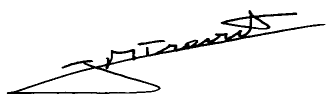


**RPW AIT FDIR TEST REPORT**

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## 1 INTRODUCTION

This document is the test report of the AIT/AIV FDIR test performed on 25/05/2017. The procedure that has been run is described in [RD10].

## 2 REFERENCES

### 2.1 APPLICABLE DOCUMENTS

Mark	Reference	Document title
AD1	SOL-EST-RCD-0050	Experiment Interface Document – Part A
AD2	RPW-SYS-MEB-AIV-00042-LES Iss01 Rev 00	AIT-AIV Plan MEB
AD3	SOL.S.ASTR.TN.00288 Iss3	FDIR concept and implementation report – Payload – RPW extract

### 2.2 REFERENCE DOCUMENTS

Mark	Reference	Document title
RD1	RPW-SYS-SSS-00013-LES Issue 4.1	Software System Specification (SSS)
RD2	RPW-SYS-MEB-DPS-ICD-000210-LES Issue 4.3.1	RPW TC Packet Definition
RD3	RPW-SYS-MEB-DPS-ICD-000211-LES Issue 4.3.1	RPW TM Packet Definition
RD4	RPW-SYS-MEB-SPC-00021-LES Issue 3.0	Specification for the Main Electronics Box
RD5	RPW-SYS-MEB-DPS-RP-00109-IWF Issue 1.2	DBS Software Configuration File for DBS Release V1.3
RD7	SOLO-RPWAI-TN-1084-CNES	RPW SFT Short Functional Test
RD8	RPW-SYS-MEB-DPS-NTT-000859-LES	DAS R3+ (3.4.x.x) SUM
RD9	DAS 3.4.x.x SUM	RPW-SYS-MEB-DPS-NTT-000859-LES
RD10	SOLO-RPWAI-TN-2058-CNES	RPW AIT FDIR TEST PROCEDURE

### 3 ACRONYMS

Acronym	Definition
AIT	Assembly Integration and Test
AIV	Assembly Integration and Validation
ANT	Antenna
C-SGSE	Command – Software Ground Support Equipment
DAS	DPU Application Software
DBS	DPU Boot Software
DPU	Data Processing Unit
EGSE	Electrical Ground Support Equipment
EM	Engineering Model
FFT	Full Functional Test
FM	Flight Model
GSE	Ground Support Equipment
HF	High Frequency
HK	House Keeping
IIC	Inter Instrument Communication
LF	Low Frequency
LFR	Low Frequency Receiver
LVPS	Low-Voltages Power Supply
MA-SGSE	Monitoring and Analysis – Software Ground Support Equipment
MEB	Main Electronics Box
PA	PreAmplifier
PCB	Printed Circuit Board
PDU	Power Distribution Unit
PSU	Power Supply Unit
QM	Qualification Model
RIU	Remote Interface Unit
RPW	Radio and Plasma Waves
RW	Reaction Wheels
S/C	SpaceCraft
SBM	Selected Burst Mode
SBM1	Selected Burst Mode1 (interplanetary shock measurement)

SBM2	In-situ Type III measurements
SCM	Search Coil Magnetometer
SFT	Short Functional Test
SGSE	Software Ground Support Equipment
SpW	SpaceWire
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TC	TeleCommand
TDS	Time Domain Sampler
TM	TeleMetry
TNR-HFR	Thermal Noise Receiver – High Frequency Receiver
TSWF	Triggered Snapshot Wave Forms

## 4 AS-RUN

### 4.1 PRELIMINARY CONFIGURATION

Before testing the FDIR, RPW instrument has to be set in SURVEY\_NORMAL mode with all equipment ON using the standard Power ON procedure. If RPW is already powered ON with all subsystems on and in SURVEY\_NORMAL mode, running the preliminary procedure is not mandatory.

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Install RPW hardware (see schematic Annex 1) <ul style="list-style-type: none"> <li>All MEB connections are done</li> <li>amplifiers are connected to the MEB with 50 Ohm loads on PAs inputs</li> <li>Install SCM FM in mu-metal box</li> <li>Install the SCM hoop</li> <li>Connect the power supply interface box between the both external power supplies (Nominal &amp; Redundant) and the MEB</li> <li>All harnesses are connected as expected (see Annex 1)</li> </ul>		OK
2	Note the model and serial number of the MEB	RPW-MEB-PFM-01	OK
3	Note the model and serial number of the Preamplifiers	FM-01 FM-02 FM-03	OK
6	Note down DAS and database version	DAS v3.6.0.4 IDB 4.3.3	OK
7	Install the GSE network and check the good communication between each computer		OK
8	GSE configuration: <ul style="list-style-type: none"> <li>Database computer runs</li> <li>Engine computer runs</li> <li>Front End computers runs (MA-SGSE and C-SGSE)</li> </ul>		OK
9	Note the version of EGSE and Foreign EGSE version	C-SGSE 3.24.4 MA-SGSE 3.20.1.1	OK
10	Run script "SWITCH ON_NOMINAL_R3++"	SURVEY_NORMAL CONV : ON ANT1 : ON ANT2 : ON ANT3 : ON SCM : ON	OK

STEP	DESCRIPTION	RESULTS	OK / NOK
		LFR : ON TDS : ON THR : ON	
11	Modify the HK generation rate and disable the analysers science telemetry data : <ul style="list-style-type: none"> <li>• TC_DPU_OBC_UPDATE_HK_PERIOD               <ul style="list-style-type: none"> <li>○ CP_DPU_OBC_HK_REPORT_PER = 8</li> </ul> </li> <li>• TC_DPU_UPDATE_HK_PERIOD               <ul style="list-style-type: none"> <li>○ CP_DPU_HK_REPORT_SID = PDU_HK_SID</li> <li>○ CP_DPU_HK_REPORT_PER = 8</li> </ul> </li> <li>• TC_LFR_DISABLE_SCIENCE</li> <li>• TC_TDS_DISABLE_SCIENCE</li> <li>• TC_THR_DISABLE_SCIENCE</li> </ul>		OK

