4.31_V2.6 TURN OFF DEA B

Last Revised: October 17, 2017
Filename: deab_off

BRIEF FUNCTIONAL DESCRIPTION:
This is an "atomic" procedure which simply turns off the DEA side B. It should be safe to execute under any condition except a spacecraft power or thermal emergency.

The sequence of actions will be:

1. Power down all the video boards
2. Turn off and disable DEA power supply side B

ASSUMED INSTRUMENT STATE:

1. Assumes that the PSMC has power from the spacecraft.
2. The instrument should not be executing a science run.
3. The instrument should not be in bakeout mode. (See details below.)
4. Assumes that at least one side of the DPA is powered and that a BEP is active and ready to execute commands. If not, skip Step 1, which issues the WSVIDALLDN command to the BEP.

SPECIAL INITIAL CONDITIONS:

OPERATIONAL CONSTRAINTS/CAUTIONS:

The DEA power status is normally indicated by the values of the 1DEPSA and 1DEPSB flags, which should not both be 1 simultaneously. However, if neither side of the DPA is receiving power (*i.e.*, if 1DPP0AVO and 1DPP0BVO are simultaneously reading 0.0 ± 0.5 V), the DEA flag values will be unreliable and the DEA voltage channels (1DEP[0123][AB]VO) should instead be used to determine which sides of the DEA are powered).

If neither side of the DPA is receiving power, then the command to power down the video boards should be skipped.

Typically 1DEICBCU (and likewise the A-side 1DEICACU) reads 16-18 A when unpowered. This is a feature of all TDB versions up through v14 and is not an anomaly.

The instrument should not be executing a science run using DEA side B. If power is removed from DEA side B while a science run is in progress, the science run will terminate abnormally. The data will still be useful, but the processing will be more complicated.

The instrument should not be in bakeout mode. If the DEA side B power is removed during a bakeout, the FP bakeout heater will lose power and the bakeout of the FP will terminate. The DH bakeout heater is unaffected by a power loss to the DEA and will therefore still be executing a bakeout if power is lost to the DEA.

REFERENCES:

CHANGE HISTORY:

V1.0

- Initial version based on deaa_off

V1.1

- Minor edits; for ACIS team review

V2.0

- For FOT review

V2.1

- Moved telemetry checks to step 1.1

V2.2

- Removed check of 1DEICBCU

V2.3

- Altered wording to conform to A side procedure
- Replaced Constraints/Cautions section from A side procedure
- Added step to power down video boards (in both table and brief functional description)
- Reordered telemetry checks to match web page; added input voltage check

V2.4

- Added language stating that if the DPA is unpowered, the WSVIDALLDN command should not be issued.

V2.5

- Clarified language per PGF comments

V2.6

- Fixed errors on voltages

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Table 1: **TURN OFF DEA B(Page 1)**

Step #	Title (Revision 4.31_V2.6)	Time (mins)	Command Description	Command Mnemonic	Telemetry Description	Telemetry Mnemonic	Expected Value
1	**Power down all video boards**						
1.1	Power down all video boards	1	changeConfigSetting	WSVIDALLDN			
2	**Turn off DEA B**						
2.1	DEA Power B Off	1	DEA PS Off B	1DEPSBOF	DEA B ON/OFF DEA Input V B DEA +28 V B DEA +24 V B DEA +15 V B DEA +6 V B DEA -6 V B DEA -15 V B	1DEPSB 1DE28BVO 1DEP3BVO 1DEP2BVO 1DEP1BVO 1DEP0BVO 1DEN0BVO 1DEN1BVO	OFF 25.0–34.0 0.0 ± 0.5 0.0 ± 0.5 0.0 ± 0.5 0.0 ± 0.5 0.0 ± 0.5 0.0 ± 0.5
2.2	Disable DEA PS B	1	DEA PS B Dis	1DEPSBDS	DEA B Dis	1DEPSBX	DIS
	Total time:	3					

Table 1: **TURN OFF DEA B(Page 1)**

Step #	**Units**	**Telemetry EGSE**	**Other Verifier**	**Crit**	**Description**	**Notes**	**RT Con**	**Tlm Fmt**	**Min Alt**	**SIM Pos**
1										
1.1		Verify cmdResult==OK commandEcho 1541		B	Skip this step if a BEP is NOT active and NOT ready to execute commands.					
			pmon	B	10 DEACCD POWEROFF messages					
2										
2.1					Ignore if DPA unpowered			1,2,4,6		
	V			2						
	V			2						
	V			1						
	V			2						
	V			2						
	V			2						
	V			2						
2.2					Ignore if DPA unpowered			1,2,4,6		