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General test methods for spacecraft

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is modified to adopt ISO 15864.2021 "General test methods for aerospace systems, spacecraft system level, subsystem level and component products"

Law".

Compared with ISO 15864.2021, this document has many structural adjustments.
Comparison list of structure number changes between the two files

See Appendix A.

Compared with ISO 15864.2021, there are many technical differences between this document and the clauses involved in the outer margin of the page.

Single lines (?) are marked. A list of these technical differences and their causes is provided in Appendix B.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

Introduction

This document provides the basis and guidance for formulating test plans for spacecraft systems, subsystems and component products, with the purpose of fully testing the products.

Effective testing to meet contractual performance specifications. This document determines the test basis for spacecraft systems, subsystems and component products.

Line, including required, assessed and unrequired test items. The tests required after evaluation are selected based on the specific development conditions of the product.

An experiment to do or not to do. If an evaluation proves that a test "required by evaluation" is valid, then the test "required by evaluation" is

It is a "required" test, and vice versa is an "unrequired" test. The tests specified in this document are mainly environmental tests, that is, to help determine the impact of environmental stress on

Product impact testing also includes other test requirements, such as function/performance testing, modal observation, measurement and control system/spacecraft compatibility testing

wait. When used during model development, this document should be tailored appropriately to meet the needs of the specific model.

General test methods for spacecraft

1 Scope

This document specifies general test methods for spacecraft systems, subsystems and component products and document requirements related to test activities.

This document applies to the identification, acceptance and prototype flight testing of spacecraft products.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 27025 General requirements for testing and calibration laboratory capabilities (GB/T 27025-2008, ISO /IEC 17025.

2005,IDT)

GB/T 32302 Launch vehicle and spacecraft interface requirements

GB/T 34515 Spacecraft thermal balance test method

GB/T 34516 Spacecraft vibration test method

GB/T 34522 Spacecraft thermal vacuum test method

GB/T 40134 Electromagnetic compatibility requirements for aerospace systems

GB/T 40541 Structural design requirements for aerospace metal pressure vessels (GB/T 40541-2021, ISO 14623.2003, MOD)

ISO.19924 Spacesystems-Acousticstesting

ISO 21494 Spacesystems-Magneticstesting

ISO 23461 Spacesystems-Programmemanagement-Inconsistency Control System

ISO 24411 Spacesystems-Micro-vibrationtesting (Spacesystems-Micro-vibrationtesting)

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

development modeldevelopmentmodel

Systems, subsystems or component products used to enhance design and conduct development testing.

3.1.2

flight model flightmodel

Systems, subsystems or component products used for acceptance testing, launch and on-orbit operation.

Note. Also called positive.