP	1) NON CONFORMANCE REPORT/~~CHANGE REQUEST~~	N°396en	Page: 1/1

2)PROJECT : Herschel	MODEL : QM2	FILLED OUT BY : J. Fontignie	DATE : 04/11/05
EQUIPMENT : SPIRE N° :	SUB-ASSEMBLY : DCU N° :	BOARD(S) : DAQ/IF (tbc) N° :	N°OT : COMPAGNY :

OCCURENCE PHASE
☐ CONTROL ☐ INTEGRATION ☐ DESTOCKAGE
☐ MANUFACTURING ☒ QUALIFICATION ☐ ACCEPTANCE
☐ DESIGN/VALIDATION ☐ OTHERS

INTEGRATION LEVEL
☐ PART ☐ SUB SYSTEM
☐ SUB-ASSEMBLY ☐ INSTRUMENT
☒ EQUIPEMENT ☐ OTHER

ENVIRONMENTAL CONDITIONS
☐ AMBIANT ☐ THERM.
☐ VIBRATION ☐ EMI/EMC
☒ THERMAL VACCUM ☐ OTHER

TITLE : At cold start (-30°C), anomaly on the the high speed "data interface" to DPU

DESCRIPTION :
At cold start (-30°C), the LTU did not reveice any frame on the high speed "data interface". An oscilloscope on the electrical signal shown that clock signal was present (2.5MHz), bus gate and data signals were stuck : the DCU did not send any frame on the "data interface".
During "warm up" to -25°C, the data i/f did not become functional, despite of tentative through the "command interface" to start frame generation. During this time, the "command interface" did not show any anomaly.
At -25°C, a brief shut down of DCU (DCU off during 30s, then ON) brought the "data interface" into a working state.
During next cycles at -25°C, no anomaly on the "data interface" was noticed.
REFERENCE DOCUMENT(S) :
Test report SAp-SPIRE-HT-0290-05
SCI-PT-IIDA-04624 Issue 3.3 §5.7.3, table 5.7.3-1

3)**TECHNICAL INVESTIGATION** : **RESPONSIBLE(S) :**

On going.

CEA / Design team

4) **CORRECTIVE ACTIONS (model concerned by NCR/CR)** . **RESPONSIBLE(S) :**

To be determined, depending on investigations

PREVENTIVE ACTIONS (further models) . **RESPONSIBLE(S) :**

To be determined, depending on investigations

FINALE DECISION(S)
☐ CANCELLED
☐ USE AS IS
☐ WAIVER
☐ DOCUMENTATION CHANGE
☐ REPAIR
☐ SCRAP
☐ MODIFICATION
☐ ACTION ON OTHER PRODUCT

CLASS	CLEARANCE FOR ACTIONS	TECHNICAL MANAGER	PRODUCT ASSURANCE MANAGER	PROJECT MANAGER
☐ MINOR	Unit responsible of involved product :	Unsigned DRAFT	Unsigned DRAFT	Unsigned DRAFT
☒ MAJOR	Upper level manager :			

5)**CLOSING DATE:** **BY:** **VISA:**

6)INVOLVED PARAMETERS
☒ INTERFACES
☐ PERFORMANCES
☐ RELIABILITY
☐ SAFETY
☐ OTHER.

DIRECT CAUSES
☐ MATERIAL ☐ HARNESS ☐ TEST MEANS
☐ STRUCT.THERM. ☐ ELECTRONICS ☐ STORAGE/TRANSPORT
☐ MECANISMS ☐ SOFTWARE ☐ HANDLING/OPERATIONS
☐ EEE PART ☐ OPTICS ☐ TESTS
☐ DOCUMENTATION ☐ CLEANLINESS ☐ UNKNOWN
☐ OTHER

ROOT CAUSES
☐ DOCUMENTATION ☐ PROCEDURE
☐ MANUFACTURING ☐ CONFIG.
☐ CONTROL ☐ DESIGN
☐ OPERATION ☐ UNKNOWN
☐ OTHER

SCHEDULE IMPACT < 1 week < 1 month > 1 month COST IMPACT < 100KF < 1MF > 1MF

7)1st DISTRIBUTION
Date to :

2nd DISTRIBUTION
Date to :

Company	Project Name	NCR-No: HP-112000-ASED-NC-1804
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No.
		Critical Item Yes [X] No [ ] Revision 0
		Page 1 of 1

Nonconformance Report

NCR **Title** SPIRE EMC E-Field RS test results non conformances

NC Item **Identification** SPIRE

Next Higher Assembly HERSCHEL INSTRUMENTS AND TELESCOPE (CFE)

Drawing No | Sr No EQM

Procedure No HP-2-ASED-PR-0033

Supplier RAL | Purchase Order SPIRE EMC Test

Subsystem | Model EQM

NC Observation
Date: 30-NOV-05 Location: ASED Otn

NC Detected During Test

Description of Nonconformance

During the E-Field RS testing to HP-2-ASED-PR-0033 sec 7.4.7 following QLA of the Sweep results it was observed that SPIRE was susceptible in the range 30MHz to 40 MHz, with a peak at 34 MHz. Spot frequencies were applied to establish the threshold.

