

Mode\_ScuFunc03 SCU DC Thermometry Check  
 File: H\_COP\_SPI\_SCDT.xls  
 Author: L.Lucas-hp



## Procedure Summary

### Objectives

The purpose of this procedure is SCU DC Thermometry check on PRIME.  
 Based on Procedure:  
 Mode\_ScuFunc03 (v3)

### Summary of Constraints

Procedures DRCU\_ON and SCU-02 must have been successfully run.

### Spacecraft Configuration

**Start of Procedure**

Mode = SPECSTBY or REDY

**End of Procedure**

Mode = SPECSTBY or REDY

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HCSSCDT

### Referenced Displays

<b>ANDs</b>	<b>GRDs</b>	<b>SLDs</b>
ZAZ90999		
SA_1_559		
SA_6_559		

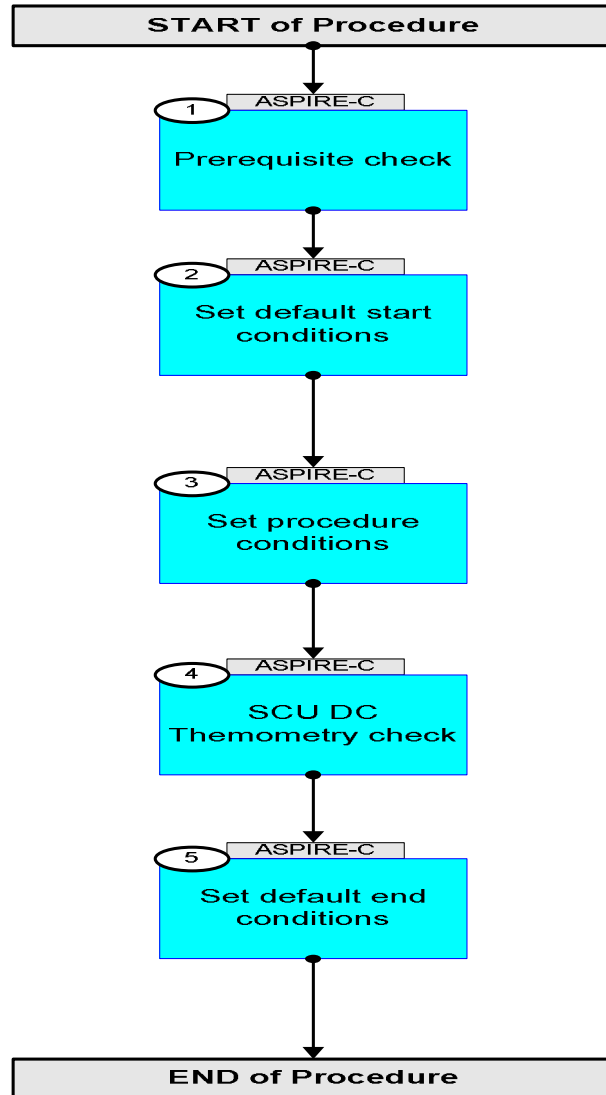
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
22/12/08		1	Created	L.Lucas-hp	
23/01/09	2	2	Sequence created	L.Lucas-hp	
24/03/09	2.2	2.01	Validation : Title Update	L.Lucas-hp	
21/04/09	2.3	2.02	Validation : Text Update	L.Lucas-hp	
05/05/09	2.4	2.03	Validation : <input type="checkbox"/> Text updates to s/c start and end config	L.Lucas-hp	

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### Procedure Flowchart Overview

