36-01510.222

ACIS Verification Summary Report

Specification:	ACIS Contract End Item Specification
Requirement Number/Title:	3.7.4.4 Power Isolation (VRSD 3.7.4.4-1)

Requirement Statement: All circuits receiving primary power from the AXAF-I shall be isolated from structure by a minimum of one megaohm DC.

Verification Method:	Measurement

Procedure Number: ACIS-400-24-02

Configuration: Power Supply and Mechanism Controller Testing

Cycle Time:

Verification Discussion/Results:

The "isolation measurement" section of Appendix D of the PSMC Performance Test Procedure (ACIS-400-24-02) provides the results of the primary power return to chassis structure resistance measurements. The applicable pages from this as-run procedure are attached and it can be seen that all measurements from chassis to J1 and J2 are greater than 1 Megaohm, as required.

Brent Reachal 6/3/97

ACIS Cognizant Engineer Date

APPENDIX-D

CONTINUITY & ISOLATION

1.1 CONTINUITY & ISOLATION TEST

Record the following:

Test description Performance

Cycle or axis (If applicable) N/A

Date and time 11/10/96 02:30

1.1.1 SETUP

Prior mating the UUT to the Test Tool, use a DVM and perform the following continuity and isolation tests.

Note: Use test aids, as defined, when performing continuity and isolation.

Use	SK849AC1380 - 002	with	J5, J6
	SK849AC1380 - 001	with	J7, J8, J9, J10
	SK849AC1370 - 001 & -002	with	J1, J2
	SK849AC1370 - 001 & -002	with	J3, J4
	SK849AC1360 - 001 & -002	with	J5, J6
	SK849AC1360 - 001 & -002	with	J7, J8, J9, J10

Short leads of DVM together & record reading. 0.352
For the following the actual measurement is the meter resistance minus the resistance of the shorted leads. 11-10-96

1.1.2 CONTINUITY TEST

From point	To point	Pass/Fail
J1 - B	J1 - E	≤ 1.0 Ω
	J1 - H	≤ 1.0 Ω
	J5 - W	≤ 1.0 Ω
	J7 - 47	≤ 2.0 Ω
	J7 - 71	≤ 1.0 Ω
	J9 - 17	≤ 10.5K Ω
	J9 - 24	≤ 10.5K Ω
	J9 - 35	≤ 2.0 Ω
	J9 - 88	≤ 2.0 Ω
J2 - B	J2 - E	≤ 1.0 Ω

	J2 - H	≤ 1.0 Ω
	J6 - W	≤ 1.0 Ω
	J8 - 47	≤ 2.0 Ω
	J8 - 71	≤ 1.0 Ω
	J10 - 17	≤ 10.5K Ω
	J10 - 24	≤ 10.5K Ω
	J10 - 35	≤ 2.0 Ω
	J10 - 88	≤ 2.0 Ω
J3 - F	J3 - G	≤ 1.0 Ω
	J3 - H	≤ 1.0 Ω
	J3 - J	≤ 1.0 Ω
	J3 - T	≤ 1.0 Ω
	J3 - W	≤ 1.0 Ω
	J3 - U	≤ 1.0 Ω
	J3 - X	≤ 1.0 Ω
	J3 - Y	≤ 1.0 Ω
	J3 - d	≤ 1.0 Ω
	J3 - e	≤ 1.0 Ω
	J3 - f	≤ 1.0 Ω
	J3 - Chassis	≤ 1.0 Ω
J4 - F	J4 - G	≤ 1.0 Ω
	J4 - H	≤ 1.0 Ω
	J4 - J	≤ 1.0 Ω
	J4 - T	≤ 1.0 Ω
	J4 - W	≤ 1.0 Ω
	J4 - U	≤ 1.0 Ω
	J4 - X	≤ 1.0 Ω
	J4 - Y	≤ 1.0 Ω
	J4 - d	≤ 1.0 Ω
	J4 - e	≤ 1.0 Ω
	J4 - f	≤ 1.0 Ω
	J4 - Chassis	≤ 1.0 Ω
J5 - B	J5 - C	≤ 2.0 Ω
	J5 - K	≤ 2.0 Ω
	J5 - S	≤ 2.0 Ω
	J5 - U	≤ 2.0 Ω