SPIRE will attach tables/plots containing the detail and measured values.
SPIRE will analyse the data and provide input

Requirements Violated
EMC E-Field RS

Initiator: Date, Name and Signature 30-NOV-05 D.Hendry

Cause of NC

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

03.02.06 ESA, ASED,SPIRE
The analysis of the data is on going at RAL and supported by JPL,
RAL state this is approx 100 hrs of work and are seeking additional personnel to perform the analysis.
ESA have commented the method of analysis and provided their input.
Follow on NRB when analysis is available (see also NCR ASED-NC-1800)
RAL will in parallel investigate the inclusion of filters on the connectors to the JFET I/F Testing with the new filters will be performed when the filters are available (not necessarily Flight parts) and at the next test suitable test slot.
RAL to advise of the progress and planning.
Suitable filters and connectors could be available from Cristek and ITT Cannon RAL to confirm

Ref. to MoMs

Classification:
Major [X] **Minor** [ ]

Customer Notification

	PA	**Engineering**						
Date:	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06
Name:	J.Raufaste	C.Schamberg	D.Hendry	B.Jackson	U.Gageur	F.Martuni	D.Griffin	E.Sawyer
Signature:								

Company	Project Name	NCR-No: HP-112200-ASED-NC-1083
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item Yes [ ] No [X] Revision 0
		Page 1 of 3

Nonconformance Report

NCR **Title** SPIRE: MIL bus functional behaviour out of requirement detect. w. IDAS

NC Item **Identification** SPIRE warm units

Next Higher Assembly SPIRE

Drawing No | Sr No

Procedure No SPIRE IDAS Check out

Supplier RAL | Purchase Order SPIRE IDAS Check out

Subsystem | Model EQM

NC Observation
Date: 18-MAY-05 Location: ASED Otn

NC Detected During Test

Description of Nonconformance

During EQM SPIRE Warm units integration tests with IDAS according to HP-2-ASED-PR-0057 "1" some values" out
of spec" are identified by the IDAS measurements as mentioned in the attached measurement records in annex 1
on page 9, 12, 14.

Requirements Violated

SPIRE IDAS Check out

Initiator: Date, Name and Signature 18-MAY-05 Lamprecht

Cause of NC
to be investigated

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

to be investigated by ASED
With respect to facility grounding: the grounding has been modified in order that all grounding lines go to the same starpoint.

see HP-2-ASED-MN-1039: Use as is for EQM, NCR is open for PFM

Ref. to MoMs

Classification:
Major [X] **Minor** [ ]

Customer Notification

	PA	Engineering	
Date:	19-MAY-05	19-MAY-05	19-MAY-05
Name:	Lamprecht	Grasl	Schlosser
Signature:			

Company	Project Name	NCR-No HP-112200-ASED-NC-1083
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No.
		Critical Item Yes [ ] No [X] Revision 0
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR/NRB Attachments

	Description	Filename	Last Updated
1	SPIRE MIL bus verification	SPIRE MIL bus.pdf	19-MAY-05 16:29:07

Company	Project Name	NCR-No: HP-121432-ASED-NC-0912
ASTRIUM FRIEDRICHSHAFEN	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 1 of 3

Nonconformance Report

NCR **Title** Discrepancy in SPIRE Harness Definition shielding of Gnd wires

NC Item **Identification** Scientific instrument Harness

Next Higher Assembly PLM Cryostat Harness

Drawing No | Sr No. C1 and C3

Procedure No

Supplier CASA | Purchase Order

Subsystem | Model FM

NC Observation
Date: 05-APR-05 Location: ASED FN | NC Detected During Inspect

Description of Nonconformance | Requirements Violated

No shielding on analogue ground wires 12 off on bundles C1 and C3

Initiator: Date, Name and Signature 14-APR-05 Hendry

Internal NRB Dispositions

SPIRE SIH CVV internal harness bundles C1 and C3 contain 12 off ground wires 30 gauge brass unshielded. see attachment 1 for NRB discussion. Follow on Customer NRB to be held 14.04.05

Ref. to MoMs H-P-ASP-MN-6180

Classification:
Major [X] **Minor** [ ]

Customer Notification
06-APR-05

Cause of NC	Corrective/Preventative Actions	Verification
Ref to Failure Report		

Date:
Name:
Signature:

Customer NRB Dispositions (Class Major Only) Ref to MoMs H-P-ASP-MN-6204

14.04.05 ESA,SPIRE,ASPI,ASED,see attached Mom

Verification

Finally Determined Cause of NC	Corrective/Preventative Actions
Ref to Failure Report	

Request for Waiver	Alert	Other related Documents
Yes [ ] No [ ] Reference:	Yes [ ] No [ ] Reference:	

NCR Close Out

NRB Approval

Organization/
Name

Date, Signature

Company	Project Name	NCR-No: HP-121432-ASED-NC-0912
ASTRIUM FRIEDRICHSHAFEN	HERSCHEL-PLANCK	Related Internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR/NRB Attachments

	Description	Filename	Last Updated
1	1st NRB H-P-ASP-MN-6180 06.04.05	H-P-ASP-MN-6180 - SPIRE C	19-APR-05 10:42:46
	Description	Filename	Last Updated
2	2nd NRB H-P-ASP-MN-620414.04.05	H-P-ASP-MN-6204 - SPIRE C	19-APR-05 10:44:21
	Description	Filename	Last Updated
3	SPIRE Harness ASED-TN-0010 data sheet	SPIRE Harness data sheet.	19-APR-05 10:45:35
	Description	Filename	Last Updated
4	Notes from NRB 3 18.04.05	ASED-NC-0912 A2.doc	19-APR-05 10:46:36

Company	Project Name	NCR-No: HP-121432-ASED-NC-0941
CASA	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 1 of 3

