Connectors for electronic equipment Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz

Connectors for electronic equipment Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60603-7-7:2006 sisaldab Euroopa standardi EN 60603-7-7:2006 ingliskeelset teksti. Käesolev dokument on jõustatud 22.09.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 60603-7-7:2006 consists of the English text of the European standard EN 60603-7-7:2006. This document is endorsed on 22.09.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of IEC 60603, which is part of the IEC 60603-7 series, covers 8 way connectors, up to 4 pairs, and specifies mechanical and environmental requirements, and electrical transmission requirements for frequencies up to 600 MHz. These connectors are typically used as category 7 connectors in class F cabling systems specified in IS0/IEC 11801:2002.	**Scope:** This part of IEC 60603, which is part of the IEC 60603-7 series, covers 8 way connectors, up to 4 pairs, and specifies mechanical and environmental requirements, and electrical transmission requirements for frequencies up to 600 MHz. These connectors are typically used as category 7 connectors in class F cabling systems specified in IS0/IEC 11801:2002.

ICS 31.220.10

Võtmesõnad: electronic equ, high sp, information processing, low frequencies, mode of connection, network, printed- circuit boards, printed circuits, properties, quality, quality assessment, radio frequencies, ratings, sectional specification, shielded, shields, testing, types

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60603-7-7

July 2006

ICS 31.220.10

Supersedes EN 60603-7-7:2002

English version

Connectors for electronic equipment Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz

(IEC 60603-7-7:2006)

Connecteurs pour équipements électroniques
Partie 7-7: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission des données à des fréquences jusqu'à 600 MHz
(CEI 60603-7-7:2006)

Steckverbinder für elektronische Einrichtungen
Teil 7-7: Bauartspezifikation für geschirmte freie und feste Steckverbinder, 8-polig, für Datenübertragungen bis 600 MHz
(IEC 60603-7-7:2006)

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

Ref. No. EN 60603-7-7:2006 E

Foreword

The text of document 48B/1664/FDIS, future edition 2 of IEC 60603-7-7, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60603-7-7 on 2006-07-01.

This European Standard supersedes EN 60603-7-7: 2002.

The following changes have been made:

– Many minor detail changes concerning the harmonization of this document, its specifications and its test procedures with those contained in the other IEC/EN 60603-7 series standards.

– Significant performance improvements have been made to insertion loss and return loss, now specified to 1 000 MHz, for special applications (ISO/IEC 15018).

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)	2007-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-07-01

The International Electrotechnical Commission (IEC) and CENELEC draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the switch given in 2.2.2.

The IEC and CENELEC take no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the IEC. Information may be obtained from:

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16, rue de Monceau
75008 Paris
France

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC and CENELEC shall not be held responsible for identifying any or all such patent rights.

Annex ZA has been added by CENELEC.

_____

Endorsement notice

The text of the International Standard IEC 60603-7-7:2006 was approved by CENELEC as a European Standard without any modification.

_____

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-581	-[1)]	International Electrotechnical Vocabulary (IEV) Chapter 581: Electromechanical components for electronic equipment	-	-
IEC 60068-1	-[1)]	Environmental testing Part 1: General and guidance	EN 60068-1	1994[2)]
IEC 60068-2-38	-[1)]	Environmental testing Part 2: Tests - Test Z/AD: Composite temperature/humidity cyclic test	EN 60068-2-38	1999[2)]
IEC 60169-16	-[1)]	Radio-frequency connectors Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling - Characteristic impedance 50 ohms (75 ohms) (Type N)	-	-
IEC 60352-2	-[1)]	Solderless connections Part 2: Solderless crimped connections - General requirements, test methods and practical guidance	EN 60352-2	2006[2)]
IEC 60352-3	-[1)]	Solderless connections Part 3: Solderless accessible insulation displacement connections - General requirements, test methods and practical guidance	EN 60352-3	1994[2)]
IEC 60352-4	-[1)]	Solderless connections Part 4: Solderless non-accessible insulation displacement connections - General requirements, test methods and practical guidance	EN 60352-4	1994[2)]
IEC 60352-5	-[1)]	Solderless connections Part 5: Press-in connections - General requirements, test methods and practical guidance	EN 60352-5 + A1	2001[2)] 2003

[1)] Undated reference.

