2.15_V1.0 RAW MODE DATA IN POSTAGE STAMP FORMAT

Last Revised: August 10, 1999
Filename: raw_stamp

BRIEF FUNCTIONAL DESCRIPTION:

This procedure uses subarray format and windows to telemeter quickly 100 x 100-pixel raw sub-images centered on the middle of quadrant D of CCD I3. These data will be analyzed for particles and compared to the event rates from the EPHIN instrument.

The sequence of actions will be:

1. start a DEA HKP run if necessary
2. configure the instrument to collect imaging array data with 6 video boards up, but only 1 FEP attached to a DEA board
3. execute the science run, collect an hour or two of raw sub-frames from CCD I3, including a dump of all the configuration information
4. reconfigure back to the thermal standby state if necessary

ASSUMED INSTRUMENT STATE:

Assumes the instrument is in the canonical thermal standby state.
Assumes the standard patches are loaded.

SPECIAL INITIAL CONDITIONS:

OPERATIONAL CONSTRAINTS/CAUTIONS:

Assumes the spacecraft is in TLM FMT 2 throughout the procedure to telemeter the raw frames in a reasonable amount of time.

SPECIAL FINAL CONDITIONS:

REFERENCES:

1. MIT 36-58010, Standard Patch Release, Rev. A

CHANGE HISTORY:

V1.0

- Initial version, copied from procedure 1.27_V2.1 “Raw Mode Data for Bias Algorithm Optimization”.
- Revised the procedure title, date, and filename
- Revised the brief functional description
- Revised the sequence of actions

- Set command mnemonic to “WT00175014” and command echo to “1379” in step 3.1
- Set command mnemonic to “W200030014” and command echo to “1369”
- Revised time required field to 120 min in step 3.15
- Revised time required fiels to 5 min in step 3.17 in step 3.2

Table 1: **Collect Raw Mode Data in Postage Stamp Format**

Step #	Title (Revision 2.15_V1.0)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1	Start DEA HK if necessary							
1.1	Load Board 11 DEA HK	1	loadDeaBlock	WD00001024				
1.2	Start DEA Hkp run	1	startDEA	XDZ0000005				
2	Configure for Imaging							
2.1	Power up imaging vid boards & FEPs	1	changeConfigSetting	WSPOW0CF3F				
					DEA Input V A	1DE28AVO	28.0–34.0	V
					DEA Input I A	1DEICACU	1.2–1.5	A
					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	Imaging Science run							
3.1	Load parameter block	0.1	loadTeBlock	WT00175014				
3.2	Load 2D window block	0.1	load2dBlock	W200030014				
3.3	Start science	0.1	startScience	XTZ0000005				
3.4	dump default TE PBs	0.1	dumpParameterSlots	RT_0000001				
3.5	dump default CC PBs	0.1	dumpParameterSlots	RC_0000001				
3.6	dump default 2D PBs	0.1	dumpParameterSlots	R2_0000001				
3.7	dump default 1D PBs	0.1	dumpParameterSlots	R1_0000001				
3.8	dump default DeaHk PBs	0.1	dumpParameterSlots	RD_0000001				
3.9	dump system config.	0.1	dumpSysConfig	RS_0000001				

Table 2: (CONT) **Collect Raw Mode Data in Postage Stamp Format**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1									
1.1	Check cmdResult == OK commandEcho 225		B	Load Fullhouse DEA housekeeping parameter block into slot 4		Y	2		
1.2	Check cmdResult == OK commandEcho 18		B	get FP temp, should be stable and ± 2 C of desired value		Y	2		
2									
2.1	Check cmdResult == OK commandEcho 359		B			Y	2	60k	
			2	Expect DEA side A					
			2	power $= 42 \pm 3$ W					
			2	Expect DPA Side A					
			2	$= 38 \pm 2$ W					
			2	Expect DPA Side B					
			2	$= 33 \pm 2$ W					
3									
3.1	Check cmdResult == OK commandEcho 1379		B	clock ACIS-I CCDs, FEP 0 on I3		Y	2	60k	
3.2	Check cmdResult == OK commandEcho 1369		B	100x100-pixel postage stamp on I3 quad D		Y	2	60k	
3.3	Check cmdResult == OK commandEcho 58		B			Y	2	60k	
3.4	Check cmdResult == OK commandEcho 78		B		*psci* should not indicate any errors regarding	Y	2	60k	
3.5	Check cmdResult == OK commandEcho 75		B		"truncated blocks" for any of these dumps.	Y	2	60k	
3.6	Check cmdResult == OK commandEcho 72		B			Y	2	60k	
3.7	Check cmdResult == OK commandEcho 71		B			Y	2	60k	
3.8	Check cmdResult == OK commandEcho 63		B			Y	2	60k	
3.9	Check cmdResult == OK commandEcho 66		B			Y	2	60k	

Table 1: **Collect Raw Mode Data in Postage Stamp Format(Page 2)**

Step #	Title (Revision 2.15_V1.0)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
3.10	dump bad pixel list	0.5	dumpBadPixels	RP_0000001				
3.11	dump bad TE columns	0.1	dumpBadTeColumn	R4_0000001				
3.12	dump bad CC columns	0.1	dumpBadCcColumn	R3_0000001				
3.13	dump Huffman tables	0.5	dumpHuffman	RH_0000001				
3.14	dump patches	2	dumpPatchlist	RU_0000001				
3.15	Wait for data acquisition	120						
3.16	Stop Science	1	stopScience	AA00000000				
3.17	Wait for telemetry	5						
4	Return to Thermal Standby **Only if necessary**							
4.1	Power down video boards and FEPs	0.1	changeConfigSetting	WSPOW00000				
4.2	dump system config.	0.1	dumpSysConfig	RS_0000001				
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
	Total Time	133.3						

Table 2: (CONT) **Collect Raw Mode Data in Postage Stamp Format(Page 2)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
3.10	Check cmdResult == OK commandEcho 83		B			Y	2	60k	
3.11	Check cmdResult == OK commandEcho 80		B			Y	2	60k	
3.12	Check cmdResult == OK commandEcho 77		B			Y	2	60k	
3.13	Check cmdResult == OK commandEcho 68		B			Y	2	60k	
3.14	Check cmdResult == OK commandEcho 65		B			Y	2	60k	
3.15			A	collect sub-images for an hour or two		Y	2	60k	
3.16	Check cmdResult == OK commandEcho 1539		B	scienceReport		Y	2	60k	
3.17			A			Y	2	60k	
4									
4.1	Check cmdResult == OK commandEcho 773		B	 return to thermal standby state		Y	2	60k	
4.2	Check cmdResult == OK commandEcho 66		B				1or2		
4.3			2 2 2 2 2	Expect 12 W for side A, power consumption should be more stable than I or V. Expect 9 W for side B, power consumption should be more stable than I or V. DEA A Power should be 21 ± 3 W, current is noisy, so an average is needed			1or2		