CSR

ENGINEERING CHANGE ORDER
CENTER FOR SPACE RESEARCH
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

ACIS
ECO 36-911

DWG. NO.	NEW REV.	DRAWING TITLE
36-01306	C	ACIS TV Test Procedure
36-		
36-		
36-		

REASON FOR CHANGE:
Redlined procedure for flight unit DA.

DESCRIPTION OF CHANGE:
Rev. B was written for the first ACIS TV Test at the Lincoln Labs which tested the flight PSMC, DEA, DPA, SS, and radiators with the Engineering Unit DH and XRCF Focal Plane, from Feb 14 – 20, 1997. Rev. C is a redlined version of the Rev B procedure with modifications to refer to the flight DH and Focal Plane*, which were swapped into the ACIS Instrument and tested at the LL from April 6 – 12, 1997, during the second ACIS TV Test.

* AND FLIGHT VENT VALVE ASS'Y

	SIGNATURE	DATE	REMARKS:
ORIGINATOR E.M.Sen	Ellen M Sen	5/6/97	
Contamination Eng	M J Bruch	5-13-97	
FABRICATION MGR			
STRUCTURE			
QUALITY ASSURANCE	Brian Klatt	5/8/97	Structural Category
DEPUTY PROGECT MGR		5/22/97	
PROJECT MGR		5/8/97	

REVISIONS

Letter	ECO No.	Description	Checked	Approved	Date
A	36-836	Initial Release	BKlatt	RFGoeke	1/17/97
B	36-853	Incorporate LMA and MSFC comments	ESen	RFGoeke	2/7/97
C	36-911	Redlined Procedure for Flight Unit DA	ESen	[signature]	5/22/97

	NAME	DATE
Drawn:	Ellen M. Sen	1/16/97
Checked:	Brian Klatt	1/17/97
Approved:	R. F. Goeke	1/17/97
Released:	D. Gage	1/17/97

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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ACIS
Thermal Vacuum Test Procedure

Size	Code Identification No.	Drawing No.	Rev.
T	80230	36-01306	C

Scale: NONE

Return-Path: esen
Received: from localhost by ireland AA19770; Fri, 4 Apr 1997 15:41:10 -0500
To: wfm, goeke, mwb, matt, bk, eab, pct, nes, jimf,
Neil.W.Tice@everest.den.mmc.com, rae@ll.mit.edu
Cc: esen
Subject: Plan for ACIS TV Test #2, Rev.B
Date: Fri, 04 Apr 97 15:41:08 -0500
From: esen
X-Mts: smtp

Note revision of step 26.

The following plan for ACIS TV Test #2 was drafted by a group of MIT engineers and scientists during a meeting today.

1. Shut TV chamber door.
   Keep gate valve to x-ray cart (under vacuum, with turbo pump off) shut.
   Heat OWS holder to +40C and control TQCM heatsink to +20C with Neslabs.
2. Pumpdown. At crossover between roughing pump and cryopump, open gate valve between TV chamber and x-ray cart.
3. When vacuum is in -6 Torr range, turn on ACIS. Heat OWS holder to +85C.
4. Heat ACIS to +60C for outgassing soak for 24 hours.
   Burn flight s/w 1.3.
   Collect TQCM data at +10C crystal temp to compare with TV Test #1 data.
5. Turn off SIMSIM heaters, FEP's, CCD's. Keep FP above +40C, warmer than DH.
6. Open low-conductance vent valve at -6 Torr range. Wait 2 hours minimum.
7. Open high-conductance vent valve.
8. Cycle vent valves shut and open, ending in open states.
9. Turn on LN2. Let DEA/DPA and PSMC cool. Achieve -7 Torr range.
10. Open ACIS DH door.
11. Cycle DH door shut and open.
12. Turn off ACIS bakeout mode. Let DH cool, keeping FP 5-10C warmer than DH.
13. Cool ACIS to cold soak temperatures.
14. ACIS cold operating soak.
    Perform 8 hours of science testing.
    Perform Short Form Test.
    Exercise vent valves and DH door, ending in open states.
    Transcribe heater and thermistor resistance values.
    Perform LED test.
15. Transition to hot soak
    Warm up PSMC first to +46C.
    Vary voltage
    Warm up DEA/DPA, keeping +X SIMSIM panel below +5C.
    Exercise vent valves, ending in open states.
16. ACIS hot soak
    Perform 8 hours of science testing.
    Perform Short Form Test.
    Transcribe heater and thermistor resistance values.
    Turn off FP temperature controller for 8 hours to evaluate hot margin.
    Perform stray light test.
    Perform PSU modes.
17. Heat FP and DH to bakeout temperatures.
    Perform Long Form Test during temperature transition.
18. Close DH door.
19. Close vent valves (first high-, then low-conductance).
20. Warm up LN2 shroud, ~~and heat ACIS~~ to ~~+60C outgassing temp.'s for 24 hours.~~ 1238 temp's
    ~~If TQCM frequency < 5 Hz/hr., proceed before 24 hours are elapsed.~~
21. ~~Cool~~ ACIS ~~to~~ 1238 temperatures, as follows:
    FP at +55C
    DH at +50C
    DEA at +43C
    DPA at +48C
    PSMC at +46C
22. Lower OWS holder to +6C (to achieve +10C at witness sample).
23. Expose OWS for 24 hour 1238 certification.
24. Raise OWS holder to +18C.

25. Turn off ACIS.
26. Re-pressurize chamber only to 1-25 Torr, for Bob Goeke to verify the DH door is closed.
27. With Goeke approval, re-pressurize TV chamber.