



<i>Publication Year</i>	2019
<i>Acceptance in OA</i>	2024-06-26T10:14:14Z
<i>Title</i>	Metis PFM EMC Assessment Report
<i>Authors</i>	NICOLINI, Gianalfredo
<i>Handle</i>	http://hdl.handle.net/20.500.12386/35258
<i>Volume</i>	METIS-OATO-RPT-032

**Metis INSTRUMENT
for the
Solar Orbiter Mission**

**Test Report
PFM EMC Assessment Report**

Principal Investigator:

Marco Romoli
Università degli Studi di Firenze
INAF – Astrophysical Observatory of Arcetri, Firenze, Italy

and the METIS Consortium:

Astronomical Institute – Academy of Sciences of the Czech Republic
CNR – Institute for Photonics and Nanotechnology, Padova, Italy
INAF – IASF, IAPS, OAA, OACN, OACt, OAPa, OATo, OATs, Italy
Laboratoire d'Astrophysique de Marseille, France
Max-Planck-Institut für Sonnensystemforschung, Germany
Naval Research Laboratory, USA
Politecnico di Torino, Italy
Universities of Florence, Padua, Italy
University of Athens, Greece



prepared by G. Nicolini

approved by G. Naletto – Experiment Manager
reference METIS-OATO-RPT-032
issue 1
revision 0
date of issue 12-AUG-2019



Page intentionally left blank

Distribution

Name	Organisation
Marco Castronuovo	ASI - Agenzia Spaziale Italiana Viale Liegi, 26 - 00198 Roma - ITALY
Mei Mei Stienstra	ESA/ESTEC (SCI-P) + P.O. Box 299 1 (part VI) 2200 AG Noordwijk The Netherlands
Daniel Müller	ESA/ESTEC (SCI-SM) + P.O. Box 299 1 (part VI) 2200 AG Noordwijk The Netherlands

Change Log

date	issue	Rev.	Paragraphs	reason for change
12/08/2019	1	0	All	First Issue

Table of Contents

Table of contents

1 INTRODUCTION.....	5
1.1 Scope of the document.....	5
2 EMC TEST CASES.....	6
2.1 Data retrieval.....	6
2.2 Summary of Issues.....	6
2.2.1 Error and warnings TM packets (TM(5,2/3/4)).....	6
2.2.1.1 TM(5,2) after Metis power-on.....	6
2.2.1.2 TM(5,2) "TCS Warning".....	6
2.2.2 Checks Not-OK during the formal run.....	6
2.2.3 Anomaly Reports and Non Conformances.....	6
2.2.3.1 SOL.SC.ASTR.NCR.01382 - VLDA configuration command rejected when testing Side B of instrument'6	6
2.2.4 Other Observations.....	7
2.2.4.1 S/C Epoch.....	7
2.3 Analysis of the TM packets.....	7
2.3.1 Analysis of the scientific telemetry.....	7
2.3.1.1 LGA autocompatibility test.....	7
2.3.1.2 HGA (nom) autocompatibility test.....	7
2.3.1.3 HGA (red) autocompatibility test.....	8
2.3.2 Noise performance analysis.....	8
3 CONCLUSIONS.....	9
4 DOCUMENT REFERENCES.....	10
4.1 Reference Documents.....	10
5 ACRONYMS.....	11

Table of Figures

Index of Tables

Table 2-1 – List of Metis related Anomaly Reports.....	6
Table 2-2 – LGA test: summary of TM(21,6) received.....	7
Table 2-3 – HGA test - Nom: summary of TM(21,6) received.....	7
Table 2-4 – HGA test - Red: summary of TM(21,6) received.....	8
Table 2-5 – Procedure AITV706A: summary of TM(21,6) received.....	8

1 Introduction

1.1 Scope of the document

This document prepared by the Metis team presents the analysis of TM data produced during the EMC autocompatibility tests of the Metis PFM model integrated on the S/C and conducted by ADS at IABG over the Solar Orbiter acceptance campaign in 2019.

Checks that were correctly verified during the test session are not re-verified here. In contrast, our analysis is performed to complete ADS test by investigating:

- Errors and warnings reported as TM event packets,
- The scientific telemetry generated by the instrument during the test
- Noise performance to detect any coupled disturbance.

For more information on the activities carried out during the test, refer to the following document: [RD-1],