

Enable default HK packets  
 File: H\_FCP\_DHS\_1009.xls  
 Author: S. Manganelli



## Procedure Summary

### Objectives

This procedure must be run to enable all essential + periodic HK packets.

### Summary of Constraints

Note that enabling diagnostic packets causes an increase on the bandwidth required to downlink them. If not enough bandwidth is available on the TM encoder (low rate 1 or 2) the VC4 TM queue can become saturated and not all packets shall be downlinked.

### Spacecraft Configuration

#### Start of Procedure

The CCU must be already initialised.

#### End of Procedure

Type Post-condition Here

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HFD1009X  
 HFD1009E  
 HFD1009A  
 HFD1009F  
 HFD1009D  
 HFD1009B  
 HFD1009G  
 HFD1009C  
 HFD1009Y

### Referenced Displays

ANDs      GRDs      SLDs

### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
17/12/07		1	Created	cmevi-hp	
16/01/08		2	Batch update of TC flags	S. Manganelli	
26/06/08		3	DB checks	S. Manganelli	
30/06/08		4	Sequences redefined.	cmevi-hp	
30/06/08	1	5	Editorial	S. Manganelli	
24/10/08		6	Added BSW4 and ASW 2 packets, added constraints	S. Manganelli	
11/11/08		7	Procedure restructured using sets of packets to be enabled	S. Manganelli	
11/12/08	2	8	Separated CCU Monitoring from STD HK	S. Manganelli	
27/02/09	2.1	9	Added initial and final report, regrouped TC in sequences	S. Manganelli	

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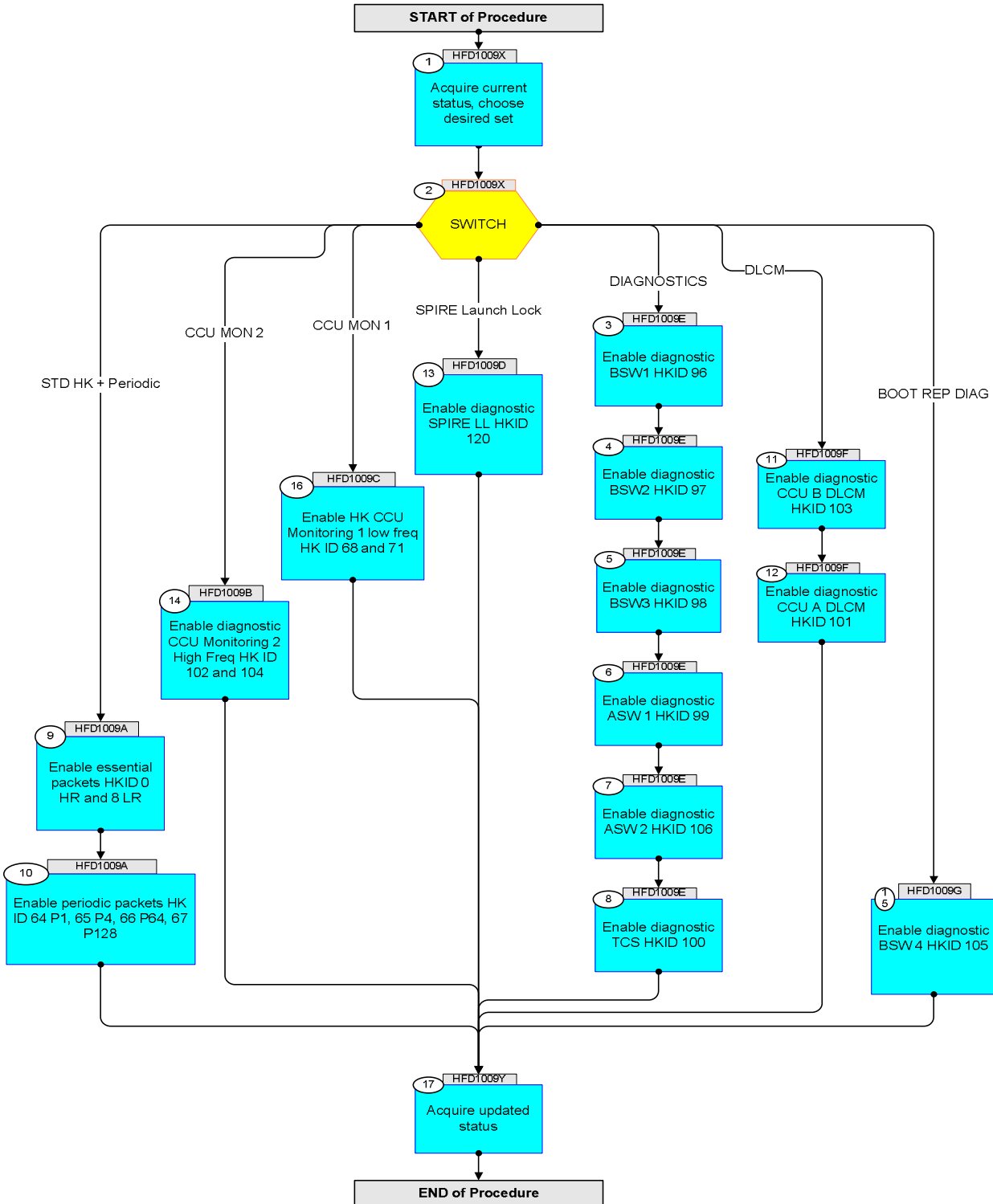


