ISO/IEC 11801

Edition 2.0 2008-04

INTERNATIONAL STANDARD

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AMENDMENT 1

Information technology – Generic cabling for customer premises

ISO/IEC 11801 A1:2008(E)

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Full document details: ISO_IEC 11801_2002_AMD1_2008

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE P

ICS 35.200

ISBN 2-8318-9715-7

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FOREWORD

Amendment 1 to International Standard ISO/IEC 11801:2002 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

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

The contents of Corrigendum 1 published in September 2008 has been included in this copy.

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INTRODUCTION to Amendment 1

This amendment provides requirements for new Class E_A and F_A channels plus additions and corrections to ISO/IEC 11801:2002. Amendment 2 of ISO/IEC 11801:2002 will provide balanced cabling models, requirements and normative references for Category 6_A and 7_A components, requirements for Class E_A and F_A links, together with amendments to the requirements for optical fibre cabling.

Update references to Tables, the numbers of which have been changed.

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Page 6

Replace, in the list of figures, the title of Figure 10 by the following new title:

Figure 10 – Balanced cabling: channel, permanent link and CP link.

Page 13

2 Normative references

Replace, on page 14 to 17, the following references by the updated references as indicated below:

IEC 60512-25-5, *Connectors for electronic equipment – Basic tests and measurements – Part 25-5: Test 25e – Return loss*[1]

IEC/PAS 60793-1-49:2002, *Optical fibres – Part 1-49: Measurement methods and test procedures – Differential mode delay*

IEC 60794-2:1989, *Optical fibre cables – Part 2: Product specification (indoor cable)* [2]
Amendment 1 (1998)

IEC/PAS 61076-3-104:2002, *Connectors for electronic equipment – Part 3-104: Detail specification for 8-way, shielded free and fixed connectors, for data transmissions with frequencies up to 600 MHz*

IEC 61935-1:2000, *Generic cabling systems – Specifications for the testing of balanced communication cabling in accordance with ISO/IEC 11801 – Part 1: Installed cabling*
Amendment 1 (under consideration)

IEC 61935-2, *Generic cabling systems – Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 – Part 2: Patch cords and work area cords*[1)]

ISO/IEC TR 14763-1, *Information technology – Implementation and operation of customer premises cabling – Part 1: Administration*

ISO/IEC 18010:2002, *Information technology – Pathways and spaces for customer premises cabling*

Updated references:

IEC 60512-25-5, *Connectors for electronic equipment – Tests and measurements – Part 25-5: Test 25e – Return loss*

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1 To be published.

2 There exists a consolidated Edition 4.1 (1998) of IEC 60794-2 that includes Edition 4.0 (1989) and its amendment 1 (1998).

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IEC 60793-1-49, *Optical fibres – Part 1-49: Measurement methods and test procedures – Differential mode delay*

IEC 60794-2, *Optical fibre cables – Part 2: Indoor cables – Sectional specification*

IEC 61076-3-104, *Connectors for electronic equipment – Product requirements – Part 3-104: Detail specification for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 600 MHz minimum*[3]

IEC 61935-1, *Testing of balanced communication cabling in accordance with ISO/IEC 11801 – Part 1: Installed cabling*)

IEC 61935-2, *Testing of balanced communication cabling in accordance with ISO/IEC 11801 – Part 2: Patch cords and work area cords*

ISO/IEC 14763-1, *Information technology – Implementation and operation of customer premises cabling – Part 1: Administration*

ISO/IEC 18010, *Information technology – Pathways and spaces for customer premises cabling*

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3 Definitions, abbreviations and symbols

3.1 Definitions

Replace the existing titles by the following new titles:

3 Terms and definitions, abbreviations and symbols

3.1 Terms and definitions

Page 20

3.1.35
Replace the existing term number, term, definition and NOTE *by the following new term number, term, definition and* NOTE*:*

3.1.45
insertion loss
loss incurred by inserting a device between a source and load of equal impedance. The device itself may have a different impedance from the load and source impedance

NOTE The terms operational attenuation or operational insertion loss are sometimes associated with this definition.

