

PACS\_Spec\_Gra\_IST\_Check\_1\_OBS  
 File: H\_COP\_PAC\_G201.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to check the stability of the grating under a given set of controller parameters. This is done by enabling and disabling the grating after a few seconds.

Based on procedure:  
 PACS\_Spec\_Gra\_IST\_Check\_1\_OBS (v2 dated 20.04.09)

### Summary of Constraints

RT Science must be enabled to receive the Diagnostic HK packets

### Spacecraft Configuration

#### Start of Procedure

PACS in NO\_PRIME (SAFE) mode

#### End of Procedure

PACS in NO\_PRIME (SAFE) mode  
 - PACS is generating Spectroscopy HK

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HCPG201X

### Referenced Displays

<b>ANDs</b>	<b>GRDs</b>	<b>SLDs</b>
ZAZ98999	PG002420	
PA016420		

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
10/10/08		1	Created	R. Biggins	
11/12/08		2	Updates due to new import files (dated 12.10.2008) - Procedure split into 2 sequences - Formal Parameter list updated	R. Biggins	
12/12/08	2	3	Changes due to IPF testing - ALL time tags updated (ET removed) - no change bars	R. Biggins	
17/04/09		4	Final updates before flight - Summary updated - TC flags updated	R. Biggins	
20/04/09	2.3	5	Changes due to new inputs from B. Vandenbussche - TCs in step 6 updated (new FPs) requiring updated IPF definition	R. Biggins	

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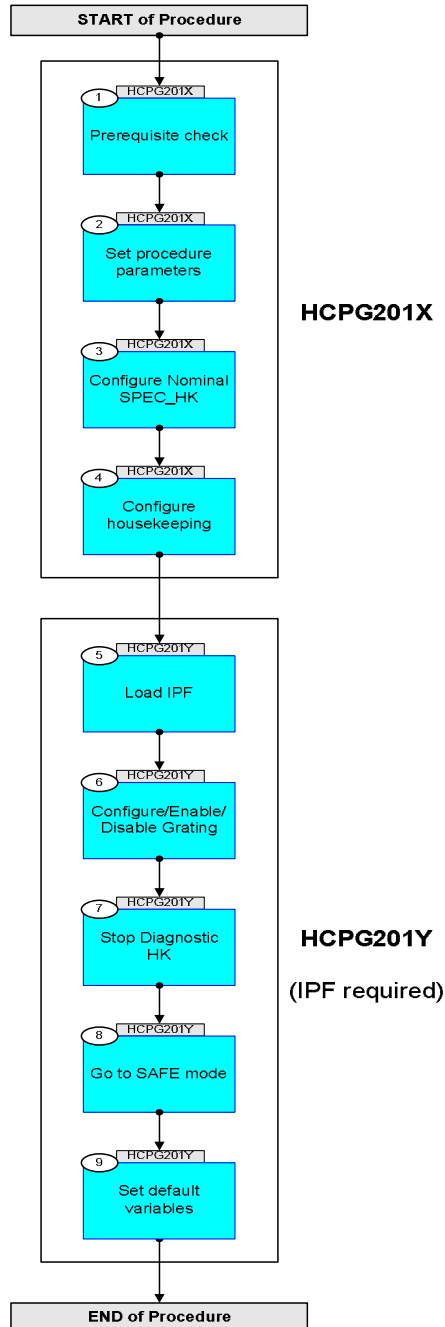


28/04/09	2.4	6	Update due to problems in IPF□ - ET times removed	R. Biggins	
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### Procedure Flowchart Overview

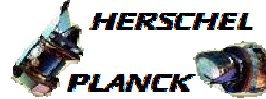


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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
<i>TC Seq. Name : HCPG201X (Grating Check 1)</i>  <i>TimeTag Type: N</i> <i>Sub Schedule ID:</i>  <input type="checkbox"/>				
1		Prerequisite check		Next Step: 2
1.1		HSC/ICC input		<input type="checkbox"/>
		Verify that the HSC has supplied a valid OBSID value:  OBS_ID = 0xnnnn nnnn		
		Verify: the following IPF file has been generated and can be called from the Manual Stack (where vvvv is the latest version number):  HCPG201Y_GRATING1_vvvv.IPF		
1.2		PACS mode		<input type="checkbox"/>
		Verify Telemetry	DP_TM_RATE PM049380 = NO PRIME	AND=ZAZ98999
2		Set procedure parameters		Next Step: 3
	ET=+ UT=+00.00.00	DMC_SET_OBSID  Command Parameter(s) : OBSERVATION_ID          PP069420  TC Control Flags :  GBM IL DSE --Y -- --  Subsch. ID : 90 Det. descr. : SET OBSID IN DMC	DMC_SET_OBSID  PC078420  OBS_ID	
		Verify Telemetry	DM_OBSID PM028420 OBS_ID	AND=ZAZ98999
3		Configure Nominal SPEC_HK		Next Step: 4

