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NATIONAL STANDARD OF THE
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GB 14023-2022

Replacing GB 14023-2011

**Vehicles, Boats and Internal Combustion Engines –
Radio Disturbance Characteristics – Limits and Methods
of Measurement for the Protection of off-Board Receivers**

(CISPR 12:2009, MOD)

车辆、船和内燃机 无线电骚扰特性

用于保护车外接收机的和测量方法

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Foreword

All technical contents of this Document are mandatory.

This Document was drafted as per the rules specified in GB/T 1.1-2020 *Directives for Standardization – Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

This Document replaced GB 14023-2011 *Vehicles, Boats and Internal Combustion Engine - Radio Disturbance Characteristics - Limits and Methods of Measurement for the Protection of off-Board Receivers*. Compared with GB 14023-2011, the major technical changes of this Document area as follows besides the structural adjustment and editorial modifications:

- Update the normative references (see Clause 2 of this Edition; Clause 2 of 2011 Edition);
- Add the normative Annex H “Exemption Conditions for on-Board Intentional Transmitting Equipment in Electromagnetic Compatibility Test” (see Annex H of this Edition).

This Document used redrafting method to modify and adopt CISPR 12:2009 *Vehicles, Boats and Internal Combustion Engines – Radio Disturbance Characteristics – Limits and Methods of Measurement for the Protection of off-Board Receivers*. The Technical differences and causes with CISPR 12:2009 are as follows:

- Regarding the normative references, this Document has made adjustments with technical differences to adapt to the technical conditions of China. The adjustments are reflected in Clause 2 "Normative References". The specific adjustments are as follows.
 - Use GB/T 4365-2003 that equivalently adopts international standard to replace IEC 60050-161;
 - Use GB/T 6113.101-2016 that equivalently adopts international standard to replace CISPR 16-1-1:2006;
 - Use GB/T 6113.104-2016 that equivalently adopts international standard to replace CISPR 16-1-4:2007;
 - Use GB/T 6113.203-2020 that equivalently adopts international standard to replace CISPR 16-2-3:2006;
 - Use GB/T 18655-2018 that modifies and adopts international standard to replace CISPR 25.
- Taking into account the practicability of national standards, delete the contents of Annex H "Continuously Working Items" of international standards (see CISPR 12:2009).
- Add normative Annex H “Exemption Conditions for on-Board Intentional Transmitting

Equipment in Electromagnetic Compatibility Test” (see Annex H).

The following editorial modifications are made to this Document:

- In order to facilitate the understanding of the judgment problems caused by the differences between the different methods of the 3m distance and the 10m distance, add footnotes;
- Integrate the references of international standards distributed at the end of each Clause or appendix into "Bibliography" in accordance with the requirements of GB/T 1.1-2020.

Please note some contents of this Document may involve patents. The issuing agency of this Document may assume the responsibility to identify these patents.

This Document was proposed by and under the jurisdiction of Standardization Administration of China.

The historical editions replaced by this Document are as follows:

- GB 14023-1992 was first-time published in 1992; first-time revised in 2000; second-time revised in 2006; and third-time revised in 2011;
- It is the fourth-time revised hereby.

Vehicles, Boats and Internal Combustion Engines – Radio Disturbance Characteristics – Limits and Methods of Measurement for the Protection of off-Board Receivers

1 Scope

The limits in this Document are designed to provide protection for broadcast receivers in the frequency range of 30 MHz ~ 1 000 MHz when used in the residential environment. Compliance with this standard may not provide adequate protection for new types of radio transmissions or receivers used in the residential environment nearer than 10 m to the vehicle, boat or device.

NOTE 1: Experience has shown that compliance with this standard may provide satisfactory protection for receivers of other types of transmissions when used in the residential environment, including radio transmissions in frequency ranges other than that specified.

This Document applies to the emission of electromagnetic energy which may cause interference to radio reception.

This type of emission is as follows:

- a) vehicles propelled by an internal combustion engine, electrical means or both (see 3.1);
- b) boats propelled by an internal combustion engine, electrical means or both (see 3.2).
Boats are to be tested in the same manner as vehicles except where they have unique characteristics as explicitly stated in this standard;
- c) devices equipped with internal combustion engines or traction batteries (see 3.3).

See Annex G for a flow chart to help determine the applicability of this Document.

This standard does not apply to aircrafts, household appliances, traction systems (railway, tramway and electric trolley bus), or to incomplete vehicles. In the case of a dual-mode trolley bus (e.g., propelled by power from either A.C./D.C. mains or an internal combustion engine), the internal combustion propulsion system shall be included, but the A.C./D.C. mains portion of the vehicle propulsion system shall be excluded from this standard.

NOTE 2: Protection of receivers used on board can refer to GB/T 18655-2018.

The measurement of electromagnetic disturbances while the vehicle is connected to power

mains for charging is not covered in this Document. The user is referred to appropriate national standards which define measurement techniques and limits for this condition.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 4365-2003 Electrotechnical Terminology - Electromagnetic Compatibility (IEC 60050-161:1990, IDT)

GB/T 6113.101-2016 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods of Measurement - Part 1-1: Radio Disturbance and Immunity Measuring Apparatus - Measuring Equipment (CISPR 16-1-1:2010, IDT)

GB/T 6113.103-2021 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods of Measurement - Part 1-3: Radio Disturbance and Immunity Measuring Apparatus - Ancillary Equipment - Disturbances Power (CISPR 16-1-3:2016, IDT)

GB/T 6113.104-2016 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods of Measurement - Part 1-4: Radio Disturbance and Immunity Measuring Apparatus - Radiated Disturbance Measuring Antenna and Test Site (CISPR 16-1-4:2012, IDT)

GB/T 6113.203-2020 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 2-3: Methods of Measurement of Disturbances and Immunity - Radiated Disturbance Measurements (CISPR 16-2-3:2016, IDT)

GB/T 18655-2018 Vehicles, Boats and Internal Combustion Engines - Radio Disturbance Characteristics - Limits and Methods of Measurement for the Protection of On-Board Receivers (CISPR 25:2016, MOD)

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 4365-2003 and the following apply.

3.1 Vehicle

Machine operating on land which is intended to carry persons or goods.

NOTE: Vehicles include, but are not limited to, cars, trucks, buses, mopeds, agricultural machinery,

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