

# SLOVENSKI STANDARD

## SIST EN 61076-3-110:2017

01-januar-2017

Nadomešča:

SIST EN 61076-3-110:2012

---

**Konektorji za elektronsko opremo - Zahteve za izdelek - 3-110. del: Podrobna specifikacija za proste in fiksne konektorje za prenos podatkov s frekvencami do 3000 MHz (IEC 61076-3-110:2016)**

Connectors for electronic equipment - Product requirements - Part 3-110: Detail specification for free and fixed connectors for data transmission with frequencies up to 3 000 mhz (IEC 61076-3-110:2016)

Steckverbinder für elektronische Einrichtungen - Produktanforderungen - Teil 3-110: Bauartspezifikation für geschirmte freie und feste Steckverbinder für Datenübertragungen bis 1 000 MHz (IEC 61076-3-110:2016)

Connecteurs pour équipements électroniques - Exigences de produit - Partie 3-110: Spécification particulière pour les fiches et les embases blindées pour la transmission de données à des fréquences jusqu'à 1 000 MHz (IEC 61076-3-110:2016)

**Ta slovenski standard je istoveten z: EN 61076-3-110:2016**

---

**ICS:**

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors
-----------	-------------------------------	--

**SIST EN 61076-3-110:2017**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 61076-3-110:2017](#)

<https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017>

EUROPEAN STANDARD

**EN 61076-3-110**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2016

ICS 31.220.10

Supersedes EN 61076-3-110:2012

English Version

**Connectors for electronic equipment - Product requirements -  
Part 3-110: Detail specification for free and fixed connectors for  
data transmission with frequencies up to 3 000 MHz  
(IEC 61076-3-110:2016)**

Connecteurs pour équipements électroniques - Exigences  
de produit - Partie 3-110: Spécification particulière pour les  
fiches et les embases pour la transmission de données à  
des fréquences jusqu'à 3 000 MHz  
(IEC 61076-3-110:2016)

Steckverbinder für elektronische Einrichtungen -  
Produktanforderungen - Teil 3-110: Bauartspezifikation für  
freie und feste Steckverbinder für Datenübertragungen bis 3  
000 MHz  
(IEC 61076-3-110:2016)

This European Standard was approved by CENELEC on 2016-10-04. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN 61076-3-110:2016****European foreword**

The text of document 48B/2496/FDIS, future edition 3 of IEC 61076-3-110, prepared by SC 48B "Electrical connectors" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61076-3-110:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-07-04
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-10-04

This document supersedes EN 61076-3-110:2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

**Endorsement notice**

The text of the International Standard IEC 61076-3-110:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60068-2-38	NOTE	Harmonized as EN 60068-2-38.
IEC 60603-7-81:2015	NOTE	Harmonized as EN 60603-7-81:2016 (not modified).
IEC 61076 Series	NOTE	Harmonized as EN 61076 Series.
IEC 61076-3:2008	NOTE	Harmonized as EN 61076-3:2008 (not modified).

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1	-	Environmental testing - Part 1: General and guidance	EN 60068-1	-
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements	EN 60512	Series
IEC 60512-1	-	Connectors for electronic equipment - Tests and measurements - Part 1: General	EN 60512-1	-
IEC 60512-25-9	-	Connectors for electronic equipment - Tests and measurements - Part 25-9: Signal integrity tests - Test 25i: Alien crosstalk	EN 60512-25-9	-
IEC 60512-28-100	-	Connectors for electronic equipment - Tests and measurements - Part 28-100: Signal integrity tests up to 1 000 MHz on IEC 60603-7 and IEC 61076-3 series connectors - Tests 28a to 28g	EN 60512-28-100	-
IEC 60603-7	-	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	-
IEC 60603-7-1	-	Connectors for electronic equipment - Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors	EN 60603-7-1	-
IEC 60603-7-7	2010	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	EN 60603-7-7	2010
IEC 60603-7-71	-	Connectors for electronic equipment - Part 7-71: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 1000 MHz	EN 60603-7-71	-