22/04/09	2.3	10	Added info tab "Enable Disable strategy"	S. Manganelli	
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## Procedure Flowchart Overview





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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <p style="text-align: right;">EnableTmGen</p> Command Parameter(s) : N                  DH017180 Sub-Type          DH019180 Packet-ID         DH020180  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
4		Enable diagnostic BSW2 HKID 97		Next Step: 5	
		Execute Telecommand <p style="text-align: right;">EnableTmGen</p> Command Parameter(s) : N                  DH017180 Sub-Type          DH019180 Packet-ID         DH020180  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
5		Enable diagnostic BSW3 HKID 98		Next Step: 6	
		Execute Telecommand <p style="text-align: right;">EnableTmGen</p> Command Parameter(s) : N                  DH017180 Sub-Type          DH019180 Packet-ID         DH020180  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
6		Enable diagnostic ASW 1 HKID 99		Next Step: 7	
		Execute Telecommand <p style="text-align: right;">EnableTmGen</p> Command Parameter(s) : N                  DH017180 Sub-Type          DH019180 Packet-ID         DH020180  TC Control Flags : GBM IL DSE --Y -- ---  Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
7		Enable diagnostic ASW 2 HKID 106		Next Step: 8	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 20px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 20px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
8		Enable diagnostic TCS HKID 100		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 20px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 20px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
End of Sequence					
TC Seq. Name : HFD1009A ( Enable ess period HK ) HFD1009A TimeTag Type: N Sub Schedule ID:  <div style="text-align: center;">□</div>					
9		Enable essential packets HKID 0 HR and 8 LR		Next Step: 10	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 20px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 20px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
10		Enable periodic packets HK ID 64 P1, 65 P4, 66 P64, 67 P128		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 100px;">             N                    DH017180              Sub-Type            DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 100px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
End of Sequence					
	HFD1009F	TC Seq. Name : HFD1009F ( Enable DLCM pkts )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>			
11		Enable diagnostic CCU B DLCM HKID 103		Next Step: 12	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 100px;">             N                    DH017180              Sub-Type            DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 100px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
12		Enable diagnostic CCU A DLCM HKID 101		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 100px;">             N                    DH017180              Sub-Type            DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 100px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
End of Sequence					
	HFD1009D	TC Seq. Name : HFD1009D ( Enable Spire LL pkt )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>			



