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Prenosna omreġja z vodniki - 2. del: Koaksialni kabli (izhodiġļ e kabelska TV)

Conducted transmission networks -- Part 2: Coaxial cables (CaTV-based)

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ICS:

33.040.20	Prenosni sistem	Transmission systems
33.120.10	Koaksialni kabli. Valovodi	Coaxial cables. Waveguides

oSIST prEN 50529-2:2009 **en**

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ICS

English version

Conducted transmission networks - Part 2: Coaxial cables (CaTV-based)

To be completed

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This draft European Standard is submitted to CENELEC members for CENELEC enquiry.
Deadline for CENELEC: 2009-04-17.

It has been drawn up by the CENELEC/ETSI JWG EMC.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CENELEC 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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Europäisches Komitee für Elektrotechnische Normung

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Foreword

This draft European Standard was prepared by the Joint CENELEC – ETSI Working Group "EMC of conducted transmission networks". It is submitted to the CENELEC enquiry.

This draft European Standard has been prepared under Mandate M/313 given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/108/EC [1]. See Annex ZZ.

***JWG note**:* In order to ensure due consensus from the stakeholders of both CENELEC and ETSI, this document is circulated to a simultaneous public enquiry in both organizations.

With a message dated 26 May 2005 to the CENELEC President, the ETSI Director General has confirmed that the subsequent vote and publication of the document will be assigned to CENELEC.

[1] *Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC,* OJ L 390, 31.12.2004, p. 24-37

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Introduction

This part of the multi-part EMC standard specifies limits and methods of measurement for emissions emanating from wire-line telecommunication networks and immunity of those networks by means of references to harmonised product standards in combination with good engineering practice. This standard specifically refers to traditional telecommunication networks.

1 Scope and object

This EMC standard specifies limits and methods of measurement for emissions originating from within wire-line telecommunication networks using coaxial cables and the immunity of those networks, including their in-premises extensions by references to harmonised EMC product standards and other standards with EMC requirements in combination with good engineering practice, when installed and operated as intended.

This standard covers the frequency range 9 kHz to 400 GHz. To date, it specifies limits and methods of measurement for conducted and radiated disturbances from telecommunication networks in the frequency range 150 kHz to 6 GHz. The assessment of a network needs to be performed only in the frequency ranges where limits are defined.

The emission limits set in this standard do not apply to the wanted emissions from embedded radio links within the network.

The requirements have been selected so as to ensure that electromagnetic disturbances generated by a network, or parts thereof, operating normally do not exceed a level that could prevent other equipment from operating as intended. Fault conditions of the network are not taken into account.

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.

EN 50083-2:2006	Cable networks for television signals, sound signals and interactive services – Part 2: Electromagnetic compatibility for equipment
EN 55022:2006 + A1:2007	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement (CISPR 22:2005, mod. + A1:2005)
EN 55024:1998 + A1:2001 + A2:2003	Information technology equipment – Immunity characteristics – Limits and methods of measurement (CISPR 24:1997, mod. + A1:2001 + A2:2002)
ETSI EN 300 386:2005 (V1.3.3) [2)]	Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements
ETSI TR 101 651 (V1.1.1)	ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM) – Classification of the electromagnetic environment conditions for equipment in telecommunication networks
IEC 60050-161:1990 + A1:1997 + A2:1998	International Electrotechnical Vocabulary – Chapter 161: Electromagnetic compatibility
IEC 60050-723:1997 + A1:1999	International Electrotechnical Vocabulary – Chapter 723: Broadcasting: Sound, television, data

2) Superseded by ETSI EN 300 386:2008 (V1.4.1), Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements.

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
access network
part of the telecommunications network between the telecommunications centre and the Network Termination Point

3.1.2
active equipment
equipment (e.g. amplifiers, converters, etc.), performing signal processing by means of external or internal power supply in a certain frequency range

3.1.3
cable network equipment
equipment from which cable networks for television signals, sound signals and interactive services are built

NOTE Examples of typical cable network equipment could be found in Part 3 to Part 6 and Part 10 of the EN 60728 series.

3.1.4
degradation (of performance)
undesired departure in the operational performance of any device, equipment or system from its intended performance

NOTE The term "degradation" can apply to temporary or permanent failure.

[IEV 161-01-19]

3.1.5
disturbance field strength
field strength produced at a given location by an electromagnetic disturbance, measured under specified conditions

[IEV 161-04-02]

3.1.6
electromagnetic disturbance
any electromagnetic phenomenon which may degrade the performance of a device, equipment or system, or adversely affect living or inert matter

NOTE An electromagnetic disturbance may be an electromagnetic noise, an unwanted signal or a change in the propagation medium itself.

