PUBLICLY
AVAILABLE
SPECIFICATION

IEC PAS 62437

First edition
2005-09

INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

Radio disturbance characteristics for the protection of receivers used on board vehicles, boats, and on devices – Limits and methods of measurement – Specifications for active antennas

© IEC 2005 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE M

For price, see current catalogue

CONTENTS

FOREWORD....3
INTRODUCTION....5

1 Scope....6
2 Normative references....6
3 Terms and definitions....6
4 Set-up for noise-floor measurement....7

Annex A (informative) Examples for artificial antenna networks....10

Figure 1 – Example test set-up for noise-floor measurements (Category I antennas)....8
Figure 2 – Example test set-up for noise-floor measurements (Category II antennas)....8
Figure A.1 – Block circuit of an artificial antenna network for antennas intended for rear-screen installation....10
Figure A.2 – Block circuit of an artificial antenna network for antennas intended for side-screen installation....11

INTERNATIONAL ELECTROTECHNICAL COMMISSION
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

_____

RADIO DISTURBANCE CHARACTERISTICS FOR THE PROTECTION OF RECEIVERS USED ON BOARD VEHICLES, BOATS, AND ON DEVICES – LIMITS AND METHODS OF MEASUREMENT – SPECIFICATIONS FOR ACTIVE ANTENNAS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

A PAS is a technical specification not fulfilling the requirements for a standard but made available to the public.

IEC-PAS 62437 has been processed by CISPR subcommittee D: Electromagnetic disturbances related to electric/electronic equipment on vehicles and internal combustion engine powered devices.

During the maintenance of CISPR 25, the need for additional information regarding the use of active antennas for on-board reception was raised. Since it is necessary to gather experience with the described methods, CISPR subcommittee D decided not to include it as an annex in CISPR 25 for the time being, but to publish it as separate document.

The text of this PAS is based on the following document:	This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document
Draft PAS	**Report on voting**
CISPR/D/308/NP	CISPR/D/315/RVN

Following publication of this PAS, the technical committee or subcommittee concerned will investigate the possibility of transforming the PAS into an International Standard.

This PAS shall remain valid for an initial maximum period of 3 years starting from 2005-09. The validity may be extended for a single 3-year period, following which it shall be revised to become another type of normative document, or shall be withdrawn.

INTRODUCTION

Use of active antennas is today the state of the art in vehicles. In principle, active antennas can be handled like any other component/module used in vehicles, but, since they become part of the test equipment when performing radiated emission tests according to Clause 5 of CISPR 25, it must be guaranteed that the emissions produced by the active antenna itself will allow these emission measurements.

RADIO DISTURBANCE CHARACTERISTICS FOR THE PROTECTION OF RECEIVERS USED ON BOARD VEHICLES, BOATS, AND ON DEVICES – LIMITS AND METHODS OF MEASUREMENT – SPECIFICATIONS FOR ACTIVE ANTENNAS

1 Scope

Active antennas used on board vehicles are electronic components in the sense of CISPR 25. Therefore, the requirements regarding emissions apply to it in its function as EUT. In addition to this, vehicle active antennas are used as part of the measurement chain for the evaluation of emissions produced by any other component in the vehicle. With a passive antenna no special considerations were necessary because it can neither generate emissions nor harmonics due to its linearity.

This Publicly Available Specification (PAS) gives additional information for the use of active antennas for radiated emission measurement according to CISPR 25. Test set-ups at component level are defined for the determination of noise floor.

The current vehicle antenna technology provides two categories of active antennas. The first category (I) consists of an active part (electronic part) and a passive part (antenna structure). These parts can be considered as two separate “black boxes”. During the emission tests (antenna as EUT), the passive antenna part is normally replaced by an “artificial antenna network”.

Antennas with their active and passive parts inseparably combined within one housing are defined as category (II) antennas.

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.

CISPR 25, *Radio disturbance characteristics for the protection of receivers used on board vehicles, boats, and on devices – Limits and methods of measurement*