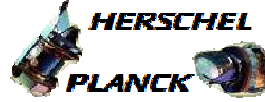


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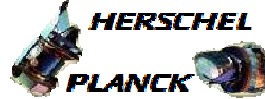
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
TC Seq. Name : HCSSCDT (SCU DC Thermal)				
TimeTag Type: Y Sub Schedule ID: <input type="checkbox"/>				
1		Prerequisite check		Next Step: 2
1.1		HSC/ICC input		<input type="checkbox"/>
		Verify that the HSC has supplied a valid OBSID value:  OBS_ID = 0xnnnn nnnn		
2		Set default start conditions		Next Step: 3
		Note that a <b>TM(5,1)</b> 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  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP  SP03N500	SC003500  0 <hex>
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID  SP01N500	SC001500  80010001 <hex>
		Verify Telemetry  BBFULLTYPE	SM2LN500	= ClearObs AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP  SP03N500	SC003500  1 <hex>

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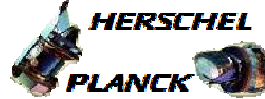
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	SET_OBSID  Command Parameter(s) : OBSERVATION_ID  Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SET_OBSID  SP00N500  00000000 <hex>	
		Verify Telemetry  OBSID SM10N500	= 00000000 <hex>	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP  SP03N500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID  SP01N500  80000000 <hex>	
		Verify Telemetry  BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP  SP03N500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID  SP01N500  80020001 <hex>	
		Verify Telemetry  BBFULLTYPE SM2LN500	= StartObs	AND=ZAZ90999
3		Set procedure conditions		Next Step: 4

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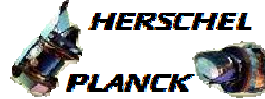
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	RESET_DRCU_COUNTERS  Subsch. ID : 370 Det. descr. : RESET DRCU COUNTERS	SCD00505	
		Verify that the TRESET parameter has the same value as the THSK parameter  TRESET SM01T500	same as THSK	AND=SA_1_559
		THSK SM00T500	any	AND=SA_1_559
		Note that a <b>TM(5,1)</b> 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  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID  Command Parameter(s) : OBSERVATION_ID SP00N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SC000500  OBS_ID	
		Verify Telemetry  OBSID SM10N500	OBS_ID	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP SP03N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID SP01N500  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500  80000000 <hex>	
		Verify Telemetry  BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999

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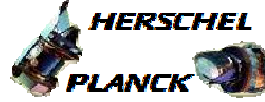
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	SET_OBS_STEP  SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP                      SP03N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID                      SP01N500  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500  8A010001 <hex>	
		Verify Telemetry  BBFULLTYPE                      SM2LN500	= SCU_DC_Therm	AND=SA_6_559
4		SCU DC Themometry check		Next Step: 5
	ET=+ UT=+00.00.02	SET_OBS_STEP  SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP                      SP03N500  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  1 <hex>	
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND  SEND_DRCU_COMMAND  Command Parameter(s) : DRCUCOMMAND                      SPD4N505 OVERRIDE                      SPD9N505  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505  A085FFFF <hex> 0 <hex> (Def)	
5		Set default end conditions		Next Step: END
		Note that a <b>TM(5,1)</b> packet [New_Step_Report] is generated after each of the following SET_OBS_STEP telecommands		

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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  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID SP01N500  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500  80000000 <hex>	
		Verify Telemetry  BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP SP03N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID  SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID SP01N500  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500  80030001 <hex>	
		Verify Telemetry  BBFULLTYPE SM2LN500	= EndObs	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP  SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP SP03N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  1 <hex>	
	ET=+ UT=+00.00.01	SET_OBSID  SET_OBSID  Command Parameter(s) : OBSERVATION_ID SP00N500  Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SC000500  00000000 <hex>	

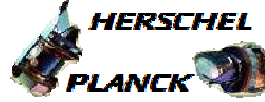
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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry OBSID SM10N500	= 00000000 <hex>	AND=ZAZ90999
	ET=+ UT=+00.00.00	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	
	ET=+ UT=+00.00.01	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999
		Verify Telemetry BBFULLTYPE SM2LN500		AND=SA_6_559
		Note: If the instrument is at He I temperature check the values of SCU DC thermometry channels.		
		TMCHECK Expected value at He I temp: PUMPHTRTEMP ~4.2K		
		Verify Telemetry PUMPHTRTEMP SMF0K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: PUMPHSTEMP ~4.4K		
		Verify Telemetry PUMPHSTEMP SMF1K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: EVAPHSTEMP ~4.3K		
		Verify Telemetry EVAPHSTEMP SMF2K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SHUNTTEMP ~4.2K		
		Verify Telemetry SHUNTTEMP SMF3K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: EMCFILTEMP ~4.8K		
		Verify Telemetry EMCFILTEMP SMF4K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SL0TEMP ~4.2K		

