4.21_V2.0 SET FOCAL PLANE TEMPERATURE TO -110 C

Last Revised: June 29,1999
Filename: setfp_m110

BRIEF FUNCTIONAL DESCRIPTION:
This is an "atomic" procedure which simply sets the focal plane temperature to -110 C.

The sequence of actions will be:

1. disable the focal plane bakeout heater and warm boot the BEP
2. start or re-start a DEA HKP run
3. load the ACIS SW command packet which sets the temperature

ASSUMED INSTRUMENT STATE:
Assumes that at least one side of the DPA and DEA A are on and the flight SW is running.

SPECIAL INITIAL CONDITIONS:
Assumes that the contamination environment allows the focal plane to be cooled to -110 C.

OPERATIONAL CONSTRAINTS/CAUTIONS:
The focal plane should not be cooled if the spacecraft is still outgassing significantly and there is a path for the contaminants to flow to the focal plane.

REFERENCES:

CHANGE HISTORY:

V1.0

- initial release, copied from procedure to set the focal plane temperature to -120 C called "setfp_m120".

V2.0

- ACIS Team signed-off version
- changed SW TLM verifiers in step 1.6 to check that the warmbootFlag =1 and not to check the SW version number
- changed expected value of BEP Select verifier in step 1.7 to BEP A or BEP B
- changed expected value of "1STAT7ST" to "0" in step 1.7
- modified step 3.3 to check that the focal plane is stable at -110 C
- edited "Operational Constraints and Cautions"

Table 1: **SET THE FOCAL PLANE TEMPERATURE TO -110 C**

Step #	Title (Revision 4.21_V2.0)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1.0	Disable FP bakeout							
1.1	turn off FP bakeout htr	2	ChangeConfigSetting	WSBAKDSABL				
1.2	disable bakeout patch	2	writeBep	WBBOEN_DIS				
1.3	set warm boot flag on	0.1	DPA Warm Boot	1WRMBTSB(1)				
1.4	Halt BEP	0.1	DPA Command Reset	1RSETIRT(1)				
1.5	Restart BEP	0.1	DPA Command Reset	1RSETIRT(0)				
1.6	Check BEP A Boot	2.0						
1.7	Check HW LEDs	2.0			BEP Select	1STAT4ST	0or1	
					BEP FIFO Not Full	1STAT6ST	1	
					BEP FIFO Not Empty	1STAT7ST	0	
1.8	Check SW LEDs	2.0			BEP initialization	1STAT3ST	0	
					Watchdog boot	1STAT2ST	1	
					Science run status	1STAT1ST	1	
						1STAT0ST	0or1	
2.0	Start DEA HK run							
2.1	Load Board 11 DEA HK	1	loadDeaBlock	WD00001024				
2.2	Start DEA Hkp run	1	startDEA	XDZ0000005				
3.0	Drop FP to -110 C							
3.1	set FP temp to -110 C	2	ChangeConfigSetting	WSFTNEG110				
3.2	dump system config.	0.1	dumpSysConfig	RS_0000001				

Table 2: (CONT) **SET THE FOCAL PLANE TEMPERATURE TO -110 C**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1.0									
1.1	Check cmdResult == OK		A			Y	1or2		
	commandEcho 116					Y	1or2		
1.2	Check cmdResult == OK								
	commandEcho 99					Y	1or2		
1.3			2			Y	1or2		
1.4			2	1RSETIRT=1 holds board in reset		Y	1or2		
1.5			2	1RSETIRT=0 releases board		Y	1or2		
1.6	Check bepStartupMessage:		A			Y	1or2		
	bepTickCounter < 10; version =??;		A						
	watchdogFlag = 0, patchValidFlag =1		A						
	warmbootFlag = 1		A						
	Check swHousekeeping messages:								
	startingBepTickCounter < 10;		B						
	endingBepTickCounter=		B						
	=startingBepTickCounter+640								
1.7			2	0/1 indicates BEP A/B is selected		Y	1or2		
			2	1 means FIFO not full					
			2	1 means FIFO not empty					
1.8			1	0 means BEP SW is running		Y	1or2		
			2	1 means no watchdog boot					
			2	1 means science idle					
			2	this bit toggles to indicate BEP is running					
2.0									
2.1	Check cmdResult == OK		B	Load Fullhouse DEA housekeeping		Y	1or2		
	commandEcho 225			parameter block into slot 4					
2.2	Check cmdResult == OK		B	get FP temp from DEA HKP data		Y	1or2		
	commandEcho 18								
3.0									
3.1	Check cmdResult == OK		1			Y	1or2		
	commandEcho 741								
3.2	Check cmdResult == OK		B			Y	1or2		

Table 1: **SET THE FOCAL PLANE TEMPERATURE TO -110 C(Page 2)**

Step #	Title (Revision 4.21_V2.0)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
3.3	monitor FP temp	30			FP Temp		-110	C
	Total Time	44.4						

Table 2: (CONT) **SET THE FOCAL PLANE TEMPERATURE TO -110 C(Page 2)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
3.3	deaHousekeepingData	commandEcho 66		Time depends on starting temperature.		P	1or2		