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GB/T 43248-2023

**Electric and hybrid electric road vehicles - Radio
disturbance characteristics - Limits and methods of
measurement for the protection of off-board receivers below
30 MHz**

电动汽车和混合动力汽车 无线电骚扰特性 用于保护 30MHz 以下车
外接收机的限值和测量方法
(CISPR 36:2020, MOD)

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Foreword

This document is drafted in accordance with the rules provided in GB/T 1.1-2020 *Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents*.

This document modifies and adopts CISPR 36:2020 *Electric and hybrid electric road vehicles - Radio disturbance characteristics - Limits and methods of measurement for the protection of off-board receivers below 30 MHz*.

This document has made the following structural adjustments compared to CISPR 36:2020:

- Remove Annex C;
- Adjust the figure numbers in order.

The technical differences between this document and CISPR 36:2020 and their reasons are as follows:

- Replace CISPR 16-1-1:2015 with the normative reference GB/T 6113.101-2021 (see 5.1.1.1, 5.1.1.2) to adapt to the technical conditions in China.

This document also makes the following editorial modifications:

- Incorporate the amendment AMD1:2023 and mark with vertical double lines (||) on the outer margin of the clause involved;
- In 3.5, use the informative reference GB/T 6113.104-2021 to replace CISPR 16-1-4;
- In 5.1.3, A.2.1, A.2.3 and B.2, use the informative reference GB/T 6113.402-2022 to replace CISPR 16-4-2;
- In A.2.3, use the informative reference GB/T 6113.101-2021 to replace CISPR 16-1-1;
- Delete the informative Annex C "Items under consideration".

Please note that some of the contents of this document may involve patents. The issuing organization of this document is not responsible for identifying patents.

This document shall be under the jurisdiction of National Technical Committee on Radio Jamming of Standardization Administration of China (SAC/TC 79).

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Electric and hybrid electric road vehicles - Radio disturbance characteristics - Limits and methods of measurement for the protection of off-board receivers below 30 MHz

1 Scope

This document defines limits for 3 m measurement distance and methods of measurement that are designed to provide protection for off-board receivers (at 10 m distance) in the frequency range of 150 kHz ~ 30 MHz when used in the residential environment.

Note: Protection of receivers used on board the same vehicle as the disturbance source(s) is covered by CISPR 25.

This document applies to the emission of electromagnetic energy which might cause interference to radio reception and which is emitted from electric and hybrid electric vehicles (see 3.2 and 3.3) propelled by an electric motor supplied with electric energy by internal rechargeable energy storage system (with voltages above 60 V) when operated on the road.

Electric vehicles to which CISPR 14-1 applies are not in the scope of this document.

This document applies only to road vehicles where an electric propulsion is used for sustained speed of more than 6 km/h.

Vehicles where the electric motor is only used to start up the internal combustion engine (e.g., "micro hybrid") and vehicles where the electric motor is used for additional propulsion only during acceleration (e.g., "48 V mild hybrid vehicles") are not in the scope of this document.

The radiated emission requirements in this document are not intended to be applicable to the intentional transmissions from a radio transmitter as defined by the ITU-R, including their spurious emissions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the

Annex A

(Informative)

Measurement instrumentation uncertainty

A.1 Overview

The purpose of this Annex is to provide guidance in the evaluation of the measurement instrumentation uncertainty for the measurement method described in this document. The relevant input quantities are listed and estimations for the calculation of the uncertainty budget are made.

The estimation of the overall uncertainty for the measurements of this document should consider input quantities due to measurement method, measurement instrumentation, operators, EUT and environment.

This Annex only considers the measurement instrumentation for uncertainty evaluation. Some other input quantities are not taken into consideration such as:

- site imperfection because site validation is under study;
- vehicle to antenna distance because it is not considered in measurement instrumentation but rather in method;
- loop antenna factor variations due to antenna imperfections are under study.

A.2 Radiated disturbance measurements in the frequency range 150 kHz to 30 MHz

A.2.1 General

The various uncertainty sources are presented in Figure A.1 and are mainly based on GB/T 6113.402-2022.

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