

	IFSI CNR	<b>Herschel SPIRE DPU Configuration Item Data List</b>	<b>Ref.:</b> SPIRE-IFS-DOC-001485 <b>Issue:</b> Issue 1.9 <b>Date:</b> 3/6/2003
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Herschel  
 SPIRE DPU Configuration Item  
 Data List

**Document Ref:** SPIRE-IFS-DOC-001485

**Issue: 1.9**

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IFSI  
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# Herschel SPIRE DPU Configuration Item Data List

Ref.: SPIRE-IFS-DOC-001485

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Date: 3/6/2003

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## Document Status Sheet

<b>Document Title:</b> SPIRE DPU Configuration Item Data List			
<b>Issue</b>	<b>Revision</b>	<b>Date</b>	<b>Reason for Change</b>
Issue 1	0	23/11/2001	First Issue
	1	11/02/2002	Updating for IBDR
	2	11/02/2002	More documents added
	3	23/7/2002	More documents added
	4	10/10/2002	Changed Title and updated.
	5	15/01/2003	Updated
	6	13/03/2003	Updated
	7	24/03/2003	Updated for IHDR
	8	11/04/2003	Updated for IHDR
	9	3/06/2003	Updated for IHDR

## Document Change Record


<b>Document Title:</b> SPIRE DPU Configuration Item Data List	
<b>Document Reference Number:</b> SPIRE-IFS-DOC-001485	
<b>Document Issue/Revision Number:</b> Issue 1.7	
<b>Section</b>	<b>Reason For Change</b>
All	<b>Issue 1.0</b>
	<b>Issue 1.1</b>
	Added CGS Test Procedures
	<b>Issue 1.2</b>
	Added Derating and Worst case Analysis
	Added DPU/ICU Spacecraft Interface Acceptance Test Plan
	<b>Issue 1.3</b>
	Added a sequence of numbers
	Added Test Reports
	Added 1553B Test Report

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	<b>Issue 1.4</b>
	Changed Title and content like the old issue of document "SPIRE DPU Configuration Status List" Issue 1.3
	Inserted distinct design pages.
	<b>Issue 1.5</b>
5	Added Virtual Machine Document # 11
5	Updated document # 9 Issue
	<b>Issue 1.6</b>
3	Added DPU/ICU Mass Budget
3	Added DPU/ICU Power Budget
3	Updated document # 8 and 14
	<b>Issue 1.7</b>
	Removed documents # 40 and 41
	<b>Issue 1.8</b>
3	Added documents # 33, 34, 35, 36, 37, 45, 46
5	Updated document #12
	<b>Issue 1.9</b>
3	Updated issue of document #12
3	Deleted document #36 (the same as #35)
3	Deleted document #46 (the same as document #16)

## Acronyms

AD	Architectural Design
ATP	Acceptance Test Plan
AVM	Avionic Model
BSW	Basic SW
CGS	Carlo Gavazzi Space
CIDL	Configuration Item Data List
CSL	Configuration Status List
CNR	Consiglio Nazionale delle Ricerche
CPP	Coordinated Parts Procurement
CPP	Coordinated Parts Procurement Board
CPU	Control Processing Unit

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CDMS	Central Data Management System
CDMU	Central Data Management Unit
CQM	Cryogenic Qualification Model
DCU	Detector Control Unit
DDD	Detailed Design Document
DPU	Digital Processing Unit
EEPROM	Electrically Erasable Programmable Read Only Memory
EMC	Electro Magnetic Compatibility
EMI	Electro Magnetic Interference
ESA	European Space Agency
FIRST	Far InfraRed and Submillimeter Telescope
HK	HouseKeeping
HW	HardWare
IBDR	Instrument Baseline Design Review
ICD	Interface Control Document
ICDR	Instrument Critical Design Review
ICU	Instrument Control Unit
IHDR	Instrument Hardware Design Review
IFSI	Istituto di Fisica dello Spazio Interplanetario
ISVR	Instrument Science Verification Review
MCU	Mechanism Control Unit
NA	Not Applicable
OBS	On-Board Software
PA	Product Assurance
PDU	Power Distribution Unit
PROM	Programmable Read Only Memory
S/C	SpaceCraft
SCC	SpaceCraft Components
SCU	S..... Control Unit
SEU	Single Event Upset
SPIRE	Spectral and Photometric Imaging Receiver
S/S	SubSystem

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SVM	Service Module
SW	Software
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TV	Thermal Vacuum
WBS	Work Breakdown Structure

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## 1 INTRODUCTION

### 1.1 SCOPE

The purpose of this document is to define a list of documents that describe the DPU and their issue status, in order to establish a configuration control of the design (as design status) and a configuration of the actual manufactured subsystem (as built status).

It has to be noted that in some cases the document is common to the three Herschel satellite instruments (i.e. PACS, HIFI and SPIRE) and in these cases the document is DPU/ICU.... instead of simply DPU.....