Nonconformance Report

NCR **Title** SPIRE SIH Double Pin allocation Pin 7 bundle C3	
NC Item **Identification** SIH SVM Internal Harness	
Next Higher Assembly Scientific instrument Harness	
Drawing No	Sr No SIH-SS-03
Procedure No SPIRE IID-B	
Supplier CASA	Purchase Order
Subsystem	Model PFM
NC Observation Date: 11-APR-05 Location: ASED FN	NC Detected During Inspect
Description of Nonconformance Double pin allocation:-Pin 7 of 128 way connector bundle C3 allocated to both FCR and "vdd7_P"/"PMW_JFETV1B+"	Requirements Violated
Initiator: Date, Name and Signature 20-APR-05 Hendry	
Internal NRB Dispositions 15.04.05 CASA E-Mail CASA confirm that the SIH-CS-03 211121 J26 pin 007 is active and not connected to faraday, attached to the E-Mail are copies the hand corrected Pin allocation List HP-2-ASED-IC-0016 and the test result sheets. Ref. to MoMs	Classification: **Major** [X] **Minor** [ ] Customer Notification 18-APR-05
Cause of NC Ref to Failure Report	Corrective/Preventative Actions / Verification
Date: Name: Signature:	
Customer NRB Dispositions (Class Major Only) Ref. to MoMs H-P-ASP-MN-6204 14.04.05 ESA,ASPI,SPIRE,ASED, ASED to raise NCR and check configuration of the H/W	Verification
Finally Determined Cause of NC Ref to Failure Report	Corrective/Preventative Actions
Request for Waiver Yes [ ] No [ ] Reference:	Alert Yes [ ] No [ ] Reference: / Other related Documents
	NCR Close Out
NRB Approval Organization/ Name Date, Signature	

Company	Project Name	NCR-No: HP-121432-ASED-NC-0941
CASA	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item Yes [X] No [ ] Revision 0
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR Treatment Sequence / Findings / Statements / Actions

Int. Ref	Actionee	Due Date	Action	Conclusion / Remark	Closed
C2-1	CASA	22-APR-05	Check the build status of the SVM harness and ensure documentation is amended and covered by NCR		Yes [ ] No [X]

Company	Project Name	NCR-No: HP-112000-ASED-NC-1248
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item: Yes [X] No [ ] Revision: 3
		Page 1 of 3

Nonconformance Report

NCR **Title** SPIRE SIH PSW_JFETV Gnd open line

NC Item **Identification** SPIRE

Next Higher Assembly HERSCHEL INSTRUMENTS AND TELESCOPE (CFE)

Drawing No IID-B Sr No.

Procedure No HP-2-ASED-TR-0073

Supplier CASA Purchase Order

Subsystem Model EQM

NC Observation
Date: 07-JUL-05 Location: ASED OTN

NC Detected During Integration

Description of Nonconformance

During IDAS testing the SPIRE SIH harness connections PO26/10 and PO30/21 was NOK and indicated an open
circuit.

Requirements Violated
IID-B

Initiator: Date, Name and Signature 11-JUL-05 Hendry

Cause of NC
IID-B deficiencies

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

Internal NRB 11.07.05 ASED S Idler, D.Hendry
1)ASED propose USE as IS for EQM as SPIRE advise by E-Mail "This wire is the Signal Ground Reference for the PSW array in the EQM harness and is showing open circuit. This fault should not be a holding issue as the PSW detector is an STM on the EQM. The loss of this wire will not compromise the validity of the results from the active CQM PLW Array.
2) ASED to investigate the cause of the open circuit and confirm the status of PFM

FO-NRB-15.07.05-WH, JL, RS :
GND wires have been implemented according to IID-B, lateron it was noticed by SPIRE that CVV internal GND wires were not shielded (as defined in IID-B), to avoid cross talking effects by unshielded GND wires it was decided by SPIRE to remove these GND wires CVV internally,
refer to ASED-NC-0912.

Correction 27.07.05 :
Nevertheless, during the IDAS end-to-end check, refer to ASED-TR-0073, it was recognized that no connection between P26 pin 10 to P30 pin 21 is existing.
ASED to check PFM build status.

see HP-2-ASED-MN-1248 Open connection is not used for EQM, i. e. "Use as is" for EQM.
For PFM to be investigated

Ref. to MoMs

Classification
Major [X] **Minor** [ ]

Customer Notification
11-JUL-05

Company	Project Name	NCR-No: HP-112000-ASED-NC-1248
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 3
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR Treatment Sequence / Findings / Statements / Actions

Int. Ref	Actionee	Due Date	Action	Conclusion / Remark	Closed
I0-1	Hund/Steinin ger	29-JUL-05	ASED to check PFM build status.		Yes [ ] No [X]

Company	Project Name	NCR-No: HP-112000-ASED-NC-1375
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 1 of 1

Nonconformance Report

NCR **Title** Source Sequence Counter Errors on CCS

NC Item **Identification** SPIRE

Next Higher Assembly HERSCHEL INSTRUMENTS AND TELESCOPE (CFE)

Drawing No ASED-TR-0084 Sr No

Procedure No

Supplier SPIRE Purchase Order SPIRE SFT Warm

Subsystem Model EQM

NC Observation
Date: 22-AUG-05 Location: ASED OTN

NC Detected During Test

Description of Nonconformance Requirements Violated

During the SFT a SSC (Source Sequence Count) error was detected. This means that packets arrive at the CCS in
a different order as they were produced by the instrument.
2005.234.14.15.49.260 Packet APID/Type/Stype 1280/5/1 SSC 249. SSC check failed, last SSC was 225
2005.234.14.15.49.026 Packet APID/Type/Stype 1280/3/25 SSC 225. SSC check failed, last SSC was 214
2005.234.14.15.48.992 Packet APID/Type/Stype 1280/3/25 SSC 214. SSC check failed, last SSC was 248
2005.234.14.15.48.243 Packet APID/Type/Stype 1280/1/1 SSC 226. SSC check failed, last SSC was 224
2005.234.14.15.47.809 Packet APID/Type/Stype 1280/5/1 SSC 215. SSC check failed, last SSC was 213

Further analysis needs to show where the problem is. On the IEGSE, the packets arrive in burst. This might be
related to this.

