4.24_V2.2 Warm Boot the Active ACIS BEP and Start DEA HK Run

Last Revised: December 8, 2015
Filename: warmboot_hkp

BRIEF FUNCTIONAL DESCRIPTION:
This contains two "atomic" procedures which warm boot the active ACIS BEP and restart the DEA housekeeping telemetry. ACIS flight software can be booted in either cold or warm mode. The warm boot reloads the flight code, applies patches and bad pixel/column lists, and cleans up memory buffers. The second step loads a DEA Housekeeping parameter block and starts a DEA Housekeeping run. The ACIS Operations Team believes that in almost all situations it is desirable to start a DEA Housekeeping run immediately after a warm boot. Nevertheless, the operator should evaluate the current situation and determine if this is the appropriate action. The sequence of actions will be:

1. set the boot-from-uplink flag to zero (should already be zero)
2. set the warm boot flag on
3. halt the active BEP
4. restart the active BEP
5. verify BEP booted from SW TLM verifiers
6. check HW LEDs
7. check SW LEDs
8. load the DEA Housekeeping PB
9. start the DEA Housekeeping run
10. inspect FP temp value and stability

ASSUMED INSTRUMENT STATE:
Upon successful completion of steps 1 through 7, steps 8 and 9 assume that at least one side of the DPA and DEA A are on, and the flight SW is running.

SPECIAL INITIAL CONDITIONS:

OPERATIONAL CONSTRAINTS/CAUTIONS:
This procedure does not change the active BEP, whichever BEP is selected is warmbooted.

The parameters for the threshold crossings patch, txings, will revert to defaults when this is run. They should be restored to their desired values.

REFERENCES:
ACIS Long Form Functional Test Procedure (36-01301.01)
ACIS Short Form Functional Test Procedure (36-01301.02)
ACIS Science Instrument SW User's Guide (36-54003)

CHANGE HISTORY:

V2.0

- Combined the warmboot (4.17_V2.0) with the load and start DEA housekeeping (1.4_V2.0).

V2.1

- Fixed an incorrect mnemonic.

V2.2

- Added reminder to reset txings parameters

Table 1: **Warm Boot the Active ACIS BEP and Start DEA HK Run**

Step #	Title (Revision 4.24_V2.2)	Time Req (s)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1	Warm boot BEP							
1.1	Set Boot modifier off	1.0	DPA FS Boot Modifier	1BMODIBM(0)				
1.2	Set warm boot flag	1.0	DPA Warm Boot	1WRMBTSB(1)				
1.3	Halt active BEP	1.0	Halt BEP	1RSETIRT(1)				
1.4	Restart active BEP	1.0	Restart BEP	1RSETIRT(0)				
1.5	Check BEP Boot	120.0						
1.6	Check HW LEDs	60.0			BEP Select	1STAT4ST	0or1	
					BEP FIFO Not Full	1STAT6ST	1	
					BEP FIFO Not Empty	1STAT7ST	0	
1.7	Check SW LEDs	60.0			BEP initialization	1STAT3ST	0	
					Watchdog boot	1STAT2ST	1	
					Science run status	1STAT1ST	1	
						1STAT0ST	0or1	
2.0	Execute DEA HK run							
2.1	Load Board 11 DEA HK	1	loadDeaBlock	WD00001024				
2.2	Start DEA Hkp run	1	startDEA	XDZ0000005				
	Total Time	246						

Table 2: (CONT) **Warm Boot the Active ACIS BEP and Start DEA HK Run**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1									
1.1				disables boot from uplink	LF 4.4.1		1or2		
1.2				Warm boot active BEP	LF 4.4.1		1or2		
1.3				Hold active BEP reset line	LF 4.4.1		1or2		
1.4				Release BEP reset line			1or2		
1.5	Check bepStartupMessage:		A				1or2		
	bepTickCounter < 10; version =??;		A	version # depends on loaded patches (if any)					
	warmbootFlag = 1, patchValidFlag =1		A						
	Check swHousekeeping messages:								
	startingBepTickCounter < 10;		B						
	endingBepTickCounter=		B						
	=startingBepTickCounter+640								
	version =??		A	version # depends on loaded patches (if any)					
1.6			2	0/1 indicates BEP A/B is selected			1or2		
			2	1 means FIFO not full					
			2	1 means FIFO not empty					
1.7			2	0 means BEP SW is running			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	commandEcho 225		B	Load Fullhouse DEA housekeeping			1or2		
	Check cmdResult == OK			parameter block into slot 4					
2.2	commandEcho 18		B	get FP temp			1or2		
	Check cmdResult == OK		should be stable and ± 2 C of desired value						
	confirm DEAhk values								