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Information technology – Generic cabling for customer premises
Part 4: Single-tenant homes

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CONTENTS

FOREWORD	5
INTRODUCTION	7
1 Scope	9
2 Normative references	9
3 Terms, definitions and abbreviated terms	9
3.1 Terms and definitions	9
3.2 Abbreviated terms	10
4 Conformance	11
5 Structure of the generic cabling system	11
5.1 General	11
5.2 Functional elements	12
5.3 Cabling subsystems for ICT and BCT	12
5.3.1 General	12
5.3.2 Primary home cabling subsystem	14
5.3.3 Secondary home cabling subsystem	14
5.4 Cabling structure	14
5.5 Interfaces	15
5.5.1 Equipment interfaces and test interfaces	15
5.5.2 Channel and permanent link	16
5.5.3 Network access cabling	17
5.5.4 External network interface	18
5.6 Accommodation of functional elements	18
5.6.1 General	18
5.6.2 Coverage areas	19
5.6.3 Dimensioning and configuring	20
5.6.4 Connecting hardware	21
5.6.5 Application outlets	21
5.6.6 Equipment cords	21
6 Channel performance requirements	22
6.1 General	22
6.2 Environmental performance	22
6.3 Transmission performance	22
6.3.1 Channel construction	22
6.3.2 Balanced cabling	22
6.3.3 Coaxial cabling	23
6.3.4 Optical fibre cabling	23
7 Link performance requirements	23
7.1 General	23
7.2 Balanced cabling	23
7.3 Coaxial cabling	23
7.4 Optical fibre cabling	23
8 Reference implementations	23
8.1 General	23
8.2 Channel construction	24
8.3 Balanced cabling	24
8.3.1 General	24

8.3.2	ICT channels	25
8.3.3	BCT channels	25
8.4	Coaxial cabling	26
8.5	Optical fibre cabling	26
8.5.1	General	26
8.5.2	Component selection	26
8.5.3	Dimensions	26
9	Cable requirements	26
9.1	General	26
9.2	Balanced cables	27
9.2.1	ICT cabling	27
9.2.2	BCT cabling	27
9.3	Coaxial cables	27
9.4	Optical fibre cables	27
10	Connecting hardware requirements	27
10.1	General requirements	27
10.2	Connecting hardware for balanced cabling	27
10.2.1	General requirements	27
10.2.2	Electrical, mechanical and environmental performance	27
10.3	Connecting hardware for coaxial cabling	28
10.3.1	General requirements	28
10.3.2	Electrical, mechanical and environmental performance	28
10.4	Connecting hardware for optical fibre cabling	28
10.4.1	General requirements	28
10.4.2	Optical, mechanical and environmental performance	28
11	Cords	28
11.1	Jumpers	28
11.2	Balanced cords	28
11.3	Coaxial cords	28
11.4	Optical fibre cords	28
Annex A (informative)	Reference implementation of TV and radio applications – use of baluns	29
A.1	Types and locations of baluns	29
A.1.1	General	29
A.1.2	Baluns at the ENI and baluns at the equipment interface toward the PHD	29
A.1.3	Baluns near or in the BO	30
A.1.4	Baluns in the cord between BO and the terminal equipment	31
A.2	Home network interface	31
Bibliography	33	
Figure 1 – Relationships between the generic cabling documents produced by ISO/IEC JTC 1/SC 25	7	
Figure 2 – Structure of the generic cabling system	12	
Figure 3 – Interconnect and cross-connect models	13	
Figure 4 – Interconnect and cross-connects at the PHD	13	
Figure 5 – Hierarchical structure of a generic cabling system in support of ICT and BCT applications	14	

Figure 6 – Equipment and test interfaces in support of ICT and BCT applications	16
Figure 7 – Channels and permanent links within the home	17
Figure 8 – Examples of interconnection of home and network access cabling	18
Figure 9 – Overview of a generic cabling for home	19
Figure 10 – Interconnection of home cabling subsystems	20
Figure 11 – Reference implementations for ICT and BCT channels (PHD/SHD to TO/BO)	24
Figure A.1 – Balun at the ENI	29
Figure A.2 – Baluns in the PHD	30
Figure A.3 – Balun built into the system outlet	30
Figure A.4 – Balun in the cord between BO and the TE	31
Figure A.5 – Types of HNI	32
Table 1 – Maximum channel lengths for reference implementations of ICT/BCT channels	21
Table 2 – Link length equations	25
Table A.1 – Insertion loss and total sectional slope	32

INFORMATION TECHNOLOGY – GENERIC CABLING FOR CUSTOMER PREMISES

Part 4: Single-tenant homes

FOREWORD

- 1) ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.
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International Standard ISO/IEC 11801-4 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This first edition cancels and replaces ISO/IEC 15018:2004 and Amendment 1:2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) standard re-structured to contain only those requirements that are specific for generic cabling systems installed in homes;
- b) the channel performance Class CCCB and related reference implementations have been deleted and are now addressed as distributed building services in ISO/IEC 11801-6;
- c) implementation options now include optical fibre in addition to balanced and coaxial media.

