



HERSCHEL
SPIRE

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SPIRE DRCU Switch On Procedure

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Distribution

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1 Scope of Document

This document describes the procedure for the safe switch on of the SPIRE DRCU.

NOTE: It ONLY applies when the power bench is to be used NOT WHEN THE PSU is used.

2 Applicable Documents

	Title	Author	Reference	Date
AD01	SPIRE EGSE ILT Startup Procedures	Sunil Sidher & Miguel Requena	SPIRE-RAL-DOC-1630 Issue 0.7	24 th June 2003
AD02	SPIRE data ICD	Ken King	SPIRE-RAL-PRJ-001078), Issue 1.1	25 th May 2004

3 Constraints

- EGSE Router and EGSE Gateway must be running.
- CDMS Simulator must be running.
- SCOS2000 must be running.
- DPU must be powered on.

Refer to document EGSE-ILT-Startup-Procedures (SPIRE-RAL-DOC-001630) for more information on how to reach to this point.



4 DRCU switch on procedure

4.1 Stop SPIRE housekeeping telemetry generation

Objective:	To prevent the DPU from sending housekeeping parameter update requests through the DPU-DRCU interfaces while the DRCU is being powered on.
Initial Conditions:	DPU power is ON and HK telemetry is being generated. DRCU power is OFF . Telemetry being generated: CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. SPIRE Nominal housekeeping packets with APID 0x502, type 3, subtype 25. SPIRE Critical housekeeping packets with APID 0x500, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0
Final Conditions:	DPU power is ON and HK telemetry request to the DRCU is halted. DRCU power is OFF . Telemetry being generated: CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0
Constraints:	DPU must be powered ON (28 V power supply) and OBS must be running, i.e. HK must be generated. TC HISTORY display MANUAL STACK and EXIF (TOPE) tasks must have been started on SCOS2000.
Total Duration:	< 1 minutes



Step.	Action								
	<ul style="list-style-type: none"> In TOPE window : Run clear_HK_report.tcl procedure by selecting the procedure (single click over the procedure name) in TOPE and pressing run button. Two CLEAR_HK_REPORT commands are sent by this procedure to the OBS. Verify that both commands are successful on the TC history display. Result : Critical and nominal HK report stops. <p>Alternatively :</p> <ul style="list-style-type: none"> Issue command CLEAR_HK_REPORT from MANUAL STACK Parameters : <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Mib definition</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>HKPCKTID_CLEARHK</td> <td>0x300</td> </tr> </tbody> </table> Result : Critical HK report stops Issue command CLEAR_HK_REPORT from MANUAL STACK Parameters : <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Mib definition</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>HKPCKTID_CLEARHK</td> <td>0x301</td> </tr> </tbody> </table> Result : Nominal HK report stops <p>NOTE: Only one of these sequences is needed in order to stop housekeeping telemetry generation, you run either one OR the other.</p>	Mib definition	Value	HKPCKTID_CLEARHK	0x300	Mib definition	Value	HKPCKTID_CLEARHK	0x301
Mib definition	Value								
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4.2 Power on DRCU

Objective:	To power on the DRCU.
Initial Conditions:	DPU power is ON and HK telemetry request to the DRCU is halted. DRCU power is OFF . Telemetry being generated: CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0
Final Conditions:	DPU power is ON and HK telemetry request to the DRCU is halted. DRCU power is ON . Telemetry being generated:



	CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0
Constraints:	DPU must be powered ON (28 V power supply) and HK generation must have been stopped following the previous steps.
Total Duration:	< 2 minutes

Step.	Action
	<ul style="list-style-type: none"> Check if the DRCU Power bench main power is switch on. The LED in the top-right hand front side with the label Main Power of the DRCU will be on. See Figure1 at the end of the document. If the main power is on skip this step, if it's not, press the main power switch which is located in the top-right hand rear side of the DRCU power bench To switch the secondary power pull down the spring in the front side of the bench.

Comments: A picture taken of the front side of the power bench is shown at the end of the document.