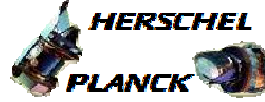


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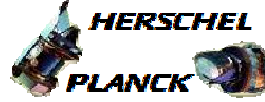
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry SL0TEMP SMF5K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: PL0TEMP ~4.2K		
		Verify Telemetry PL0TEMP SMF6K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: OPTTEMP ~4.8K		
		Verify Telemetry OPTTEMP SMF7K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: BAFTEMP ~4.8K		
		Verify Telemetry BAFTEMP SMF8K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: BSMIFTEMP ~4.7K		
		Verify Telemetry BSMIFTEMP SMF9K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SCAL2TEMP ~4.8K		
		Verify Telemetry SCAL2TEMP SMS0K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SCAL4TEMP ~4.8K		
		Verify Telemetry SCAL4TEMP SMS1K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SCALTEMP ~4.8K		
		Verify Telemetry SCALTEMP SMS2K520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SMECIFTEMP ~4.7K		
		Verify Telemetry SMECIFTEMP SMFAK520		AND=SA_6_559
		TMCHECK Expected value at He I temp: SMECTEMP ~4.7K		
		Verify Telemetry SMECTEMP SMFBK520		AND=SA_6_559
		TMCHECK Expected value at He I temp: BSMTEMP ~4.8K		
		Verify Telemetry BSMTEMP SMFCK520		AND=SA_6_559
		Note: If the instrument is at He II temperature check the values of SCU DC thermometry channels.		
		TMCHECK Expected value at He II temp: PUMPHTRTEMP ~4.6K		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Verify Telemetry PUMPHRTEMP SMF0K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: PUMPHSTEMP ~3.0K		
		Verify Telemetry PUMPHSTEMP SMF1K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: EVAPHSTEMP ~3.0K		
		Verify Telemetry EVAPHSTEMP SMF2K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SHUNTTEMP ~1.7K		
		Verify Telemetry SHUNTTEMP SMF3K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: EMCFILTEMP ~4.6K		
		Verify Telemetry EMCFILTEMP SMF4K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SL0TEMP ~1.7K		
		Verify Telemetry SL0TEMP SMF5K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: PL0TEMP ~1.7K		
		Verify Telemetry PL0TEMP SMF6K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: OPTTEMP ~4.6K		
		Verify Telemetry OPTTEMP SMF7K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: BAFTEMP ~4.6K		
		Verify Telemetry BAFTEMP SMF8K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: BSMIFTEMP ~4.5K		
		Verify Telemetry BSMIFTEMP SMF9K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SCAL2TEMP ~4.6K		
		Verify Telemetry SCAL2TEMP SMS0K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SCAL4TEMP ~4.6K		
		Verify Telemetry SCAL4TEMP SMS1K520		AND=SA_6_559

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		TMCHECK Expected value at He II temp: SCALTEMP ~4.6K		
		Verify Telemetry SCALTEMP SMS2K520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SMECIFTEMP ~4.6K		
		Verify Telemetry SMECIFTEMP SMFAK520		AND=SA_6_559
		TMCHECK Expected value at He II temp: SMECTEMP ~4.6K		
		Verify Telemetry SMECTEMP SMFBK520		AND=SA_6_559
		TMCHECK Expected value at He II temp: BSMTEMP ~4.5K		
		Verify Telemetry BSMTEMP SMFCK520		AND=SA_6_559
<b>End of Procedure</b>				