

ACIS Verification Summary Report

36-01515.084
20

Specification: AXAF Observatory to Science Instrument ICD (IF 1-20)

Requirement Number/Title: 3.9.1.6.6 Spacecraft Charging Effects (VRSD 3.9.1.6.6)

Requirement Statement: ACIS shall operate properly during discharge transients resulting from spacecraft charging as defined in the ICD.

Verification Method: Test

Procedure Number: ACIS-000-78-01 ACIS EMC Test Procedure

Configuration: As described in ACIS-000-78-01 ACIS EMC Test Procedure

Cycle Time:

Verification Discussion/Results:

During the performance of the ACIS Instrument Electromagnetic Compatibility test procedure (ACIS-000-78-01) on the ACIS flight unit Digital Processing Assembly (DPA), flight unit Detector Electronics Assembly (DEA), flight unit PSMC, the engineering model Detector Assembly (DA) and the flight unit harness/cable assembly a transient radiated susceptibility characterization test was performed. The purpose of this test is to characterize the ability of ACIS to operate satisfactorily in the presence of radiated fields produced by the sudden collapse of a highly charged spacecraft surface in the vicinity of the ACIS instrument. During this testing the ACIS instrument showed no signs of susceptibility to nearby arc discharges of 8-10 kv. The detailed test procedure can be found in the ACIS-000-78-01 EMC Test Procedure and the resulting verification data can be found in the Verification Assessment Report # 36-01510.0150.

To further verify the capability of the ACIS instrument to operate satisfactorily in the presence of spacecraft charging effects, it is planned that a Spacecraft charging effects test will be performed during integration and verification testing of the integrated AXAF at TRW. The results of this Spacecraft charging effects test will be reported on after completion of the test.


ACIS Cognizant Engineer

5-23-97
Date