4.3 Restarting the SPIRE Housekeeping

Objective:	To restart the SPIRE housekeeping generation
Initial Conditions:	DPU power is ON and HK telemetry request to the DRCU is halted. DRCU power is ON . Telemetry being generated: CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0
Final Conditions:	DPU power is ON and HK telemetry is being generated. DRCU power is ON . Telemetry being generated: CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. SPIRE Nominal housekeeping packets with APID 0x502, type 3, subtype 25. SPIRE Critical housekeeping packets with APID 0x500, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 5
Constraints:	DPU power must be ON (28 V power supply) DRCU power must be ON following previous steps
Total Duration:	< 1 minute



Step.	Action																												
	<ul style="list-style-type: none"> In TOPE window : Run define_New_HK_report.tcl procedure by selecting the procedure (single click over the procedure name) in TOPE and pressing run button. Two DEFINE_NEW_HK_REPORT commands are sent by this procedure to the OBS. Verify that both commands are successful on the TC history display. <p>Result : Critical and nominal HK report restarts.</p> <p>Alternatively:</p> <ul style="list-style-type: none"> Issue command DEFINE_NEW_HK_REPORT from MANUAL STACK Parameters : <table border="1" data-bbox="529 958 1281 1330"> <thead> <tr> <th>Mib definition</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>HKPCKTID_DEFINENEWHK</td> <td>0x301</td> </tr> <tr> <td>HKSID_DEFINENEWHK</td> <td>0x301</td> </tr> <tr> <td>HKINTERVAL_DEFINENEWHK</td> <td>0x3E8</td> </tr> <tr> <td>HKREPEAT_DEFINENEWHK</td> <td>0x1</td> </tr> <tr> <td>MONTABID_DEFINENEWHK</td> <td>0x1</td> </tr> <tr> <td>TABLEID_DEFINENEWHK</td> <td>0x1</td> </tr> </tbody> </table> <p>Result : Nominal HK report restarts</p> <ul style="list-style-type: none"> Issue command DEFINE_NEW_HK_REPORT from MANUAL STACK Parameters : <table border="1" data-bbox="529 1518 1281 1890"> <thead> <tr> <th>Mib definition</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>HKPCKTID_DEFINENEWHK</td> <td>0x300</td> </tr> <tr> <td>HKSID_DEFINENEWHK</td> <td>0x300</td> </tr> <tr> <td>HKINTERVAL_DEFINENEWHK</td> <td>0x7D0</td> </tr> <tr> <td>HKREPEAT_DEFINENEWHK</td> <td>0x1</td> </tr> <tr> <td>MONTABID_DEFINENEWHK</td> <td>0x0</td> </tr> <tr> <td>TABLEID_DEFINENEWHK</td> <td>0x0</td> </tr> </tbody> </table> <p>Result : Critical HK report restarts</p>	Mib definition	Value	HKPCKTID_DEFINENEWHK	0x301	HKSID_DEFINENEWHK	0x301	HKINTERVAL_DEFINENEWHK	0x3E8	HKREPEAT_DEFINENEWHK	0x1	MONTABID_DEFINENEWHK	0x1	TABLEID_DEFINENEWHK	0x1	Mib definition	Value	HKPCKTID_DEFINENEWHK	0x300	HKSID_DEFINENEWHK	0x300	HKINTERVAL_DEFINENEWHK	0x7D0	HKREPEAT_DEFINENEWHK	0x1	MONTABID_DEFINENEWHK	0x0	TABLEID_DEFINENEWHK	0x0
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TABLEID_DEFINENEWHK	0x0																												



5 DRCU Switch Off procedure

Objective:	To switch off the DRCU
Initial Conditions:	<p>DRCU main and secondary power switches are ON. DRCU power is ON. DPU power is ON and OBS running. Telemetry being generated:</p> <p>CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. SPIRE Nominal housekeeping packets with APID 0x502, type 3, subtype 25. CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 5</p>
Final Conditions:	<p>DRCU main and secondary power switches are OFF. DRCU powered OFF. DPU powered ON and OBS running. Telemetry being generated:</p> <p>CDMS Simulator housekeeping packets with APID 0x7F6, type 3, subtype 25. SPIRE Nominal housekeeping packets with APID 0x502, type 3, subtype 25. SPIRE Critical housekeeping packets with APID 0x500, type 3, subtype 25. In the DPU AND OBS PARAMETERS DISPLAY in SCOS check: MONSTAT = 0</p>
Constraints:	None.
Total Duration:	0 minute

Step.	Action
	<ul style="list-style-type: none"> • Pull down the spring in the front right-hand side of the power bench. The LED in the top-right hand front side with the label Secondary Power will fade off. • Switch off the Main Power on the top-right hand rear side.



Figure 1. Power bench front image (OFF configuration)