

ACIS Verification Summary Report

Specification:	ACIS Contract End Item Specification
Requirement Number/Title:	3.7.2.2.1 ACIS Detector Housing Control (VRSD 3.7.2.2.1-2)
Requirement Statement:	For bakeout purposes, the ACIS TCS shall be capable of raising the on-orbit Detector Housing temperature to $25 \pm 3^\circ \text{C}$.
Verification Method:	<i>Similarity with EU DH Test</i>
Procedure Number:	<i>MIT 36-01306, Rev's B and C</i>
Configuration:	<i>Rev. B documents ACIS TV Test #1, with the flight ACIS, except for the EU DH and flight-like FP. Rev. C documents ACIS TV Test #2, with the flight ACIS, including the flight DH and FP.</i>
Cycle Time:	<i>In excess of 31 hours</i>
Verification Discussion/Results:	
<p><i>MIT Verification Report 36-01510.086 documents ACIS TV Tests #1 and #2. The flight-like EU DH was controlled to $25 \pm 3^\circ \text{C}$ for more than 31 hours with ACIS radiators cooled by the LN2 shroud in TV Test #1. The flight DH was heated above $+25^\circ \text{C}$ in Test #2, but both its operational and survival heaters were used to hasten the test, so that test alone did not prove the capability of the operational heater to heat the DH to $+25^\circ \text{C}$ in bakeout mode.</i></p>	

Ellen M Sen 5/15/97
 ACIS Cognizant Engineer Date

Element:
ACIS

Requirement Number:
3.7.2.2.1-2

Verification Item:
3.7.2.2.1-2

Requirement Title:
ACIS Detector Housing Control

AXAF-I Verification Requirement Compliance Data Submittal

Evaluators:
THRM

Type of Review:
 Verification Item Closure
 Requirement Closure

Compliance Data/Location:
MA-08/ACIS-110-77-01/Rm 522 Bldg 4200 (Part 1 of 3)
MA23/ACIS-600-A-05VR/Rm 522 Bldg 4200 (Part 2 of 3)
MA-100/36.01510.211/Bldg 4200 Rm 522 (MIT Closure Report) (Part 3 of 3)

Verification Method
Test

Comments:
*Agreed.
However, verification could be completed by
"Similarity" with engineering unit Detector Assembly.
During T-V test #1 (Feb-March, 1997), EU was
taken to bakeout temperatures in the Lincoln Lab
vacuum chamber without help of survival heaters.
Both flight + EU are identical, including heaters.
T-V test #1 report has been submitted as 36-01510.086*

Status
Open 5/9/97 due 6/6/97 (Parts 1 & 2)
Open 5/27/97 due 6/27/97 (Part 3 of 3)

Recommendation: Approve
 Disapprove
 Other (Explain)

Action Required for Closure:
This should have been analysis & test verification. I am approving partly based on analysis since flight detector housing bakeout heater never heated unit to bakeout temperatures (alone without use of survival heaters as well). Schedule drove less-than-optimum testing of flight unit. Will receive final verification at ISIM level testing.

MSFC Evaluator: John Sharp Date: 6/17/97 Organization: NASA/MSFC/ED63 Phone Number: 205-544-5156

Disposition: Approve
 Disapprove
 Other (Explain)

Action Required for Closure:
John's comment is a good one. We will hold this open until ISIM thermal balance. Provide evidence that the bakeout heaters on housing alone can heat to bakeout temps during ISIM testing.

Chief Engineer: Anthony R. Lavoie Date: 6/26/97