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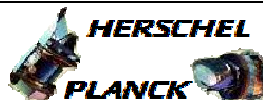
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	DPU_SET_HK_LIST  DPU_SET_HK_LIST  Command Parameter(s) : HK_PACKET_ID PP005380 SPU_ARRAY PP025380  Subsch. ID : 90 Det. descr. : SET THE PREDIFINED LIST OF HK VALUES FOR THE HK PACKET	PC003380  SPEC BOTH Array	
		Verify Telemetry  DP_TM_RATE PM049380	= SPEC	AND=ZAZ98999
4		Configure housekeeping		Next Step: 5
	ET=+ UT=+00.00.01	DMC_SET_BBID  DMC_SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID PP070420  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 90 Det. descr. : SET BBID IN DMC	PC079420  409D0001 <hex>	
	ET=+ UT=+00.00.01	DMC_WRT_DIAG_HK_LIST  DMC_WRT_DIAG_HK_LIST  Command Parameter(s) : DMC_DATA_LENGTH PP065420 DMC_4_BYTES_WORDS_DATA PP067420 DMC_4_BYTES_WORDS_DATA PP067420 DMC_4_BYTES_WORDS_DATA PP067420 DMC_4_BYTES_WORDS_DATA PP067420 DMC_CHECKSUM PP066420  Subsch. ID : 90 Det. descr. : WRITE THE LIST OF DIAGNOSTIC HK INTO DMC MEMORY	PC160420  4 <dec> FA <hex> FB <hex> 1C4 <hex> FFFF <hex> CDF9 <hex>	
	ET=+ UT=+00.00.01	DMC_START_DIAG_HK  DMC_START_DIAG_HK  Command Parameter(s) : DIAG_HK_PERIOD PP076420  Subsch. ID : 90 Det. descr. : START THE ACQUISITION OF THE DIAGNOSTIC HK	PC146420  0 <dec>	
		<b>NOTE:</b> The verification of the generation of the <b>TM(21,3)</b> diagnostic packets cannot be done on the MCS, but can be seen on the NCTRS (VC7)		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<p><i>TC Seq. Name : HCPG201Y (Grating Check 1)</i></p> <p><i>TimeTag Type: N</i>  <i>Sub Schedule ID:</i></p> <p>□</p>				
5		Load IPF		Next Step: 6
		Load the following IPF (TPF) file into the Manual Stack (where vvvv is the latest version number):  HCPG201Y_GRATING1_vvvv.IPF		
6		Configure/Enable/Disable Grating		Next Step: 7
		The following parameters should be monitored:		
		Verify Telemetry DM_GRAT_CUR_POS PM054420		GRD=PG002420
		Verify: This value should be stable DM_GRAT_OUTPUT PM256420		AND=PA016420
	ET=+ UT=+00.00.01	DMC_WRT_GRAT_CONF_PAR  Command Parameter(s) : DMC_4_BYTES_WORDS_DATA PP067420 1 DMC_4_BYTES_WORDS_DATA PP067420 2 DMC_4_BYTES_WORDS_DATA PP067420 3 DMC_4_BYTES_WORDS_DATA PP067420 4 DMC_4_BYTES_WORDS_DATA PP067420 5 DMC_4_BYTES_WORDS_DATA PP067420 6 DMC_4_BYTES_WORDS_DATA PP067420 7 DMC_4_BYTES_WORDS_DATA PP067420 8 DMC_4_BYTES_WORDS_DATA PP067420 9 DMC_4_BYTES_WORDS_DATA PP067420 10 DMC_CHECKSUM PP066420	PC162420	
		TC Control Flags :  Subsch. ID : 90 Det. descr. : WRITE THE PARAMETERS TO CONFIGURE THE GRATING SERVO LOOP	GBM IL DSE --Y -- ---	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	DMC_WRT_GRAT_CONF_FILT  <b>DMC_WRT_GRAT_CONF_FILT</b>  Command Parameter(s) : DMC_4_BYTES_WORDS_DATA          PP067420      11 DMC_4_BYTES_WORDS_DATA          PP067420      12 DMC_4_BYTES_WORDS_DATA          PP067420      13 DMC_4_BYTES_WORDS_DATA          PP067420      14 DMC_4_BYTES_WORDS_DATA          PP067420      15 DMC_CHECKSUM              PP066420      16  Subsch. ID : 90 Det. descr. : WRITE THE PARAMETERS OF THE GRATING CONTROLLER FILTER	PC378420	
