

estec (european space research and technology centre)

MECHANICAL SYSTEMS LABORATORY (TOS-MCV)

Doc.No:	TOS-MCV/2004/2965/In/BL	Issue:	1	Revision:	0
Lab.Act.No:	Eb164.04.538/5	Project:	STEREO	Date:	17.03.2004
Subject:	SEPT TV Cycling Test - PTR of FM 2				

Minutes of Meeting

Participants: S. Böttcher, J. Falenski (University of Kiel, D)

L. Duvet (D/SCI-A)

B. Lehmann (secretary), (TOS-MCV)

Date:17.03.2004Location:Mechanical Systems Laboratory (Eb164 at ESTEC)

SEPT FM 2 - Post Test Review

1. Test configuration deviations none

2. Test procedure deviations

none

3. Test results

3.1. SEPT FM2

All functional tests of SEPT FM 2 were executed in accordance with the tests defined in the step-by-step sequence of the test plan, STEREO-ETKI-006.

3.2.Facility

The FM 2 was subjected to 7 TV cycles (one survival and 6 qualification cycles) in the range from -40°C to +50°C. The hot and cold dwells were realised according to the test procedure with a change rate of \leq 1K/h. The implemented bake-out was conducted at a temperature of 48.5°C (see annex 1).

The pressure inside the facility was kept at any time below <10⁻⁵mbar during the cycling and off-gassed components were collected on a liquid Nitrogen trap installed in the facility.

4. NCR

4.1. SEPT FM 2

NCR 4: Detector "short" in SEPT-E sensor side A, detector electron and proton 4.2. Facility

NCR 5: Temperature exceeding during cycling on TC2 being mounted on the base plate of SEPT-E (see annex 2).

5. Open work, AOB

The facility report will be provided to the customer within 3 weeks. The data file will be send to the customer by email. The photos will be send on a CD.



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6. Conclusion

The electronic parts of SEPT FM 2 passed successfully the TV cycling test consisting of one survival and 6 operational cycles in the qualification temperature range from -40°C to +50°C. The failure of the detectors has to be investigated (see also PTR of FM 1, TOS-MCV/2004/2964/In/BL).



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oc.No:	TOS-MCV/2004/2965/ln/BL Eb164.04.538/5		Issue:	Issue: 1 Project: STEREO		0
b.Act.No:			Project:			17.03.2004
ubject:	SEPT TV Cycli	ng Test - PTR of FM 2				
nnex 1:	SEPT FM 2	Test Temperatures				
	SEPT FM 2					
	Project:	SEPT_FM2_TV				
	Printout:	17-03-2004				
	TV Cycling Test					
	Test Specimens	Temperatures				
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MECHANICAL SYSTEMS LABORATORY (TOS-MCV) Doc.No: TOS-MCV/2004/2965/In/BL Revision: Issue: 1 0 Lab.Act.No: Eb164.04.538/5 STEREO Date: 17.03.2004 Project: Subject: SEPT TV Cycling Test - PTR of FM 2 **SEPT FM 2** Project: SEPT_FM2_TV Printout: 17-03-2004 TV Cycling Test Average Shroud Temperature





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Doc.No: .ab.Act.No: Subject:	TOS-MCV/2 Eb164.04.5 SEPT TV C	2004/2965/In/B 338/5 Cycling Test - P ⁻	L FR of FM 2	Issue: Project:	1 STEREO	Revision: Date:	0 17.03.2004
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	Project:	SEPT_					
	Printout:	17-03-3	2004				
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Annex 2: Temperature non-conformities

The temperatures of SEPT-E on the bottom were exceeded during cycle 3 and 4 at the minimum temperature limit for a short period of time (-43.8/-44.8°C versus -43.0°C). All TC's allocated to the sensors stayed within the requirements.



The test procedure allows to boost the equipment by undershooting shroud and/or cold plate. TC 2 was linked quite well to the cold plate via the Aluminium washers and exceeded by approximately -1°C and -2°C the lower limit.