## 4.2 SECONDARY POWER CONSUMPTION BIAS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_BIAS_P5V_LNOM = 8.88 mA</li> <li>• SY_DPU_BIAS_P5V_HNOM = 58.96 mA</li> <li>• SY_DPU_BIAS_P5V_WDEV = 5</li> <li>• SY_DPU_BIAS_P5V_FDEV = 20</li> <li>• SY_DPU_BIAS_P5V_MTR = enabled</li> <li>• SY_DPU_BIAS_P5V_REC = enabled</li> </ul>	LNOM = 13.32 mA HNOM = 92.56 mA Thresholds have been modified after the SFT execution	OK
3	Set BIASx3 currents to ~-10 $\mu$ A: <ul style="list-style-type: none"> <li>• TC_DPU_SET_BIAS1               <ul style="list-style-type: none"> <li>○ CP_BIA_SET_BIAS1 = 0X60000 (RAW)</li> </ul> </li> <li>• TC_DPU_SET_BIAS2               <ul style="list-style-type: none"> <li>○ CP_BIA_SET_BIAS2 = 0X60000 (RAW)</li> </ul> </li> </ul>		OK



STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>• TC_DPU_SET_BIAS3               <ul style="list-style-type: none"> <li>○ CP_BIA_SET_BIAS3 = 0X60000 (RAW)</li> </ul> </li> </ul>		
4	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_BIAS_P5V_HNOM = 8.88 mA</li> <li>○ SY_DPU_BIAS_P5V_WDEV = 0</li> <li>○ SY_DPU_BIAS_P5V_FDEV = 0</li> </ul> </li> </ul>	HNOM = 13.32 Thresholds have been modified after the SFT execution	OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_LE_RPW_CURRENT</li> <li>• TM_DPU_EVENT_ME_RPW_CURRENT</li> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK
6	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_BIAS_P5V_LNOM = 8.88 mA</li> <li>○ SY_DPU_BIAS_P5V_HNOM = 58.96 mA</li> <li>○ SY_DPU_BIAS_P5V_WDEV = 5</li> <li>○ SY_DPU_BIAS_P5V_FDEV = 20</li> <li>○ SY_DPU_BIAS_P5V_MTR = enabled</li> <li>○ SY_DPU_BIAS_P5V_REC = enabled</li> </ul> </li> </ul>	LNOM = 13.32 mA HNOM = 92.56 mA Thresholds have been modified after the SFT execution	OK
7	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
8	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• BIAS has been correctly restarted (switch OFF then switch ON)               <ul style="list-style-type: none"> <li>○ check that the current consign is still -10 µA</li> </ul> </li> </ul>	BIAS HK current ~-9 mA	OK

### 4.3 SECONDARY POWER CONSUMPTION LFR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that :		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		
2	<p>Dump the monitoring configuration :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_DAS_DUMP_PAR</b></li> </ul> <p>And check the following parameters :</p> <ul style="list-style-type: none"> <li><b>SY_DPU_LFR_P5V_LNOM</b> = 0 mA</li> <li><b>SY_DPU_LFR_P5V_HNOM</b> = 19 mA</li> <li><b>SY_DPU_LFR_P5V_WDEV</b> = 5</li> <li><b>SY_DPU_LFR_P5V_FDEV</b> = 20</li> <li><b>SY_DPU_LFR_P5V_MTR</b> = enabled</li> <li><b>SY_DPU_LFR_P5V_REC</b> = enabled</li> </ul>	<p>HNOM = 17.15 mA</p> <p>Thresholds have been modified after the SFT execution</p>	OK
3	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_LFR_P5V_HNOM</b> = 0 mA</li> <li><b>SY_DPU_LFR_P5V_WDEV</b> = 0</li> <li><b>SY_DPU_LFR_P5V_FDEV</b> = 0</li> </ul> </li> </ul>		OK
4	<p>Wait for the emission of the following TM packet :</p> <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_LE_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_ME_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		OK
5	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_LFR_P5V_LNOM</b> = 0 mA</li> <li><b>SY_DPU_LFR_P5V_HNOM</b> = 19 mA</li> <li><b>SY_DPU_LFR_P5V_WDEV</b> = 5</li> <li><b>SY_DPU_LFR_P5V_FDEV</b> = 20</li> <li><b>SY_DPU_LFR_P5V_MTR</b> = enabled</li> <li><b>SY_DPU_LFR_P5V_REC</b> = enabled</li> </ul> </li> </ul>	<p>HNOM = 17.15 mA</p> <p>Thresholds have been modified after the SFT execution</p>	
6	<p>Wait for the emission of the following TM packet :</p> <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</b></li> </ul>		OK
7	<p>Check that :</p> <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>LFR has been correctly restarted (switch OFF then switch ON)</li> </ul>		

