

Mode\_BSMFunc05a Open Loop Chop Test  
 File: H\_COP\_SPI\_BS5A.xls  
 Author: L.Lucas-hp



## Procedure Summary

### Objectives

The objective of this procedure is a BSM Open Loop Chop test on the PRIME, characterising the BSM movement in Open Loop.  
 Based on Procedure:  
 Mode\_BSMFunc05a (v5)

### Summary of Constraints

BSM-01 has been successfully run.

### Spacecraft Configuration

**Start of Procedure**

SPIRE in REDY mode + BSM ON

**End of Procedure**

SPIRE in REDY mode + BSM ON

### Reference File(s)

**Input Command Sequences**

**Output Command Sequences**

HCSBS5A

### Referenced Displays

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

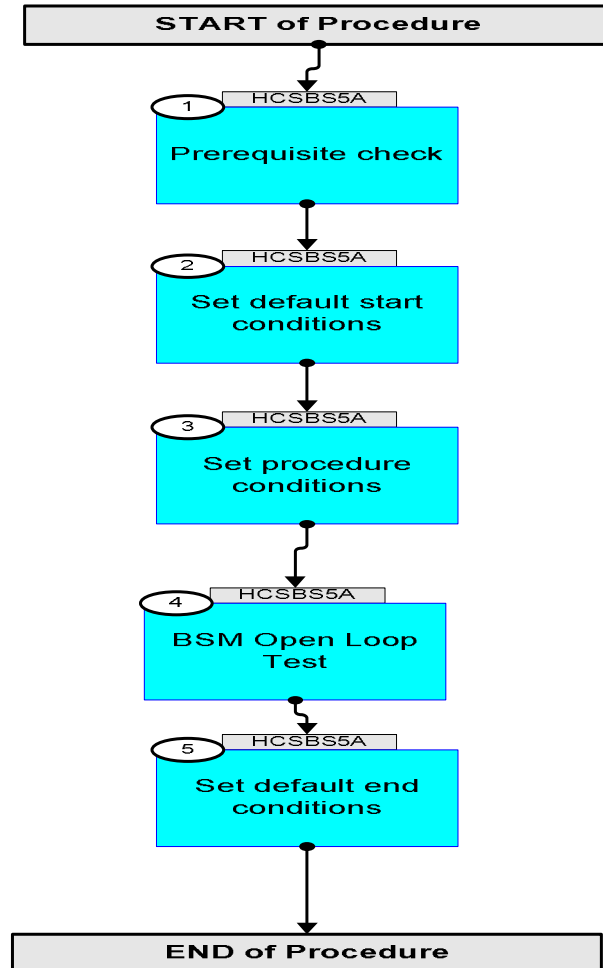
### Configuration Control Information

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	
20/01/09		2	TC Parameter updated	L.Lucas-hp	
23/01/09	2	3	Commands and AND Updates	L.Lucas-hp	
23/03/09	2.2	3.01	Validation : Title Update	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
<b>Beginning of Procedure</b>					
TC Seq. Name :HCSBS5A ( BSM OLChopTest ) HCSBS5A TimeTag Type: Y Sub Schedule ID: □					
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 <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 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 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 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 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 Open Loop Test		Next Step: 5	
		Unless otherwise instructed, execute all the TCs in this test without performing any TM parameter checks on the MCS			
	ET=+ UT=+00.00.01	SEND_DRCU_COMMAND  Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505  TC Control Flags :  Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SEND_DRCU_COMMAND  SCD06505  91C20000 <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  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	
	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	