Initiator: Date, Name and Signature 23-AUG-05 S. Ilsen

Cause of NC

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

21.09.05 ASED internal
The errors on Spire HK were also seen during the HIFI and PACS IMT.
Problem to be investigated, customer NRB to be held with ESA,ASP,Terma,ASED,Spire.
Date to be arranged during the Spire IMT TRR 21.09.05

Ref. to MoMs

Classification:
Major [X] **Minor** [ ]

Customer Notification

Date:
Name:
Signature:

Company	Project Name	NCR-No. HP-112000-ASED-NC-1800
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item Yes [X] No [ ] Revision 0
		Page 1 of 1

Nonconformance Report

NCR **Title** SPIRE EMC H-Field RS Test Results non conformances

NC Item **Identification** SPIRE

Next Higher Assembly HERSCHEL INSTRUMENTS AND TELESCOPE (CFE)

Drawing No — Sr No. EQM

Procedure No HP-2-ASED-PR-0033

Supplier RAL — Purchase Order SPIRE EMC Test

Subsystem — Model EQM

NC Observation
Date: 29-NOV-05 Location: ASED Otn

NC Detected During Test

Description of Nonconformance

During the H-Field RS testing to HP-2-ASED-PR-0033 sec 7.4.5 following QLA of the Sweep results it was
observed that SPIRE was susceptible in the range 30Hz to 50 KHz.
Spot frequencies were applied to establish the threshold.
The Attached tables contain the detail and measured values

Requirements Violated
EMC H-Field

Initiator: Date, Name and Signature 30-NOV-05 D.Hendry

Cause of NC

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

03.02.06 ESA, ASED,SPIRE
The analysis of the data is on going at RAL and supported by JPL.
RAL state this is approx 100 hrs of work and are seeking additional personnel to perform the analysis.
ESA have commented the method of analysis and provided their input.
Follow on NRB when analysis is available (see also NCR ASED-NC-1804

Ref. to MoMs

Classification:
Major [X] **Minor** [ ]

Customer Notification

	PA	**Engineering**						
Date:	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06	09-FEB-06
Name:	J.Rautakoski	C.Scharmberg	D Hendry	B Jackson	U.Gageur	F Mariani	D.Griffin	E.Sawyer
Signature:								

Company	Project Name	NCR-No: HP-153300-ASED-NC-0210
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 1 of 3

Nonconformance Report

NCR **Title** PACS DPU anomalous behaviour during first test at ASED		
NC Item **Identification** PACS Digital Processing Unit		
Next Higher Assembly PACS warm units		
Drawing No	Sr No. 153300	
Procedure No		
Supplier	Purchase Order	
Subsystem	Model AVM	
NC Observation Date: 24-MAR-04 Location: Astrium / MPE	NC Detected During Test	

Description of Nonconformance — Requirements Violated

During first MilBus Tests at ASED with the PACS DPU AVM the unit behaved anomalous. After the DPU was forced to boot, no HK packets were sent. — 3270-DLL-T and 4665-TFL-T

Further investigation at MPE showed following bugs:

1) in the DPU Bootstrap software: "Subsystem Flag" (Bit 13) , "Terminal Flag" (Bit 15) and "Service Request Flag" (Bit 7) in the MIL Bus RT Status Word are set to 1, but are expected to be 0 according to PSICD requirement 3270-DLL-T (see 3.3.2 in Appendix 9).

2) in the DPU On-Board-SW:
A correct TM confirmation from the CDMU (DFE) is not accepted . The DPU SW expects wrongly a copy of the TM poll word ("Transfer Pending") to mark the end of a transfer rather than the specific BC initiated "Transfer Finished" as required in PSICD (see 4.6.1.2 in Appendix 9).

Initiator: Date, Name and Signature 06-APR-04 M. Koelle

Internal NRB Dispositions — Ref. to MoMs	Classification: **Major** [X] **Minor** [ ]
Further investigation and Bug-Fixing has to be performed Alcatel schould advise MPE respectively IFSI to fix the Problems in the PACS DPU Software and to release a new version before PACS DPU tests can continue at ASED premises with the CDMU DFE.	Customer Notification 06-APR-04

Cause of NC Ref to Failure Report	Corrective/Preventative Actions	Verification

Date:
Name:
Signature:

Company	Project Name	NCR-No: HP-153300-ASED-NC-0210
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item Yes [X] No [ ] Revision 0
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR/NRB Attachments

	Description	Filename	Last Updated
1	SAT-RP-0401	HP-SAT-RP-0401_DraftA1.pd	06-APR-04 15:53:15

Company	**Project Name**	NCR-No: HP-112000-ASED-NC-1340
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item:Yes [X] No [ ] Revision 0
		Page 1 of 3

Nonconformance Report

NCR **Title** SPIRE: FPU SIH connectors not fully fixed after fastening of fix. screws	
NC Item **Identification** SPIRE instrument Cryoharness	
Next Higher Assembly SPIRE cryostat units	
Drawing No	Sr No. EQM
Procedure No	
Supplier RAL	Purchase Order
Subsystem	Model EQM
NC Observation Date: 08-AUG-05 Location: ASED Otn	NC Detected During Integration

Description of Nonconformance Requirements Violated

During/ after integration of the SIH SPIRE connectors to the SPIRE FPU it was observed that in this integrated status a slight movement by appr. 0,5mm of the connectors backshells is possible.

Remark: With ASED Glenair Cannon MDM Connectors mounted at the Mass dummies not such problem has been
detected yet, therefore it is expected this problem is related to the JPL connectors mounted on the SPIRE EQM FPU.

Initiator: Date, Name and Signature 08-AUG-05 Lamprecht/ Grasl

Cause of NC

Corrective/Preventative Action(s)

Verification

Internal NRB Dispositions

For EQM: Use as is, since no vibrationtest will be performed and for the planned activities at the EQM the actual fixation of connectors is sufficient.