	ET=+ UT=+00.00.01	DMC_WRT_GRAT_INDUC_AMPL  <b>DMC_WRT_GRAT_INDUC_AMPL</b>  Command Parameter(s) : DMC_4_BYTES_WORDS_DATA          PP067420      17 DMC_CHECKSUM              PP066420      18  Subsch. ID : 90 Det. descr. : WRITE THE AMPLITUDE OF THE INDUCTOSYN EXCITATION SIGNAL	PC203420	
	ET=+ UT=+00.00.01	DMC_WRT_GRAT_HALLOFFSET  <b>DMC_WRT_GRAT_HALLOFFSET</b>  Command Parameter(s) : DMC_4_BYTES_WORDS_DATA          PP067420      19 DMC_CHECKSUM              PP066420      20  Subsch. ID : 90 Det. descr. : WRITE THE OFFSET OF THE HALL SENSORS OF THE GRATING	PC368420	
	ET=+ UT=+00.00.01	DMC_WRT_GRAT_RANGE  <b>DMC_WRT_GRAT_RANGE</b>  Command Parameter(s) : DMC_4_BYTES_WORDS_DATA          PP067420      21 DMC_CHECKSUM              PP066420      22  Subsch. ID : 90 Det. descr. : WRITE THE NUMBER OF ENCODER STEPS OF THE HARDSTOPS	PC204420	
	ET=+ UT=+00.03.00	DMC_SWON_GRAT_CONT  <b>DMC_SWON_GRAT_CONT</b>  Subsch. ID : 90 Det. descr. : SWITCH ON GRATING CONTROLLER	PC108420	
	ET=+ UT=+00.00.01	DMC_ENABLE_GRAT_CONT  <b>DMC_ENABLE_GRAT_CONT</b>  Subsch. ID : 90 Det. descr. : ENABLE GRATING CONTROLLER	PC110420	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.03	DMC_DISABLE_GRAT_CONT  Subsch. ID : 90 Det. descr. : DISABLE GRATING CONTROLLER	PC111420	
7		Stop Diagnostic HK		Next Step: 8
	ET=+ UT=+00.00.01	DMC_STOP_DIAG_HK  TC Control Flags :  Subsch. ID : 90 Det. descr. : STOP THE ACQUISITION OF THE DIAGNOSTIC HK	DMC_STOP_DIAG_HK  GBM IL DSE --Y -- --	PC147420
		<b>NOTE:</b> The verification of the cessation of generation of the <b>TM(21,3)</b> diagnostic packets cannot be done on the MCS, but can be seen on the NCTRS (VC7)		
8		Go to SAFE mode		Next Step: 9
	ET=+ UT=+00.00.01	DMC_SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID  TC Control Flags :  Subsch. ID : 90 Det. descr. : SET BBID IN DMC	DMC_SET_BBID  PP070420  GBM IL DSE --Y -- --	PC079420  40180001 <hex>
	ET=+ UT=+00.00.01	DPU_START_OBCP  Command Parameter(s) : PROCEDURE_ID NUMBER_OF_TIMES  Subsch. ID : 90 Det. descr. : START AN OBCP WITH THE COMMANDED PARAMETERS	DPU_START_OBCP  PP012380 PP010380	PC012380  GO_SAFE_MODE 0 <dec>
		Verify Telemetry  DP_TM_RATE	PM049380	= NO PRIME AND=ZAZ98999
9		Set default variables		Next Step: END



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.01	DMC_SET_OBSID  Command Parameter(s) : OBSERVATION_ID                   PP069420  TC Control Flags :  GBM IL DSE --Y -- ---  Subsch. ID : 90 Det. descr. : SET OBSID IN DMC	PC078420  00000000 <hex>	
	ET=+ UT=+00.00.00	DMC_SET_BBID  Command Parameter(s) : BUILDING_BLOCK_ID                   PP070420  Subsch. ID : 90 Det. descr. : SET BBID IN DMC	PC079420  40000000 <hex>	
		Verify Telemetry  DM_OBSID                   PM028420	= 00000000 <hex>	AND=ZAZ98999
		Verify Telemetry  DM_BBID                   PM029420	= 40000000 <hex>	AND=ZAZ98999
<b>End of Procedure</b>				