

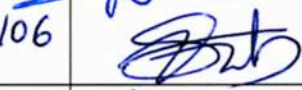
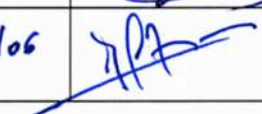


HERSCHEL/SPIRE

TECHNICAL NOTE
DRCU Users Manual

	Function	Name	Date	Visa
Prepared by	DRCU Responsible	C.CARA	17/07/2006	
Verified by	AIV Responsible	H. Triou	01/08/2006	
Checked by	PA Responsible	J. FONTIGNIE	21/07/06	
Approved by	Project Manager	JL. AUGUERES	11/9/06	

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1 Introduction

The purpose of this document is to list applicable constraints when operating the DRCU during integration at instrument level phases. Performance and/or functional limitations may result if these constraints are not satisfied.

2 Documentation

2.1 Applicable

AD1	DRCU interface control document	SAp-SPIRE-CCa-075-02
AD2	HSPSU Safety operations, failure and recovery	HSPUR.PSU.MA.00110.V.ASTR iss 00 rev 00
AD3	DRCU/DPU interface control document	SAp-SPIRE-CCa-076-02

2.2 Reference

RD1	As run assembly DCU FM	SAp-SPIRE-JF-386-06
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3 Integration

3.1 Configuration

Loading properly the PSU is mandatory to avoid any dysfunction of the equipment. All the secondary output connectors shall be connected by means of an appropriate harness to the load (DCU – MCU & SCU) before applying the primary power. Omission of this requirement may imply partial or complete disruption of the PSU.

3.2 Harness

Harness used during integration phases shall be compliant with AD1 including secondary power between the PSU and the DCU (harness between PSU and FCU are mounted prior to delivery to RAL).
For this specific harness the pin to pin resistance shall be less than 0.5 Ω for all signals.

3.3 Electrical Continuity

The following table gives input resistor as measured on the secondary connectors of the unit (J4) during FM integration test (ref RD1 – multimeter used is Wavetek DM78A):

Group	Voltage	M+	M-	Criteria	J03	J04
LIAP	+9V-0V	1	2	> 100 Ω	6.01 k Ω	6.01 k Ω
	-9V-0V	2	3	> 100 Ω	5.91 k Ω	5.91 k Ω
	+9V+9V	1	14	< 1 Ω	0.3 Ω	0.3 Ω
	-9V-9V	3	16	< 1 Ω	0.3 Ω	0.3 Ω
	0V ana-ch	2	Chassis	< 1 Ω	0.3 Ω	0.3 Ω
	0V-0V	2	15	< 1 Ω	0.3 Ω	0.3 Ω
	+5V-0V	12	25	> 100 Ω	493 Ω	493 Ω
	0V dig-ch	25	Chassis	< 1 Ω	0.3 Ω	0.3 Ω

LIAS	+9V-0V	4	5	> 100 Ω	9.97 kΩ	9.97 kΩ
	-9V-0V	5	6	> 100 Ω	9.96 kΩ	9.96 kΩ
	+9V+9V	4	17	< 1 Ω	0.3 Ω	0.3 Ω
	-9V-9V	6	19	< 1 Ω	0.4 Ω	0.4 Ω
	0V ana-ch	5	Chassis	< 1 Ω	0.3 Ω	0.3 Ω
	0V-0V	5	18	< 1 Ω	0.3 Ω	0.3 Ω
	+5V-0V	11	24	> 100 Ω	493 Ω	493 Ω
	0V dig-ch	24	Chassis	< 1 Ω	0.3 Ω	0.3 Ω
DAQ-BIAS	+9V-0V	7	8	> 100 Ω	1.57 kΩ	23 kΩ
	-9V-0V	8	9	> 100 Ω	200 Ω	200 Ω
	+9V+9V	7	20	< 1 Ω	0.4 Ω	0.4 Ω
	-9V-9V	9	22	< 1 Ω	0.4 Ω	0.3 Ω
	0V ana-ch	8	Chassis	< 1 Ω	0.3 Ω	0.3 Ω
	0V-0V	8	21	< 1 Ω	0.3 Ω	0.3 Ω
	+5V-0V	10	23	> 100 Ω	415 Ω	414 Ω
	0V dig-ch	23	Chassis	< 1 Ω	0.3 Ω	0.3 Ω

4 Power-on sequence

The following power-on sequence shall be observed:

- power-on the primary power (either main OR redundant) - effect is:
 - o to switch-on the entire SCU
 - o to switch-on the DCU digital electronics (DAQ_IF and BIAS modules)
- power-on the MCU by means of the SCU command "SetDRelOnOff"
- boot the MCU by means of the appropriate MCU commands (refer to AD3)
- power-on DCU analog electronics (either Photometer OR Spectrometer) by means of the SCU command "SetDRelOnOff"

It is mandatory to observe this sequence when operation with both DRCU sub-systems to avoid PSU overload. In case of overload refer to AD2 to recover.

When performing power-on sequence primary current shall be checked. Nominal value are given thereafter. Any deviation exceeding ±10% shall be considered as an anomaly.

Status	Initial power-on	Before MCU boot	MCU booted	Photometer	Spectrometer
Primary current	0.40 A	0.81 A	0.87 A	2.10 A	1.23 A

Depending on MCU operations (load / activity on mechanisms) primary current may increase of 400 mA