3.1.36
Replace the existing term number and definition by the following new term number and definition:

3.1.46
insertion loss deviation
difference between the measured insertion loss of cascaded components and the insertion loss determined by the sum of the individual component insertion losses

[3] A new edition (edition 3.0) to support measurements up to 1 000 MHz is under consideration.

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3.1.41
Replace the existing term number and definition by the following new term number and definition:

3.1.51
link
transmission path between two cabling system interfaces, including the connections at each end

Pages 17 to 23

***Insert**, in the existing list of terms and definitions, the following new terms and definitions in alphabetical order and renumber the existing terms and definitions accordingly:*

3.1.2
alien (exogenous) crosstalk
signal coupling from a disturbing pair of a channel to a disturbed pair of another channel

NOTE This also applies to the signal coupling from a disturbing pair within a permanent link or component, used to create a channel, to a disturbed pair within a permanent link or component, used to create another channel.

3.1.3
alien (exogenous) far-end crosstalk loss (AFEXT)
signal isolation between a disturbing pair of a channel and a disturbed pair of another channel, measured at the far-end

NOTE This also applies to the measurement of the signal isolation between a disturbing pair within a permanent link or component, used to create a channel, and a disturbed pair within a permanent link or component, used to create another channel.

3.1.4
alien (exogenous) near-end crosstalk loss (ANEXT)
signal isolation between a disturbing pair of a channel and a disturbed pair of another channel, measured at the near-end

NOTE This also applies to the measurement of signal isolation between a disturbing pair within a permanent link or component, used to create a channel, and a disturbed pair within a permanent link or component, used to create another channel.

3.1.7
attenuation to alien (exogenous) crosstalk ratio at the far-end (AACR-F)
difference, in dB, between the alien far-end crosstalk loss from a disturbing pair of a channel and the insertion loss of a disturbed pair in another channel

NOTE This also applies to the calculation using the alien far-end crosstalk loss from a disturbing pair within a permanent link or component, used to create a channel, and the insertion of a disturbed pair within a permanent link or component, used to create another channel.

3.1.8
attenuation to alien (exogenous) crosstalk ratio at the near-end (AACR-N)
difference, in dB, between the alien near-end crosstalk loss from a disturbing pair of a channel and the insertion loss of a disturbed pair in another channel

NOTE This also applies to the calculation using the alien near-end crosstalk loss from a disturbing pair within a permanent link or component, used to create a channel, and the insertion loss of a disturbed pair within a permanent link or component, used to create another channel.

3.1.9
attenuation to crosstalk ratio at the far-end (ACR-F)
difference, in dB, between the far-end crosstalk loss from a disturbing pair of a channel and the insertion loss of a disturbed pair of the same channel

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NOTE This also applies to the calculation using the far-end crosstalk loss from a disturbing pair within a permanent link or component, used to create a channel, and the insertion loss of a disturbed pair within the permanent link or component, of the same channel.

3.1.10
attenuation to crosstalk ratio at the near-end (ACR-N)
difference, in dB, between the near-end crosstalk loss from a disturbing pair of a channel and the insertion loss of a disturbed pair of the same channel

NOTE This also applies to the calculation using the near-end crosstalk loss from a disturbing pair within a permanent link or component, used to create a channel, and the insertion loss of a disturbed pair within the permanent link or component, of the same channel.

3.1.11
average power sum alien (exogenous) near-end crosstalk loss
the calculated average of the power sum alien near-end crosstalk loss of the pairs of a disturbed channel

NOTE This also applies to the calculation using the pairs within a permanent link used to create a channel.