#### 4.4 SECONDARY POWER CONSUMPTION TDS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li><b>TC_DPU_DAS_DUMP_PAR</b></li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>SY_DPU_TDS_P5V_LNOM = 1.4125 mA</li> <li>SY_DPU_TDS_P5V_HNOM = 56.063 mA</li> <li>SY_DPU_TDS_P5V_WDEV = 5</li> <li>SY_DPU_TDS_P5V_FDEV = 20</li> <li>SY_DPU_TDS_P5V_MTR = enabled</li> <li>SY_DPU_TDS_P5V_REC = enabled</li> </ul>		OK
3	Modify the monitoring values : <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li>SY_DPU_TDS_P5V_HNOM = 1.4125 mA</li> <li>SY_DPU_TDS_P5V_WDEV = 0</li> <li>SY_DPU_TDS_P5V_FDEV = 0</li> </ul> </li> </ul>		OK
4	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_LE_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_ME_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		OK
5	Modify the monitoring values : <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li>SY_DPU_TDS_P5V_LNOM = 1.4125 mA</li> <li>SY_DPU_TDS_P5V_HNOM = 56.063 mA</li> <li>SY_DPU_TDS_P5V_WDEV = 5</li> <li>SY_DPU_TDS_P5V_FDEV = 20</li> <li>SY_DPU_TDS_P5V_MTR = enabled</li> </ul> </li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>○ SY_DPU_TDS_P5V_REC = enabled</li> </ul>		
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>● TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>● the DAS is in SURVEY_NORMAL mode</li> <li>● all the equipment are ON</li> <li>● TDS has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.5 SECONDARY POWER CONSUMPTION THR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>● the DAS is in SURVEY_NORMAL mode</li> <li>● all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>● TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>● SY_DPU_THR_P12V_LNOM = 27.844 mA</li> <li>● SY_DPU_THR_P12V_HNOM = 55.3 mA</li> <li>● SY_DPU_THR_P12V_WDEV = 5</li> <li>● SY_DPU_THR_P12V_FDEV = 20</li> <li>● SY_DPU_THR_P12V_MTR = enabled</li> <li>● SY_DPU_THR_P12V_REC = enabled</li> </ul>	LNOM = 26.58 mA HNOM = 52.5 mA Thresholds have been modified after the SFT execution	OK
3	Modify the monitoring values : <ul style="list-style-type: none"> <li>● TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_THR_P12V_HNOM = 27.844 mA</li> <li>○ SY_DPU_THR_P12V_WDEV = 0</li> <li>○ SY_DPU_THR_P12V_FDEV = 0</li> </ul> </li> </ul>	HNOM = 26.58 mA Thresholds have been modified after the SFT execution	OK
4	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>● TM_DPU_EVENT_LE_RPW_CURRENT</li> <li>● TM_DPU_EVENT_ME_RPW_CURRENT</li> <li>● TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
5	Modify the monitoring values : <ul style="list-style-type: none"> <li>• <b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li>○ SY_DPU_THR_P12V_LNOM = 27.844 mA</li> <li>○ SY_DPU_THR_P12V_HNOM = 55.3 mA</li> <li>○ SY_DPU_THR_P12V_WDEV = 5</li> <li>○ SY_DPU_THR_P12V_FDEV = 20</li> <li>○ SY_DPU_THR_P12V_MTR = enabled</li> <li>○ SY_DPU_THR_P12V_REC = enabled</li> </ul> </li> </ul>	LNOM = 26.58 mA HNOM = 52.5 mA Thresholds have been modified after the SFT execution	OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• <b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</b></li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• THR has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.6 SECONDARY POWER CONSUMPTION ANT1 UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• <b>TC_DPU_DAS_DUMP_PAR</b></li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_ANT1_P5V_LNOM = 1.193 mA</li> <li>• SY_DPU_ANT1_P5V_HNOM = 51.524 mA</li> <li>• SY_DPU_ANT1_P5V_WDEV = 5</li> <li>• SY_DPU_ANT1_P5V_FDEV = 20</li> <li>• SY_DPU_ANT1_P5V_MTR = enabled</li> <li>• SY_DPU_ANT1_P5V_REC = enabled</li> </ul>	LNOM = 0 mA HNOM = 50.28 mA Thresholds have been modified after the SFT execution	OK
3	Modify the monitoring values : <ul style="list-style-type: none"> <li>• <b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li>○ SY_DPU_ANT1_P5V_HNOM = 1.193 mA</li> </ul> </li> </ul>	HNOM = 0 mA	OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>○ SY_DPU_ANT1_P5V_WDEV = 0</li> <li>○ SY_DPU_ANT1_P5V_FDEV = 0</li> </ul>	Thresholds have been modified after the SFT execution	
4	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>● TM_DPU_EVENT_LE_RPW_CURRENT</li> <li>● TM_DPU_EVENT_ME_RPW_CURRENT</li> <li>● TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		
5	Modify the monitoring values : <ul style="list-style-type: none"> <li>● TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_ANT1_P5V_LNOM = 1.193 mA</li> <li>○ SY_DPU_ANT1_P5V_HNOM = 51.524 mA</li> <li>○ SY_DPU_ANT1_P5V_WDEV = 5</li> <li>○ SY_DPU_ANT1_P5V_FDEV = 20</li> <li>○ SY_DPU_ANT1_P5V_MTR = enabled</li> <li>○ SY_DPU_ANT1_P5V_REC = enabled</li> </ul> </li> </ul>	LNOM = 0 mA HNOM = 50.28 mA Thresholds have been modified after the SFT execution	OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>● TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>● the DAS is in SURVEY_NORMAL mode</li> <li>● all the equipment are ON</li> <li>● ANT1 has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.7 SECONDARY POWER CONSUMPTION ANT2 UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>● the DAS is in SURVEY_NORMAL mode</li> <li>● all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>● TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>● SY_DPU_ANT2_P5V_LNOM = 1.193 mA</li> <li>● SY_DPU_ANT2_P5V_HNOM = 51.686 mA</li> </ul>	LNOM = 2.386 mA Thresholds have been modified	OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>• SY_DPU_ANT2_P5V_WDEV = 5</li> <li>• SY_DPU_ANT2_P5V_FDEV = 20</li> <li>• SY_DPU_ANT2_P5V_MTR = enabled</li> <li>• SY_DPU_ANT2_P5V_REC = enabled</li> </ul>	after the SFT execution	
3	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_ANT2_P5V_HNOM = 1.193 mA</li> <li>○ SY_DPU_ANT2_P5V_WDEV = 0</li> <li>○ SY_DPU_ANT2_P5V_FDEV = 0</li> </ul> </li> </ul>	HNOM = 2.386 mA Thresholds have been modified after the SFT execution	OK
4	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_LE_RPW_CURRENT</li> <li>• TM_DPU_EVENT_ME_RPW_CURRENT</li> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK
5	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_POWER_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_ANT2_P5V_LNOM = 1.193 mA</li> <li>○ SY_DPU_ANT2_P5V_HNOM = 51.686 mA</li> <li>○ SY_DPU_ANT2_P5V_WDEV = 5</li> <li>○ SY_DPU_ANT2_P5V_FDEV = 20</li> <li>○ SY_DPU_ANT2_P5V_MTR = enabled</li> <li>○ SY_DPU_ANT2_P5V_REC = enabled</li> </ul> </li> </ul>	LNOM = 2.386 mA Thresholds have been modified after the SFT execution	OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• ANT2 has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.8 SECONDARY POWER CONSUMPTION ANT3 UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that :		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li><b>TC_DPU_DAS_DUMP_PAR</b></li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li><b>SY_DPU_ANT3_P5V_LNOM</b> = 1.2 mA</li> <li><b>SY_DPU_ANT3_P5V_HNOM</b> = 51.539 mA</li> <li><b>SY_DPU_ANT3_P5V_WDEV</b> = 5</li> <li><b>SY_DPU_ANT3_P5V_FDEV</b> = 20</li> <li><b>SY_DPU_ANT3_P5V_MTR</b> = enabled</li> <li><b>SY_DPU_ANT3_P5V_REC</b> = enabled</li> </ul>		OK
3	Modify the monitoring values : <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_ANT3_P5V_HNOM</b> = 1.2 mA</li> <li><b>SY_DPU_ANT3_P5V_WDEV</b> = 0</li> <li><b>SY_DPU_ANT3_P5V_FDEV</b> = 0</li> </ul> </li> </ul>		OK
4	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_LE_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_ME_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		OK
5	Modify the monitoring values : <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_ANT3_P5V_LNOM</b> = 1.2 mA</li> <li><b>SY_DPU_ANT3_P5V_HNOM</b> = 51.539 mA</li> <li><b>SY_DPU_ANT3_P5V_WDEV</b> = 5</li> <li><b>SY_DPU_ANT3_P5V_FDEV</b> = 20</li> <li><b>SY_DPU_ANT3_P5V_MTR</b> = enabled</li> <li><b>SY_DPU_ANT3_P5V_REC</b> = enabled</li> </ul> </li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</b></li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK



STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>ANT3 has been correctly restarted (switch OFF then switch ON)</li> </ul>		

#### 4.9 SECONDARY POWER CONSUMPTION SCM UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	<p>Check that :</p> <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	<p>Dump the monitoring configuration :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_DAS_DUMP_PAR</b></li> </ul> <p>And check the following parameters :</p> <ul style="list-style-type: none"> <li><b>SY_DPU_SCM_P12V_LNOM</b> = 0 mA</li> <li><b>SY_DPU_SCM_P12V_HNOM</b> = 48.865 mA</li> <li><b>SY_DPU_SCM_P12V_WDEV</b> = 5</li> <li><b>SY_DPU_SCM_P12V_FDEV</b> = 20</li> <li><b>SY_DPU_SCM_P12V_MTR</b> = enabled</li> <li><b>SY_DPU_SCM_P12V_REC</b> = enabled</li> </ul>	<p>HNOM = 69.4 mA</p> <p>Thresholds have been modified after the SFT execution</p>	OK
3	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_SCM_P12V_HNOM</b> = 0 mA</li> <li><b>SY_DPU_SCM_P12V_WDEV</b> = 0</li> <li><b>SY_DPU_SCM_P12V_FDEV</b> = 0</li> </ul> </li> </ul>		OK
4	<p>Wait for the emission of the following TM packet :</p> <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_LE_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_ME_RPW_CURRENT</b></li> <li><b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		OK
5	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_POWER_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_SCM_P12V_LNOM</b> = 0 mA</li> <li><b>SY_DPU_SCM_P12V_HNOM</b> = 48.865 mA</li> <li><b>SY_DPU_SCM_P12V_WDEV</b> = 5</li> <li><b>SY_DPU_SCM_P12V_FDEV</b> = 20</li> <li><b>SY_DPU_SCM_P12V_MTR</b> = enabled</li> </ul> </li> </ul>	<p>HNOM = 69.4 mA</p> <p>Thresholds have been modified after the SFT execution</p>	OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>○ SY_DPU_SCM_P12V_REC = enabled</li> </ul>		
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• SCM has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.10 ANALYSER MONITORING LFR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_EQ_SWITCH_ON_REC = true</li> </ul>		OK
3	Reset the LFR : <ul style="list-style-type: none"> <li>• TC_LFR_RESET</li> </ul> And check that : <ul style="list-style-type: none"> <li>• TM_DPU_DAS_STATISTICS_HK               <ul style="list-style-type: none"> <li>○ HK_DPU_LFR_LINK_HB_MISSING increases</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_LE_DPU_LFR_LINK(HB_TIMEOUT)</li> <li>• TM_DPU_EVENT_LE_DPU_LFR_LINK(HB_MISSING)</li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• LFR has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.11 ANALYSER MONITORING TDS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>SY_DPU_EQ_SWITCH_ON_REC = true</li> </ul>		OK
3	Reset the LFR : <ul style="list-style-type: none"> <li>TC_TDS_RESET</li> </ul> And check that : <ul style="list-style-type: none"> <li>TM_DPU_DAS_STATISTICS_HK               <ul style="list-style-type: none"> <li>HK_DPU_TDS_LINK_HB_MISSING increases</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>TM_DPU_EVENT_LE_DPU_TDS_LINK(HB_TIMEOUT)</li> <li>TM_DPU_EVENT_LE_DPU_TDS_LINK(HB_MISSING)</li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> <li>TDS has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.12 ANALYSER MONITORING THR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>TC_DPU_DAS_DUMP_PAR</li> </ul> And check the following parameters : <ul style="list-style-type: none"> <li>SY_DPU_EQ_SWITCH_ON_REC = true</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
3	Reset the LFR : <ul style="list-style-type: none"> <li>• TC_THR_RESET</li> </ul> And check that : <ul style="list-style-type: none"> <li>• TM_DPU_DAS_STATISTICS_HK               <ul style="list-style-type: none"> <li>○ HK_DPU_THR_LINK_HB_MISSING increases</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_LE_DPU_THR_LINK(HB_TIMEOUT)</li> <li>• TM_DPU_EVENT_LE_DPU_THR_LINK(HB_MISSING)</li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> <li>• THR has been correctly restarted (switch OFF then switch ON)</li> </ul>		OK

