

ICS 03.220
CCS V54



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

GB/T 12183-2018

Replacing GB 12183-1990

**General specification for airborne transponder of air traffic
control**

空中交通管制机载应答机通用规范

Issued on: September 17, 2018

Implemented on: January 1, 2019

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1 Scope	1
2 Normative references	1
3 Product Category	1
4 Requirements	1
4.1 A/C mode answering machine	1
4.1.1 Main performance requirements	1
4.1.2 Technical performance requirements	3
4.2 S mode answering machine	6
4.2.1 Main performance requirements	6
4.2.2 Technical performance requirements	10
4.3 Antenna unit	12
4.3.1 Working frequency	12
4.3.2 Polarization mode	12
4.3.3 Directionality	12
4.3.4 Standing wave ratio	12
4.4 Environmental adaptability	12
4.4.1 High temperature	12
4.4.2 Low temperature	13
4.4.3 Temperature shock	13
4.4.4 Low air pressure (height)	13
4.4.5 Damp heat	13
4.4.6 Vibration	13
4.4.7 Impact	13
4.4.8 Acceleration	13
4.5 Electromagnetic Compatibility	13
4.6 External Interface	13
4.6.1 Control	13
4.6.2 Air pressure height	14
4.6.3 Power Adaptability	14
4.7 Continuous working capacity	14
4.8 Reliability	14
4.9 Maintainability	14

4.10 Security	14
4.11 Size and weight	14
5 Test Method	14
5.1 Test environment, test instrument	14
5.1.1 Test Environment	14
5.1.2 Test instruments and instruments	14
5.2 A/C mode transponder test method	14
5.2.1 Main performance test	14
5.2.2 Technical performance test	15
5.3 S mode answering machine test method	17
5.3.1 Main performance test	17
5.3.2 Technical performance test	18
5.4 Antenna unit	20
5.5 Environmental Adaptability	21
5.5.1 High temperature	21
5.5.2 Low temperature	21
5.5.3 Temperature shock	21
5.5.4 Low air pressure (height)	21
5.5.5 Damp heat	21
5.5.6 Vibration	21
5.5.7 Impact	21
5.5.8 Acceleration	21
5.6 Electromagnetic Compatibility	21
5.7 External Interface	21
5.8 Continuous working capacity	22
5.9 Reliability	22
5.10 Maintainability	22
5.11 Security	22
5.12 Size and weight	22
5.13 Packing	22
6 Quality assessment procedures	22
6.1 Inspection classification	22
6.2 Inspection items	22
6.3 Identification test	25
6.4 Quality consistency test	25

7 Marking, packaging, transport and storage	25
7.1 mark	25
7.1.1 Product Mark	25
7.1.2 Package surface mark	25
7.2 Packing	25
7.3 Transportation	26
7.4 Storage	26

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 12183-1990 "General Technical Conditions for Air Traffic Control Airborne Transponders". This standard and GB/T 12183- Compared with.1990, the main technical changes are as follows:

- Modified the "scope" description (see Chapter 1, Chapter 1 of the.1990 edition);
- Modified "normative references" (see Chapter 2, Chapter 2 of the.1990 edition);
- Added "product classification" (see Chapter 3);
- Removed the "general requirements" (see version 3.1 of the.1990 edition);
- Modified the "response mode" requirement (see 4.1.1.1, 3.2.1 of the.1990 edition);
- Modified the "response characteristics" requirement (see 4.1.1.2, version 3.2.2 of the.1990 version);
- Modified the "Special Position Identification (SPI) Pulse" requirement (see 4.1.1.2.3, version 3.2.2.3 of the.1990 version);
- Modified the "response code" requirement (see 4.1.1.2.4, version 3.2.2.4 of the.1990 version);

1 Scope

GB/T 12183-2018 is the Chinese national standard on general specification for airborne transponder of air traffic control, in the field of services and company organization. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes

binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 17 September 2018 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 January 2019. Classification: ICS 03.220, CCS V54. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the technical requirements, test methods, and quality assessment procedures for air traffic control airborne transponders (hereinafter referred to as transponders). Marking, packaging, shipping and storage requirements. This standard applies to the design, production and acceptance of transponders, and is the basic basis for the preparation of transponder product standards.

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. GJB74A-1998 General Specification for Military Ground Radar GJB150.2A-2009 Environmental testing methods for military equipment - Part 2. Low-pressure (height) test GJB150.3A-2009 Environmental testing methods for military equipment - Part 3. High temperature test GJB150.4A-2009 Environmental testing methods for military equipment - Part 4. Low temperature test GJB150.5A-2009 Environmental testing methods for military equipment - Part 5. Temperature impact test GJB150.9A-2009 Environmental testing methods for military equipment - Part 9. Damp heat test GJB150.15A-2009 Environmental testing methods for military equipment - Part 15. Acceleration test GJB150.16A-2009 Environmental testing methods for military equipment - Part 16. Vibration test GJB150.18A-2009 Environmental testing methods for military equipment - Part 18. Impact test GJB151A-1997 Electromagnetic emission and sensitivity requirements for military equipment and sub-systems GJB152A-1997 Electromagnetic emission and sensitivity measurement for military equipment and sub-systems GJB181B-2012 Aircraft Power Supply Characteristics GJB899A-2009 Reliability Identification and Acceptance Test GJB2072-1994 Maintainability Test and Evaluation International Civil Aviation Organization Annex 10 "Aeronautical Telecommunications" Volume IV Surveillance Radar and Collision Avoidance System (ICAOAnnex10VolumeIV SurveillanceRadarandCollisionAvoidanceSystems)

3 Product Categories

The answering machine is usually divided into. A/C mode answering machine and S mode answering machine according to the answer mode.