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Mobilni in prenosni radijski dostop v sistemu DVB-T/H - 1. del: Specifikacija vmesnika (IEC 62002-1:2005)

Mobile and portable DVB-T/H radio access - Part 1: Interface specification (IEC 62002-1:2005)

Mobiler und tragbarer Funkzugang zu DVB-T/H - Teil 1: Festlegung der Schnittstelle (IEC 62002-1:2005)

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Acces radio DVB-T/H vers les mobiles et les portables - Partie 1 : Spécification de l'interface (IEC 62002-1:2005)

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Mobile and portable DVB-T/H radio access
Part 1: Interface specification
(IEC 62002-1:2005)

Accès radio DVB-T/H
vers les mobiles et les portables
Partie 1 : Spécification de l'interface
(CEI 62002-1:2005)

Mobiler und tragbarer Funkzugang
zu DVB-T/H
Teil 1: Festlegung der Schnittstelle
(IEC 62002-1:2005)

This European Standard was approved by CENELEC on 2006-11-01. 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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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 the International Standard IEC 62002-1:2005, prepared by IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the formal vote and was approved by CENELEC as EN 62002-1 on 2006-11-01 without any modification.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-11-01

Endorsement notice

The text of the International Standard IEC 62002-1:2005 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**

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.

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>
CISPR 13	- ¹⁾	Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55013	2001 ²⁾
CISPR 20	- ¹⁾	Sound and television broadcast receivers and associated equipment - Immunity characteristics - Limits and methods of measurement	EN 55020 + corr. September	2002 ²⁾ 2005
IEC 60169-2	- ¹⁾	Radio-frequency connectors Part 2: Coaxial unmatched connector	HD 134.2 S2	1984 ²⁾
-	-	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for digital terrestrial television V1.5.1	ETSI EN 300 744	2004
-	-	Radio Equipment and Systems (RES); ElectroMagnetic Compatibility (EMC) for European digital cellular telecommunications system (GSM 900 MHz and DCS 1 800 MHz) Part 1: Mobile and portable radio and ancillary equipment	ETSI ETS 300 342-1	- ¹⁾
-	-	Digital cellular telecommunications system (Phase 2+) (GSM) - Mobile Station (MS) conformance specification Part 1: Conformance specification	ETSI EN 300 607-1	- ¹⁾
-	-	Digital Video Broadcasting (DVB); Transmission System for Handheld Terminals (DVB-H) V1.1.1	ETSI EN 302 304	2004

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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Part 1: Interface specification

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MOBILE AND PORTABLE DVB-T/H RADIO ACCESS –**Part 1: Interface specification**

FOREWORD

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International Standard IEC 62002-1 has been prepared by Technical Area 1: Terminals for audio, video and data services, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

CDV	Report on voting
100/920/CDV	100/1012/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

IEC 62002 consists of the following parts, under the general title *Mobile and portable DVB-T/H Radio access*:

Part 1: Interface specification

Part 2: Interface conformance testing

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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MOBILE AND PORTABLE DVB-T/H RADIO ACCESS –

Part 1: Interface specification

1 Scope

This part of IEC 62002 is a radio access specification for mobile, portable and hand-held portable devices capable of receiving DVB-T/H services. It includes informative system aspects as well as specifications for minimum RF performance. It covers terminals in three main classes, namely integrated car terminals, portable digital TV sets and hand-held portable convergence terminals. Interoperability with integrated cellular radios is also considered. The specification covers the following areas.

- Frequency ranges
- Supported modes
- Definition of receiving conditions
- Definition of the receiver RF reference model
- Definition of QoS criteria
- Antenna characteristics
- Channel models
- *C/*-performance with different channels
- Minimum and maximum input levels
- Immunity to interfering signals
- Definition of an ensemble of interference patterns
- Tolerance to impulse interference
- SFN performance
- Transmitter minimum performance
- Interoperability of cellular radios
- EMC aspects

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 13, *Sound and television broadcast receivers and associated equipment – Radio disturbance characteristics – Limits and methods of measurement*

CISPR 20, *Sound and television broadcast receivers and associated equipment – Immunity characteristics – Limits and methods of measurement*