#### 4.13 TEMPERATURE BIAS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• TC_DPU_DAS_DUMP_PAR</li> </ul>		OK
3	Check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_BIA_TEMP_PCB_LOW = -30.184°C</li> <li>• SY_DPU_BIA_TEMP_PCB_UP = 64.8°C</li> <li>• SY_DPU_BIA_TEMP_PCB_MTR = enabled</li> <li>• SY_DPU_BIA_TEMP_PCB_REC = enabled</li> </ul>		OK
4	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_TEMP_PAR               <ul style="list-style-type: none"> <li>○ SY_DPU_BIA_TEMP_PCB_UP = -30.184°C</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_HE_RPW_TEMPERATURE</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>• <b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• <b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</b></li> </ul>		OK
7	Modify the monitoring values : <ul style="list-style-type: none"> <li>• <b>TC_DPU_LOAD_TEMP_PAR</b> <ul style="list-style-type: none"> <li>○ <b>SY_DPU_BIA_TEMP_PCB_LOW</b> = -30.184°C</li> <li>○ <b>SY_DPU_BIA_TEMP_PCB_UP</b> = 64.8°C</li> <li>○ <b>SY_DPU_BIA_TEMP_PCB_MTR</b> = enabled</li> <li>○ <b>SY_DPU_BIA_TEMP_PCB_REC</b> = enabled</li> </ul> </li> </ul>		OK
8	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment except the BIAS are ON</li> <li>• BIAS has been correctly switched OFF</li> <li>• Check that LFR parameter <b>SY_LFR_BW</b> = 0</li> </ul>		OK
9	Enter Service Mode: <ul style="list-style-type: none"> <li>• <b>TC_DPU_ENTER_SERVICE</b></li> </ul>		OK
10	Switch ON BIAS : <ul style="list-style-type: none"> <li>• <b>TC_DPU_SWITCH_ON_EQUIPMENT</b> <ul style="list-style-type: none"> <li>○ <b>CP_DPU_SWITCH_ON_EQ</b> = RPW_BIA_EID</li> </ul> </li> </ul>		OK
11	Set BIAS in its default configuration: <ul style="list-style-type: none"> <li>• Script <b>EMC_FM_Conf_BIAS_0_R3</b></li> </ul>		OK
12	Update LFR configuration <ul style="list-style-type: none"> <li>• <b>TC_LFR_LOAD_COMMON_PAR</b> <ul style="list-style-type: none"> <li>○ <b>SY_LFR_BW</b> = 1</li> </ul> </li> </ul>		OK
13	Enter in the Science Survey Normal mode: <ul style="list-style-type: none"> <li>• <b>TC_DPU_ENTER_SURVEY_NORMAL</b></li> </ul>		OK

#### 4.14 TEMPERATURE TDS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• TC_DPU_DAS_DUMP_PAR</li> </ul>		OK
3	Check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_TDS_TEMP_PCB_LOW = 69°C</li> <li>• SY_DPU_TDS_TEMP_PCB_UP = -30°C</li> <li>• SY_DPU_TDS_TEMP_PCB_MTR = enabled</li> <li>• SY_DPU_TDS_TEMP_PCB_REC = enabled</li> </ul>		OK
4	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_TEMP_PAR <ul style="list-style-type: none"> <li>○ SY_DPU_TDS_TEMP_PCB_UP = -30°C</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_HE_RPW_TEMPERATURE</li> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Modify the monitoring values : <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_TEMP_PAR <ul style="list-style-type: none"> <li>○ SY_DPU_TDS_TEMP_PCB_LOW = 69°C</li> <li>○ SY_DPU_TDS_TEMP_PCB_UP = -30°C</li> <li>○ SY_DPU_TDS_TEMP_PCB_MTR = enabled</li> <li>○ SY_DPU_TDS_TEMP_PCB_REC = enabled</li> </ul> </li> </ul>		OK
8	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment except the TDS are ON</li> <li>• TDS has been correctly switched OFF</li> </ul>		OK
9	Enter Service Mode: <ul style="list-style-type: none"> <li>• TC_DPU_ENTER_SERVICE</li> </ul>		OK
10	Switch ON TDS : <ul style="list-style-type: none"> <li>• TC_DPU_SWITCH_ON_EQUIPMENT <ul style="list-style-type: none"> <li>○ CP_DPU_SWITCH_ON_EQ = RPW_TDS_EID</li> </ul> </li> </ul>		OK
11	Boot TDS SW from EEPROM: <ul style="list-style-type: none"> <li>• TC_DPU_BOOT_TDS</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>Script EMC_FM_Conf_TDS_0_R3</li> <li>TC_TDS_DISABLE_SCIENCE</li> </ul>		
12	Enter in the Science Survey Normal mode: <ul style="list-style-type: none"> <li>TC_DPU_ENTER_SURVEY_NORMAL</li> </ul>		OK