	J5 - W	≤ 1.0 Ω
	J5 - X	≤ 1.0 Ω
	J5 - Z	≤ 2.0 Ω
	J5 - f	≤ 2.0 Ω
	J5 -m	≤ 1.0 Ω
J8-87	J5 - w	≤ 1.0 Ω
J5-B	J5 - HH	≤ 2.0 Ω
	J9 - 42	≤ 1.0 Ω
	J9 - 58	≤ 1.0 Ω
J6 - B	J6 - C	≤ 2.0 Ω
	J6 - K	≤ 2.0 Ω
	J6 - S	≤ 2.0 Ω
	J6 - U	≤ 2.0 Ω
	J6 - W	≤ 1.0 Ω
	J6 - X	≤ 1.0 Ω
	J6 - Z	≤ 2.0 Ω
	J6 - HH	≤ 2.0 Ω
	J6 - w	≤ 1.0 Ω
	J10 - 42	≤ 1.0 Ω
	J10 - 58	≤ 1.0 Ω
J9 - 7	Chassis	≤ 10.5K Ω
	J3 - F	≤ 10.5K Ω
	J3 - W	≤ 10.5K Ω
J9 - 9	Chassis	≤ 10.5K Ω
	J3 - T	≤ 10.5K Ω
J9 - 19	J3 - X	≤ 10.5K Ω
J9 - 64	J7 - 68	≤ 2.0 Ω
J9 - 92	J5 - FF	≤ 10.5K Ω
J10 - 7	Chassis	≤ 10.5K Ω
	J4 - F	≤ 10.5K Ω
	J4 - W	≤ 10.5K Ω
J10 - 9	Chassis	≤ 10.5K Ω
	J4 - T	≤ 10.5K Ω
J10 - 19	J4 - X	≤ 10.5K Ω
J10 - 64	J8 - 68	≤ 2.0 Ω
J10 - 92	J6 - FF	≤ 10.5K Ω

T_____

1.1.2 ISOLATION TEST

From point	To point	Pass/Fail
Chassis	J1 - B	≥ 1 MΩ
	J2 - B	≥ 1 MΩ
	J7 - 10	≥ 1 MΩ
	J7 - 25	≥ 1 MΩ
	J7 - 34	≥ 1 MΩ
	J7 - 47	≥ 1 MΩ
	J7 - 54	≥ 1 MΩ
	J8 - 10	≥ 1 MΩ
	J8 - 25	≥ 1 MΩ
	J8 - 34	≥ 1 MΩ
	J8 - 47	≥ 1 MΩ
	J8 - 54	≥ 1 MΩ
	J9 - 17	≥ 1 MΩ
	J9 - 24	≥ 1 MΩ
	J9 - 35	≥ 1 MΩ
	J9 - 68	≥ 10.0K Ω
	J10 - 17	≥ 1 MΩ
	J10 - 24	≥ 1 MΩ
	J10 - 35	≥ 1 MΩ
	J10 - 68	≥ 10.0K Ω
J1 - B	J7 - 10	≥ 1 MΩ
	J7 - 13	≥ 1 MΩ
	J7 - 25	≥ 1 MΩ
	J7 - 34	≥ 1 MΩ
	J7 - 54	≥ 1 MΩ
	J7 - 68	≥ 1 MΩ
	J8 - 10	≥ 1 MΩ
	J8 - 13	≥ 1 MΩ
	J8 - 25	≥ 1 MΩ
	J8 - 34	≥ 1 MΩ
	J8 - 47	≥ 1 MΩ
	J8 - 54	≥ 1 MΩ

	J8 - 68	≥ 1 MΩ
	J8 - 71	≥ 1 MΩ
	J2 - B	≥ 1 MΩ
J2 - B	J7 - 10	≥ 1 MΩ
	J7 - 13	≥ 1 MΩ
	J7 - 25	≥ 1 MΩ
	J7 - 34	≥ 1 MΩ
	J7 - 47	≥ 1 MΩ
	J7 - 54	≥ 1 MΩ
	J7 - 68	≥ 1 MΩ
	J7 - 71	≥ 1 MΩ
	J8 - 10	≥ 1 MΩ
	J8 - 13	≥ 1 MΩ
	J8 - 25	≥ 1 MΩ
	J8 - 34	≥ 1 MΩ
	J8 - 54	≥ 1 MΩ
	J8 - 68	≥ 1 MΩ

c) Step buy off.

