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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 38027-2019

Test requirements for micro-nano satellites

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify the design and identification of small spacecraft and its components in the space system using ISO 19683.2017.

Acceptance test.

This standard has more structural adjustments than ISO 19683.2017. Appendix A lists this standard and ISO 19683.2017.

The chapter number is compared to the list.

There are technical differences between this standard and ISO 19683.2017, and the terms involved in these differences have been passed to the margins on the outside of the margins.

The vertical single line (-) is marked, and a list of the corresponding technical differences and their causes is given in Appendix B.

This standard also made the following editorial changes.

--- Change the standard name to "Micro-nano Satellite Test Requirements";

--- Removed 8.5.7 of ISO 19683.2017, as with other pilot projects, added "trial tailoring";

--- Removed Appendix A of the ISO 19683.2017 "Trimming Guide", added the corresponding content to the body of this standard, and became each test

Article 7 of the inspection project "test tailoring";

--- Removed five informative appendices such as Appendix B~Appendix F of ISO 19683.2017;

--- Removed references to ISO 19683.2017.

This standard is proposed and managed by the National Aerospace Technology and its

Application Standardization Technical Committee (SAC/TC425).

This standard was drafted. Beijing Satellite Environmental Engineering Research Institute, Harbin Institute of Technology, Aerospace Oriental Red Satellite Co., Ltd., Shenzhen Aerospace

Oriental Red Sea Special Satellite Co., Ltd.

Introduction

This standard provides the basis and guidance for the development of a pilot program for low-cost, fast-delivery micro-nano-satellite, with the aim of

The qualification test and acceptance test ensure that the micro-nano satellites complete the scheduled mission with high probability.

This standard is formulated for the first time. The chapters are mainly referred to ISO 19683.2017. Design of small spacecraft and its components for aerospace systems.

Identification and acceptance test. Combined with the practical experience of domestic micro-nano satellite experiments, this standard has appropriately deleted and supplemented some of the contents.

According to the quality of satellites, the quality is 10kg (excluding) ~100kg is a micro-small satellite, the quality is 1kg~10kg

The nano-satellite, micro-satellite and nano-satellite are collectively referred to as micro-nano satellites. The micro-nano satellites covered by this standard are mainly based on commercial spot supply.

It should be manufactured by (COTS) products, and its typical quality is 1kg~100kg, but it is not strictly limited to this range.

This standard is intended to provide a minimum level of guarantee for space work for micro-nano satellites built from COTS products, while guaranteeing their low cost.

At the same time as the rapid delivery advantage, it guides the micro-nano satellite design, manufacturing and test units to carry out the test work more efficiently.

Micro-nano satellite test requirements

1 Scope

This standard specifies the general requirements for testing micro-nano satellites and their components, micro-nano satellite system-level tests, component-level tests and detailed requirements.

This standard applies to the development and implementation of the micro-nano satellite

and its component test plan.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 35203-2017 General test documents for aerospace products (ISO 17566.2011, MOD)

GJB3590-1999 Aerospace system electromagnetic compatibility requirements

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Flat satellite flat-sat

Desktop satellite table-sat

It does not need to be installed on the satellite structure, but is constructed by components or bare circuit boards on the desktop.

3.2

Positive flightmodel

Flight model

Represents the final flight status of the product, the micro-nano satellite product used for flight.

3.3

Test piece testarticle

Satellite or component product for testing.

3.4

Component unit

A product with a certain function consisting of multiple parts or components or any combination of them.

Note. From the perspective of manufacturing and maintenance, the component is a complete and independent whole.

3.5

Deploy the transmitter payload or orbital deployer

After the orbit, the cube satellite is released from the separate device.

3.6

Cube satellite cubesat

A box-shaped satellite composed of cubic units having a size of 10 cm x 10 cm x 10 cm.