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**SPIRE DRCU Switch On Procedure for IST**  
SPIRE-RAL-PRC-002235

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**SPIRE DRCU Switch On Procedure for IST**



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## Document Change Record

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### 1 Scope of Document

This document describes the procedure for the safe switch on of the SPIRE DRCU during IST.  
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 <sup>th</sup> June 2003
AD02	SPIRE data ICD	Ken King	SPIRE-RAL-PRJ-001078), Issue 1.1	25 <sup>th</sup> May 2004

### 3 Constraints

- EGSE Router and EGSE Gateway must be running.
- SCOS2000 must be running.
- DPU must be powered ON following DPU switch ON procedure.



## 4 DRCU switch on procedure

The procedure consists of three main steps:

1. Stop SPIRE housekeeping telemetry generation
2. Power ON DRCU
3. Restart SPIRE housekeeping telemetry generation

These steps are explained in detail in the following sections. Fill in the check boxes as the procedure is executed.

### 4.1 Stop SPIRE housekeeping telemetry generation

<b>Objective:</b>	To prevent the DPU from sending housekeeping parameter update requests through the DPU-DRCU interfaces while the DRCU is being powered on.
<b>Initial Conditions:</b>	DPU power is <b>ON</b> and HK telemetry is being generated. DRCU power is <b>OFF</b> .
<b>Final Conditions:</b>	DPU power is <b>ON</b> and HK telemetry request to the DRCU is halted. DRCU power is <b>OFF</b> .
<b>Constraints:</b>	DPU must be powered <b>ON</b> (28 V power supply) and OBS must be running, i.e. HK must be generated.
<b>Total Duration:</b>	< 1 minutes

Step.	Action	Comments	Check
1	Check that the DPU is powered ON and that HK telemetry packets are being generated by the OBS.	HK packets (type, subtype) = (3, 25) with APIDs 0x500 and 0x502 for both critical and nominal HK respectively, must appear in the TMPH task in SCOS2000 once a second for nominal HK and once every 2 seconds for critical HK.	
2	In SCOS alpha numeric display SPIRE DPU AND OBS PARAMETERS display check MONSTAT =0	Reflects which subsystems are ON: Bit 0 = SCU (ON=1/OFF=0) Bit 1 = DCU (ON=1/OFF=0) Bit 2 = MCU (ON=1/OFF=0)	
3	In CCS TOPE : Execute <b>Template_ClearHKReport.tcl</b>	Two commands are sent to the OBS to stop both the critical and nominal HK requests.	
	Check the telecommands are successful	In TCHistory display in SCOS2000 both commands must be successful.  In TMPH task in SCOS2000 both nominal and critical HK packets stop.	



## 4.2 Power ON DRCU

<b>Objective:</b>	To power on the DRCU.
<b>Initial Conditions:</b>	DPU power is <b>ON</b> and HK telemetry request to the DRCU is halted. DRCU power is <b>OFF</b> .
<b>Final Conditions:</b>	DPU power is <b>ON</b> and HK telemetry request to the DRCU is halted. DRCU power is <b>ON</b> .
<b>Constraints:</b>	DPU must be powered <b>ON</b> (28 V power supply) and HK generation must have been stopped following the previous steps.
<b>Total Duration:</b>	< 2 minutes

Step.	Action	Comments	Check
1	Press the main power switch which is located in <b>the top-right hand rear side</b> of the DRCU POWER BENCH	The LED in the <b>top-right hand front side</b> with the label <b>Main Power</b> will shine ON.  By default, PRIME configuration is selected. <b>No further action is required.</b>	
2	In the front side of the POWER BENCH there is a loaded spring. Pull it UP.	Is a loaded spring. When the spring is pulled the secondary power LED will shine ON.	

**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

<b>Objective:</b>	To restart the SPIRE housekeeping generation
<b>Initial Conditions:</b>	DPU power is <b>ON</b> and HK telemetry request to the DRCU is halted. DRCU power is <b>ON</b> .
<b>Final Conditions:</b>	DPU power is <b>ON</b> and HK telemetry is being generated. DRCU power is <b>ON</b> .
<b>Constraints:</b>	DPU power must be <b>ON</b> (28 V power supply) DRCU power must be <b>ON</b> following previous steps
<b>Total Duration:</b>	< 1 minute



Step.	Action	Comments	Check
1	Check that the DRCU is powered ON and HK telemetry packets are stopped.	NO NEW HK packets (type, subtype) = (3, 25) with APIDs 0x500 and 0x502 appear in the TMPH task in SCOS2000.	
2	In SCOS alpha numeric display SPIRE DPU AND OBS PARAMETERS display check MONSTAT =0		
3	In CCS TOPE : Execute <b>Template_DefineNewHKReport.tcl</b>	Two commands are sent to the OBS to restart the HK requests, an extra command is sent to setup the instrument MODE.	
4	Check the telecommands are successful	In TCHistory display in SCOS2000 both commands must be successful.	
5	In SCOS alpha numeric display SPIRE DPU AND OBS PARAMETERS display check MONSTAT =5	Reflects that the SCU and DCU are ON	

## 5 DRCU Switch Off procedure

<b>Objective:</b>	To switch off the DRCU
<b>Initial Conditions:</b>	DRCU main and secondary power switches are ON. DRCU power is <b>ON</b> . DPU power is <b>ON</b> and OBS running.
<b>Final Conditions:</b>	DRCU main and secondary power switches are <b>OFF</b> . DRCU powered <b>OFF</b> . DPU powered ON and OBS running.
<b>Constraints:</b>	None.
<b>Total Duration:</b>	< 1 minute



Step.	Action	Comments	Check
1	Pull down the spring in the front right-hand side of the POWER BENCH. The LED in the <b>top-right hand front side</b> with the label <b>Secondary Power</b> will fade off.	At this moment 3 event packets (type, subtype) = (5, 1) will be generated by the OBS to warn of the non response of the DRCU.	
2	In SCOS alpha numeric display SPIRE DPU AND OBS PARAMETERS display check MONSTAT =0	Reflect that the MCU SCU and DCU are OFF	
3	Switch OFF the main power supply button on the top-right hand rear side of the POWER BENCH		







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