3.1.12
average power sum attenuation to alien (exogenous) crosstalk ratio far-end
the calculated average of the power sum attenuation to alien crosstalk ratio at the far-end of the pairs of a disturbed channel

NOTE This also applies to the calculation using the pairs within a permanent link used to create a channel.

3.1.35
equal level far-end crosstalk ratio (ELFEXT)
difference, in dB, between the far-end crosstalk loss from a disturbing pair of a channel and the insertion loss of a disturbing pair of the same channel

NOTE This also applies to the calculation using the far-end crosstalk loss from a disturbing pair within a permanent link or component, used to create a channel, and the insertion loss of a disturbing pair within a permanent link or component, of the same channel.

3.1.55
operating temperature
stabilised temperature of the cabling combining ambient temperature with any increase due to the application being supported

3.1.64
power sum alien (exogenous) far-end crosstalk loss (PS AFEXT)
power sum of the signal isolation between multiple disturbing pairs of one or more channels and a disturbed pair of another channel, measured at the far-end

NOTE This also applies to the calculation using the multiple disturbing pairs within one or more permanent links or components and a disturbed pair within a permanent link or component, used to create another channel.

3.1.65
power sum alien (exogenous) near-end crosstalk loss (PS ANEXT)
power sum of the signal isolation between multiple disturbing pairs of one or more channels and a disturbed pair of another channel, measured at the near-end

NOTE This also applies to the calculation using the multiple disturbing pairs within one or more permanent links or components and a disturbed pair within a permanent link or component, used to create another channel.

3.1.66
power sum attenuation to alien (exogenous) crosstalk ratio at the far-end (PS AACR-F)
difference, in dB, between the power sum alien far-end crosstalk loss from multiple disturbing pairs of one or more channels and the insertion loss of a disturbed pair in another channel

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NOTE This also applies to the calculation using the power sum alien far-end crosstalk loss from multiple disturbing pairs within one or more permanent links or components and the insertion loss of a disturbed pair within a permanent link or component, used to create another channel.

3.1.67
power sum attenuation to alien (exogenous) crosstalk ratio at the near-end (PS AACR-N)
difference, in dB, between the power sum alien near-end crosstalk loss from multiple disturbing pairs of one or more channels and the insertion loss of a disturbed pair in another channel

NOTE This also applies to the calculation using the power sum alien near-end crosstalk loss from multiple disturbing pairs within one or more permanent links or components, and the insertion loss of a disturbed pair within a permanent link or component, used to create another channel.

3.1.68
power sum attenuation to crosstalk ratio at the far-end (PS ACR-F)
difference, in dB, between the power sum far-end crosstalk loss from multiple disturbing pairs of a channel and the insertion loss of a disturbed pair in the same channel

NOTE This also applies to the calculation using the power sum far-end crosstalk loss from multiple disturbing pairs within one or more permanent links or components, used to create a channel, and the insertion loss of a disturbed pair within a permanent link or component, of the same channel.

3.1.69
power sum attenuation to crosstalk ratio at the near-end (PS ACR-N)
difference, in dB, between the power sum near-end crosstalk loss from multiple disturbing pairs of a channel and the insertion loss of a disturbed pair in the same channel

NOTE This also applies to the calculation using the multiple disturbing pairs within one or more permanent links or components, used to create a channel, and the insertion loss of a disturbed pair within a permanent link or component, of the same channel.

3.1.70
power sum equal level far-end crosstalk ratio (PS ELFEXT)
power sum of all disturbing pairs of a channel, of the difference, in dB, between the far-end crosstalk loss and the insertion loss of each disturbing pair

NOTE This also applies to the calculation using the multiple disturbing pairs within one or more permanent links or components, used to create a channel, and the insertion loss of a disturbing pair within a permanent link or component, of the same channel.

Update the reference numbers to the terms and definitions throughout the document.

