INTERNATIONAL STANDARD

IEC 60728-2

First edition
2002-10

Cabled distribution systems for television and sound signals –

Part 2: Electromagnetic compatibility for equipment

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 X

For price, see current catalogue

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CABLED DISTRIBUTION SYSTEMS FOR TELEVISION AND SOUND SIGNALS –

Part 2: Electromagnetic compatibility for equipment

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 co-operation 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 specifications, 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.
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. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60728-2 has been prepared by technical area 5: Cable networks for television signals, sound signals and interactive services, 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
100/535/FDIS	100/570/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.

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

The committee has decided that this publication remains valid until 2005. At this date, in accordance with the committee's decision, the publication will be

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- withdrawn;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

INTRODUCTION

Standards of the IEC 60728 series deal with cabled distribution systems for television, sound and interactive multimedia signals including equipment, systems and installations

- for headend-reception, processing and distribution of sound and television signals and their associated data signals and
- for processing, interfacing and transmitting all kinds of interactive signals

using all applicable transmission media.

They cover all kinds of systems such as

- CATV-systems,
- MATV- and SMATV-systems,
- individual receiving systems

and all kinds of equipment installed in such systems.

The extent of these standards is from the antennas, special signal source inputs to the headend or other interface points to the system up to the system outlet or the terminal input, where no system outlet exists.

The standardisation of any user terminals (i.e. tuners, receivers, decoders, multimedia terminals, etc.) is excluded.

CABLED DISTRIBUTION SYSTEMS FOR TELEVISION AND SOUND SIGNALS –

Part 2: Electromagnetic compatibility for equipment

1 Scope

This standard

– applies to the radiation characteristics and immunity to electromagnetic disturbances of active and passive equipment for the reception, processing and distribution of television, sound and interactive services signals, as dealt with in the following parts of IEC 60728 series:

  IEC 60728-3 – “Active coaxial wideband distribution equipment”

  IEC 60728-4 – “Passive coaxial wideband distribution equipment”

  IEC 60728-5 – “Headend equipment”

  IEC 60728-6 – “Optical equipment”

– covers the following frequency ranges:

Disturbance voltage injected into the mains	9 kHz to 30 MHz
Radiation from active equipment	5 MHz to 25 GHz
Immunity of active equipment	150 kHz to 25 GHz
Screening effectiveness of passive equipment	5 MHz to 3 GHz (25 GHz)[1]

– specifies requirements for maximum allowed radiation, minimum immunity and minimum screening effectiveness.

– describes test methods for conformance testing.

Coaxial cables for cabled distribution systems do not fall under the scope of this standard. Reference is made to the EN 50117 series.

Standardisation in the field of electromagnetic compatibility for any user terminals (for example tuners, receivers, decoders, multimedia terminals etc.) is covered by the IEC CISPR 13 and CISPR 20.

Requirements for the electromagnetic compatibility of receiver leads are laid down in IEC 60966-2-4, IEC 60966-2-5 and IEC 60966-2-6.

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.

IEC 60050(161):1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*
Amendment 1 (1997)
Amendment 2 (1998)

---

[1] For the frequency range 3 GHz to 25 GHz for "Screening effectiveness of passive equipment" no requirements apply at present. Methods of measurement and limits are under investigation for inclusion in a future amendment or revised edition.

IEC 60728-3:2000, *Cabled distribution systems for television and sound signals – Part 3: Active coaxial wideband distribution equipment*

IEC 60728-4:2000, *Cabled distribution systems for television and sound signals – Part 4: Passive coaxial wideband distribution equipment*

IEC 60728-5:2001, *Cabled distribution systems for television and sound signals – Part 5: Headend equipment*

IEC 60728-6:2001, *Cabled distribution systems for television and sound signals – Part 6: Optical equipment*

IEC 60966-2-4:1997, *Radio frequency and coaxial cable assemblies – Part 2-4: Detail specification for cable assemblies for radio and TV receivers (Frequency range 0 to 3 000 MHz, IEC 60169-2 connectors*)

IEC 60966-2-5:1998, *Radio frequency and coaxial cable assemblies – Part 2-5: Detail specification for cable assemblies for radio and TV receivers – Frequency range 0 to 1 000 MHz, IEC 60169-2 connectors*

IEC 60966-2-6:1998, *Radio frequency and coaxial cable assemblies – Part 2-6: Detail specification for cable assemblies for radio and TV receivers – Frequency range 0 to 3 000 MHz, IEC 60169-24 connectors*

IEC 61000-3-2:2000, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*
Amendment 1 (2001)

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*
Amendment 1 (1998)
Amendment 2 (2000)

IEC 61000-4-3 2002, *Electromagnetic compatibility (EMC – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test.* Basic EMC Publication

Amendment 1 (2000)
Amendment 2 (2001)

IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*
Amendment 1 (2000)

IEC 61000-6-1:1997, *Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 1: Immunity for residential, commercial and light-industrial environments*

IEC 61079-1:1992, *Methods of measurement on receivers for satellite broadcast transmissions in the 12 GHz band – Part 1: Radio-frequency measurements on outdoor units*

CISPR 13:2001, *Sound and television broadcast receivers and associated equipment – Radio disturbance characteristics – Limits and methods of measurement*

CISPR 16-1:1999, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

CISPR 20:2002, *Sound and television broadcast receivers and associated equipment – Immunity characteristics – Limits and methods of measurement*