[2)] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEC 60352-6	-[1)]	Solderless connections Part 6: Insulation piercing connections - General requirements, test methods and practical guidance	EN 60352-6	1997[2)]
IEC 60352-7	-[1)]	Solderless connections Part 7: Spring clamp connections - General requirements, test methods and practical guidance	EN 60352-7	2002[2)]
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements	EN 60512	Series
IEC 60512-1-100	-[1)]	Connectors for electronic equipment - Tests and measurements Part 1-100: General - Applicable publications	EN 60512-1-100	2006[2)]
IEC 60603-1	-[1)]	Connectors for frequencies below 3 MHz for use with printed boards Part 1: Generic specification - General requirements and guide for the preparation of detail specifications, with assessed quality	EN 60603-1	1998[2)]
IEC 60603-7	-[1)]	Connectors for frequencies below 3 MHz for use with printed boards Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality	EN 60603-7	1997[2)]
IEC 60603-7-5	-[1)]	Connectors for electronic equipment Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	-	-
IEC 60664-1 (mod)	-[1)]	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003[2)]
IEC 61076-1	-[1)]	Connectors for electronic equipment - Product requirements Part 1: Generic specification	EN 61076-1	2006[2)]
IEC 61156	Series	Multicore and symmetrical pair/quad cables for digital communications	-	-
ISO/IEC 11801	2002	Information technology - Generic cabling for customer premises	-	-
ISO 1302	-[1)]	Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation	EN ISO 1302	2002[2)]
ITU-T G.117	-[1)]	Transmission aspects of unbalance about earth	-	-
ITU-T K.20	-[1)]	Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents	-	-

Publication	Year	Title	EN/HD	Year
ITU-T K.44	-[1)]	Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation	-	-
ITU-T O.9	-[1)]	Measuring arrangements to assess the degree of unbalance about earth	-	-
-	-	Communication cables - Specifications for test methods Part 1-14: Electrical test methods - Coupling attenuation or screening attenuation of connecting hardware	EN 50289-1-14	-[1)]

INTERNATIONAL STANDARD

IEC 60603-7-7

Second edition
2006-06

Connectors for electronic equipment –

Part 7-7:
Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz

Reference number
IEC 60603-7-7:2006(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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INTERNATIONAL STANDARD

IEC 60603-7-7

Second edition
2006-06

Connectors for electronic equipment –

Part 7-7:
Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz

FOREWORD

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The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the switch given in 2.2.2.

The IEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. Information may be obtained from:

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60603-7-7 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This second edition cancels and replaces the first edition published in 2002. This edition constitutes a technical revision.

The following changes to the first edition have been made in this second edition:

- Many minor detail changes concerning the harmonization of this document, its specifications and its test procedures with those contained in the other IEC 60603-7 series standards.
- Significant performance improvements have been made to insertion loss and return loss, now specified to 1 000 MHz, for special applications (ISO/IEC 15018).

The text of this standard is based on the following documents:

FDIS	Report on voting
48B/1664/FDIS	48B/1691/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.

A list of all parts of IEC 60603 series, under the general title *Connectors for frequencies below 3 MHz for use with printed boards*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

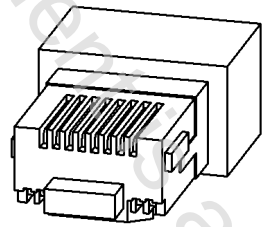
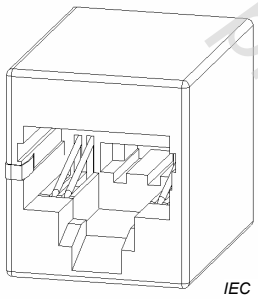
This detail specification describes connectors according to IEC 60603-7 series connectors requirements.

This detail specification describes connectors that are similar to and backward compatible with IEC 60603-7 series connectors. Backward compatibility definition and requirements are given in 2.2.