For PFM: Investigation about possible improvement of the SIH connector fixation to be performed since on PFM this connector fixation has to withstand vibration loads caused by the vibration systemtests as well during the launch to the orbit. --> SPIRE

Ref. to MoMs

Classification:
Major [ ] **Minor** [X]

Customer Notification

	PA	**Engineering**	
Date:	08-AUG-05	08-AUG-05	08-AUG-05
Name:	E. Lamprecht	A. Grasl	J. Lang
Signature:			

Company	Project Name	NCR-No: HP-112000-ASED-NC-1340
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item: Yes [X] No [ ] Revision 0
		Page 3 of 3

Nonconformance Report - Continuation Sheet -

NCR/NRB Attachments

	Description	Filename	Last Updated
1	NC-ASED-1340 signed	NC-ASED-1340.pdf	10-AUG-05 20:16:25

Declared Materials List
Photo detector for stray light tests

Issue # 1		**DECLARED MATERIALS LIST**																**17/5/06**		
Project:	**Herschel-SPIRE**																			
Institute:	**Cardiff University**																			
Prepared by:																				
Category:	**2**	**Copper & copper alloys**																		
Item #	Commercial ID	Chemical nature and type of product	Procurement information	Processing parameter	Use & location	Environment code			Size code	Approval status							ESA approval & comments	Project sign	ESA sign
						R	A	T		QUT	SOC	CORR.	FLAMM	OFF	Justification	Status of contractor			
2-1	OFHC Copper 99.99%	1" diameter copper bar BS3839 C110 C of C# L.41568	Columbia metals Ltd, Titley Bawk Avenue, Wellingborough road, Earls barton, Northampton, NN6 0LA	Machined,	Detector body	I	V	1	W1							ISO9002			

Issue # 1		DECLARED MATERIALS LIST	HSO-CDF-LI-074
Project:	**Herschel-SPIRE**		
Institute:	**Cardiff University**		
Prepared by:	**Peter Hargrave**		
Category:	**10**	**Adhesives, coatings, varnishes**	

Item #	Commercial ID	Chemical nature and type of product	Procurement information	Processing parameter	Use & location	Environment code			Size code	Approval status							ESA approval & comments	Project sign	ESA sign
						R	A	T		QUT	SOC	QOBS	FLAMM	QEF	Justification	Status of contractor			
10-1	Epotek-920FL	Two-part loaded thermally conductive epoxy. Cert. of analysis#90-3421/67-3421	Promatech Ltd, 2 Wilkinson Road, Cirencester, Gloucestershire, GL7 1YT	Mixed as per manufacturers instructions. Cured at 80°C for 4 Hours.	General adhesive	I	V	1	W1						ESA approved epoxy				
10-2	Epotek-920	Two-part loaded thermally conductive epoxy. Cert. of analysis#45-3421/67-3421			General adhesive	I	V	1	W0						ESA approved epoxy				

OPEN WORK STATUS RECORD

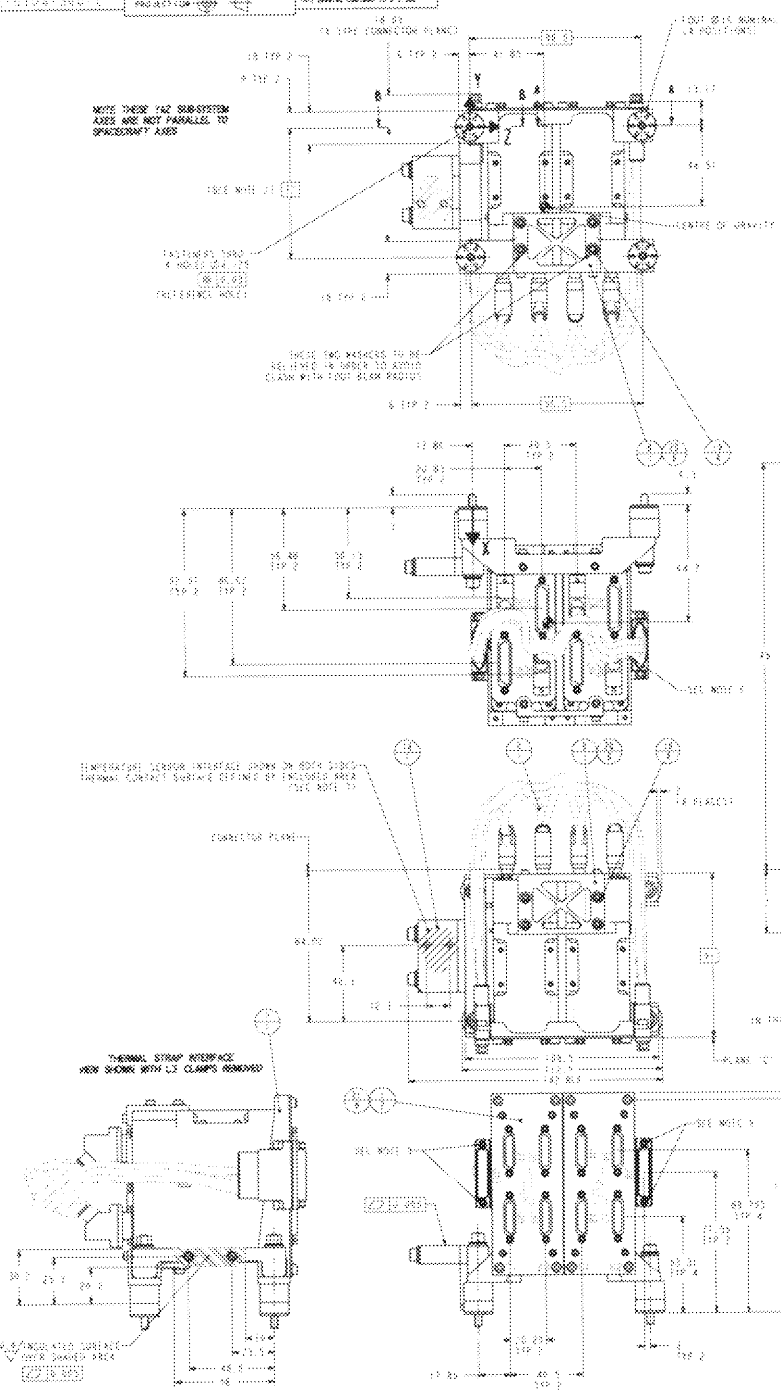
Open work as identified during DRB on 11 and 12 November 2004