#### 4.15 TEMPERATURE THR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>TC_DPU_DAS_DUMP_PAR</li> </ul>		OK
3	Check the following parameters : <ul style="list-style-type: none"> <li>SY_DPU_THR_TEMP_PCB_LOW = 69°C</li> <li>SY_DPU_THR_TEMP_PCB_UP = -30°C</li> <li>SY_DPU_THR_TEMP_PCB_MTR = enabled</li> <li>SY_DPU_THR_TEMP_PCB_REC = enabled</li> </ul>		OK
4	Modify the monitoring values : <ul style="list-style-type: none"> <li>TC_DPU_LOAD_TEMP_PAR               <ul style="list-style-type: none"> <li>SY_DPU_THR_TEMP_PCB_UP = -30°C</li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>TM_DPU_EVENT_HE_RPW_TEMPERATURE</li> <li>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	Modify the monitoring values : <ul style="list-style-type: none"> <li>TC_DPU_LOAD_TEMP_PAR               <ul style="list-style-type: none"> <li>SY_DPU_THR_TEMP_PCB_LOW = 69°C</li> <li>SY_DPU_THR_TEMP_PCB_UP = -30°C</li> <li>SY_DPU_THR_TEMP_PCB_MTR = enabled</li> <li>SY_DPU_THR_TEMP_PCB_REC = enabled</li> </ul> </li> </ul>		OK
8	Check that :		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment except the THR are ON</li> <li>THR has been correctly switched OFF</li> </ul>		
9	Enter Service Mode: <ul style="list-style-type: none"> <li><b>TC_DPU_ENTER_SERVICE</b></li> </ul>		OK
10	Switch ON TDS : <ul style="list-style-type: none"> <li><b>TC_DPU_SWITCH_ON_EQUIPMENT</b> <ul style="list-style-type: none"> <li><b>CP_DPU_SWITCH_ON_EQ = RPW_THR_EID</b></li> </ul> </li> </ul>		OK
11	Boot TDS SW from EEPROM: <ul style="list-style-type: none"> <li><b>TC_DPU_BOOT_THR</b></li> <li>Script <b>EMC_FM_Conf_THR_0_R3</b></li> <li><b>TC_THR_DISABLE_SCIENCE</b></li> </ul>		OK
12	Enter in the Science Survey Normal mode: <ul style="list-style-type: none"> <li><b>TC_DPU_ENTER_SURVEY_NORMAL</b></li> </ul>		OK

#### 4.16 TEMPERATURE LFR UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>the DAS is in SURVEY_NORMAL mode</li> <li>all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li><b>TC_DPU_DAS_DUMP_PAR</b></li> </ul>		OK
3	Check the following parameters : <ul style="list-style-type: none"> <li><b>SY_DPU_LFR_TEMP_PCB_LOW = -30°C</b></li> <li><b>SY_DPU_LFR_TEMP_PCB_UP = 68°C</b></li> <li><b>SY_DPU_LFR_TEMP_PCB_MTR = enabled</b></li> <li><b>SY_DPU_LFR_TEMP_PCB_REC = enabled</b></li> </ul>		OK
4	Modify the monitoring values : <ul style="list-style-type: none"> <li><b>TC_DPU_LOAD_TEMP_PAR</b> <ul style="list-style-type: none"> <li><b>SY_DPU_LFR_TEMP_PCB_UP = -30°C</b></li> </ul> </li> </ul>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li><b>TM_DPU_EVENT_HE_RPW_TEMPERATURE</b></li> </ul>		OK



STEP	DESCRIPTION	RESULTS	OK / NOK
	<ul style="list-style-type: none"> <li>• <b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</b></li> </ul>		
6	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• <b>TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</b></li> </ul>		OK
7	Modify the monitoring values : <ul style="list-style-type: none"> <li>• <b>TC_DPU_LOAD_TEMP_PAR</b> <ul style="list-style-type: none"> <li>○ <b>SY_DPU_LFR_TEMP_PCB_LOW</b> = -30°C</li> <li>○ <b>SY_DPU_LFR_TEMP_PCB_UP</b> = 68°C</li> <li>○ <b>SY_DPU_LFR_TEMP_PCB_MTR</b> = enabled</li> <li>○ <b>SY_DPU_LFR_TEMP_PCB_REC</b> = enabled</li> </ul> </li> </ul>		OK
8	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_BACKUP mode</li> <li>• all the equipment except the LFR are ON</li> <li>• the LFR has been correctly switched OFF</li> </ul>		OK
9	Enter Service Mode: <ul style="list-style-type: none"> <li>• <b>TC_DPU_ENTER_SERVICE</b></li> </ul>		OK
10	Switch ON LFR : <ul style="list-style-type: none"> <li>• <b>TC_DPU_SWITCH_ON_EQUIPMENT</b> <ul style="list-style-type: none"> <li>○ <b>CP_DPU_SWITCH_ON_EQ</b> = RPW_LFR_EID</li> </ul> </li> </ul>		OK
11	Boot TDS SW from EEPROM: <ul style="list-style-type: none"> <li>• <b>TC_DPU_BOOT_LFR</b></li> <li>• Script <b>EMC_FM_Conf_LFR_0_R3</b></li> <li>• <b>TC_LFR_DISABLE_SCIENCE</b></li> </ul>		OK
12	Enter in the Science Survey Normal mode: <ul style="list-style-type: none"> <li>• <b>TC_DPU_ENTER_SURVEY_NORMAL</b></li> </ul>		OK