T KG

Q 1-10-96

Element:
ACIS

Requirement Number:
3.7.4.4-1

Verification Item:
3.7.4.4-0-1

AXAF-I Verification Requirement Compliance Data Submittal

Evaluators:
POWR, EMC, EDI

Type of Review:
☐ Verification Item Closure
☒ Requirement Closure

Requirement Title:
Power Isolation

Compliance Data/Location:
MA-20/ACIS-000-78-01VR/Bldg 4200 Rm 522 (Part 1 of 3)
MA-202/36.01510.222/Bldg 4200 Rm 522 (Part 2 of 3)
MA-301/ACIS-600-A-03/Rm 522 Bldg 4200

Verification Method
Test

Comments:
TEST DATA SHOWS THAT THERE ARE TWO (2) PINS (J9-68 & J10-68) THAT FAIL TO MEET THE 1 MEGOHM ISOLATION REQUIREMENT. SUGGEST THIS VERIFICATION ITEM BE REWORKED OR MORE EXPLANATION FOR THE DATA READINGS BE INCLUDED.

EDI TOPS - CONCUR IN THE DISAPPROVAL UNTIL FURTHER DATA OR RATIONALE IS PROVIDED.
JEFF WESLEY / EB14, 6/20/97.

Both J9 and J10 are test connectors - not used in flight.

Pins 68 of both are 10K by design to prevent unit from floating during test in event chasis is not grounded. See attached Wire List

William Mayer 7/16/97

Status
Open 5/13/97 due 6/27/97

Recommendation:
☐ Approve
☒ Disapprove
☐ Other (Explain)

Action Required for Closure:

MSFC Evaluator:	Date:	Organzation:	Phone Number:
STEVEN L. LUNA	6/20/97	EB11	4-3402

Disposition:
☐ Approve
☐ Disapprove
☐ Other (Explain)

Action Required for Closure:
Explain why there is only 10k ohms between chassis and the two pins mentioned above and not 1 Mohm. Is this by design? If not, need waiver or fix it.

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

CSR

36-03020.02
Rev. G
May 22, 1997
NAS8-37716
DR SSE06

Advanced X-ray
Astrophysics Facility

AXAF - I
CCD Imaging Spectrometer

ACIS WIRE LIST

Submitted to:

George C. Marshall Space Flight Center
National Aeronautics and Space Administration
Marshall Space Flight Center, AL 35812

Submitted by:

Center for Space Research
Massachusetts Institute of Technology
Cambridge, MA 02139

Wire List: ACIS (PSMC)/TEST CONNECTOR B

WIRE				FROM UNIT: PSMC MS27505E23F35PD				TO UNIT: Test Equipment MS27505E23F35PD						
TYPE *	SIZE	LENGTH	TWIST CODE	REF	CONNECTOR	PIN	PIN SIZE	REF	CONNECTOR	PIN	PIN SIZE	CIRCUIT NAME	MNEMONIC	CHANNEL TYPE
2M	22		H1	PSMC	A1J10	61	22	TCR	"B"	61	22	VV Act Trans TP "B"	VVBVVTRNTP	
				PSMC	A1J10	62	22					N/C		
								TCR	"B"	62	22	N/C		
3M	22		H1	PSMC	A1J10	63	22	TCR	"B"	63	22	DPA Power Supply Input Current Tlm. TP "B"	SDBDPIINTLTP	
5M	22		H1	PSMC	A1J10	64	22	TCR	"B"	64	22	DPA Power Supply Rtn. TP "B"	SDBDPTLRTTP	
5M	22		H1	PSMC	A1J10	65	22	TCR	"B"	65	22	DPA Power Supply Enable "B"	SDBDPENTP	
5M	22		H1	PSMC	A1J10	66	22	TCR	"B"	66	22	DPA Power Supply I Drain "B"	SDBDPIDRNTP	
2M	22		J1	PSMC	A1J10	67	22	TCR	"B"	67	22	DPA Power Supply Auxillary +5 Volts TP "B"	SDBDPAX5TP	
2M	22		J1	PSMC	A1J10	68	22	TCR	"B"	68	22	DPA Power Supply Aux. +5 Volts Rtn. TP "B"	SDBDPAXTNTP	
				PSMC	A1J10	69	22					N/C		
								TCR	"B"	69	22	N/C		
9M	22		H1	PSMC	A1J10	70	22	TCR	"B"	70	22	Serial Digital 5 Volts Test Point "B"	SDBSD5VTP	
				PSMC	A1J10	71	22							
				PSMC	A1J10	72	22							
				PSMC	A1J10	73	22							
								TCR	"B"	71	22	N/C		
								TCR	"B"	72	22	N/C		
								TCR	"B"	73	22	N/C		
20M	22		H1	PSMC	A1J10	74	22	TCR	"B"	74	22	VV Open TP "B"	VVBVVOPTP	
20M	22		H1	PSMC	A1J10	75	22	TCR	"B"	75	22	VV Close TP "B"	VVBVVCLTP	
20M	22		H1	PSMC	A1J10	76	22	TCR	"B"	76	22	VV Act Htr Open TP "B"	VVBVVHTROPTL	
20M	22		H1	PSMC	A1J10	77	22	TCR	"B"	77	22	VV Act Htr Close TP "B"	VVBVVHTRCLTP	
20M	22		H1	PSMC	A1J10	78	22	TCR	"B"	78	22	LV ON TP "B"	VVBLVONTP	

