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INTERNATIONAL STANDARD



**Information technology – Implementation and operation of customer premises
cabling –
Part 3: Testing of optical fibre cabling**

INTERNATIONAL
ELECTROTECHNICAL
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CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope.....	9
2 Normative references	9
3 Terms, definitions and abbreviations	10
3.1 Terms and definitions.....	10
3.2 Abbreviations.....	13
3.3 Symbols.....	13
4 Conformance.....	14
5 General requirements	14
5.1 Test system	14
5.2 Reference measurement and calibration	15
5.3 Environmental conditions	15
5.3.1 Protection of transmission and terminal equipment	15
5.3.2 Inspecting and cleaning connectors	15
5.3.3 Use of test equipment.....	15
5.3.4 Relevance of measurement	16
5.3.5 Treatment of marginal test results.....	16
5.4 Documentation.....	16
6 Test equipment.....	16
6.1 Light source and power meter	16
6.1.1 General	16
6.1.2 Light sources	16
6.1.3 Power meters	17
6.1.4 Test system stability (ffs)	17
6.2 OTDR	17
6.2.1 General	17
6.2.2 OTDR characterization using a launch test cord and a tail test cord.....	18
6.3 Test cords and adapters	18
6.3.1 Connecting hardware at test interfaces	18
6.3.2 Reference connector requirements	19
6.3.3 Test cords	20
6.4 MMF launched modal distribution.....	22
6.5 SMF launch condition.....	22
7 Inspection equipment.....	22
8 Cabling under test – Channels and permanent links	23
8.1 General.....	23
8.2 Reference planes.....	23
8.3 Wavelength of measurement.....	24
8.4 Direction of measurement	24
9 Testing of installed cabling	25
9.1 Attenuation	25
9.1.1 LSPM	25
9.1.2 OTDR	29

9.2	Propagation delay	31
9.2.1	Test method	31
9.2.2	Treatment of results	32
9.3	Length	32
9.3.1	Test method	32
9.3.2	Measurement uncertainty	32
9.3.3	Treatment of results	32
10	Testing of cabling components within installed cabling	33
10.1	Attenuation of optical fibre cable	33
10.1.1	Test method	33
10.1.2	Measurement uncertainty	33
10.1.3	Treatment of results	33
10.2	Attenuation of local and remote test interfaces	34
10.2.1	Test method	34
10.2.2	Test system measurement uncertainty	34
10.2.3	Treatment of results	35
10.3	Attenuation of connecting hardware	36
10.3.1	Test method	36
10.3.2	Treatment of results	36
10.4	Return loss of connecting hardware	37
10.4.1	Test method (in accordance with IEC 61300-3-6, method 2)	37
10.4.2	Treatment of results	38
10.4.3	Measurement uncertainty	39
10.5	Optical fibre length	39
10.5.1	Test method	39
10.5.2	Measurement uncertainty	41
10.5.3	Treatment of results	41
10.6	Attenuation of cords	41
10.6.1	Test method	41
10.6.2	Treatment of results	42
11	Inspection of cabling and cabling components	42
11.1	Optical fibre continuity	42
11.2	Cabling polarity	42
11.3	Optical fibre cable length	42
11.4	Inspection of optical fibre end faces	43
11.5	Optical fibre core size	43
Annex A (normative) Launch modal conditions for testing multimode optical fibre cabling		44
Annex B (normative) Visual inspection criteria for connectors		45
Annex C (informative) Optical time domain reflectometry		46
C.1	Operational capability	46
C.1.1	Effective characterization	46
C.1.2	Dynamic range	46
C.1.3	Pulse width	46
C.1.4	Integration or sample count	46
C.2	Limitations of OTDR capability	47
C.2.1	Minimum lengths of operation – Attenuation dead zone	47
C.2.2	Ghosting	48

