1.3_V2.1 TURN ON DPA A & B AND DEA A (realtime version)

Last Revised: June 25,1999
Filename: dpaab_deaa_on

BRIEF FUNCTIONAL DESCRIPTION:
This is an "atomic" procedure which simply powers up the DPA sides A and B and DEA side A. It should be safe to execute under any condition except a spacecraft power or thermal emergency. The DEA side A is powered up first so that the default configurations can be loaded into the DEA when DPA side A and BEP A are powered up.

The sequence of actions will be:

1. enable and turn on DEA power supply side A
2. enable and turn on DPA power supply side A
3. check that BEP A boots properly
4. check the HW LEDs
5. check the SW LEDs
6. enable and turn on DPA power supply side B

ASSUMED INSTRUMENT STATE:
Assumes that the PSMC has power from the spacecraft.

SPECIAL INITIAL CONDITIONS:

OPERATIONAL CONSTRAINTS/CAUTIONS:

REFERENCES:

CHANGE HISTORY:

V1.2

- changed filenames from "turnon_dpaab_deaa" to "dpaab_deaa_on"
- changed the procedure to turn on the DEA A first, then turn on the DPAs

V1.3

- added DEA current and voltage tlm verifiers in step 1

V1.4

- deleted DEA input current as a verifier in step 1
- changed the expected values of the DEA voltages in step 1.2
- changed expected values of DPA A input voltage, DPA A input current and DPA A 5 V supply in step 2.2
- expanded SW tlm verifiers in step 2.3

- added HW LED verifiers in step 2.4
- added SW LED verifiers in step 2.5
- changed expected values of DPA input voltage, DPA input current and DPA 5 V supply in step 2.2

V1.5

- changed expected values of the DPA A input voltage and current in step 2.2 to 28.0–34.0 V and 0.35–0.43 A and DPA B input voltage and current in step 3.2 to 28.0–34.0 V and 0.26–0.32 A

V2.0

- ACIS Team signed-off version
- fixed typo in "Description" column in step 2.4

V2.1

- changed expected value of "1STAT7ST" to "0" in step 2.4

Table 1: **TURN ON DPA A & B AND DEA A (realtime version)**

Step #	Title (Revision 1.3_V2.1)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
1.0	Turn on DEA A							
1.1	Enable DEA PS A	0.1	DEA PS A En	1DEPSAEN				
1.2	DEA Power A On	5.0	DEA PS On A	1DEPSAON				
					DEA +24 V A	1DEP2AVO	24.0–26.0	V
					DEA +6 V A	1DEP0AVO	5.6–6.7	V
					DEA -6 V A	1DEN0AVO	-7.0– -5.7	V
					DEA +15 V A	1DEP1AVO	15.0–17.0	V
					DEA -15 V A	1DEN1AVO	-17.0– -15.0	V
					DEA +28 V A	1DEP3AVO	>26.0	V
2.0	Turn on DPA A							
2.1	Enable DPA PS A	0.1	DPA PS A En	1DPPSAEN				
2.2	Turn on DPA PS A	2.0	DPA PS A On	1DPPSAON	DPA A On	1DPPSA	ON	
					DPA A Enb	1DPPSAX	ENB	
					DPA +5V	1DPP0AVO	4.9–5.5	V
					DPA Input V	1DP28AVO	28.0–34.0	V
					DPA Input I	1DPICACU	0.35–0.43	A
2.3	Check BEP A Boot	2.0						
2.4	Check HW LEDs	2.0			BEP Select	1STAT4ST	0	
					BEP FIFO Not Full	1STAT6ST	1	
					BEP FIFO Not Empty	1STAT7ST	0	
2.5	Check SW LEDs	2.0			BEP initialization	1STAT3ST	0	
					Watchdog boot	1STAT2ST	1	
					Science run status	1STAT1ST	1	
						1STAT0ST	0or1	

Table 2: (CONT) **TURN ON DPA A & B AND DEA A (realtime version)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
1.0									
1.1						Y	1or2		
1.2				Use voltages to verify DEA is on.		Y	1or2		
			1						
			2						
			2						
			2						
			2						
			2						
2.0									
2.1				No verifier before power is on		Y	1or2		
2.2			1			Y	1or2		
			1						
			1						
			2	Expect 12 W for side A, power consumption					
			2	should be more stable than I or V.					
2.3	Check bepStartupMessage:		A			Y	1or2		
	bepTickCounter < 10; version =11;		A						
	watchdogFlag = 0, patchValidFlag =1		A						
	Check swHousekeeping messages:								
	startingBepTickCounter < 10;		B						
	endingBepTickCounter=		B						
	=startingBepTickCounter+640								
	version =11		A						
2.4			2	0 indicates BEP A is selected		Y	1or2		
			2	1 means FIFO not full					
			2	1 means FIFO not empty					
2.5			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					

Table 1: **TURN ON DPA A & B AND DEA A (realtime version)(Page 2)**

Step #	Title (Revision 1.3_V2.1)	Time Req (m)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value	Units
2.6	Check DEA A state				DEA A ENB/DIS	1DEPSAX	ENB	
					DEA A ENB/DIS	1DEPSA	ON	
3.0	Turn on DPA B							
3.1	Enable DPA PS B	0.1	DPA PS B En	1DPPSBEN	DPA B Enb	1DPPSBX	ENB	
3.2	Turn on DPA PS B	2	DPA PS B On	1DPPSBON	DPA B on	1DPPSB	ON	
					DPA +5V	1DPP0BVO	4.9–5.5	V
					DPA Input V	1DP28BVO	28.0–34.0	V
					DPA Input I	1DPICBCU	0.26–0.32	A
	Total Time	15.3						

Table 2: (CONT) **TURN ON DPA A & B AND DEA A (realtime version)(Page 2)**

Step #	Telemetry EGSE	Other Verifier	Crit	Description	Notes	RT Con	Tlm Fmt	Min Alt	SIM Pos
2.6			2			Y	1or2		
3.0 3.1 3.2			 1 1 1 2 2	 Expect 9 W for side B, power consumption should be more stable than I or V.		 Y Y	 1or2 1or2		