

SDET_ON - Switch ON the SPIRE Spectrometer
 File: H_FCP_SPI_SDEN.xls
 Author: R. Biggins



Procedure Summary

Objectives

The objective of this procedure is to switch ON the Spectrometer Detectors (SDET)

Summary of Constraints

n/a

Spacecraft Configuration

Start of Procedure

SPIRE is in SMEC_INIT mode (for SVT-1 SPIRE will be in SMEC_ON mode)

End of Procedure

SPIRE is in SPECSTBY mode

Reference File(s)

Input Command Sequences

Output Command Sequences

HFSSDEN

Referenced Displays

ANDs **GRDs** **SLDs**
 ZAZ93999

Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
07/08/07		1	Created	R. Biggins	
15/01/08		2	Update due to initial testing against the simulator: - TCs updated due to new DB	R. Biggins	
24/01/08		3	Update due to changes in input file (SDET_ON: version 3) - Execution times removed - Update to DRCU Commands	R. Biggins	
22/02/08		4	 Update due to testing against MOC Simulator: - Time Tags updated - BBID/OBSID TM checks added - Editorial updates	R. Biggins	
03/03/08		4.01	Validation : Update due to comments by S. Sidher: - Editorial updates due to SVT-1/flight differences in initial mode	R. Biggins	

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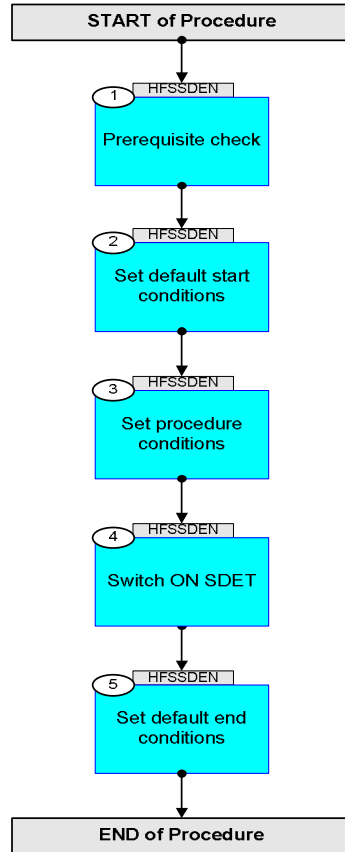


19/05/08	1	5	Updates due to SVT-1 testing: <ul style="list-style-type: none"> - TM checks added to RESET_DRCU_COUNTERS TC - All DRCU commands in step 4.1 have been set for automatic dispatch with telemetry checks being moved to step 4.2 - Default OBSID value updated to 0x0000 0000 - flags updated - comments added/updated - AND updated for all TM parameters 	R. Biggins	
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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
HFSSDEN Switch ON SDET				
SSID :				
1		Prerequisite check		Next Step: 2
		Verify Telemetry MODE SM00M500	= SMEC_INIT	AND=ZAZ93999
		Verify Telemetry SLIABITSTAT SM_1X520	= OFF	AND=ZAZ93999
		Verify Telemetry SPECJFETSTAT SMF0F510	= 0 <hex>	AND=ZAZ93999
		Verify Telemetry SSWJFET1V SM00V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry SSWJFET2V SM01V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry SLWJFET1V SM10V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry SLIAP5V SML3V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry SLIAP9V SML4V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry SLIAM9V SML5V510	= 0.0 V	AND=ZAZ93999
		Verify Telemetry BSW_SDB_ActProf DEF5F160	= 3 <dec>	AND=ZAZ93999
2		Set default start conditions		Next Step: 3
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500	SC003500 0 <hex>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SSID : 370	SET_BBID SP01N500 80010001 <hex>	
		Verify Telemetry BBFULLTYPE	SM2LN500 = ClearObs	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID SSID : 370	SET_OBSID SP00N500 00000000 <hex>	
		Verify Telemetry OBSID	SM10N500 = 00000000 <hex>	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SSID : 370	SET_BBID SP01N500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE	SM2LN500 = Null	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 0 <hex>	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SSID : 370	SET_BBID SP01N500 80020001 <hex>	SC001500
		Verify Telemetry BBFULLTYPE	SM2LN500 = StartObs	AND=ZAZ93999
3		Set procedure conditions		Next Step: 4
	ET=+ UT=+00.00.00	RESET_DRCU_COUNTERS SSID : 370	RESET_DRCU_COUNTERS	SCD00505
		Verify that the TRESET parameter has the same value as the THSK parameter TRESET	SM01T500 same as THSK	AND=ZAZ93999
			THSK	SM00T500 any AND=ZAZ93999
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 1 <hex>	SC003500
	ET=+ UT=+00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID SSID : 370	SET_OBSID SP00N500 OBS_ID	SC000500
		Verify Telemetry OBSID	SM10N500 OBS_ID	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 0 <hex>	SC003500

