1.9_V2.0 SET FOCAL PLANE TEMPERATURE TO -90 C

Last Revised: June 23,1999
Filename: setfp_m90

BRIEF FUNCTIONAL DESCRIPTION:
This is an "atomic" procedure which simply sets the focal plane temperature to -90 C. This procedure assumes that it will be necessary to use the FP bakeout heater to raise the FP temperature to -90 C; if the ISIM runs hotter than expected this may not be true. **THE INSTRUMENT IS LEFT IN A STATE WITH THE FOCAL PLANE BAKEOUT ENABLED AND THE FOCAL PLANE TEMPERATURE ELEVATED TO -90 C.**

The sequence of actions will be:

1. start a DEA HKP run if necessary
2. enable the FP bakeout heater start heating FP to -90 C
3. verify that the FP temp stabilizes at -90 C

ASSUMED INSTRUMENT STATE:
Assumes the instrument is in the canonical thermal standby state (the video boards and FEPs should be off !!!!).

SPECIAL INITIAL CONDITIONS:
Assumes that the contamination environment allows the focal plane to be cooled to -90 C.

OPERATIONAL CONSTRAINTS/CAUTIONS:
The instrument is left in a state with the focal plane bakeout enabled and the focal plane temperature elevated to -90 C.
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.
CARD-C-005.

REFERENCES:

CHANGE HISTORY:

V1.2

- changed filenames from "setFP_m90" to "setfp_m90"

V1.3

- added the command to set the warm boot flag off in step 2.2
- added "dumpSysConfig" command in step 2.6
- created a new step to explicitly wait for temperature stabilization
- added radiator and camera body temperatures to the list of verifiers in step 3.1
- added commandEcho values in steps 1.1, 1.2, 2.5 & 2.6
- added filename identification at top of procedure

V1.4

- changed HW TLM verifier in step 4.1 to 1DE28AV0 from 1DEP3AVO, and expected value to 27.0-35.0 V, and changed DEA A input current to 0.60–0.78 A

V2.0

- ACIS Team signed-off version
- fixed typos in "Brief Functional Description" and "Operational Constraints and Cautions" section which said -50 C instead of -90 C
- changed expected value of the cold radiator temperatures (1CRAT,1CRBT) in step 3.1 to be -110 C

Table 1: **SET THE FOCAL PLANE TEMPERATURE TO -90 C**

Step #	Title (Revision 1.9_V2.0)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1.0	Start DEA HK if necessary							
1.1	Load Board 11 DEA HK	1	loadDeaBlock	WD00001024				
1.2	Start DEA Hkp run	1	startDEA	XDZ0000005				
2.0	Start heating FP to -90 C							
2.1	verify power consumption	10			DEA Input I	1DEICACU	0.60–0.78	A
					DEA Input V	1DE28AVO	27.0-35.0	V
2.2	Set warm boot flag off	1	DPA Cold Boot	1WRMBTSB(0)				
2.3	Upload bakeout patch	1	writeBep	WBBOEN_ENB				
2.4	Enable the FP BO htr	1	changeConfigSetting	WSBAKENABL				
2.5	Set FP temp to -90 C	1	changeConfigSetting	WSFTNEG_90				
2.6	dump system config.	0.1	dumpSysConfig	RS_0000001				
3.0	Verify FP stable at -90 C							
3.1	wait for stabilization	60			FP Temp		-90	C
					Cold Radiator T A	1CRAT	~ -110	C
					Cold Radiator T B	1CRBT	~ -110	C
					Camera Body T A	1CBAT	-60	C
					Camera Body T B	1CBBT	-60	C
					Warm Radiator T A	1WRAT	-84	C
					Warm Radiator T B	1WRBT	-84	C
	Total Time	76.1						

Table 2: (CONT) **SET THE FOCAL PLANE TEMPERATURE TO -90 C**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1.0									
1.1	Check cmdResult == OK		B	Load Fullhouse DEA housekeeping			1or2		
	commandEcho 225			parameter block into slot 4					
1.2	Check cmdResult == OK		B	get FP temp, should be stable			1or2		
	commandEcho 18			and ± 2 C of desired value			1or2		
2.0									
2.1			2	DEA A Power should be 21 ± 3 W,		Y	1or2		
				current is noisy so an avg. is needed		Y	1or2		
2.2				disable Warm boot if BEP watchdogs		Y	1or2		
2.3	Check cmdResult == OK		A	Enable the "enable"		Y	1or2		
	commandEcho 101								
2.4	Check cmdResult == OK		A	enable the FP bakeout heater	If *psci* indicates a	Y	1or2		
	commandEcho 114				SWSTAT_DEAMAN_BADCNTLREG				
2.5	Check cmdResult == OK		A	Set desired FP temp to -90 C,	or SWSTAT_DEABOARD_ERROR,	Y	1or2		
	commandEcho 102			FP bakeout htr comes on.	bakeout enabled failed.				
2.6	Check cmdResult == OK		B	get data to verify bakeout enable	run *psci -a -l* to examine	Y	1or2		
	commandEcho 66				SysConfig packets.				
3.0									
3.1	deaHousekeepingData		A	verify FP temp stabilizes at -90 C	Time depends on starting T	P	1or2		
			2	should be at -60 C					
			2	should be at -60 C					
			2						
			2						