[IEV 161-01-05]

3.1.7
electronic communications network
means transmission systems and, where applicable, switching or routing equipment and other resources which permit the conveyance of signals by wire, by radio, by optical or by other electromagnetic means, including satellite networks, fixed (circuit- and packet-switched, including Internet) and mobile terrestrial networks, electricity cable systems, to the extent that they are used for the purpose of transmitting signals, networks used for radio and television broadcasting, and cable TV networks, irrespective of the type of information conveyed

[Derived from art.2.a) of Directive 2002/21/EC [1] (Framework Directive)]

3.1.8
emission
phenomenon by which electromagnetic energy emanates from a source

[IEV 161-01-08]

3.1.9
equipment
for the purposes of this standard ‘equipment’ means any apparatus or fixed installation

3.1.10
headend
equipment, which is connected between receiving antennas or other signal sources and the remainder of the cable network, to process the signals to be distributed

[IEV 723-09-11, modified]

NOTE The headend may, for example, comprise antenna amplifiers, frequency converters, combiners, separators and generators.

3.1.11
immunity (to a disturbance)
ability of a device, equipment or system to perform without degradation in the presence of an electromagnetic disturbance

[IEV 161-01-20]

3.1.12
in-premises extension network
cable network inside the home premises for distributing television and telecommunication signals

3.1.13
network cable
cable infrastructure (transmission line) used to connect together equipment

3.1.14
passive equipment
equipment (e.g. splitters, tap-offs, system outlets, etc.) not requiring a power supply in order to operate and/or not carrying out signal processing in a certain frequency range

3.1.15
(electromagnetic) radiation
1. phenomenon by which energy in the form of electromagnetic waves emanates from a source into space

2. energy transferred through space in the form of electromagnetic waves

NOTE By extension, the term "electromagnetic radiation" sometimes also covers induction phenomena.

[IEV 161-01-10]

3.1.16
radio (frequency) disturbance
electromagnetic disturbance having components in the radio frequency range

[IEV 161-01-13]

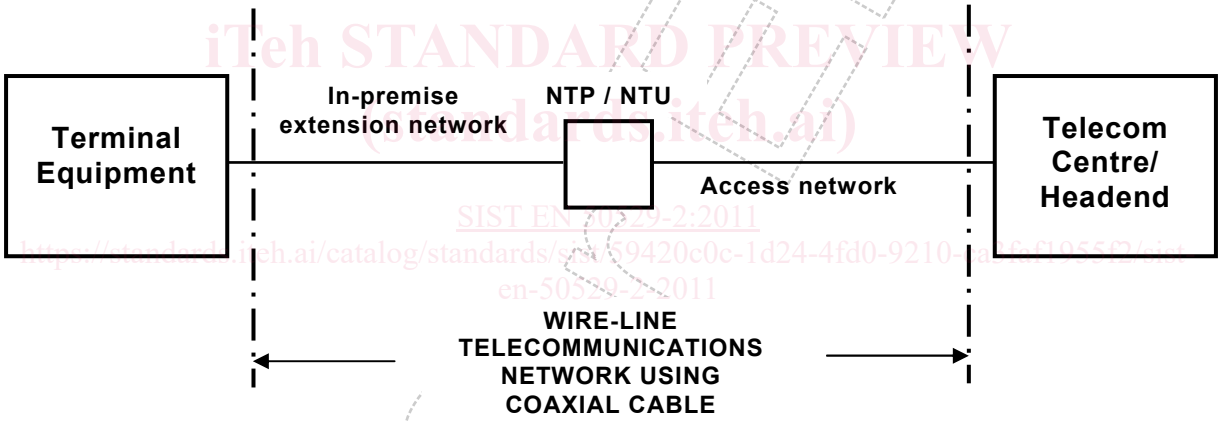
151 **3.1.17**
152 **screening effectiveness**
153 ability of an equipment or system to attenuate the influence of electromagnetic fields from
154 outside the equipment or system or to suppress the radiation of electromagnetic fields from
155 inside the equipment or system

156 **3.1.18**
157 **telecommunication centre**
158 refer to ETSI TR 101 651 for description of telecommunication centre

159 **3.1.19**
160 **(surface) transfer impedance (of a coaxial line)**
161 quotient of the voltage induced in the centre conductor of a coaxial line per unit length by the
162 current on the external surface of the coaxial line

163 [IEV 161-04-15]

164 **3.1.20**
165 **wire-line telecommunication network**
166 combination of equipment and passive devices (network cables, connectors) interconnected
167 together (see Figure 1) to constitute the wire-line part of an electronic communications
168 network



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170 **Figure 1 – Diagram showing alignment of definitions to a typical wire-line**
171 **telecommunications network using coaxial cable**