Pages 23 to 24

3.2 Abbreviations

Replace the existing items as follows:

ISO	International Standardisation Organisation
ELFEXT	Equal level far-end crosstalk attenuation (loss)
PS NEXT	Power sum NEXT attenuation (loss)
PS ELFEXT	Power sum ELFEXT attenuation (loss)
PS FEXT	Power sum FEXT attenuation (loss)

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by the following amended items:

ELFEXT	Equal level FEXT
ISO	International Organization for Standardization
PS ELFEXT	Power sum ELFEXT
PS FEXT	Power sum FEXT (loss)
PS NEXT	Power sum NEXT (loss)

Insert, in the existing Table, the following new abbreviations in alphabetical sequence:

AACR-F	Attenuation to alien crosstalk ratio at the far-end
ACR-F	Attenuation to crosstalk ratio at the far-end
ACR-N	Attenuation to crosstalk ratio at the near-end
AFEXT	Alien far-end crosstalk (loss)
ANEXT	Alien near-end crosstalk (loss)
ELTCTL	Equal level TCTL
PS AACR-F	Power sum attenuation to alien crosstalk ratio at the far-end
PS AACR-F_{avg}	Average power sum attenuation to alien crosstalk ratio at the far-end
PS ACR-F	Power sum attenuation to crosstalk ratio at the far-end
PS ACR-N	Power sum attenuation to crosstalk ratio at the near-end
PS AFEXT	Power sum alien far-end crosstalk (loss)
PS $AFEXT_{norm}$	Normalized power sum alien far-end crosstalk (loss)
PS ANEXT	Power sum alien near-end crosstalk (loss)
PS $ANEXT_{avg}$	Average power sum alien near-end crosstalk (loss)

Pages 24 and 25

3.3.1 Variables

Insert, in the existing list, the following new variables in alphabetical order:

l number of the disturbing channel

N number of disturbing channels

Page 25

3.3.2 Indices

Insert, in the existing list, the following new indices in alphabetical order:

avg index to denominate average of the associated parameter across all of the pairs in the same channel or permanent link

norm index to denominate scaling of the associated parameter

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4 Conformance

Replace the entire text of this clause by the following text.

For a cabling installation to conform to this International Standard the following applies.

a) The configuration and structure shall conform to the requirements outlined in Clause 5.

b) The performance of balanced channels shall meet the requirements specified in Clause 6.

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This shall be achieved by one of the following:

1) a channel design and implementation ensuring that the prescribed channel performance is met;
2) attachment of appropriate components to a permanent link or CP link design meeting the prescribed performance class of Clause 6 and Annex A. Channel performance shall be assured where a channel is created by adding more than one cord to either end of a link meeting the requirements of Clause 6 and Annex A;
3) using the reference implementations of Clause 7 and compatible cabling components conforming to the requirements of Clauses 9, 10 and 13, based upon a statistical approach of performance modelling.

Until amendment 2[4] of ISO/IEC 11801:2002 has been published:

- conformance for Classes D, E and F with regards to TCL, ELTCTL and coupling attenuation can only be achieved by option 1) above;
- conformance for Classes E_A and F_A can only be achieved by option 1) above.

c) The implementation and performance of optical fibre cabling channels shall meet the requirements specified in Clause 8.

d) The interfaces to the cabling at the TO shall conform to the requirements of Clause 10 with respect to mating interfaces and performance.

e) Connecting hardware at other places in the cabling structure shall meet the performance requirements specified in Clause 10.

f) If present, screens shall be handled as specified in Clause 11.

g) System administration shall meet the requirements of Clause 12.

h) Regulations on safety and EMC applicable at the location of the installation shall be met.

In the absence of the channel, the conformance of the link shall be used to verify conformance with the standard.

Specifications marked "f.f.s." are preliminary specifications, and are not required for conformance to this International Standard.

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5.5 Accommodation of functional elements

Replace the existing text of the last paragraph of this subclause by the following new text:

Telecommunications outlets are typically located in the work area.

[4] Amendment 2 to ISO/IEC 11801 is under consideration.

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