IEC 60169-2, *Radio-frequency connectors – Part 2: Coaxial unmatched connector*

ETSI EN 300 744:2004, *Digital Video Broadcasting (DVB); Framing structure, Channel coding and modulation for digital terrestrial television, V1.5.1*

ETSI ETS 300 342-1, *Radio Equipment and Systems (RES); ElectroMagnetic Compatibility (EMC) for European digital cellular telecommunications system (GSM 900 MHz and DCS 1 800 MHz) – Part 1: Mobile and portable radio and ancillary equipment*

ETSI EN 300 607-1, *Digital cellular telecommunications system (Phase 2+) (GSM) – Mobile Station (MS) conformance specification; Part 1: Conformance specification*

ETSI EN 302 304:2004, *Digital Video Broadcasting (DVB); Transmission System for Handheld Terminals (DVB-H), V1.1.1*

3 Abbreviations

For the purposes of this document, the following abbreviations apply.

λ	Lambda, wavelength ($\lambda = c/f$)
A2	German analogue TV stereo system
A_A	Coupling between antennas
AGC	Automatic gain control
A_{GSM}	Stop band attenuation of the GSM reject filter
B	Bandwidth
BER	Bit error ratio
C	Carrier power (In band carrier power including any echoes)
c	Speed of light $c = 3,0 \times 10^8$ m/s
C_i	Power contribution from the i -th signal
C_t	Total useful carrier power
C/N	Carrier-to-noise ratio
C/N_{min}	Minimum C/N
CPE	Common phase error
CR	Code rate
dB	Decibel
dBc	dB compared to carrier power C
dBd	Antenna gain in dB compared to reference dipole (0 dBd = –2,14 dBi)
dBi	Antenna gain in dB compared to isotropic antenna (0 dBi = 2,14 dBd)
dB(mW)	Power in dB compared to 1 mW
DVB, DVB-T	Digital video broadcasting, terrestrial digital video broadcasting
DVB-H	Digital video broadcasting to hand held terminals
DVB-RCT	DVB terrestrial return channel
E	Field strength V/m
$E(\text{dB}\mu\text{V/m})$	Field strength in dB compared to 1 μV
EDGE	Enhanced data rates for GSM/global evolution
EMC	Electromagnetic compatibility
END	Equivalent noise degradation
ENF	Equivalent noise floor
ESR	Erroneous second ratio

<i>F</i>	Frequency in Hz
<i>f</i> (MHz)	Frequency in MHz
<i>f_c</i>	Centre frequency
<i>F</i>	Noise factor
<i>f_d</i> , <i>F_d</i>	Doppler frequency
<i>F_d</i> _{3dB}	Doppler frequency with minimum <i>C/N</i> requirement raised by 3dB
<i>FER</i>	Frame error rate
<i>G</i>	Gain
<i>G_a</i>	Antenna gain
<i>GI</i>	Guard interval
GPRS	General packet radio service
GSM	Global system for mobile communications
<i>I</i>	Interfering power
<i>ICI</i>	Intercarrier interference
J	joule
K	Boltzmann's constant $k = 1,38 \times 10^{-26}$ J/K
K	kelvin
L1, L2, L3	Linearity patterns
<i>L</i> _{GSM}	Insertion loss of the GSM reject filter
LNA	Low noise amplifier
<i>MER</i>	Modulation error ratio
<i>MFER</i>	MPE-FEC frame error rate
MHz	Megahertz
MPEG-2	Motion pictures expert group, video compression standard
<i>N</i> , <i>m</i> , <i>N</i>	Channel indexes
<i>NF</i>	Noise figure in dB
NICAM	Additional sound carrier for analogue TV, modulated with a near instantaneous companded audio multiplex
PA	Power amplifier
PAL, PAL B, PAL G, PAL I, PAL I1	Phase alternation line, TV-systems using PAL
<i>PER</i>	Packet error ratio
<i>P_{in}</i>	Input power W
<i>P_{in}</i> (dB(mW))	Input power dB compared to 1 mW
<i>P_{max}</i>	Maximum power
<i>P_{min}</i>	Minimum power
ppm	Parts per million
PSI/SI	Program specific information, service information
<i>P_{TX}</i>	Transmission power
<i>P_x</i>	Excess noise power dBc
QAM16, QAM64	Quadrature amplitude modulation, 16-level and 64-level versions

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