## 2 DOCUMENTS

### 2.1 APPLICABLE DOCUMENTS

AD	Name
01	Herschel/Planck Instrument Interface Document, part A
02	Herschel/Planck Instrument Interface Document, part B-Instrument SPIRE
04	SPIRE Instrument Specification
07	DPU/ICU P.A.Plan
10	DPU/ICU OBS PA Plan

### 2.2 Reference documents

Reference Document	Name

	<b>IFSI CNR</b>	<b>Herschel SPIRE DPU Configuration Item Data List</b>	<b>Ref.:</b> SPIRE-IFS-DOC-001485 <b>Issue:</b> Issue 1.9 <b>Date:</b> 3/6/2003
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### 3 List of Hardware documents

1	SPIRE DPU Subsystem Specification Document	SPIRE-IFS-PRJ-000462 Issue 1.2
2	DPU/ICU Development Plan	SPIRE-IFS-PRJ-000469 Issue 1.4
3	SPIRE DPU HW User Manual	SPIRE-IFS-PRJ-001390 Issue 1
4	SPIRE DPU AIV and Test Plan	SPIRE-IFS-DOC-001028
5	SPIRE-DPU Handling, Packing, Storage, Shipping Procedures	SPIRE-IFS-PRJ-001386 Issue 1
6	DPU/ICU Switch-On Procedure	CNR.IFSI.2001TR01 Issue 1
8	DPU/ICU Derating and Worst Case Analysis	CNR.IFSI.2001TR06 Issue 1.3
10	DPU/ICU PA Plan	IFSI/ICU/PL/1999-001 Issue 1 SPIRE-IFS-PRJ-000399
11	DPU/ICU ESD Control procedure	IFSI/ICU/PR/2001-001 Issue 1
12	SPIRE DPU Configuration Status List	SPIRE-IFS-DOC-001033 Issue 1.5
13	SPIRE AVM Log-Book	SPIRE-IFS-PRJ-001387 Issue 1
14	SPIRE DPU AVM Design Description	SPIRE-IFS-PRJ-001389 Issue 2
15	SPIRE DPU HW User Manual	SPIRE-IFS-PRJ-001390 Issue 1
16	SPIRE-DPU-IF-CNTRL-Drawing	SPIRE_DPUBox5.pdf
17	SPIRE DPU Interface Control Document	SPIRE-IFS-PRJ-000650
18	SPIRE DPU Declared Components, Material and Processes List	SPIRE-IFS-DOC-001031 Issue 1.1
19	CPU Board Specification	DPU-SP-CGS-001 Issue 1
20	I/F Board Specification	DPU-SP-CGS-002 Issue 1
21	Mother-Board Specification	DPU-SP-CGS-005 Issue 1
22	DC/DC Board Specification	DPU-SP-CGS-004 Issue 1
23	DPU/ICU Spacecraft Interface Acceptance Test Plan	CNR.IFSI.2001TR04 Draft 0.1
24	CPU Board Design	Herschel CPU Main EM1.DSN
24.1	CPU Board Design Electrical Assembly page 1/2	DPU-EM-110.00-0
24.2	CPU Board Design Electrical Assembly page 2/2	DPU-EM-110.00-0
24.3	CPU Board General Block Diagram page 1/8	DPU-EM-110.02-0
24.4	CPU Board Boot Loader & Clocks Generator page 2/8	DPU-EM-110.02-0
24.5	CPU Board Control Block page 3/8	DPU-EM-110.02-0
24.6	CPU Board Data Memory page 4/8	DPU-EM-110.02-0
24.7	CPU Board DM Mezzanine I/F page 5/8	DPU-EM-110.02-0
24.8	CPU Board DSP_PGA page 6/8	DPU-EM-110.02-0
24.9	CPU Board PM Mezzanine page 7/8	DPU-EM-110.02-0
24.10	CPU Board Program Memory page 8/8	DPU-EM-110.02-0
25	CPU Board Piggy-Back Design	Herschel CPU DM PIGGY EM1.DSN
25.1	CPU Piggy-Back Electrical Assembly page 1/2	DPU-EM-120.00-0
25.2	CPU Piggy-Back Electrical Assembly page 2/2	DPU-EM-120.00-0
25.3	CPU Piggy-Back Electrical Block Diagram page 1/3	DPU-EM-120.02-0
25.4	CPU Piggy-Back Electrical EEPROM Block page 2/3	DPU-EM-120.02-0
25.5	CPU Piggy-Back SMCS332 (NA for SPIRE) page 3/3	DPU-EM-120.02-0
26	Interface Board Design	PSI-E000_0.00.DSN
26.1	Interface Board Electrical Assembly page 1/2	DPU-EM-210.00-0