**EN 61076-3-110:2016**

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60603-7-82	2016	Connectors for electronic equipment - Part 7-82: Detail specification for 8-way, 12 contacts, shielded, free and fixed connectors, for data transmission with frequencies up to 2 000 MHz	EN 60603-7-82	201X <sup>1)</sup>
IEC 61076-1	-	Connectors for electronic equipment - Product requirements - Part 1: Generic specification	EN 61076-1	-
IEC 62153-4-15	2015	Metallic communication cable test methods - Part 4-15: Electromagnetic compatibility (EMC) - Test method for measuring transfer impedance and screening attenuation - or coupling attenuation with triaxial cell		-

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 61076-3-110:2017](https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017)

<https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017>

---

<sup>1)</sup> To be published.



IEC 61076-3-110

Edition 3.0 2016-08

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Connectors for electronic equipment – Product requirements –  
Part 3-110: Detail specification for free and fixed connectors for data  
transmission with frequencies up to 3 000 MHz**

**Connecteurs pour équipements électroniques – Exigences de produit –  
Partie 3-110: Spécification particulière pour les fiches et les embases pour la  
transmission de données à des fréquences jusqu'à 3 000 MHz**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 31.220.10

ISBN 978-2-8322-3557-7

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions .....	8
4 Common features and isometric view .....	9
4.1 General.....	9
4.2 Cable terminations and internal connections – Fixed and free connectors.....	10
4.3 Mating information .....	10
4.4 Mounting information.....	10
5 Gauges .....	11
6 Characteristics .....	11
6.1 General.....	11
6.2 Classification into climate categories, clearance and creepage distances and current carrying capacity .....	11
6.3 Electrical characteristics.....	11
6.4 Transmission characteristics .....	11
6.4.1 General .....	11
6.4.2 Insertion loss (IL).....	11
6.4.3 Return loss (RL).....	11
6.4.4 Propagation delay.....	12
6.4.5 Delay skew .....	12
6.4.6 Near-end crosstalk (NEXT).....	12
6.4.7 Power sum NEXT (PSNEXT) (for information only) .....	12
6.4.8 Far-end crosstalk (FEXT) .....	12
6.4.9 Power sum FEXT (PSFEXT) (for information only) .....	12
6.4.10 Transverse conversion loss (TCL) .....	12
6.4.11 Transverse conversion transfer loss (TCTL).....	12
6.4.12 Power sum alien (exogenous) NEXT (PSANEXT).....	13
6.4.13 Power sum alien (exogenous) FEXT (PSAFEXT) .....	13
6.4.14 Coupling attenuation .....	13
6.5 Mechanical characteristics .....	13
7 Test schedule .....	13
7.1 General.....	13
7.2 Test schedule .....	14
7.2.1 Test group EP.....	14
Annex A (normative) Gauging requirements.....	15
A.1 Fixed connectors.....	15
A.2 Free connectors .....	15
Bibliography .....	16
Figure 1 – Isometric view of fixed cable connector and free 4, 6 and 2 pair connectors, examples.....	9
Figure 2 – Isometric view of fixed board connector, example.....	10



Figure 3 – Fixed connector pin numbering assignments (front view of connector), example .....	10
Table 1 – Test group EP .....	14

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 61076-3-110:2017](https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017)

<https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –  
PRODUCT REQUIREMENTS –****Part 3-110: Detail specification for free and fixed connectors  
for data transmission with frequencies up to 3 000 MHz**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61076-3-110 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

This third edition cancels and replaces the second edition published in 2012. This edition constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- IEC 61076-3-110 series connectors have been updated to support intermateability with IEC 60603-7-82 (up to 2 000 MHz) connectors, in addition to IEC 60603-7-71 (up to 1 000 MHz) connectors and IEC 60603-7-7 (up to 600 MHz) connectors for prior editions;
- the specifications cover electrical transmission requirements for frequencies up to 3 000 MHz.

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

FDIS	Report on voting
48B/2496/FDIS	48B/2509/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 61076 series, under the general title *Connectors for electronic equipment – Product requirements*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 61076-3-110:2017](https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017)

<https://standards.iteh.ai/catalog/standards/sist/a7c2df09-e228-4447-9957-a771c90cc676/sist-en-61076-3-110-2017>