SLOVENSKI STANDARD
SIST EN 60315-7:1999

01-april-1999

Methods of measurement on radio receivers for various classes of emission -- Part 7: Methods of measurement on digital satellite radio (DSR) receivers (IEC 60315-7:1995)

Methods of measurement on radio receivers for various classes of emission -- Part 7: Methods of measurement on digital satellite radio (DSR) receivers

Meßverfahren für Funkempfänger für verschiedene Sendearten -- Teil 7: Meßverfahren für Empfänger für digitale Satelliten-Tonrundfunksendungen (DSR)

Méthodes de mesure applicables aux récepteurs radioélectriques pour diverses classes d'émission -- Partie 7: Méthodes de mesure pour les récepteurs de radiodiffusion sonore numérique par satellite (DSR)

Ta slovenski standard je istoveten z: **EN 60315-7:1995**

ICS:

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Methods of measurement on radio receivers for various classes of emission Part 7: Methods of measurement on digital satellite radio (DSR) receivers (IEC 315-7:1995)

Méthodes de mesure applicables aux récepteurs radioélectriques pour diverses classes d'émission Partie 7: Méthodes de mesure pour les récepteurs de radiodiffusion sonore numérique par satellite (DSR) (CEI 315-7:1995)

Meßverfahren für Funkempfänger für verschiedene Sendearten Teil 7: Meßverfahren für Empfänger für digitale Satelliten-Tonrundfunksendungen (DSR) (IEC 315-7:1995)

This European Standard was approved by CENELEC on 1995-07-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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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.

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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 12A/378/DIS, future edition 1 of IEC 315-7, prepared by SC 12A, Receiving equipment, of IEC TC 12, Radiocommunications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60315-7 on 1995-07-04.

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)	1996-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	1996-04-01

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 annex A is informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 315-7:1995 was approved by CENELEC as a European Standard without any modification.

The following editorial change applies to the text of IEC 315-7:1995:

In figure 11, replace "See figure 7b" by "See figure 12".

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.

Publication	Year	Title	EN/HD	Year
IEC 268-3	1988	Sound system equipment Part 3: Amplifiers	HD 483.3 S2[1)]	1992
IEC 268-15	1987	Part 15: Preferred matching values for the interconnection of sound system components	HD 483.15 S4[2)]	1992
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 651	1979	Sound level meters	EN 60651	1994
IEC 958	1989	Digital audio interface	EN 60958	1990
ITU-R Recom. BS 468-4	1990	Measurement of audio-frequency noise voltage level in sound broadcasting (Vol. X-1)	-	-

1) HD 483.3 S2 includes A1:1990 + A2:1991 to IEC 268-3.

2) HD 483.15 S4 includes A1:1989 + A2:1990 + A3:1991 to IEC 268-15.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 7: Methods of measurement on digital satellite radio (DSR) receivers

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, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 315-7 has been prepared by sub-committee 12A: Receiving equipment, of IEC technical committee 12: Radiocommunications.

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

DIS	Report on voting
12A/378/DIS	12A/391/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.

Annex A is for information only.

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

Part 7: Methods of measurement on digital satellite radio (DSR) receivers

Section 1: General

1.1 Scope and object

This part of IEC 315 applies to the DSR tuner/receiver unit of a receiving installation for the direct reception of digital satellite sound broadcast transmissions in the 12 GHz band. The channels are identical to those defined by WARC BS-77 and RARC SAT-83 for television broadcasting. The DSR system is recommended in CCIR* Recommendation 712 for the transmission of very high-quality sound programmes to fixed receivers within a wide coverage area in Region 1.

The object of this standard is to define the conditions and methods of measurement to be used to determine the characteristics of a DSR tuner unit, so as to make possible the comparison of results of measurements achieved by different observers. Performance requirements (limiting values for the characteristics, required for acceptable performance) are not specified.

NOTES

1 The tuner unit comprises a channel selector and a demodulator/decoder for the reception of digitally coded and phase-modulated satellite sound broadcast transmissions. The unit may additionally comprise a fixed frequency input.

2 For more information about the system, see annex A.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions in this part of IEC 315. At the time of publication, the editions indicated were valid. All normative documents 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 normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 268-3: 1988, *Sound system equipment – Part 3: Amplifiers*

IEC 268-15: 1987, *Sound system equipment – Part 15: Preferred matching values for the interconnection of sound system components*

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* CCIR is replaced by ITU-R.

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 651: 1979, *Sound level meters*

IEC 958: 1989, *Digital audio interface*

ITU-R Recommendation BS 468-4: 1990, *Measurement of audio-frequency noise voltage level in sound broadcasting (Vol. X-1)*

Section 2: General explanation of terms

For the purpose of this part of IEC 315 the following definitions apply.

2.1 *DSR tuner/receiver unit*

The function of this unit is to select a desired channel from a group of signals received and converted to a first intermediate frequency by the outdoor unit and possibly to a second intermediate frequency, for example in cable distribution systems, and to provide analogue and/or digital audio outputs. This unit is able to select a specific sound channel from a group of time multiplexed sound channels transmitted with 4-PSK (QPSK) modulation according to the DSR standard. For this purpose the unit includes an RF filter module followed by a demodulator, decoder and digital-analogue converter.

The exact configuration of the unit depends on overall product design and the transmission standards that the equipment is designed to receive (see annex A).

2.2 *Radio frequencies for measurements*

DSR receivers may provide inputs for the first and/or second intermediate frequency, or they may have a switchable input. Receivers designed for several frequency ranges shall be measured in each of these frequency ranges.

2.3 *Carrier frequency*

The carrier frequency is the centre frequency of the spectrum of the modulated radio-frequency input signal, which is equal to the frequency of the unmodulated signal.

2.4 *4-PSK (QPSK) modulation*

For this system the phase steps of the 4-PSK modulation are defined as $n \times 90°$ (for $n = 0$ to 3) i.e. the modulation is a QPSK modulation.

NOTE – 4-PSK means four-phase phase-shift keying.
QPSK means quadrature phase-shift keying.

2.5 *Rated values*

In this standard, the term rated value is used as specified in IEC 315-1.

Section 3: General notes on measurements

3.1 Preliminary measurements

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

3.2 General conditions

With respect to accuracy of measurement equipment, environment conditions, presentation of results and deviation from the recommended methods of measurements, reference is made to IEC 315-1.

Accuracy of measurements may be influenced by radio interference. In this case, measurements shall be carried out in a screened room.

3.3 Test signals

3.3.1 *Standard radio-frequency input signal for measurements*

The standard radio-frequency input signal is a signal with the appropriate standard carrier frequency using the audio signal according to 3.3.2 for modulation of programme channel 1 (if not stated otherwise) with a utilization factor corresponding to the standard utilization factor (see 3.3.3 and 3.3.4).

The available power of the signal generator at the antenna input of the receiver shall be as stated below:

- 50 dB (mW) = 70 dB (fW) for measurements at the first intermediate frequency, and/or
- 40 dB (mW) = 80 dB (fW) for measurements at the second intermediate frequency.

3.3.2 *Standard audio signal for measurements*

The audio-signal frequency or the standard audio-signal frequency shall be the standard reference frequency (1 000 Hz). Preferably these signals should be generated synthetically (see 3.4.2). In this case slightly different frequencies may be used.

If required, other audio frequencies may be chosen, preferably from the third-octave frequencies of table 1 of IEC 315-1.

NOTE – The DSR system does not make use of a pre-emphasis.