INTERNATIONAL STANDARD

ISO 11452-8

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Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy —

Part 8: Immunity to magnetic fields

Véhicules routiers — Méthodes d'essai d'un équipement soumis à des perturbations électriques par rayonnement d'énergie électromagnétique en bande étroite —

Partie 8: Méthodes d'immunité aux champs magnétiques

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11452-8 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 3, *Electrical and electronic equipment*.

ISO 11452 consists of the following parts, under the general title *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy*:

— *Part 1: General principles and terminology*

— *Part 2: Absorber-lined shielded enclosure*

— *Part 3: Transverse electromagnetic mode (TEM) cell*

— *Part 4: Bulk current injection (BCI)*

— *Part 5: Stripline*

— *Part 7: Direct radio frequency (RF) power injection*

— *Part 8: Immunity to magnetic fields*

The following parts are under preparation:

— *Part 9: Portable transmitters*

— *Part 10: Conducted immunity in the extended audio frequency range*

— *Part 11: Radiated immunity test method using a reverberation chamber*

Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy —

Part 8: Immunity to magnetic fields

1 Scope

This part of ISO 11452 specifies tests for the electromagnetic immunity of electronic components for passenger cars and commercial vehicles, regardless of the propulsion system (e.g. spark-ignition engine, diesel engine, electric motor), to magnetic fields generated by power transmission lines and generating stations and some powerful electrical equipment, such as motors. To perform this test, the device under test (DUT) is exposed to a magnetic disturbance field.

The radiating loop method can be applied to small DUTs or to larger DUTs by positioning the coil in multiple locations.

The Helmholtz coil is sometimes used as an alternative method. This technique is limited by the relationship between the size of the DUT and the size of the coils.

The electromagnetic disturbances considered in this part of ISO 11452 are limited to continuous narrowband electromagnetic fields.

Immunity measurements of complete vehicles can generally only be carried out by the vehicle manufacturer for reasons including the high cost of an absorber-lined shielded enclosure preserving the secrecy of prototypes or the large number of different vehicle models. Consequently, for research, development and quality control, a laboratory measuring method is used by the vehicle manufacturer and equipment suppliers to test electronic components.

ISO 11452-1 specifies general test conditions, definitions, practical use and basic principles of the test procedure.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11452-1, *Road vehicles — Component test methods for electrical disturbances from narrowband radiated electromagnetic energy — Part 1: General principles and terminology*

3 Test conditions

3.1 General

The applicable frequency range of this test method is 15 Hz to 150 kHz.