#### 4.17 NEGATIVE HIGH-VOLTAGE BIAS UNIT

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• <b>TC_DPU_DAS_DUMP_PAR</b></li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
3	<p>Check the following parameters :</p> <ul style="list-style-type: none"> <li>• SY_DPU_BIA_NHV_LOW= -115.938 V</li> <li>• SY_DPU_BIA_NHV_UP = 2.184 V</li> <li>• SY_DPU_BIA_NHV_MTR = enabled</li> <li>• SY_DPU_BIA_NHV_REC = enabled</li> </ul>		OK
4	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_BHV_PAR <ul style="list-style-type: none"> <li>○ SY_DPU_BIA_NHV_UP = -115.938 V</li> </ul> </li> </ul>		OK
5	<p>Wait for the emission of the following TM packet :</p> <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_HE_BIAS_HV(BIAS_NHV)</li> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_START)</li> </ul>		OK
6	<p>Wait for the emission of the following TM packet :</p> <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_PR_DPU_RECOVERY(REC_END)</li> </ul>		OK
7	<p>Modify the monitoring values :</p> <ul style="list-style-type: none"> <li>• TC_DPU_LOAD_BHV_PAR <ul style="list-style-type: none"> <li>○ SY_DPU_BIA_NHV_LOW= -115.938 V</li> <li>○ SY_DPU_BIA_NHV_UP = 2.184 V</li> <li>○ SY_DPU_BIA_NHV_MTR = enabled</li> <li>○ SY_DPU_BIA_NHV_REC = enabled</li> </ul> </li> </ul>		OK
8	<p>Check that :</p> <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment except the BIAS are ON</li> <li>• BIAS has been correctly switched OFF</li> <li>• Check that LFR parameter SY_LFR_BW = 0</li> </ul>		OK
9	<p>Enter Service Mode:</p> <ul style="list-style-type: none"> <li>• TC_DPU_ENTER_SERVICE</li> </ul>		OK
10	<p>Switch ON BIAS :</p> <ul style="list-style-type: none"> <li>• TC_DPU_SWITCH_ON_EQUIPMENT <ul style="list-style-type: none"> <li>○ CP_DPU_SWITCH_ON_EQ = RPW_BIA_EID</li> </ul> </li> </ul>		OK
11	<p>Activate BIAS High Voltage (HV):</p> <ul style="list-style-type: none"> <li>• TC_DPU_SET_BIAS_MODE</li> </ul>		OK

STEP	DESCRIPTION	RESULTS	OK / NOK
12	Update LFR configuration <ul style="list-style-type: none"> <li>• TC_LFR_LOAD_COMMON_PAR <ul style="list-style-type: none"> <li>○ SY_LFR_BW = 1</li> </ul> </li> </ul>		OK
13	Enter in the Science Survey Normal mode: <ul style="list-style-type: none"> <li>• TC_DPU_ENTER_SURVEY_NORMAL</li> </ul>		OK

