4.10_V2.1 PUT ACIS INTO MEMORY SAVE MODE

Last Revised: August 25, 1999
Filename: mem_save

BRIEF FUNCTIONAL DESCRIPTION:

This procedure is intended to be used during the normal science mission to prepare the ACIS instrument for eclipse passage during which ACIS may be allowed to dissipate $\sim$ 21 W as specified by the spacecraft power budget. 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 all components *which are expected to be on during the normal science mission (bakeout mode is not one of the expected normal states of the instrument)* and leaves the DPA side A on to preserve ACIS volatile memory.

The sequence of actions will be:

1. issue a Stop Science Run command
2. turn off the video board power and FEPS, stop DEA HKP, and dump the system configuration
3. turn off the Detector Housing heater
4. turn off the DEA side B and A
5. turn off the DPA side B

ASSUMED INSTRUMENT STATE:
Assumes the instrument is on and has just completed a science run.
The instrument should not be in bakeout mode.

SPECIAL INITIAL CONDITIONS:
None.
OPERATIONAL CONSTRAINTS/CAUTIONS:
The active thermal control of the instrument is disabled by this procedure so the DH and FP may approach survival temperatures.

REFERENCES:

V1.2

- changed command to power-down the FEPs and video boards to be "WSPOW00000" in step 2.1
- added a command to stop the DEA HKP run in step 2.2
- changed the time delay in steps 4.2 and 4.4 to 1 s
- added a step 6 to verify the proper state of ACIS

V2.0

- ACIS Team signed-off version
- changed HW TLM verifier in step 6.4 to "1DEN1BVO"

V2.1

- changed the order of commands in the previous steps 2.1 and 2.2 so that the "stopDea" command comes *before* the "changeConfigSetting" command which powers down the video boards.
- changed the execution time for step 2.1 to 4.0s

Table 1: **Put ACIS into Memory Save Mode**

Step #	Title (Revision 4.10_V2.1)	Time Req (s)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1.0	Stop the current science run							
1.1	send a stop science	10.0	stopScience	AA00000000				
1.2	send another stop science	10.0	stopScience	AA00000000				
2.0	Turn off the VBs & FEPS							
2.1	Stop DEA HKP run	4.0	stopDea	AD_0000001				
2.2	Turn off the video boards	20.0	changeConfigSetting	WSPOW00000				
2.3	Dump System Config.	1.0	dumpSysConfig	RS_0000001				
3.0	Turn off DH heater							
3.1	Turn off DH heater side A	1.0	Housing Htr Off A	1HHTRAOF	DA A ON/OFF	1DAHTAON	OFF	
3.2	Disable DH heater side A	1.0	Housing Htr Dis A	1HHTRADS	DA A ENB/DIS	1DAHTAEN	DIS	
3.3	Turn off DH heater side B	1.0	Housing Htr Off B	1HHTRBOF	DA B ON/OFF	1DAHTBON	OFF	
3.4	Disable DH heater side B	1.0	Housing Htr Dis B	1HHTRBDS	DA B ENB/DIS	1DAHTBEN	DIS	
4.0	Power down DEAs							
4.1	turn off DEA side B	1.0	DEA PS B OFF	1DEPSBOF	DEA B ON/OFF	1DEPSBON	OFF	
4.2	disable DEA side B	1.0	DEA PS B OFF	1DEPSBDS	DEA B ENB/DIS	1DEPSBEN	DIS	
4.4	turn off DEA side A	1.0	DEA PS A OFF	1DEPSAOF	DEA A ON/OFF	1DEPSAON	OFF	
4.5	disable DEA side A	1.0	DEA PS A OFF	1DEPSADS	DEA A ENB/DIS	1DEPSAEN	DIS	
5.0	Power down DPA side B							
5.1	turn off DPA side B	1.0	DPA PS B OFF	1DPPSBOF	DPA B ON/OFF	1DPPSBON	OFF	
5.2	disable DPA side B	1.0	DPA PS B OFF	1DPPSBDS	DPA B ENB/DIS	1DPPSBEN	DIS	
6	Verify ACIS is off when TLM is available.							
6.1	Verify DPA A is on				DPA A On	1DPPSA	ON	
					DPA A Enb	1DPPSAX	ENB	
					DPA +5V	1DPP0AVO	4.9–5.5	V
					DPA Input V	1DP28AVO	28.0–34.0	V
					DPA Input I	1DPICACU	0.35–0.43	A
6.2	Verify DPA B is off				DPA B +5V Voltage	1DPP0BVO	0.0 ± 0.2	V
					DPA Input Current	1DPICBCU	< 0.2	A
6.3	Verify DEA A is off				DEA Input I A	1DEICACU	<0.2	A
					DEA +6 V A	1DEP0AVO	0.0 ± 0.2	V
					DEA -6 V A	1DEN0AVO	0.0 ± 0.2	V

Table 2: (CONT) **Put ACIS into Memory Save Mode**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1.0									
1.1	Check cmdResult == 1						1or2	60k	
1.2	commandEcho 1539			this ensures the ring buffers are cleared.			1or2	60k	
2.0									
2.1	Check cmdResult == 1			commandEcho 60			1or2	60k	
2.2	Check cmdResult == 1			commandEcho 773			1or2	60k	
2.3	Check cmdResult == 1			commandEcho 66			1or2		
3.0									
3.1							1or2		
3.2							1or2		
3.3							1or2		
3.4							1or2		
4.0									
4.1							1or2		
4.2							1or2		
4.4							1or2		
4.5							1or2		
5.0									
5.1							1or2		
5.2							1or2		
6									
6.1			2				1,2,4or6		
			2						
			1						
			2	Expect 12 W for side A, power consumption					
			2	should be more stable than I or V.					
6.2							1,2,4or6		
6.3							1,2,4or6		

Table 1: **Put ACIS into Memory Save Mode(Page 2)**

Step #	Title (Revision 4.10_V2.1)	Time Req (s)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
					DEA +15 V A	1DEP1AVO	0.0 ± 0.2	V
					DEA -15 V A	1DEN1AVO	0.0 ± 0.2	V
					DEA +24 V A	1DEP2AVO	0.0 ± 0.2	V
					DEA +28 V A	1DEP3AVO	0.0 ± 0.2	V
6.4	Verify DEA B is off				DEA Input I B	1DEICBCU	<0.2	A
					DEA +6 V B	1DEP0BVO	0.0 ± 0.2	V
					DEA -6 V B	1DEN0BVO	0.0 ± 0.2	V
					DEA +15 V B	1DEP1BVO	0.0 ± 0.2	V
					DEA -15 V B	1DEN1BVO	0.0 ± 0.2	V
					DEA +24 V B	1DEP2BVO	0.0 ± 0.2	V
					DEA +28 V B	1DEP3BVO	0.0 ± 0.2	V
6.5	Verify DA Htr A is off				DA Htr +28V INPUT A	1DAHHAVO	0.0 ± 0.2	V
					DA Htr Output V A	1DAHAVO	0.0 ± 0.2	V
					DA Htr Current A	1DAHACU	<0.2	A
6.6	Verify DA Htr B is off				DA Htr +28V INPUT B	1DAHHBVO	0.0 ± 0.2	V
					DA Htr Output V B	1DAHBVO	0.0 ± 0.2	V
					DA Htr Current B	1DAHBCU	<0.2	A
	Total Time	55						

Table 2: (CONT) **Put ACIS into Memory Save Mode(Page 2)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
6.4							1,2,4or6		
6.5							1,2,4or6		
6.6							1,2,4or6		