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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 --- -- ---  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	
	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   40960 <dec> DATA_RUNVM              SPV3N500   32768 <dec> DATA_RUNVM              SPV3N500   32768 <dec> DATA_RUNVM              SPV3N500   32768 <dec> DATA_RUNVM              SPV3N500   50 <dec> DATA_RUNVM              SPV3N500   500000 <dec> DATA_RUNVM              SPV3N500   0 <dec> DATA_RUNVM              SPV3N500   4 <dec>	SCV00500	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		DATA_RUNVM SPV3N500 DATA_RUNVM SPV3N500  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : EXECUTE COMMAND LIST HELD IN A TABLE BY INTERRUPT DRIVEN VM	34959 <dec> 31 <dec>		
	ET+= UT+=00.00.36	SEND_DRCU_COMMAND <p style="text-align: right;">SEND_DRCU_COMMAND</p> Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505  91439a60 <hex> 0 <hex> (Def)	TC	
	ET+= UT+=00.00.00	SEND_DRCU_COMMAND <p style="text-align: right;">SEND_DRCU_COMMAND</p> Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505  90c39300 <hex> 0 <hex> (Def)	TC	
	ET+= UT+=00.00.01	SEND_DRCU_COMMAND <p style="text-align: right;">SEND_DRCU_COMMAND</p> Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505  90c60001 <hex> 0 <hex> (Def)	TC	
	ET+= UT+=00.00.01	SEND_DRCU_COMMAND <p style="text-align: right;">SEND_DRCU_COMMAND</p> Command Parameter(s) : DRCUCOMMAND SPD4N505 OVERRIDE SPD9N505  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SCD06505  90c60000 <hex> 0 <hex> (Def)	TC	
	ET+= UT+=00.00.00	SET_OBS_STEP <p style="text-align: right;">SET_OBS_STEP</p> Command Parameter(s) : OBSERVATION_STEP SP03N500  TC Control Flags : <p style="text-align: right;">GBM IL DSE ---- --</p> Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SC003500  0 <hex>	TC	



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment	
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  TC Control Flags :  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID  SP01N500  80000000 <hex>  GBM IL DSE ----	SC001500	TC	
	ET=+ UT=+00.00.01	FLUSH_FIFO  Command Parameter(s) : FIFOFLAGS  TC Control Flags :  Subsch. ID : 370 Det. descr. : FORCE DPU TO READ SCIENCE DATA FROM FIFOS AND FLUSH CONTENTS	FLUSH_FIFO  SPD0N505  1000 <hex>  GBM IL DSE ----	SCD01505	TC	
	ET=+ UT=+00.00.02	SET_OBS_STEP  Command Parameter(s) : OBSERVATION_STEP  TC Control Flags :  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP  SP03N500  0 <hex>  GBM IL DSE ----	SC003500	TC	
	ET=+ UT=+00.00.00	SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  TC Control Flags :  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID  SP01N500  80000000 <hex>  GBM IL DSE ----	SC001500	TC	
	ET=+ UT=+00.00.02	SEND_DRCU_COMMAND  Command Parameter(s) : DRCUCOMMAND OVERRIDE  TC Control Flags :  Subsch. ID : 370 Det. descr. : SEND A SINGLE COMMAND TO THE DRCU	SEND_DRCU_COMMAND  SPD4N505 SPD9N505  91c10000 <hex> 0 <hex> (Def)  GBM IL DSE ----	SCD06505	TC	
	ET=+ UT=+00.00.01	FLUSH_FIFO  Command Parameter(s) : FIFOFLAGS  TC Control Flags :  Subsch. ID : 370 Det. descr. : FORCE DPU TO READ SCIENCE DATA FROM FIFOS AND FLUSH CONTENTS	FLUSH_FIFO  SPD0N505  2000 <hex>  GBM IL DSE ----	SCD01505	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
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			
	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  80030001 <hex>	TC	
		Verify Telemetry  BBFULLTYPE SM2LN500	= EndObs	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  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	

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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) : <b>OBSERVATION_STEP</b> <b>SP03N500</b>  Subsch. ID : 370 Det. descr. : SET OBSERVATION STEP	SET_OBS_STEP     0 <hex>	SC003500	TC	
	ET=+ UT=+00.00.01	SET_BBID  Command Parameter(s) : <b>BUILDING_BLOCK_ID</b> <b>SP01N500</b>  Subsch. ID : 370 Det. descr. : SET BUILDING BLOCK IDENTIFIER	SET_BBID     80000000 <hex>	SC001500	TC	
		Verify Telemetry  <b>BBFULLTYPE</b> <b>SM2LN500</b>	     = Null		AND=ZAZ90999	
End of Sequence						
<b>End of Procedure</b>						