* 2M - Twisted pair; 3M - Twisted 3-conductor; 5M - Twisted 5-conductor; 7M - Twisted 7-conductor;
8M - Twisted 8-conductor; 9M - Twisted 9-conductor; 18M - Twisted 18-conductor; 20M - Twisted 20-conductor

Wire List: ACIS (PSMC)/TEST CONNECTOR A

WIRE				FROM UNIT: PSMC MS27505E23F35PC				TO UNIT: Test Equipment MS27505E23F35PC						
TYPE *	SIZE	LENGTH	TWIST CODE	REF	CONNECTOR	PIN	PIN SIZE	REF	CONNECTOR	PIN	PIN SIZE	CIRCUIT NAME	MNEMONIC	CHANGE TYPE
20M	22		III	PSMC	A1J9	61	22	TCR	"A"	61	22	VV Act Trans TP "A"	VVAVVTRNTP	
				PSMC	A1J9	62	22					N/C		
								TCR	"A"	62	22	N/C		
5M	22		II	PSMC	A1J9	63	22	TCR	"A"	63	22	DPA Power Supply Input Current Tlm. TP "A"	SDADPIINTLTP	
5M	22		II	PSMC	A1J9	64	22	TCR	"A"	64	22	DPA Power Supply Rtn. TP "A"	SDADPTLRTTP	
5M	22		II	PSMC	A1J9	65	22	TCR	"A"	65	22	DPA Power Supply Enable "A"	SDADPENTP	
5M	22		II	PSMC	A1J9	66	22	TCR	"A"	66	22	DPA Power Supply I Drain "A"	SDADPIDRNTP	
2M	22		J1	PSMC	A1J9	67	22	TCR	"A"	67	22	DPA Power Supply Auxillary +5 Volts TP "A"	SDADPAX5TP	
2M	22		J1	PSMC	A1J9	68	22	TCR	"A"	68	22	DPA Power Supply Aux. +5 Volts Rtn. TP "A"	SDADPAXTNTP	
				PSMC	A1J9	69	22					N/C		
								TCR	"A"	69	22	N/C		
5M	22		II	PSMC	A1J9	70	22	TCR	"A"	70	22	Serial Digital 5 Volts Test Point "A"	SDASD5VTP	
				PSMC	A1J9	71	22					N/C		
				PSMC	A1J9	72	22					N/C		
				PSMC	A1J9	73	22					N/C		
								TCR	"A"	71	22	N/C		
								TCR	"A"	72	22	N/C		
								TCR	"A"	73	22	N/C		
20M	22		III	PSMC	A1J9	74	22	TCR	"A"	74	22	VV Open TP "A"	VVAVVOPTP	
20M	22		III	PSMC	A1J9	75	22	TCR	"A"	75	22	VV Close TP "A"	VVAVVCLTP	
20M	22		III	PSMC	A1J9	76	22	TCR	"A"	76	22	VV Act Htr Open TP "A"	VVAVVHTROPTL	
20M	22		III	PSMC	A1J9	77	22	TCR	"A"	77	22	VV Act Htr Close TP "A"	VVAVVHTRCLTP	
20M	22		III	PSMC	A1J9	78	22	TCR	"A"	78	22	LV ON TP "A"	VVALVONTP	

* 2M - Twisted pair; 3M - Twisted 3-conductor; 5M - Twisted 5-conductor; 7M - Twisted 7-conductor;
8M - Twisted 8-conductor; 9M - Twisted 9-conductor; 18M - Twisted 18-conductor; 20M - Twisted 20-conductor