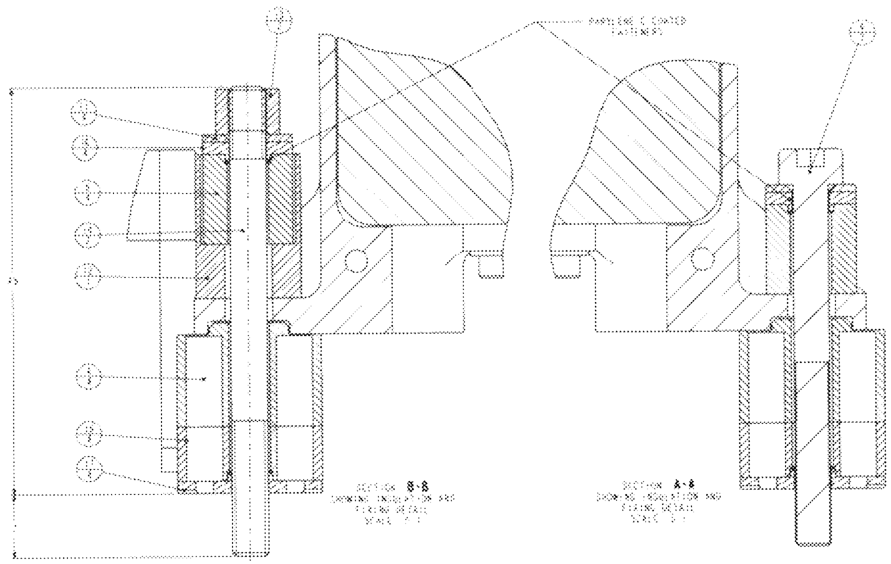
Updated 6/12/04
Updated 6/1/05
Updated 12/4/05
Updated 16/5/06

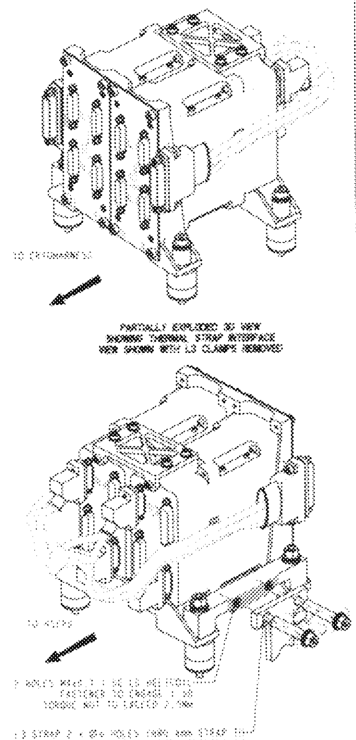
	OPEN Work	Status
	Apply Scotchweld inside the JFET carbon fibre feet's	Done
	Exchange Damaged JFET	Completed 18/11/04
	Swap level 0 Straps	fitted
	FPU external alignement & fit alignement cube	Fitted 18/11/04
	MGSE proof load test (To be ready for !7/11/04)	Done
	Change DCU/FCU external power supply cable	N/A
	Integration of the EMI backshell (performed by ASED)	done by Astrium
	Grounding of warm units (normal work, performed by ASED, see AI 18)	doneby Astrium
	For transportation, the FPU is sealed in plastic bags, and flushed with dry nitrogen	Done
	Fit "connector saver" to 4 JFET connectors	Not required

For stray light test delivery

	Fit Photo detector at EADS	To be done







CONNECTOR TABLE

LABEL	TYPE	FUNCTION
J1–J8	[illegible]	ALL SIGNAL ITEMS TO CRYOHARNESS
J9–J10	[illegible]	BIAS WIRES FROM CRYOHARNESS
J11–J14	[illegible]	SIGNALS IN FROM DETECTORS
J15–J18	[illegible]	BIAS FEEDS INTO MODULES

ITEM	PART NO	DESCRIPTION	QTY	MASS/ITEM	TOTAL MASS	COMMENTS
1	[illegible]	JFET MODULE	2	[illegible]	[illegible]	SPL SUPPLY
2	JFET HARNESS	BACKHARNESS [illegible]	1	[illegible]	[illegible]	SPL SUPPLY
3	HARNESS CLIP		2			
4	[illegible]	[illegible] THERMAL STANDOFF	4	[illegible]	[illegible]	
5	[illegible]	[illegible] STANDOFF	4	[illegible]	[illegible]	
6	[illegible]	[illegible]	2	[illegible]	[illegible]	
7	[illegible]	[illegible]	1	[illegible]	[illegible]	
8	[illegible]	[illegible]	1	[illegible]	[illegible]	
9	[illegible]	[illegible]	1	[illegible]	[illegible]	
10	[illegible]	[illegible]	2	[illegible]	[illegible]	
11	[illegible]	THERMAL STANDOFF WASHER	4	[illegible]	[illegible]	
12	[illegible]	THERMAL [illegible]	1	[illegible]	[illegible]	
13	[illegible]	[illegible]	2	[illegible]	[illegible]	
14	[illegible]	[illegible]	1	[illegible]	[illegible]	
15	[illegible]	THERMAL STANDOFF [illegible]	4	[illegible]	[illegible]	
16	[illegible]	[illegible] WASHER	4	[illegible]	[illegible]	
17	[illegible]	[illegible] WASHER	4	[illegible]	[illegible]	
18	L3 STRAP	L3 STRAP	1	N/A		[illegible] SUPPLY
19	[illegible] WASHER	WASHER	8	[illegible]	[illegible]	[illegible]
20	[illegible]	FASTENER	12	[illegible]	[illegible]	[illegible]
21	[illegible]	FASTENER	8	[illegible]	[illegible]	[illegible]
				ASSEMBLY MASS	[illegible] GRAMS	

