4.11_V2.1 PUT ACIS INTO THERMAL STANDBY MODE

Last Revised: April 7, 2017
Filename: standby

BRIEF FUNCTIONAL DESCRIPTION:

This procedure is intended to put ACIS into a relatively low power state while preserving the flight SW patches in memory and active control of the focal plane temperature by maintaining power to at least one side of the DPA and one side of the DEA. The FEPs and the video boards will be turned off to reduce power consumption. ACIS should consume about 50 W in this configuration. The power breakdown is 12 W for DPA-A, 8 W for DPA-B, 24+/-4 W for DEA-A, 4 W for the PSMC overhead, and 3 W for the FP heater. It is expected that the previous science run will have been halted by a "Stop Science" command included in the daily command load and scheduled at the appropriate time by the OFLS SW. Nevertheless, since it is no harm to the instrument to send this command twice, this command is sent again in this procedure. The procedure then turns off the video boards and FEPs but leaves everything else up and running. The advantage of this configuration is that the flight SW patches are preserved in memory and active control of the FP temperature is maintained such that it would be relatively quick to resume science operations.

The sequence of actions will be:

1. issue a Stop Science Run command
2. turn off the video board power and FEPs, dump the system configuration
3. verify power consumption and Camera Body and Focal Plane temperatures

ASSUMED INSTRUMENT STATE:
Assumes that at least one side of the DPA and DEA A are on.
The instrument should not be in bakeout mode.

SPECIAL INITIAL CONDITIONS:
None.

OPERATIONAL CONSTRAINTS/CAUTIONS:
This procedure maintains the active thermal control of the instrument so that the Camera Body and Focal Plane maintain their operational temperatures of ~-60 C and ~-120 C.

CHANGE HISTORY:

V1.2

- changed command to power-down the FEPs and video boards to be "WSPOW00000" in step 2.1
- modified Assumed Instrument State and Operational Constraints and Cautions

V2.0

- ACIS Team signed-off version

- added step 3 to verify DPA A & B, DEA A and DA Htr B power consumption and to verify Camera Body and FP temperature

V2.1

- Removed verification steps for detector housing heater telemetry
- Updated expected values for telemetry verifiers
- Updated text to reflect current operational paradigm circa 2017

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Table 1: **Put ACIS into Thermal Standby Mode (Page 1)**

Step #	**Title (Revision 4.11_V2.0)**	**Time (min)**	**Command Description**	**Command Mnemonic**	**Telemetry Description**	**Telemetry Mnemonic**	**Expected Value**
1	**Stop the current science run**						
1.1	Send a stop science	1	stopScience	AA00000000			
1.2	Send another stop science	1	stopScience	AA00000000			
2	**Power down components**						
2.1	Turn off the VBs & FEPs	2	changeConfigSetting	WSPOW00000			
2.2	Dump System Config.	1	dumpSysConfig	RS_0000001			
3	**Verify telemetry**						
3.1	Verify DPA A Power				DPA Input V DPA Input I	1DP28AVO 1DPICACU	25.0–34.0 0.35–0.43
3.2	Verify DPA B Power				DPA Input V DPA Input I	1DP28BVO 1DPICBCU	25.0–34.0 0.26–0.32
3.3	Verify DEA A Power				DEA Input I A DEA Input V A	1DEICACU 1DE28AVO	0.7–0.9 25.0-34.0
3.5	Verify camera body temp				Camera Body T A Camera Body T B	1CBAT 1CBBT	-72.3–-52 -72.3–-52
3.6	Verify FP temp				FP Temp		-120–-112
	Total time:	5					

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Step #	Units	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1										
1.1		Check cmdResult==OK commandEcho==1539			This ensures the ring buffers are cleared.			1,2	60k	
1.2		Check cmdResult==OK commandEcho==1539						1,2	60k	
2										
2.1		Check cmdResult==OK commandEcho==773						1,2	60k	
2.2		Check cmdResult==1 commandEcho==66						1,2		
3										
3.1	V A				Expect 12 W for side A, power consumption should be more stable than I or V.			1,2		
3.2	V A				Expect 8 W for side B, power consumption should be more stable than I or V. Ignore if DPA-B unpowered			1,2		
3.3	A V				DEA A Power should be 24 ± 4 W, current is noisy, so an average is needed.			1,2		
3.5	C C							1,2		
3.6	C	deaHousekeepingData						1,2		