C.2.3	Effective group index of refraction	49
C.2.4	Backscattering coefficient	49
Annex D (normative)	Inspection and testing of test and substitution test cords	50
D.1	General requirements	50
D.2	Attenuation (test and substitution test cord reference connections)	50
Annex E (informative)	Enhanced three-test-cord and one-test-cord reference methods for link and channel attenuation	52
E.1	Reference methods for link attenuation	52
E.2	One-test-cord reference method for link attenuation	52
E.3	Test method for channel attenuation	52
Annex F (informative)	Quality planning	53
F.1	Inspection and test schedules	53
F.2	Stage 1 inspection and testing	53
F.3	Stage 2 testing	53
F.3.1	Basic test group	53
F.3.2	Extended test group	54
Annex G (informative)	Examples of calculations of channel and permanent link limits	55
G.1	Channel measurement	55
G.2	Permanent link measurement	55
Annex H (informative)	Cleaning and inspection of fibre optic connections	57
Bibliography		58
Figure 1	– Relationship of related International Standards	8
Figure 2	– Test system and the cabling under test	15
Figure 3	– OTDR characterization using a launch test cord and a tail test cord	18
Figure 4	– An example of test cord labelling and identification	20
Figure 5	– OTDR launch test cord and/or tail test cord schematic	21
Figure 6	– Channels and permanent links in accordance with ISO/IEC 11801 and equivalent standards	23
Figure 7	– Channel and permanent link test configuration	24
Figure 8	– LSPM enhanced three-test-cord attenuation measurement of installed channels	26
Figure 9	– LSPM one test cord attenuation measurement of installed permanent links	27
Figure 10	– OTDR measurement of installed cabling (channel): 2 point attenuation measurement method	30
Figure 11	– OTDR measurement of installed cabling (permanent link)	31
Figure 12	– OTDR measurement of optical fibre attenuation	34
Figure 13	– OTDR measurement of connection attenuation	35
Figure 14	– OTDR measurement of joint attenuation	37
Figure 15	– OTDR measurement of return loss	38
Figure 16	– Determination of length using an OTDR	39
Figure 17	– OTDR characterization of a SMF permanent link containing a break	40
Figure 18	– OTDR characterization of a permanent link containing a macrobend	41
Figure 19	– Measurement of cord interface attenuation	42
Figure C.1	– OTDR characterization using different length launch test cords	47
Figure C.2	– OTDR characterization showing ghost effects	48

Figure C.3 – OTDR characterization showing complex ghost effects	49
Figure D.1 – Measurement of substitution test cord interface attenuation	50
Table 1 – MMF light source characteristics	17
Table 2 – SMF light source characteristics	17
Table 3 – Non-LC reference connector requirements	19
Table 4 – Connecting hardware attenuation	28
Table C.1 – Default effective group IOR values	49
Table C.2 – Default backscattering coefficient values	49

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INFORMATION TECHNOLOGY – IMPLEMENTATION AND OPERATION OF CUSTOMER PREMISES CABLING –

Part 3: Testing of optical fibre cabling

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 14763-3 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This second edition cancels and replaces the first edition published in 2006 and its Amendment 1:2009.

This edition constitutes a technical revision.

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

- general requirements (Clause 5) have been revised and the concept of normalization has been replaced by reference measurements;
- OTDR characterization (6.2) and requirements for cabling interface adapters (6.3) and test cords have been revised and requirements for single-mode fibre test cords (6.3.4) have been removed;
- enhanced three-test-cord reference method has been introduced (9.1.1.2);
- requirements for the attenuation measurement of cords (10.6) have been revised;
- Annex A "Launched modal distribution (LMD)" has been simplified and the new title now reads "Launched modal conditions for testing multimode optical fibre cabling";
- visual inspection criteria for connectors have been reworked (Annex B);
- information on optical time domain reflectometry (Annex C) has been revised;
- examples of calculations of channel and permanent link limits (Annex G) have been revised;
- and information regarding cleaning and inspection of fibre optic connections have been added (Annex H).

A list of all parts in the ISO/IEC 14763 series, published under the general title *Information technology – Implementation and operation of customer premises cabling*, can be found on the IEC website.

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This International Standard is one of four prepared in support of International Standard ISO/IEC 11801 and other cabling standards.

Figure 1 below shows the inter-relationship between ISO/IEC 11801 and other International Standards and for cabling systems with related standards.