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
13		Enable diagnostic SPIRE LL HKID 120		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
End of Sequence					
	HFD1009B	TC Seq. Name : HFD1009B ( Enable CCUMON hifreq )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>			
14		Enable diagnostic CCU Monitoring 2 High Freq HK ID 102 and 104		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
		Execute Telecommand <div style="text-align: right; margin-right: 20px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="margin-left: 40px;">             N                   DH017180              Sub-Type           DH019180              Packet-ID         DH020180           </div> TC Control Flags : <div style="margin-left: 40px;">             GBM IL DSE              --Y -- ---           </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	DC900180	TC	
End of Sequence					
	HFD1009G	TC Seq. Name : HFD1009G ( Enable BootRec pkt )  TimeTag Type: N Sub Schedule ID:  <input type="checkbox"/>			

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch	AIT Comment
15		Enable diagnostic BSW 4 HKID 105		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 100px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>N</b></span> <span><b>DH017180</b></span> <span><b>1 &lt;dec&gt; (Def)</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Sub-Type</b></span> <span><b>DH019180</b></span> <span><b>Diag Report</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Packet-ID</b></span> <span><b>DH020180</b></span> <span><b>105 &lt;dec&gt;</b></span> </div> TC Control Flags : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>GBM IL DSE</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>--Y -- ---</b></span> </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	<b>DC900180</b>	<b>TC</b>	
<b>End of Sequence</b> TC Seq. Name : HFD1009C ( Enable CCUMON lofreq ) TimeTag Type: N Sub Schedule ID: <div style="text-align: center; margin-top: 10px;">□</div>					
16		Enable HK CCU Monitoring 1 low freq HK ID 68 and 71		Next Step: 17	
		Execute Telecommand <div style="text-align: right; margin-right: 100px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>N</b></span> <span><b>DH017180</b></span> <span><b>1 &lt;dec&gt; (Def)</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Sub-Type</b></span> <span><b>DH019180</b></span> <span><b>HK Report</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Packet-ID</b></span> <span><b>DH020180</b></span> <span><b>68 &lt;dec&gt;</b></span> </div> TC Control Flags : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>GBM IL DSE</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>--Y -- ---</b></span> </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	<b>DC900180</b>	<b>TC</b>	
		Execute Telecommand <div style="text-align: right; margin-right: 100px;"><b>EnableTmGen</b></div> Command Parameter(s) : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>N</b></span> <span><b>DH017180</b></span> <span><b>1 &lt;dec&gt; (Def)</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Sub-Type</b></span> <span><b>DH019180</b></span> <span><b>HK Report</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>Packet-ID</b></span> <span><b>DH020180</b></span> <span><b>71 &lt;dec&gt;</b></span> </div> TC Control Flags : <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>GBM IL DSE</b></span> </div> <div style="display: flex; justify-content: space-between; margin-left: 100px;"> <span><b>--Y -- ---</b></span> </div> Subsch. ID : 10 Det. descr. : Enable Generation of Telemetry Packets	<b>DC900180</b>	<b>TC</b>	
<b>End of Sequence</b> TC Seq. Name : HFD1009Y ( Acquire Ena TMPKT ) TimeTag Type: N Sub Schedule ID: <div style="text-align: center; margin-top: 10px;">□</div>					



