

# Danish Space Research Institute

JEM-X FM1 End Item Data Package

## *Certificate of Compliance*

Manufacturer: Danish Space Research Institute

Unit Name: JEM-X FM1

Unit ID Code: P/N 130000, S/N 01

It is hereby confirmed that the JEM-X FM1 complies with the functional, electrical and mechanical requirements and the electrical and mechanical interface definition in EID-A 1.7, September 1999 and EID-B 5.3, September 2001.

September 2001,  
Danish Space Research Institute  
Copenhagen, Denmark

Niels Lund, PI, DSRI: Niels Lund Date: 17/9 2001

Kurt Omø, Project Manager, DSRI: Kurt Omø Date: 17. Sept. 2001.

# ANNEX 1:

EXPERIMENT INTERFACE REQUIREMENTS – VERIFICATION BY TEST				
TYPE	REF	REQUIREMENT	EM	FM
MECHANICAL	MICD	Dimensional control according to latest MICD: Envelope Mounting hole positions (X&Y positions of all I/F holes) I/F hole diameters Spot faced areas Mounting feet dimensions Mounting feet thickness Isolation bushes (if applicable) Surface flatness over mounting plane Connector and ground stud location Harness length and diameter	X X X  X X X	X X X X X X X X X <del>N/A</del>
	EID-A 4.2.11	Physical properties: Mass Centre of Gravity (CoG) Moment of Inertia (Mol)	X	X X X
	EID-A 4.2.12	Alignment: Alignment mirror location (X,Y,Z) Alignment measurement between the instrument optical axes and alignment cube. Alignment measurement between the instrument mechanical centre and crosshair on alignment cubes.		X <del>N/A</del> <del>N/A</del>
	EID-A 4.2.6 4.2.10	Connector and ground stud: Ground stud fixation torque Connector fixation torque	X X	X X

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## EXPERIMENT INTERFACE REQUIREMENTS - VERIFICATION BY TEST

TYPE	REF	REQUIREMENT	EM	FM	COMMENT
THERMAL	TICD	Thermo-optical properties for all surfaces		X	MICD JEM-X - 130100 rev D
	TICD	Dimensional control of thermal control surfaces		X	MICD
	TICD	Fit check of thermal protection (MLI)		X	N/A (Mask MLI?)
	EID-A	Heater impedance		X	N/A
POWER	EID-A 4.4.2.1	Short circuit/Open circuit	X	X	Part of functional test IN-TP-JEM-0012
	EID-A 4.4.2.2	Inrush Current (all power I/F) Rate of change of inrush (<1A/μsec) Inrush peak	X	X	Inrush current shall be defined for all steps from OFF to full operational unit IN-TP-JEM-0011 STEP 22-25
	EID-A 4.4.2.3	Initial electrical status	X	X	Part of functional test <del>STEP 29</del> p 29
	EID-A 4.4.3.1	Insulation of power lines Primary power vs. bonding stud (1) Primary power vs. secondary power (2) Secondary power vs. bonding stud	X	X	IN-TP-JEM-0012 p 11-12 & EMC Test Report (2) p 11-p 12
	EID-A 4.4.4	Power allocation. For all operational modes the following shall be defined per power I/F: Average power } "operation" Long peak power } Short peak power } "stand by"	X	X	Verification shall be performed at ambient and during TV test. EID-B p 65
DATA HANDLING	EID-A 4.5.2.3	Electrical interfaces to RTU and DPE: Bi-level digital TM Relay status TM Analogue TM Thermistor TH ((YSI 44908) Resistance thermometer (PT-500) On/off commands Low speed link High speed link	X	X	IN-TP-JEM-0012

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EXPERIMENT INTERFACE REQUIREMENTS – VERIFICATION BY TEST				
TYPE	REF	REQUIREMENT	EM	FM
EMC	4.6.2.2	Electrical bonding and case shielding: Adjacent structural parts Connector shells and structure MLI and structure	X	X
FUNCTIONAL	EID-A 5.4.2	Full performance and Limited performance test for nominal and redundant configurations including: Switch on/off (intentionally and unintentionally) Time synchronisation of all units and time stability All operational modes All maintenance and diagnostic modes including memory dump and patch. Onboard autonomy Response to all broad cast package entries. HV switch off Others Command protocol and report (on-event). On-event reporting Functionality of all relays	X	X
	EID-A	Validation of all entries in TC and TLM database	X	X

EMC test report

Verification shall be performed at ambient and during TV test.

INT-TP-JEH-0011

N/A