NOTES:

1. BOND ITEM 15 TO 4 PRIOR TO ASSEMBLY. BOND ITEMS 14 & 16 TO 3 PRIOR TO ASSEMBLY. ITEMS 3 & 4 TO BE PERMANENTLY GLUED TO MATING SURFACES.
2. TO ACHIEVE THE CORRECT MOUNTING INTERFACE DIMENSION, AND TO COMPENSATE FOR ACTUAL JFET MODULE SIZES, THE FOLLOWING PROCEDURE WILL BE FOLLOWED: PARTS 1 ARE TO BE MOUNTED TO PART 6. MEASURE FROM THE TOP OF PARTS 1 SHOWN AS PLANE "D" TO THE TAIL END FACE OF PART 6, NOTING THE TWO VALUES. MACHINE RAISED PADS ON PART 7 TO REMOVE (VALUE - 83.3). PADS ON ITEM 8 WILL ALSO NEED MACHINING IF TRIAL ASSEMBLY OF RACK ON FLAT SURFACE SHOWS GAPS BEFORE FASTENERS ARE TIGHTENED.
3. ITEMS 6 TO BE TORQUED TO 2.1 Nm ABOVE LOCKING INSERT RUNNING TORQUE. ITEMS 13 TO BE TORQUED TO 2.1 Nm WITH STUD SET TO DEPTH SHOWN IN NON LOCKING INSERT.
4. UNIT SHOWN FITTED WITH BACK-HARNESS MATING TO J9 - J10 & J15 - J18 BECAUSE THIS WILL BE FITTED BEFORE ITEM IS INTEGRATED TO MWB.
5. HEAT CAPACITY AT RT ~ 789 JOULES / KELVIN.
6. FITTED BACKHARNESS TO AFFORD OPEN ACCESS TO 51 WAYS AS SHOWN.
7. AFFIX ONE SENSOR WITH LONG BOLTS AND THEN THE OTHER ON THE REVERSE WITH NUTS.
8. ITEMS 6 AND 11 TO BE PRE-FITTED BEFORE ITEM 2 IS FITTED.
9. ONLY 3mm JACKSCREW LENGTH GUARANTEED BELOW THE MATING PLANE.
10. INNER SURFACES OF PARTS 4, 5 AND 15 TO BE CLEAN OF CARBON PARTICLES AND DEGREASED WITH G222A AFTER ASSEMBLY.

1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ISSUED
ISSUE	DATE	MOD No	DRN BY	CHKD	APPD	STATUS