The complete requirements for the connectors described herein correspond to this detail specification and the current issues of IEC 60603-7 series, which are referenced herein accordingly.

CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 600 MHz

<table>
<tr><td>IEC SC 48B: LF connectors
Specification available from:
IEC Central Office or the addresses shown on the inside cover.</td><td>IEC 60603-7-7</td></tr>
<tr><td rowspan="4"> 
 
IEC 1068/06</td><td>Detail specification for two-part cable to cable connector used in:
- high speed communications applications up to 600 MHz
- 4 balanced contact pairs (8 contacts)
- compatible with IEC 60603-7 series connectors
- intended for inside-building cabling systems</td></tr>
<tr><td>Typical construction is for cable mount for use in communication cabling systems</td></tr>
<tr><td>Performance level(s): 1, 2
Assessment level(s): not applicable</td></tr>
<tr><td>Reference data: not applicable</td></tr>
<tr><td colspan="2">Information on the availability of components qualified to this detail specification is not covered.</td></tr>
</table>

1 General

1.1 Scope

This part of IEC 60603, which is part of the IEC 60603-7 series, covers 8 way connectors, up to 4 pairs, and specifies mechanical and environmental requirements, and electrical transmission requirements for frequencies up to 600 MHz. These connectors are typically used as category 7 connectors in class F cabling systems specified in IS0/IEC 11801:2002.[1]

The connectors are intermateable with IEC 60603-7-X series connectors.[2]

The connectors are interoperable with IEC 60603-7-X series connectors.[3]

The connectors are backward compatible with IEC 60603-7-X series connectors.[4]

1.2 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(581), *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electro-mechanical components for electronic equipment*

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-38, *Environmental testing – Part 2: Tests – Test Z/AD: Composite temperature/ humidity cyclic test*

IEC 60169-16, *Radio-frequency connectors – Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0.276 in) with screw coupling – Characteristic impedance 50 ohms (75 ohms) (Type N)*

IEC 60352-2, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-3, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 60352-4, *Solderless connections – Part 4: Solderless non-accessible insulation displace-ment connections – General requirements, test methods and practical guidance*

IEC 60352-5, *Solderless connections – Part 5: Press-in connections – General requirements, test methods and practical guidance*

IEC 60352-6, *Solderless connections – Part 6: Insulation piercing connections – General requirements, test methods and practical guidance*

IEC 60352-7, *Solderless connections – Part 7: Spring clamp connections – General requirements, test methods and practical guidance*

IEC 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

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1 ISO/IEC 11801 contains various ‘category’ designations corresponding to various frequency ranges.

2 Intermateability definition and requirements are given in 2.2.

3 Interoperability definition and requirements are given in 2.2.

4 Backward compatibility definition and requirements are given in 2.2.

IEC 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

IEC 60603-1, *Connectors for frequencies below 3 MHz for use with printed boards – Part 1: Generic specification – General requirements and guide for the preparation of detail specifications, with assessed quality*

IEC 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features*

IEC 60603-7-5, *Connectors for electronic equipment – Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz* [5]

IEC 60664-1, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 61076-1, *Connectors for electronic equipment – Product requirements – Part 1: Generic specification*

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

ISO/IEC 11801:2002, *Information technology – Generic cabling for customer premises*

ISO 1302, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*

ITU-T G.117, *Transmission aspects of unbalance about earth*

ITU-T K.20, *Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents*

ITU-T K.44, *Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic recommendation*

ITU-T O.9, *Measuring arrangements to assess the degree of unbalance about earth*

EN 50289-1-14, *Communication Cables – Specifications for Test Methods – Part 1-14: Electrical Test Methods – Coupling attenuation or screening attenuation of connecting hardware*

2 Technical information

This detail specification covers connectors intended for use in inside-building communication cabling systems.

2.1 Terms and definitions

For the purposes of this part of IEC 60603, the terms and definitions given in 2.1 of IEC 61076-1 and IEC 60050(581) apply. Some applicable terms are also covered in IEC 60512-1.

2.2 Information on application

These connectors are interoperable with lower frequency or “category” IEC 60603-7 series connectors.

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[5] To be published.