



SLOVENSKI STANDARD

SIST EN 60315-9:1999

01-april-1999

Methods of measurement on radio receivers for various classes of emission -- Part 9: Measurement of the characteristics relevant to radio data system (RDS) reception (IEC 60315-9:1996)

Methods of measurement on radio receivers for various classes of emission -- Part 9: Measurement of the characteristics relevant to radio data system (RDS) reception

Meßverfahren für Funkempfänger für verschiedene Sendearten -- Teil 9: Messungen von auf RDS(Radio-Daten-System)-Empfang bezogenen Eigenschaften
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Méthodes de mesure applicables aux récepteurs radioélectriques pour diverses classes d'émission -- Partie 9: Méthodes de mesure des caractéristiques relatives à la réception du système de radiodiffusion de données (RDS)

Ta slovenski standard je istoveten z: EN 60315-9:1996

ICS:

33.160.20 Radijski sprejemniki Radio receivers

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60315-9

July 1996

ICS 33.060.30

Descriptors: Telecommunications, communication equipment, radiocommunications, sound broadcasting, receivers, characteristics, measurements, acoustic signals, testing conditions

English version

**Methods of measurement on radio receivers
for various classes of emission
Part 9: Measurement of the characteristics relevant to
radio data system (RDS) reception
(IEC 315-9:1996)**

Méthodes de mesure applicables aux
récepteurs radioélectriques pour
diverses classes d'émission
Partie 9: Méthodes de mesure des
caractéristiques relatives à la réception
du système de radiodiffusion de
données (RDS)
(CEI 315-9:1996)

Meßverfahren für Funkempfänger für
verschiedene Sendeararten
Teil 9: Messungen von auf
RDS(Radio-Daten-System)-Empfang
bezogenen Eigenschaften
(IEC 315-9:1996)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 100A/2/FDIS, future edition 1 of IEC 315-9, prepared by SC 100A, Receiving equipment, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60315-9 on 1996-07-02.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-04-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A and B are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 315-9:1996 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 315-1	1988	Methods of measurement on radio receivers for various classes of emission Part 1: General considerations and methods of measurement, including audio-frequency measurements	HD 560.1 S1	1990
IEC 315-4	1982	Part 4: Radio-frequency measurements on receivers for frequency modulated sound-broadcasting emissions	-	-
CISPR 16-1	1993	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
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315-9

Première édition
First edition
1996-05

**Méthodes de mesure applicables
aux récepteurs radioélectriques pour
diverses classes d'émission –**

Partie 9:

**Méthodes de mesure des caractéristiques
relatives à la réception du système
de radiodiffusion de données (RDS)**

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**Methods of measurement on radio
receivers for various classes of emission –**

Part 9:

**Measurement of the characteristics relevant
to radio data system (RDS) reception**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
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CONTENTS

	Page
FOREWORD	5
Clause	
1 General	7
2 General notes on measurements	9
3 Characteristics and methods of measurement	11
Annexes	
A The radio broadcast data system	27
B Bibliography	29

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[SIST EN 60315-9:1999](https://standards.iteh.ai/catalog/standards/sist/54ee8949-dea5-49a4-8b72-92d7534ab777/sist-en-60315-9-1999)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

METHODS OF MEASUREMENT ON RADIO RECEIVERS FOR
VARIOUS CLASSES OF EMISSION –Part 9: Measurement of the characteristics relevant to
radio data system (RDS) reception

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 315-9 has been prepared by subcommittee 100A (former 12A): Receiving equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
100A/2/FDIS	100A/14/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A and B are for information only.

This part of IEC 315 is to be used in conjunction with IEC 315-1 and IEC 315-4.

METHODS OF MEASUREMENT ON RADIO RECEIVERS FOR VARIOUS CLASSES OF EMISSION –

Part 9: Measurement of the characteristics relevant to radio data system (RDS) reception

1 General

1.1 Scope

This part of IEC 315 specifies the conditions, characteristics and methods of measurement to be used to determine the RDS reception characteristics of a sound-broadcasting receiver, so as to make possible the comparison of results of measurements made by different observers. Performance requirements (limit values for the characteristics required for acceptable RDS performance) are not specified. The methods of measurement are conceived for determining the overall performance of the receiver, without attempting to study its functional units separately.

1.2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of IEC 315. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of IEC 315 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 315-1: 1988, *Methods of measurement on radio receivers for various classes of emission – Part 1: General considerations and methods of measurement, including audio-frequency measurements*

IEC 315-4: 1982, *Methods of measurement on radio receivers for various classes of emission – Part 4: Radio-frequency measurements on receivers for frequency modulated sound-broadcasting emissions*

CISPR 16-1: 1993, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

1.3 Definitions

The "characteristics to be specified" are defined in their relevant clauses. This avoids the need for cross-references when reading the text. For the purposes of this part of IEC 315, the following definition applies:

1.3.1 satisfactory reception: The correct display of the programme service name (PS) within 10 s after the beginning of the relevant step of a test.

NOTES

1 Any eight characters from the available character set may be chosen as the programme service name. The chosen name(s) should be stated with the results.

2 The correct display of the programme service name is used as the criterion for satisfactory reception, because this application is generally available on RDS receivers, and can be used without making internal connections to the receiver circuits.

3 If the PS is not available (on a special purpose receiver, for example), another, stated, criterion may be used. In this case, it may be necessary to make internal connections to the receiver in order to obtain a suitable output signal for measurement. If possible, a correlation should be established between this criterion and the PS criterion, and stated with the results.

2 General notes on measurements

2.1 Preliminary measurements

As the results of various measurements described in this part may be influenced by other properties of the receiver, the related measurements given in IEC 315-1 and IEC 315-4 should be carried out first.

2.2 Standard signals

Unless otherwise specified, the following standard signals shall be used for the measurements:

2.2.1 Standard measuring signal

- Standard radio-frequency (r.f.) input signal level: 70 dB(fW)
- Standard carrier frequency: 69 MHz, 83 MHz or 98 MHz,
(depending on the tuning range of the receiver,
see IEC 315-4, table 1)
- Stereophonic signal without audio modulation
- Frequency deviation of 19 kHz pilot tone: $\pm 6,75$ kHz
or in accordance with the broadcasting system standards
for which the receiver is designed
- Frequency deviation of RDS signal: $\pm 1,20$ kHz
- Phase relation to the third harmonic of the pilot tone: $0^\circ \pm 1^\circ$
- Repetition rate for RDS group type 0A: approximately 4/s

2.2.2 Standard measuring signal with ARI (see note 2)

When it is required to carry out measurements in the presence of an ARI signal, the following requirements apply in addition to those in 2.2.1.

- Frequency deviation of ARI signal (carrier only): $\pm 3,50$ kHz
- ARI area identification: A
- ARI traffic announcement identification: off
- Phase relation between ARI and RDS subcarriers: $90^\circ \pm 1^\circ$
- Phase relation between ARI signal and the third harmonic
of the pilot-tone: $0^\circ \pm 1^\circ$

NOTES

1 Unless otherwise stated, the receiver is tuned to the standard measuring frequency nearest the centre of the broadcast band for which the receiver is designed (see IEC 315-4, table 1).

2 ARI is the Autofahrer-Rundfunk-Information (broadcast information for motorists), a traffic information system used in some countries, and which can be broadcast simultaneously with the RDS system from the same transmitters.