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**Enable Disable Strategy**

SPID	DESCR	HK ID	launch	launch	1st AOS	LEOP gnd	Later
			pad	pad	after sep	select asap	phases
			150k	5k	5k	at 150k	(TBC)
260130999	CDMU Herschel Essential HR HK Parameter Report	0	1	1	1	1	1
260131999	CDMU Herschel Essential LR HK Parameter Report	8	1	1	1	1	1
264999999	CDMU her Ess LCH NOGO HK Parameter Report	15		1	1		
260132999	CDMU Herschel Periodic P1 HK Parameter Report	64	1	1	1	1	1
260133999	CDMU Herschel Periodic P4 HK Parameter Report	65	1	1	1	1	1
260134999	CDMU Herschel Periodic P64 HK Parameter Report	66	1	1	1	1	1
260146999	CDMU Herschel Periodic P128 HK Parameter Report	67				1	1
260141999	Her Monitoring 1 Data from CCUA - generation period 512 s	68			1		1
260144999	Her Monitoring 1 Data from CCUB - generation period 512 s	71			1		1
260135999	CDMU Herschel Diagnostic BSW1 HK Parameter Report	96	1	1	1	1	1
260136999	CDMU Herschel Diagnostic BSW2 HK Parameter Report	97	1	1	1	1	1
260137999	CDMU Herschel Diagnostic BSW3 HK Parameter Report	98	1	1	1	1	1
260147999	CDMU Herschel Diagnostic BSW4 HK Parameter Report	105					
260138999	CDMU Herschel Diagnostic ASW1 HK Parameter Report	99	1			1	1
260148999	CDMU Herschel Diagnostic ASW2 HK Parameter Report	106				1	1
260139999	CDMU Herschel Diagnostic TCS HK Parameter Report	100	1			1	1
260141999	Her Monitoring 2 Data from CCUA - generation period 8 s	102	1	1	1	1	
260144999	Her Monitoring 2 Data from CCUB - generation period 8 s	104	1	1	1	1	
260140999	Her DLCM Data from CCUA - generation period 8 s	101					
260143999	Her DLCM Data from CCUB - generation period 8 s	103					
264000999	P DTM SPIRE LL	120					
264001999	P DTM TCS01	121	1				
		<b>Tot</b>	<b>13</b>	<b>11</b>	<b>13</b>	<b>14</b>	<b>14</b>

LEGEND
"1" on white background: generation enabled, downlink disabled
"1" on green background: generation and downlink enabled
For ALL TM(3,25) and TM(3,26) packets: storage enabled
Comments on specific cells show selection / deselection initiator

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Standard HK packets

HERSCHEL - CDMS HK PACKETS											
Packet Type	HK Identifier	SID	Packet Name	Number of DIDs	Timing (µs)	Size (bits)	Header + SID + CRC (bits)	Total size (bits)	Period (s)	bps	bps including the correction factor in the frame (1115/1099)
Essential	HK ID = 0	0x0000	High Rate	241	3912	4416	160	4576	4	1144	1160
	HK ID = 8	0x1000	Low Rate	188	2324	3056	160	3216	64	50	50
Periodic	HK ID = 64	0x2000	P1	118	1209	2160	160	2320	1	2320	2353
	HK ID = 65	0x2186	P4	83	1123	1024	160	1184	4	296	300
	HK ID = 66	0x230C	P64	56	660	1264	160	1424	64	22	22
	HK ID = 67	0x2492	P128	182	1991	2896	160	3056	128	23	23
	HK ID = 68	0x2618	CCU A Monit #1	118	1413	1672	160	2032	512	3	3
	HK ID = 71	0x2AAA	CCU B Monit #1	118	1413	1672	160	2032	512	3	3
Diagnostic	HK ID = 96	0x5000	BSW 1	22	242	528	160	688	8	86	87
	HK ID = 97	0x5186	BSW 2	9	99	432	160	592	8	74	75
	HK ID = 98	0x530C	BSW 3	26	286	512	160	672	8	84	85
	HK ID = 105	0x5D86	BSW 4	37	1650	4416	160	4576	256	17	17
	HK ID = 99	0x5492	ASW 1	54	486	1728	160	1888	64	29	29
	HK ID = 106	0x5F3C	ASW 2	20	180	400	160	560	8	70	71
	HK ID = 100	0x5618	TCS	159	3342	2344	160	2704	64	42	42
	HK ID = 101	0x579E	CCU A DLGM	61	729	960	160	1120	1	1120	1136
	HK ID = 102	0x5924	CCU A Monit #2	118	1413	1672	160	2032	8	254	257
	HK ID = 103	0x5AAA	CCU B DLGM	61	729	960	160	1120	1	1120	1136
HK ID = 104	0x5C30	CCU B Monit #2	118	1413	1672	160	2032	8	254	257	

Table 25: Herschel - CDMS HK packets summary