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26.2	Interface Board Electrical Assembly page 2/2	DPU-EM-210.00-0
26.3	Interface Board Electrical Block Diagram page 1/8	DPU-EM-210.02-0
26.4	Interface Board IEEE 1553 Interface page 2/8	DPU-EM-210.02-0
26.5	Interface Board Analogue Inputs page 3/8	DPU-EM-210.02-0
26.6	Interface Board Control Logic page 4/8	DPU-EM-210.02-0
26.7	Interface Board FSL,LSL Interfaces page 5/8	DPU-EM-210.02-0
26.8	Interface Board FSL Channel 0,1 FIFOs page 6/8	DPU-EM-210.02-0
26.9	Interface Board FSL Channel 2,3 FIFOs page 7/8	DPU-EM-210.02-0
26.10	Interface Board Power and Spares page 8/8	DPU-EM-210.02-0
27	DC/DC Converter Board Design	DC DC FIRST DESIGN1 EM.DSN
27.1	DC/DC Converter Board Electrical Assembly page 1/2	DPU-EM-310.00-0
27.2	DC/DC Converter Board Electrical Assembly page 2/2	DPU-EM-310.00-0
27.3	DC/DC Converter Board Electrical Block Diagram page 1/6	PDU-EM-310.02-0
27.4	DC/DC Converter Board Electrical Drawing page 2/6	PDU-EM-310.02-0
27.5	DC/DC Converter Board Electrical Drawing page 3/6	PDU-EM-310.02-0
27.6	DC/DC Converter Board Electrical Drawing page 4/6	PDU-EM-310.02-0
27.7	DC/DC Converter Board Electrical Drawing page 5/6	PDU-EM-310.02-0
27.8	DC/DC Converter Board Electrical Drawing page 6/6	PDU-EM-310.02-0
28	Motherboard Design	MOTHERBOARD_2_D.DSN
28.1	Motherboard Electrical Assembly page 1/1	DPU-EM-410.00-0
28.2	Motherboard Electrical Drawing page 1/3	DPU-EM-410.02-0
28.3	Motherboard Electrical Drawing page 2/3	DPU-EM-410.02-0
28.4	Motherboard Electrical Drawing page 3/3	DPU-EM-410.02-0
29	CPU BOARD Test Procedure	DPU-PR-CGS-001 Issue 2
30	I/F BOARD Test Procedure	DPU-PR-CGS-002 Issue 1
31	DC/DC BOARD Test Procedure	DPU-PR-CGS-003 Issue 1
32	MOTHER BOARD Test Procedure	DPU-PR-CGS-004 Issue 1
33	SPIRE DPU Physical Properties Test Procedure	SPIRE-IFS-PRC-001589 Issue 1
34	SPIRE DPU Electrical Test Procedure	SPIRE-IFS-PRC-001590 Issue 1
35	DPU EMC Test Procedure	CNR.IFSI.2003TR01 Issue 1
36	DPU-ICU Vibration Test Procedure	CNR.IFSI.2002TR01 Issue 1.1
37	CPU Board S/N 05 Test Report	DPU-RP-CGS-026 Issue 1
38	I/F Board S/N 05 Test Report	DPU-RP-CGS-032 Issue 1
39	DC/DC Converter S/N 03 Board Test Report	DPU-RP-CGS-031 Issue 1
40	Mother- Board S/N 05 Test Report	DPU-RP-CGS-011 Issue 1
41	SPIRE 1553B Test Report	SPIRE-IFS-REP-001385 Issue 1
42	SPIRE AVM DPU Test Summary Report	SPIRE-IFS-REP-001394 Issue 1
43	SPIRE DPU Design Verification Matrix	SPIRE-IFS-PRJ-001593
44	SPIRE DPU AVM Verification Control Matrix	SPIRE-IFS-PRJ-001596

#### 4 List of Management Documents

	<b>IFSI CNR</b>	<b>Herschel SPIRE DPU Configuration Item Data List</b>	<b>Ref.:</b> SPIRE-IFS-DOC-001485 <b>Issue:</b> Issue 1.9 <b>Date:</b> 3/6/2003
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SPIRE DPU Communication Matrix	SPIRE-IFS-DOC-001032 Issue 1
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## 5 List of Software documents

1	DPU-BSW SOFTWARE REQUIREMENTS DOCUMENT	DPU-SQ-CGS-001 Issue 2
2	DPU-BSW SOFTWARE A.D. DOCUMENT	DPU-AD-CGS-001 Issue 1
3	DPU SW VV Plan/Acceptance Test	DPU-PL-CGS-002 Issue 1
4	DPU Basic SW Test Report	DPU-RP-CGS-030 Issue 1
5	DPU Basic SW User Manual	DPU-MA-CGS-003 Issue 1
6	SPIRE DPU OBS SSD	SPIRE-IFS-PRJ-001036 draft 0.9
7	HSO DPU/ICU OBS Product Assurance Plan	IFSI/OBS/PL/2000-001 Issue 1.1
8	SPIRE OBS URD	SPIRE-IFS-PRJ-000444 Issue 1.1
9	SPIRE OBS SVVP/Acceptance Test Plan	SPIRE-IFS-DOC-001392 Issue 1.1
10	SPIRE DPU OBS Test Report (TBW)	SPIRE-IFS-REP-001393 Issue 1
11	SPIRE DPU Virtual Machine	CNR.IFSI.2003.TR01 Issue 1
12	SPIRE DPU OBS Software User Manual	SPIRE-IFS-PRJ-001391 Draft 0.5