ISO/IEC 11801-4 is to be read in conjunction with ISO/IEC 11801-1.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

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

A list of all parts in the ISO/IEC 11801 series, published under the general title *Information technology – Generic cabling for customer premises*, can be found on the IEC website.

The contents of the corrigendum of April 2018 have been included in this copy.

INTRODUCTION

The importance of cabling infrastructure is similar to that of other fundamental utilities such as water and energy supply and interruptions to the services provided over that infrastructure can have a serious impact. A lack of design foresight, the use of inappropriate components, incorrect installation, poor administration or inadequate support can threaten quality of service and have commercial consequence for all types of users.

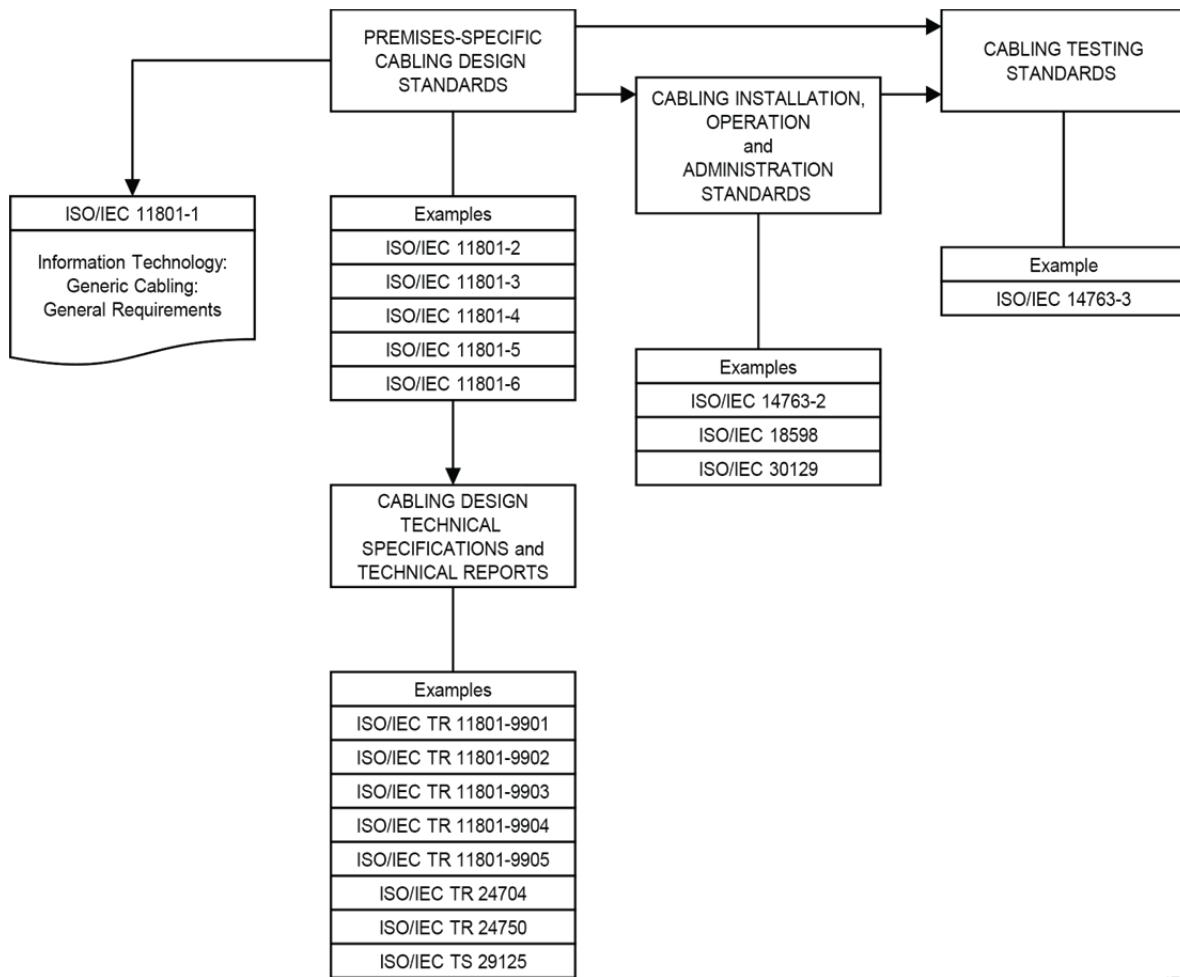
This document specifies generic cabling within a home.

