2.16_1.1 VIDEO BOARD TEMPERATURE MEASUREMENTS

Last Revised: August 24, 1999

BRIEF FUNCTIONAL DESCRIPTION:
This procedure will run a special dea housekeeping run to collect video board temperatures as Chandra comes out of radiation.

The sequence of actions will be:

1. start DEA housekeeping with video board temperatures
2. configure the instrument to collect imaging array data
3. execute the faint mode science run
4. return to thermal standby mode

ASSUMED INSTRUMENT STATE:
Assumes that the instrument is in the cannonical thermal standby mode. Assumes that the standard patches have been loaded.

SPECIAL INITIAL CONDITIONS:

OPERATIONAL CONSTRAINTS/CAUTIONS:

REFERENCES:

CHANGE HISTORY:

V1.0 Original version.
V1.1

- Change parameter block loaded in step 3.1 to WT000A8014
- Add step to dump the Huffman table, RH_0000001, at step 3.3.
- Increased the wait time in step 3.5 to 60 minutes.
- Deleted step 4.2 to power down the FEPs, WSFEPALLDN.

Table 1: **Video Board Temperature Measurements**

Step #	Title (Revision 2.16_1.1)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1.0	Start DEA HK							
1.1	Stop current HK run	1	stopDea	AD_0000001				
1.2	Load Board 11 DEA HK	1	loadDeaBlock	WD00002014				
1.3	Start DEA Hkp run	1	startDEA	XDZ0000005				
2.0	Config to check clock biases							
2.1	Power up all video boards	1	changeConfigSetting	WSVIDALLUP				
					DEA Input V A	1DE28AVO	28.0–34.0	V
					DEA Input I A	1DEICACU	1.2–1.5	A
2.2	Power up FEPs	2	changeConfigSetting	WSFEPALLUP				
					DPA Input V A	1DP28AVO	28.0–34.0	V
					DPA Input I A	1DPICACU	1.1–1.4	A
					DPA Input V B	1DP28BVO	28.0–34.0	V
					DPA Input I B	1DPICBCU	1.0–1.2	A
3.0	Start I-array science run							
3.1	Load parameter block	1	loadTeBlock	WT000A8014				
3.2	Start science	10	startScience	XTZ0000005				
3.3	dump Huffman tables	0.5	dumpHuffman	RH_0000001				
3.4	dump system config.	0.1	dumpSysConfig	RS_0000001				
3.5	Wait for data acquisition	60						
3.6	Stop Science	1	stopScience	AA00000000				
4.0	Power down VDs							
4.1	Power down vid bds	1	changeConfigSetting	WSVIDALLDN				
4.2	dump system config.	0.1	dumpSysConfig	RS_0000001				

Table 2: (CONT) **Video Board Temperature Measurements**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1.0									
1.1	Check cmdResult == OK		B	stop current housekeeping		Y	2		
	commandEcho 60			parameter block into slot 4					
1.2	Check cmdResult == OK		B	Load Fullhouse DEA housekeeping		Y	2		
	commandEcho 1523			parameter block into slot 4					
1.3	Check cmdResult == OK		B	get FP temp, should be stable		Y	2		
	commandEcho 18			and ± 2 C of desired value					
2.0									
2.1	Check cmdResult == OK		A			Y	2	60k	
	commandEcho 768		2	Expect DEA side A $= 42 \pm 3$ W.					
			2	Current is noisy, so an average is needed.					
2.2	Check cmdResult == OK		A			Y	2	60k	
	commandEcho 89		2	Expect DPA Side A $= 38 \pm 2$ W					
			2						
			2	Expect DPA Side B $= 33 \pm 2$ W					
			2						
3.0									
3.1	Check cmdResult == OK		A	clock ACIS-I CCDs		Y	2	60k	
	commandEcho 688								
3.2	Check cmdResult == OK		A	wait for at least one exposure record		Y	2	60k	
	commandEcho 58								
3.3	Check cmdResult == OK		B			Y	2	60k	
	commandEcho 68								
3.4	Check cmdResult == OK		B			Y	2	60k	
	commandEcho 66								
3.5			A	wait for data		Y	2	60k	
3.6	Check cmdResult == OK		A	scienceReport		Y	2	60k	
	commandEcho 1539								
4.0									
4.1	Check cmdResult == OK		A			Y	2	60k	
	commandEcho 1541			return to thermal standby state					
4.2	Check cmdResult == OK		B	verify FEPs and video boards off		Y	1or2		

Table 1: **Video Board Temperature Measurements(Page 2)**

Step #	Title (Revision 2.16_1.1)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
4.3	Check DPA and DEA pwr				DPA Input V A	1DP28AVO	28.0–34.0	V
					DPA Input I A	1DPICACU	0.35–0.43	A
					DPA Input V B	1DP28BVO	28.0–34.0	V
					DPA Input I B	1DPICBCU	0.26–0.32	A
					DEA Input I A	1DEICACU	0.62–0.75	A
					DEA Input V A	1DE28AVO	28.0-34.0	V
5.0	Start Standard DEA HK							
5.1	Stop current HK run	1	stopDea	AD_0000001				
5.1	Load Board 11 DEA HK	1	loadDeaBlock	WD00001024				
5.2	Start DEA Hkp run	1	startDEA	XDZ0000005				
	Total Time	82.7						

Table 2: (CONT) **Video Board Temperature Measurements(Page 2)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
	commandEcho 66								
4.3			2	Expect 12 W for side A, power consumption		Y	1or2		
			2	should be more stable than I or V.					
			2	Expect 9 W for side B, power consumption					
			2	should be more stable than I or V.					
			2	DEA A Power should be 21 ± 3 W,					
				current is noisy, so an average is needed.					
5.0									
5.1	Check cmdResult == OK		B	stop current housekeeping		Y	2		
	commandEcho 60			parameter block into slot 4					
5.1	Check cmdResult == OK		B	Load Fullhouse DEA housekeeping		Y	2		
	commandEcho 225			parameter block into slot 4					
5.2	Check cmdResult == OK		B	get FP temp, should be stable		Y	2		
	commandEcho 18			and ± 2 C of desired value					