

Mode_BSMFunc05b Closed Loop Chop Test
 File: H_COP_SPI_BS5B.xls
 Author: L.Lucas-hp



Procedure Summary

Objectives

The objective of this procedure is a BSM Close Loop Chop Test PRIME.

Based on Procedure:
 Mode_BSMFunc05b (v5)

The purpose is Characterising BSM movement for a single scan on chop axis, in close loop. Test Description:
 Move BSM to multiple set positions. Check telemetry response, consumed power.

Summary of Constraints

Ensure that BSM-01 and BSM_INIT has have been successfully run.

Spacecraft Configuration

Start of Procedure

SPIRE Sub-Mode: BSM_INIT

End of Procedure

SPIRE Sub-Mode: BSM_INIT

Reference File(s)

Input Command Sequences

Output Command Sequences

HSCBS5B

Referenced Displays

ANDs	GRDs	SLDs
ZAZ90999		
SA_1_559		

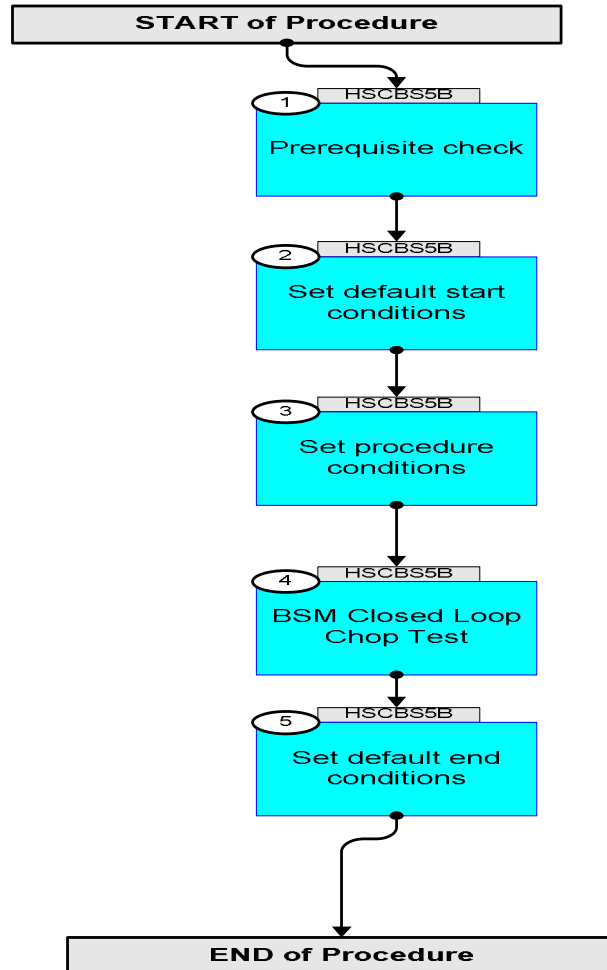
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
22/12/08		1	Created	L.Lucas-hp	
14/01/09		1.01	Validation : Update AND	L.Lucas-hp	
23/01/09		2	TC and AND Updates	L.Lucas-hp	
26/01/09	2	3	Sequence not previously generated	L.Lucas-hp	
23/03/09	2.2	3.01	Validation : Title Updates	L.Lucas-hp	
18/05/09	2.5	4	Procedure lost in space. Re-submitted to MOIS	L.Lucas-hp	