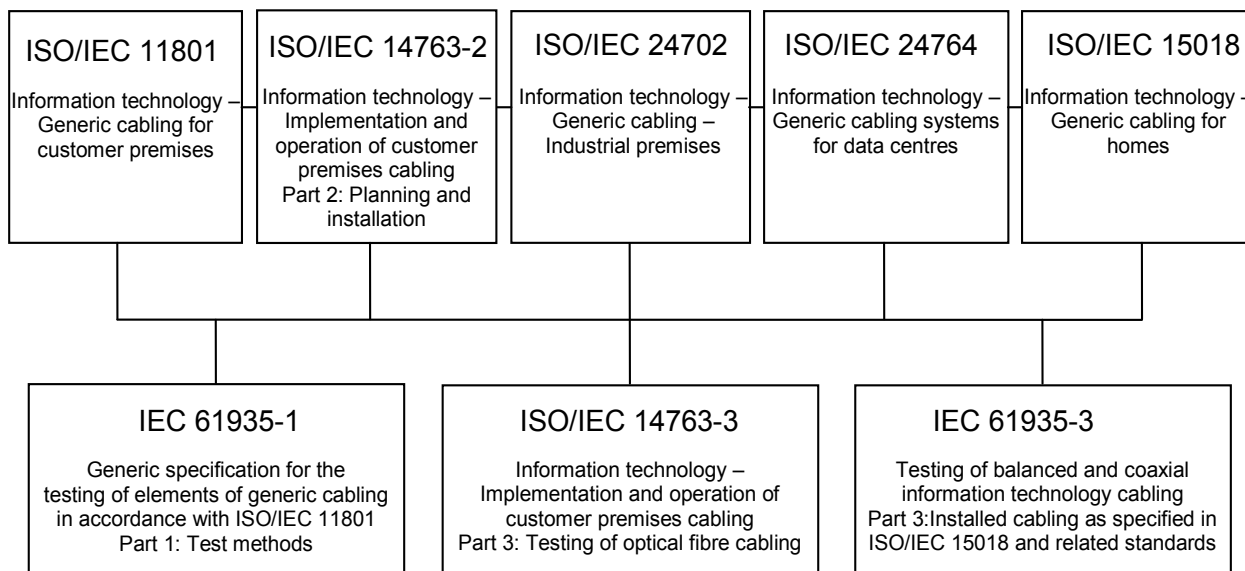


Figure 1 – Relationship of related International Standards

ISO/IEC 14763-3 details the inspection and test procedures for optical fibre cabling,

- a) designed in accordance with premises cabling standards including ISO/IEC 11801, ISO/IEC 24764, ISO/IEC 24702 and ISO/IEC 15018, and
- b) installed according to the requirements and recommendations of ISO/IEC 14763-2.

Users of this International Standard should be familiar with relevant premises cabling standards and ISO/IEC 14763-2.

The quality plan for each installation will define the acceptance tests and sampling levels selected for that installation. Requirements and recommendations for the development of a quality plan are described in ISO/IEC 14763-2.

NOTE JTC 1/SC 25, in cooperation with IEC/TC 86, is currently developing an overall quantitative model to calculate total measurement uncertainty as stated in the reference planes of ISO/IEC 11801. When such a model has been verified, it is expected to be incorporated into this standard in form of an Amendment, thereby removing pertinent clauses currently marked “ffs” (for further study).

INFORMATION TECHNOLOGY – IMPLEMENTATION AND OPERATION OF CUSTOMER PREMISES CABLING –

Part 3: Testing of optical fibre cabling

1 Scope

This part of ISO/IEC 14763 specifies systems and methods for the inspection and testing of installed optical fibre cabling designed in accordance with premises cabling standards including ISO/IEC 11801, ISO/IEC 24764, ISO/IEC 24702 and ISO/IEC 15018. The test methods refer to existing standards-based procedures where they exist.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

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

IEC 60050-731, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication*

IEC 60825-2, *Safety of laser products – Part 2: Safety of optical fibre communication systems (OFCS)*

IEC 60874-14-3, *Connectors for optical fibres and cables – Part 14-3: Detail specification for fibre optic adapter (simplex) type SC for single-mode fibre*

IEC 60874-19-1, *Fibre optic interconnecting devices and passive components – Connectors for optical fibres and cables – Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification*

IEC 61280-1-3, *Fibre optic communication subsystem test procedures – Part 1-3: General communication subsystems – Central Wavelength and spectral width measurement*

IEC 61280-1-4, *Fibre optic communication subsystem test procedures – Part 1-4: General communication subsystems – Light source encircled flux measurement method*

IEC 61280-4-1, *Fibre-optic communication subsystem test procedures – Part 4-1: Installed cable plant – Multimode attenuation measurement*

IEC 61280-4-2, *Fibre optic communication subsystem basic test procedures – Part 4-2: Fibre optic cable plant – Single-mode fibre optic cable plant attenuation*

IEC 61300-3-4, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-4: Examinations and measurements – Attenuation*

IEC 61300-3-6, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-6: Examinations and measurements – Return loss*

IEC 61300-3-35:2009, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-35: Examinations and measurements – Fibre optic connector endface visual and automated inspection*

IEC 61300-3-42, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures – Part 3-42: Examinations and measurements – Attenuation of single mode alignment sleeves and or adaptors with resilient alignment sleeves*

IEC 61755-3-1, *Fibre optic connector optical interfaces – Part 3-1: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia PC ferrule, single mode fibre*

IEC 61755-3-2, *Fibre optic connector optical interfaces – Part 3-2: Optical interface, 2,5 mm and 1,25 mm diameter cylindrical full zirconia ferrules for 8 degrees angled-PC single mode fibres*

IEC 62614, *Fibre optics – Launch condition requirements for measuring multimode attenuation*

IEC 62664-1-1, *Fibre optic interconnecting devices and passive components – Fibre optic connector product specifications – Part 1-1: LC-PC duplex multimode connectors terminated on IEC 60793-2-10 category A1a fibre*