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SSID : 370	SET_BBID SP01N500 80000000 <hex>	SC001500
		Verify Telemetry BBFULLTYPE	SM2LN500 = Null	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SSID : 370	SET_OBS_STEP SP03N500 0 <hex>	SC003500
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SSID : 370	SET_BBID SP01N500 86000001 <hex>	SC001500
		Verify Telemetry BBFULLTYPE	SM2LN500 = SF_BDA_On	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_MODE Command Parameter(s) : OBSERVING_MODE SSID : 370	SET_OBS_MODE SP02N500 206 <hex>	SC002500
		Verify Telemetry MODE	SM00M500 = SDET_ON	AND=ZAZ93999
4		Switch ON SDET		Next Step: 5
4.1		Send DRCU commands		<input type="checkbox"/>
		WARNING: All the TCs in this step should be sent automatically with the defined times between uplink.		
	ET=+ UT=+00.00.01	Send DRCU command to SetDRelONoff SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND OVERRIDE SSID : 370	SPD4N505 SPD9N505 A0870006 <hex> 0 <hex> (Def)	SCD06505

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Send DRCU command to SetSpectroBiasMode SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843000FF <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetSpectroMClkDiv SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84390079 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetSpectroBiasDiv SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84380001 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetSpectroBiasAmpl (SW channels) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84310002 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetSpectroBiasAmpl (LW channels) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84320002 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetPhaseShift (SW channels) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843A0080 <hex> 0 <hex> (Def)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Send DRCU command to SetPhaseShift (LW channels) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843B0080 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUDataMode SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843C0014 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUStartFrame SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843E0001 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.02	Send DRCU command to SetDCUStartFrame SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843E0000 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUDataMode SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843C001C <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUStartFrame SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843E0001 <hex> 0 <hex> (Def)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.03	Send DRCU command to SetDCUStartFrame SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843E0000 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	FLUSH_FIFO FLUSH_FIFO Command Parameter(s) : FIFOFLAGS SPD0N505 SSID : 370	SCD01505 1000 <hex>	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUDataMode SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843C0004 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCU FrameCount SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843D0000 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetDCUStartFrame SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 843E0001 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.04	Send DRCU command to SetSSWJFETSourceVoltage (Ch 1) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 8435004C <hex> 0 <hex> (Def)	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	Send DRCU command to Set SLW/SSW JFET Bias Settings SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84370002 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to SetSSWJFETSourceVoltage (Ch 2) SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 8436004C <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to Set SLW/SSW JFET Bias Settings SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84370006 <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 8434004C <hex> 0 <hex> (Def)	
	ET=+ UT=+00.00.01	Send DRCU command to Set SLW/SSW JFET Bias Settings SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 SSID : 370	SCD06505 84370007 <hex> 0 <hex> (Def)	
4.2		Verify telemetry		<input type="checkbox"/>
		Verify Telemetry SLIABITSTAT SM_1X520	= ON	AND=ZAZ93999
		Verify Telemetry SPECJFETSTAT SMF0F510	= 7 <hex>	AND=ZAZ93999
		Verify Telemetry SLIAP5V SML3V510	= 5.0 V	AND=ZAZ93999
		Verify Telemetry SLIAP9V SML4V510	= 11.5 V	AND=ZAZ93999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry SLIAM9V SML5V510	= -11.5 V	AND=ZAZ93999
		Ensure that the following parameters are within approximately -1V and -3V		
		Verify Telemetry SLWJFET1V SM10V510	= -1.47 V	AND=ZAZ93999
		Verify Telemetry SSWJFET1V SM00V510	= -1.47 V	AND=ZAZ93999
		Verify Telemetry SSWJFET2V SM01V510	= -1.47 V	AND=ZAZ93999
4.3		Set Mode		<input type="checkbox"/>
	ET=+ UT=+00.00.00	SET_OBS_MODE Command Parameter(s) : OBSERVING_MODE SP02N500 SSID : 370	SC002500 400 <hex>	
		Verify Telemetry MODE SM00M500	= SPECSTBY	AND=ZAZ93999
5		Set default end conditions		Next Step: END
		Note that a TM(5,1) packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 SSID : 370	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 SSID : 370	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ93999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 SSID : 370	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 SSID : 370	SC001500 80030001 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= EndObs	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 SSID : 370	SC003500 1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 SSID : 370	SC000500 00000000 <hex>	
		Verify Telemetry OBSID SM10N500	= 00000000 <hex>	AND=ZAZ93999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 SSID : 370	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 SSID : 370	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ93999
End of Procedure				