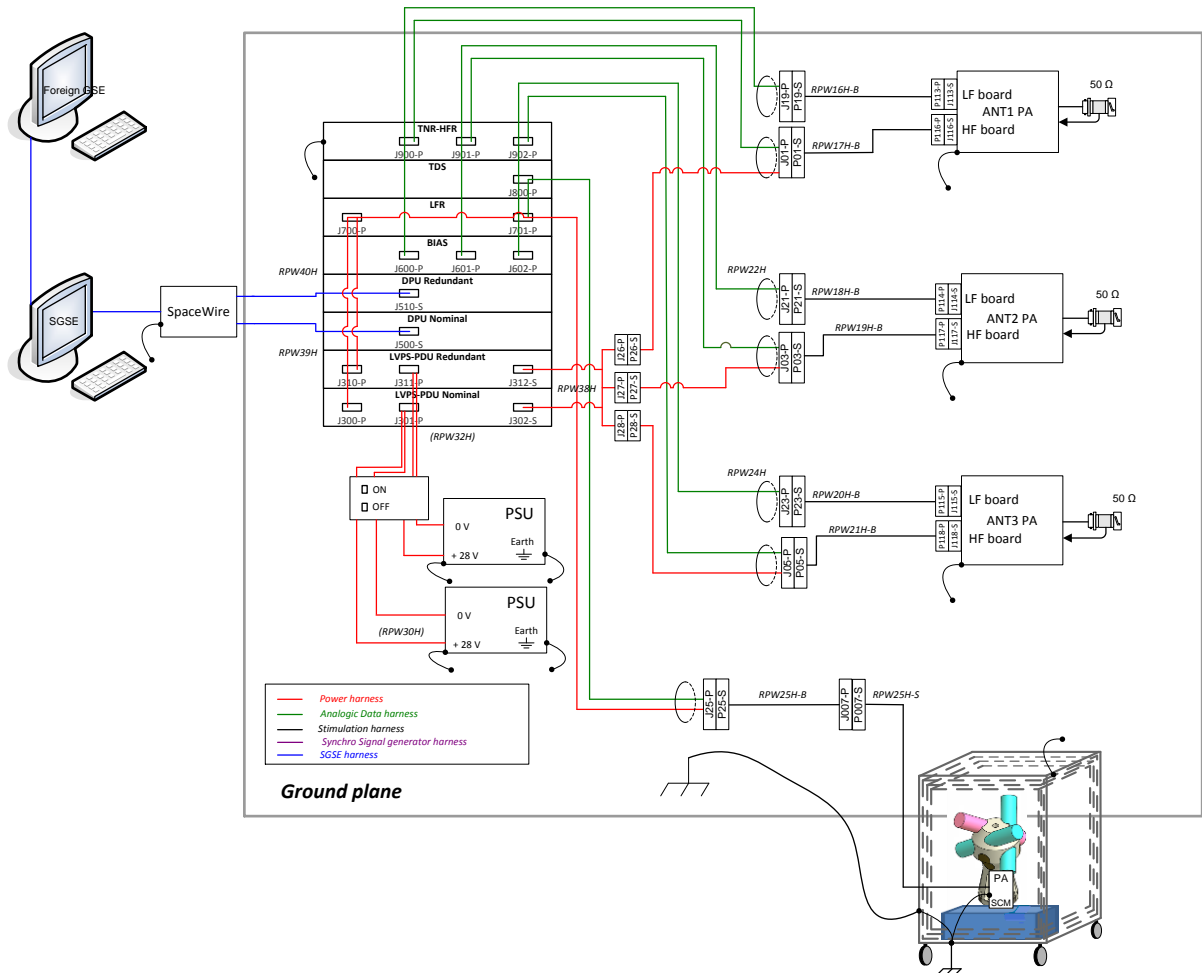
#### 4.18 SERVICE 20 MONITORING

STEP	DESCRIPTION	RESULTS	OK / NOK
1	Check that : <ul style="list-style-type: none"> <li>• the DAS is in SURVEY_NORMAL mode</li> <li>• all the equipment are ON</li> </ul>		OK
2	Dump the monitoring configuration : <ul style="list-style-type: none"> <li>• TC_DPU_DAS_DUMP_PAR</li> </ul>		OK
3	Check the following parameters : <ul style="list-style-type: none"> <li>• SY_DPU_DMS_S20_MISSING = 30</li> </ul>		OK
4	Stop sending S20 packets using the following EGSE command : Command C-SGSE > SC > Command > Service 20 > Behavior > <b>SetService20State(DISABLE)</b>		OK
5	Wait for the emission of the following TM packet : <ul style="list-style-type: none"> <li>• TM_DPU_EVENT_ME_DPU_SC_LINK(S20_MISSING)</li> </ul>		OK
6	Check that : <ul style="list-style-type: none"> <li>• the DAS is set in STANDBY mode (this switches OFF all equipment)</li> <li>• the DAS is reset an unexpected reset event (TM_DPU_EVENT_HE_DPU_RESET) has been generated</li> <li>• the DAS is in STANDBY mode</li> <li>• all the equipment are OFF</li> </ul>		OK

#### 5 CONCLUSION

This test shows that the FDIR behavior is conformed to what is expected and described in the Software System Specification [RD1]. This test shows that the hard-soft interfaces work properly as far as the FDIR is concerned. No non conformities were found during this test.

**ANNEX 1: TEST CONFIGURATION**



FFT FM Test Set-up in CNES configuration

## DIFFUSION LIST

PROJECT TEAM					TEL	BPI	HIERARCHY					TEL	BPI
DSO/SC/SOL	X	FRATTER I.	74427	2220	DSO		CLAIR Marie-Anne	74629	2521				
DSO/SC/SOL	X	GUILHEM E. (ALTRAN)	87604	2220									
DSO/TB/EL		FIACHETTI C.	83576	1713	DSO/DA		MARCHAL Philippe	74456	2911				
DSO/TB/SM		HOT A.	82594	1717	DSO/DA		BORRIEN Andre	81770	2911				
DSO/TB/SM		PUILLET C.	82305	1717	DSO/BL		DUBOURG Vincent	73523	2222				
DSO/TB/MS		TREMOLIERE S.	73520	1715	DSO/BL		VARGAS Andre	73493	2222				
DSO/SC/SOL	X	BELLOUARD E.	82615	2220	DSO/AVI		LANDIECH Philippe	81958	1416				
DSO/TB/TH		BRYLSBAERT C.	74275	1717	DSO/AVI		LADIETTE Nadine	74972	1416				
DSO/TB/TH		LIQUIERES N. (EPSILON)	75612		DSO/DV		VAN-TROOSTENBERGH E Paola	81820	1421				
DSO/AVI/RI	X	SANISIDRO J.	73782	2212	DSO/DV		DESMAZEAUX Pascal	83345	1421				
DSO/AVI/RI		GASC P.	83049	2212	DSO/NT		BOLOH Loic	81401	212				
DSO/AVI/RI	X	TELLIER S (SOGETI)	74677	2212	DSO/NT		GUAY Philippe	82620	212				
DSO/AVI/RI		MERCIER M (SOGETI)	75227	2212									
DSO/SC/EUC		DANTO P.	82921	2220									
DSO/AVI/SI		JARLAUD J-L.	74950	2212	DSO/OT		GLEYZES Alain	73187	2524				
DSO/AVI/2I		VEGA J-F	73049	2212	DSO/OT		BRICOUT Jean-Noel	81320	2524				
DSO/AVI/AV		MEYER J-R	81567	1714	DSO/RF		PRADINES Dominique	74747	2512				
DSO/AQ/LE		FAYE D.	81812	1414	DSO/RF		LAPORTE Christophe	81324	2512				
DSO/AQ/BA	X	JULIEN S. (LOGIQUAL)	73110	1415	DSO/SC		LIER Philippe	82155	2532				
DSO/AQ/BA	X	BENEZETH J-M. (LOGIQUAL)	75879	1415	DSO/		PERBOS J.	74157	2532				
DSO/AQ/BA		SENDER G. (LOGIQUAL)	75669	1415									
DSO/AQ/BA	X	WORGAGUE M. (LOGIQUAL)	74768	1415	DSO/SI		BOUSSARIE Eric	74354	1711				

DSO/AQ/IM		RIBAIMONT A. (MI-GSO)	81914	1415
DSO/AQ/MP		COMBES H.	73073	1414
DSO/DA/CP		LE GALLUDEC J.	81745	2502
DSO/TB/LV	X	CAMPO GARRIDO G.	83271	1715
DIA/DA		CASOLI F.	67862	Paris
DIA/SME		AMSIF .K	73704	213
DAJ/AR/TN		DOORN M.	73193	1605
DSO/TB/ET		SABA B.	82876	1713
DSO/DA/CP		BLANDIN C. (MI-GSO)	83142	2502
DSO/AVI/CC	X	TRAVERT J-M (ALTRAN)	82169	2213

DSO/SI		CUGNY Bruno	73139	1711
DSO/TB		SERENE Fabienne	83180	1716
DSO/TB		BRIET Richard	82322	1716
DSO/AQ		CADIOU Anne.	82632	1411
DSO/AQ/IM		MAZEAU Sophie.	82918	1415
DSO/AQ/B A		GEAY-KAMINSKI N.	82047	1415

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