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

**Part 11:
Reverberation chamber**

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

Partie 11: Chambre réverbérante



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Published in Switzerland

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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 11452-11 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: Harness excitation methods*
- *Part 5: Stripline*
- *Part 7: Direct radio frequency (RF) power injection*
- *Part 8: Immunity to magnetic fields*
- *Part 9: Portable transmitters*
- *Part 10: Immunity to conducted disturbances in the extended audio frequency range*
- *Part 11: Reverberation chamber*

Introduction

Immunity measurements of complete road vehicles can generally only be carried out by the vehicle manufacturer, owing to, for example, high costs of absorber-lined shielded enclosures, the desire to preserve the secrecy of prototypes or a large number of different vehicle models.

For research, development and quality control, a laboratory measuring method can be used by both vehicle manufacturers and equipment suppliers to test electronic components.

This test method is based on parts of IEC 61000-4-21 and RTCA/DO-160E.

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

Part 11: Reverberation chamber

1 Scope

This part of ISO 11452 specifies a reverberation chamber method for testing the immunity (off-vehicle radiation source) of electronic components for passenger cars and commercial vehicles, regardless of the propulsion system (i.e. spark-ignition engine, diesel engine, electric motor). The device under test (DUT), together with the wiring harness (prototype or standard test harness), is subjected to an electromagnetic disturbance generated inside the reverberation chamber, with peripheral devices either inside or outside the chamber. It is applicable to disturbances from continuous narrowband electromagnetic fields.

The test is performed using the tuned mode method.

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 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11452-1 and the following apply.

3.1

antenna characterization factor

ACF

ratio of the average received power to forward power obtained in the antenna characterization

NOTE See Clause B.5.

3.2

chamber characterization factor

CCF

normalized average received power over one tuner rotation with the DUT and supporting equipment present

NOTE See Clause C.3.