

# **Cable networks for television signals, sound signals and interactive services —**

## **Part 4: Passive wideband equipment for coaxial cable networks**

The European Standard EN 50083-4:1998 has the status of a British Standard

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# National foreword

This British Standard is the English language version of EN 50083-4:1998. It supersedes BS EN 50083-4:1995 which will be withdrawn on 1999-12-01.

The UK participation in its preparation was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/4, Cable distribution systems, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

## Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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## Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 13 and a back cover.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 April 1999

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Descriptors: telecasting, cable television, sound broadcasting, television broadcasting, community aerial systems, coaxial cables, components, measuring techniques, specifications

English version

## Cable networks for television signals, sound signals and interactive services — Part 4: Passive wideband equipment for coaxial cable networks

Réseaux de distribution par câbles pour signaux de télévision, signaux de radiodiffusion sonore et services interactifs — Partie 4: Matériels passifs à large bande utilisés dans les réseaux de distribution coaxiale

Kabelnetze für Fernsehsignale, Tonsignale und interaktive Dienste — Teil 4: Passive Breitbandgeräte für koaxiale Kabelnetze

This European Standard was approved by CENELEC on 1 January 1998. 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.

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 standards bodies of Austria, Belgium, Czech Republic, 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 second edition of this European Standard was prepared by CENELEC Technical Committee TC 209, Cable networks for television signals, sound signals and interactive services, on the basis of EN 50083-4:1994 and the first amendment to EN 50083-4 and includes corrigendum no. 1.

The text of this first amendment was approved by CENELEC on 1998-01-01 with the request to prepare a second edition of EN 50083-4, by incorporating this amendment into the European Standard EN 50083-4:1994.

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) 1998-12-01
- latest date by which national standards conflicting with the EN have to be withdrawn (dow) 1999-12-01

Annexes designated normative are part of the body of the standard.

Annexes designated informative are given only for information.

In this standard, annex A is normative, annexes B and C are informative.

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# 1 Scope

## 1.1 General

Standards of EN 50083 series deal with cable networks for television signals, sound signals and interactive services including equipment, systems and installations:

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

using all applicable transmission media.

All kinds of networks such as:

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

and all kinds of equipment, systems and installations installed in such networks, are within this scope.

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

The standardization of any user terminals (i.e. tuners, receivers, decoders, multimedia terminals etc.) as well as of any coaxial and optical cables and accessories therefore is excluded.

## 1.2 Specific scope of this part

This standard applies to receiver leads, system outlets, splitters and subscriber taps, passive one and two port equipment comprising filters, attenuators, equalizers, galvanic isolators, power injectors, cable splices, terminating resistors and transfer points, but excluding coaxial cables.

This standard

- covers the frequency range 5 MHz to 3 000 MHz;
- identifies performance requirements for certain parameters;
- lays down data publication requirements for certain parameters;
- stipulates methods of measurements;
- introduces minimum requirements defining quality (Q) grade(s).

There are three Q grades for taps and splitters and two Q grades for passive one and two port equipment.

There is only one Q grade for system outlets and receiver leads. Different networks require the same performance and, when integrating networks, upgrading will be avoided.

Practical experience has shown these types meet most of the technical requirements necessary for supplying a minimum signal quality to the subscribers. This classification shall not be considered as a requirement but as information for users and manufacturers on the minimum quality criteria of the material required to install networks of different sizes. The system operator has to select appropriate material to meet the minimum signal quality at the subscriber's outlet and to optimize cost/performance, taking into account the size of the network and local circumstances.

All requirements and published data shall be understood as guaranteed values within the specified frequency range and in well-matched conditions.

For passive equipment of quality grades other than those mentioned, manufacturers shall specify minimum values for:

- return loss,
- isolation,
- directivity,

using the relevant measurement methods and Table 1.

# 2 Normative references

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.

EN 50083, *Cable networks for television signals, sound signals and interactive services*.

EN 50083-1:1993 + A1:1997, *Safety requirements*.

EN 50083-2:1995 + A1:1997, *Electromagnetic compatibility for equipment*.

EN 50083-3:1998, *Active wideband equipment for coaxial cable networks*.

EN 50083-5:1998, *Headend equipment*.

EN 50083-7:1996, *System performance*.

EN 60068/HD 323 series, *Environmental testing/Basic environmental testing procedures*.

EN 60169-24:1993, *Radio frequency connectors — Radio-frequency coaxial connectors with screw coupling, typically for use in 75  $\Omega$  cable distribution systems (Type F)*.  
(IEC 169-24:1991)

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code)*.

(IEC 529:1989)

NOTE Basic Safety Publication.

HD 134.1 S1:1977, *Radio frequency connectors — Part 1: General requirements and measuring methods*.  
(IEC 169-1:1965)

HD 134.2 S2:1984, *Radio frequency connectors — Part 2: Coaxial unmatched connector*.  
(IEC 169-2:1965 + A1:1982)

HD 243 S12:1995, *Graphical symbols for use on equipment — Index, survey and compilation of the single sheets*.

(IEC 417:1973 + IEC 417A:1974 to IEC 417M:1994)

HD 571 S1:1990, *General principles for the creation of graphical symbols for use on equipment*.  
(IEC 416:1988)



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