The home can contain one or more buildings (e.g. farm) or be within a building which contains more than one home (e.g. one home in a multi-tenant building).

The campus or backbone cabling connecting individual homes within multi-tenant premises is specified according to the relevant standard (for instance ISO/IEC 11801-1 or IEC 60728).

Generic cabling for distributed building services in homes is specified in ISO/IEC 11801-6, which addresses all of the above premises and spaces within them.

Figure 1 shows the schematic and contextual relationships between the standards relating to information technology cabling produced by ISO/IEC JTC 1/SC 25, namely the ISO/IEC 11801 series of standards for generic cabling design, standards for the installation, operation and administration of generic cabling and for testing of installed generic cabling.



IEC

Figure 1 – Relationships between the generic cabling documents produced by ISO/IEC JTC 1/SC 25

The generic cabling specified by this document provides users with

- a) an application independent system capable of supporting a wide range of applications in a range of installation and operating environments,
- b) a flexible scheme such that modifications are both easy and economical,
- c) a multi-vendor supply chain within an open market for cabling components.

In addition, this document provides

- d) relevant industry professionals with guidance allowing the accommodation of cabling before specific requirements are known, i.e. in the initial planning either for construction or refurbishment and for further deployment as the requirements of areas are defined,
- e) industry and standardization bodies with a cabling system which supports current products and provides a basis for future product development and applications standardization,
- f) users, designers and manufacturers of application-specific cabling systems with advice on interfacing to this generic cabling,
- g) suppliers of cabling components and installers of cabling with relevant requirements,
- h) service providers with a distribution system for their services.

Applications addressed in this document include those developed by the technical committees of IEC (including the subcommittees of ISO/IEC JTC 1) and study groups of ITU-T as used to support the following services:

- information and communications technologies (ICT),
- broadcast and communications technologies (BCT).

This document also applies where cabling is designed to support only one of the services listed above.

Physical layer requirements for the applications listed in Annex E of ISO/IEC 11801-1:2017 have been analysed to determine their compatibility with the cabling performance specified in this document and, together with statistics concerning premises geography from different countries and the models described in Clause 6, have been used to develop the requirements for cabling components and to stipulate their arrangement into cabling systems.

As a result, this document

- 1) specifies a structure for generic cabling supporting a wide variety of applications including, but not restricted to, the applications in ISO/IEC 11801-1:2017, Annex E,
- 2) adopts balanced cabling channel and link Classes D, E, E_A, F, F_A and BCT-B specified in ISO/IEC 11801-1,
- 3) adopts coaxial cabling channel and link Classes BCT-C specified in ISO/IEC 11801-1,
- 4) adopts optical fibre cabling channel and link requirements specified in ISO/IEC 11801-1,
- 5) adopts component requirements, specified in ISO/IEC 11801-1, and specifies cabling implementations that ensure performance of permanent links and of channels that meet or exceed the requirements of a specified group (e.g. Class) of applications.

Life expectancy of generic cabling systems can vary depending on environmental conditions, supported applications, aging of materials used in cables, and other factors such as access to pathways (campus pathways are more difficult to access than building pathways). With appropriate choice of components, generic cabling systems meeting the requirements of this document are expected to have a life expectancy of at least ten years.

This document has taken into account requirements specified in application standards listed in ISO/IEC 11801-1:2017, Annex E. It refers to International Standards for components and test methods whenever appropriate International Standards are available.

INFORMATION TECHNOLOGY – GENERIC CABLING FOR CUSTOMER PREMISES

Part 4: Single-tenant homes

1 Scope

This part of ISO/IEC 11801 specifies generic cabling for single-tenant homes. A home can contain one or more buildings or can be within a building that contains more than one home. It covers balanced cabling, optical fibre cabling and coaxial cabling.

This document specifies a generic cabling for two groups of applications:

- 1) information and communications technologies (ICT),
- 2) broadcast and communications technologies (BCT).

This document specifies directly or via reference to ISO/IEC 11801-1

- a) the structure and minimum configuration for generic cabling within homes,
- b) the interfaces at the telecommunications outlet (TO) and broadcast outlet (BO),
- c) the performance requirements for cabling links and channels,
- d) the implementation requirements and options,
- e) the performance requirements for cabling components,
- f) the conformance requirements and verification procedures.

Safety and electromagnetic compatibility (EMC) requirements are outside the scope of this document, and are covered by other standards and by regulations. However, information given by this document can be of assistance.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60728 (all parts), *Cable networks for television signals, sound signals and interactive services*

IEC 61754-20 (all parts), *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family*

ISO/IEC 11801-1:2017, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-2, *Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation*

ISO/IEC 30129, *Information technology – Telecommunications bonding networks for buildings and other structures*