TOLERANCES UNLESS STATED — FINISH: CLEAN, REMOVE ALL BURRS — ORIGINAL SCALE: DO NOT SCALE

MATERIAL & SPEC: SEE DETAILS — SURFACE TEXTURE: SEE DETAILS

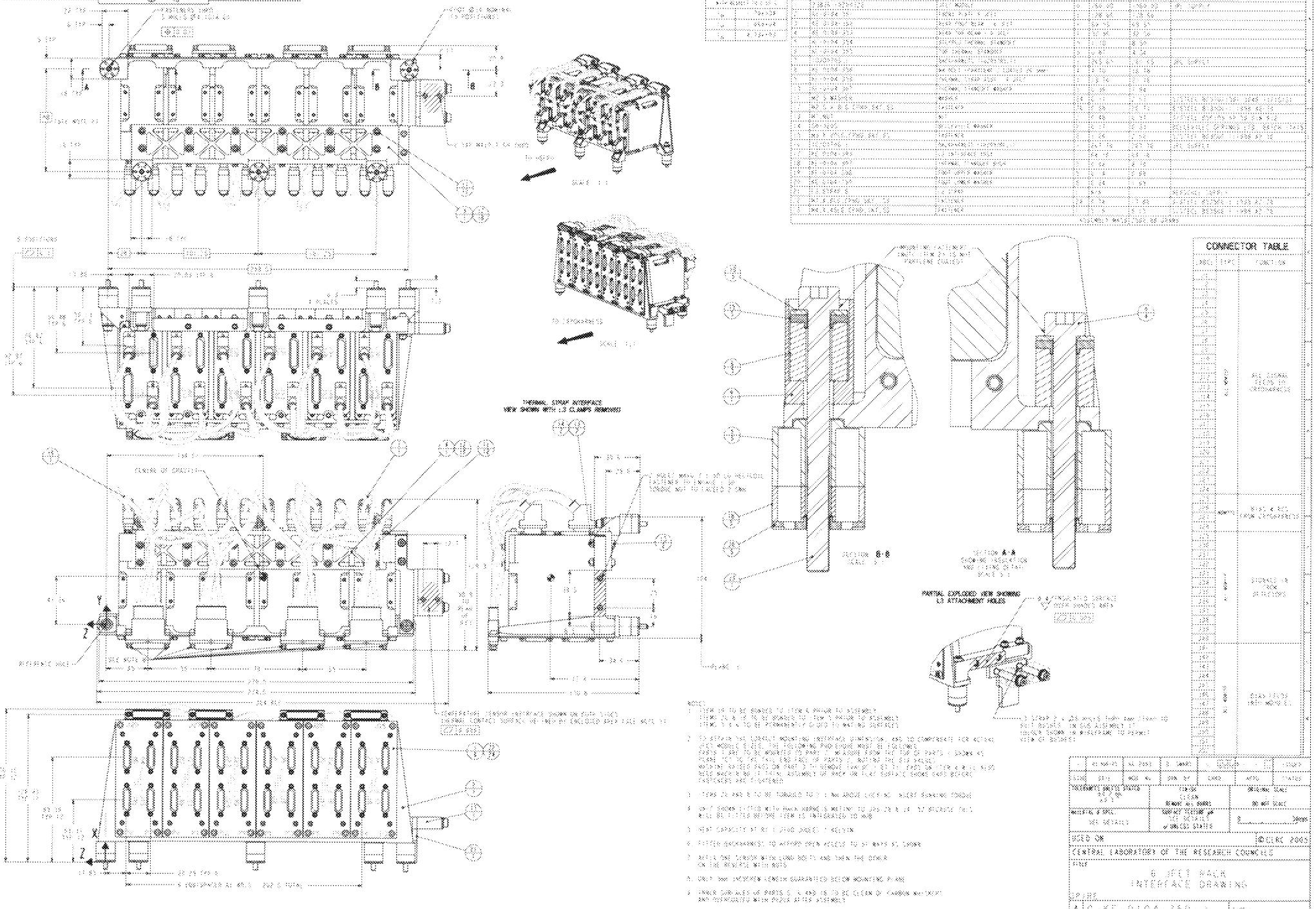
USED ON

CENTRAL LABORATORY OF THE RESEARCH COUNCILS

TITLE: 2 JFET RACK INTERFACE DRAWING

A | 0-XE-0104-360-L

FORM.MECH.009.1.SSTD.A0


CONNECTOR TABLE
THERMAL STRAP INTERFACE
VIEW SHOWING WITH L.H. CLAMPS REMOVED
PARTIAL EXPLODED VIEW SHOWING
L.H. ATTACHMENT PADS
CENTRAL LABORATORY OF THE RESEARCH COUNCILS
B JEET RACK
INTERFACE DRAWING

	Name	Dep./Comp.		Name	Dep./Comp.
x	Alberti von Mathias Dr.	AOE22		Sonn Nico	AOE51
	Barlage Bernhard	AED11		Steininger Eric	AED44
x	Bayer Thomas	AOA52	x	Stritter Rene	AED11
	Brune Holger	AOA55		Thörmer Klaus-Horst Dr.	OTN/AED65
	Fehringer Alexander	AOE13		Wagner Klaus	AOE22
x	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	AOA52		Wöhler Hans	AOE22
	Gerner Willi	AED11		Wössner Ulrich	ASE442
x	Grasl Andreas	OTN/AOA54			
	Grasshoff Brigitte	AET12			
	Hauser Armin	AOE22			
x	Hendry David	Terma Resid.			
	Hengstler Reinhold	AOA 5			
	Hinger Jürgen	AOE22	X	Alcatel	ASP
	Hofmann Rolf	ASE442	X	ESA/ESTEC	ESA
x	Hohn Rüdiger	AED65		**Instruments:**	
	Huber Johann	AOA52		MPE (PACS)	MPE
	Hund Walter	ASE442	x	RAL (SPIRE)	RAL
x	Idler Siegmund	AED432		SRON (HIFI)	SRON
	Ilsen Stijn	Terma Resid.		**Subcontractors:**	
	Iványi von András	FAE22		Air Liquide, Space Department	AIR
x	Jahn Gerd Dr.	AOE22		Air Liquide, Space Department	AIRS
	Kalde Clemens	APE3		Air Liquide, Orbital System	AIRT
	Kameter Rudolf	OTN/AOA54		Alcatel Bell Space	ABSP
	Kettner Bernhard	AET42		Astrium Sub-Subsyst. & Equipment	ASSE
	Knoblauch August	AET32		Austrian Aerospace	AAE
	Koelle Markus	AOA53		Austrian Aerospace	AAEM
x	Kroeker Jürgen	AED65		APCO Technologies S. A.	APCO
	Kunz Oliver Dr.	AOE22		Bieri Engineering B. V.	BIER
x	Lamprecht Ernst	OTN/ASI21		BOC Edwards	BOCE
	Lang Jürgen	ASE442		Dutch Space Solar Arrays	DSSA
x	Langenstein Rolf	AED15		EADS CASA Espacio	CASA
x	Langfermann Michael	AOA51		EADS CASA Espacio	ECAS
	Mack Paul	OTN/AOA54		EADS Space Transportation	ASIP
	Müller Jörg	AOA52		Eurocopter	ECD
	Müller Ralf	FAE22		European Test Services	ETS
	Peltz Heinz-Willi	AOE13		HTS AG Zürich	HTSZ
	Pietroboni Karin	AED65		Linde	LIND
	Platzer Wilhelm	AED22		Patria New Technologies Oy	PANT
	Reichle Konrad	AOA52		Phoenix, Volkmarsen	PHOE
	Reuß Friedhelm	AED62		Prototech AS	PROT
	Rühe Wolfgang	AED65		QMC Instruments Ltd.	QMC
	Runge Axel	OTN/AOA54		Rembe, Brilon	REMB
	Sachsse Bernt	AED21		Rosemount Aerospace GmbH	ROSE
	Schink Dietmar	AED44		RYMSA, Radiación y Microondas	RYM
x	Schlosser Christian	OTN/AOA54		SENER Ingenieria SA	SEN
	Schmidt Rudolf	FAE22		Stöhr, Königsbrunn	STOE
	Schweickert Gunn	AOE22		Terma A/S, Herlev	TER