

ACIS Verification Summary Report

Specification:

ACIS Contract End Item Specification

Requirement Number/Title:

3.2.5.3.2 On Orbit Extremes (VRSD 3.2.5.3.2)

Requirement Statement: The on-orbit extremes shall be based upon worst case combinations of the space environment thermal parameters and the spacecraft parameters, i.e., surface thermo-optical properties, insulation performance, power level, Beta angle, altitude, and attitude.

Verification Method:

Analysis

Procedure Number: *N.A.*

Configuration: *ACIS Instrument, on-orbit, installed in the ISIM.*

Cycle Time: *N.A.*

Verification Discussion/Results:

LMA Report ACIS-600-A-05VR, "Verification Assessment Report - Power and Thermal Control Structure - Thermal Analysis Report" documents that "worst-case thermal conditions for all mission phases" (para. 2.2.2) were analyzed for the ACIS Power and Thermal Control Structure, including the PSMC and Detector Assembly.

For the DEA and DPA analysis, worst-case values of boundary temperatures were used in the ACIS thermal models, as provided by Ball/TRW in CM07A. Worst-case power levels were used, as provided by MIT. Thermal optical properties were used, as selected by the participants in AXAF Thermal TOPS Telecons, for ISIM surfaces and black Aeroglyse Z306 paint.

Because the DEA and DPA are enclosed in the ISIM, their environment is not in direct view of deep space.

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Date