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Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
Beginning of Procedure					
		TC Seq. Name :HSCBS5B (BSM Closed LChopTest) TimeTag Type: Y Sub Schedule ID: <input type="checkbox"/>			
1		Prerequisite check		Next Step: 2	
1.1		HSC/ICC input			
		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 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 0 <hex> Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500	TC	
	ET+= UT+=00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 80010001 <hex> Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500	TC	
		Verify Telemetry BBFULLTYPE SM2LN500 = ClearObs		AND=ZAZ90999	
	ET+= UT+=00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 1 <hex> Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500	TC	
	ET+= UT+=00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 00000000 <hex> Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SC000500	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		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>	TC	
	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>	TC	
		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>	TC	
	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 80020001 <hex>	TC	
		Verify Telemetry BBFULLTYPE SM2LN500	= StartObs	AND=ZAZ90999	
3		Set procedure conditions		Next Step: 4	
	ET=+ UT=+00.00.00	RESET_DRCU_COUNTERS RESET_DRCU_COUNTERS Subsch. ID : 370 Det. descr. : RESET DRCU COUNTERS	SCD00505	TC	
		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 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 SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 1 <hex>	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SET_OBSID SC000500 OBS_ID	TC	
		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	SET_OBS_STEP SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SC001500 80000000 <hex>	TC	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999	
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SC001500 89060001 <hex>	TC	
		Verify Telemetry BBFULLTYPE SM2LN500	= StartMCUdata	AND=ZAZ90999	
4		BSM Closed Loop Chop Test		Next Step: 5	
		Select the TM Display for CHOP PARAMETERS and JIGGLE PARAMETERS			
		TMCHECK Check that CHOPLOOPMODE and JIGGLOOPMODE are set to 1			
		Verify Telemetry CHOPLOOPMODE SMC0M515	= CLOSED_MRSENSE	AND=ZAZ90999	
		Verify Telemetry JIGGLOOPMODE SML3M515	= CLOSED_MRSENSE	AND=ZAZ90999	
		Unless otherwise instructed, execute all the TCs in this test without performing any TM parameter checks on the MCS			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	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 91C20000 <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.00	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c00000 <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c40000 <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.00	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c50000 <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c20013 <hex> 0 <hex> (Def)	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.00	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c3ffff <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505 91c10001 <hex> 0 <hex> (Def)	TC	
	ET=+ UT=+00.00.01	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.00	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 80000000 <hex>	TC	
	ET=+ UT=+00.00.02	SET_OBS_STEP SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.00	SET_BBID SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 TC Control Flags : GBM IL DSE ---- -- Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SC001500 81100001 <hex>	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.02	RUN_VM RUN_VM Command Parameter(s) : TABLEID_RUNVM SPV0N500 47 <hex> INDEX_RUNVM SPV1N500 0 <hex> N_RUNVM SPV2N500 10 <dec> DATA_RUNVM SPV3N500 46592 <dec> DATA_RUNVM SPV3N500 39520 <dec> DATA_RUNVM SPV3N500 27176 <dec> DATA_RUNVM SPV3N500 39520 <dec> DATA_RUNVM SPV3N500 50 <dec> DATA_RUNVM SPV3N500 500000 <dec> DATA_RUNVM SPV3N500 0 <dec> DATA_RUNVM SPV3N500 4 <dec>	SCV00500	TC	
		DATA_RUNVM SPV3N500 34959 <dec> DATA_RUNVM SPV3N500 31 <dec>			
		TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : EXECUTE COMMAND LIST HELD IN A TABLE BY INTERRUPT DRIVEN VM			
	ET=+ UT=+00.00.36	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 91439a60 <hex> OVERRIDE SPD9N505 0 <hex> (Def)	SCD06505	TC	
		TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU			
	ET=+ UT=+00.00.00	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 90c39300 <hex> OVERRIDE SPD9N505 0 <hex> (Def)	SCD06505	TC	
		TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU			
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 90c60001 <hex> OVERRIDE SPD9N505 0 <hex> (Def)	SCD06505	TC	
		TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU			
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 90c60000 <hex> OVERRIDE SPD9N505 0 <hex> (Def)	SCD06505	TC	
		TC Control Flags : GBM IL DSE --- -- --- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SC001500 80000000 <hex>	TC	
	ET=+ UT=+00.00.01	FLUSH_FIFO Command Parameter(s) : FIFOFLAGS SPD0N505 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : FORCE DPU TO READ SCIENCE DATA FROM FIFOS AND FLUSH CONTENTS	FLUSH_FIFO SCD01505 1000 <hex>	TC	
	ET=+ UT=+00.00.02	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.00	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SC001500 80000000 <hex>	TC	
	ET=+ UT=+00.00.02	SEND_DRCU_COMMAND Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505 TC Control Flags : GBM IL DSE ---- Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SEND_DRCU_COMMAND SCD06505 91c10000 <hex> 0 <hex> (Def)	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.01	FLUSH_FIFO FLUSH_FIFO Command Parameter(s) : FIFOFLAGS SPD0N505 TC Control Flags : GBM IL DSE --- -- -- Subsch. ID : 370 Det. descr. : FORCE DPU TO READ SCIENCE DATA FROM FIFOS AND FLUSH CONTENTS	SCD01505 2000 <hex>	TC	
		TMCHECK Check that CHOPLOOPMODE and JIGGLOOPMODE are still set to 1			
		Verify Telemetry CHOPLOOPMODE SMC0M515	= CLOSED_MRSENSE	AND=ZAZ90999	
		Verify Telemetry JIGGLOOPMODE SML3M515	= CLOSED_MRSENSE	AND=ZAZ90999	
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 SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500 0 <hex>	TC	
	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>	TC	
		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>	TC	
	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>	TC	
		Verify Telemetry BBFULLTYPE SM2LN500	= EndObs	AND=ZAZ90999	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SC003500 1 <hex>	TC	
	ET=+ UT=+00.00.01	SET_OBSID Command Parameter(s) : OBSERVATION_ID SP00N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION IDENTIFIER	SET_OBSID SC000500 00000000 <hex>	TC	
		Verify Telemetry OBSID SM10N500	= 00000000 <hex>	AND=ZAZ90999	
	ET=+ UT=+00.00.00	SET_OBS_STEP Command Parameter(s) : OBSERVATION_STEP SP03N500 Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP SC003500 0 <hex>	TC	
	ET=+ UT=+00.00.01	SET_BBID Command Parameter(s) : BUILDING_BLOCK_ID SP01N500 Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID SC001500 80000000 <hex>	TC	
		Verify Telemetry BBFULLTYPE SM2LN500	= Null	AND=ZAZ90999	
End of Sequence					
End of Procedure					