



SLOVENSKI STANDARD
SIST EN IEC 62343-5-2:2018
01-maj-2018

**Dinamični moduli - 5-2. del: Preskusne metode - 1xN WSS s fiksno mrežo -
Merjenje dinamičnega presluha (IEC 62343-5-2:2018)**

Dynamic modules - Part 5-2: Test methods - 1xN fixed-grid WSS - Dynamic crosstalk measurement (IEC 62343-5-2:2018)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN IEC 62343-5-2:2018**
<https://standards.iteh.ai/catalog/standards/sist/5110ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>

ICS:

33.180.01	Sistemi z optičnimi vlakni na splošno	Fibre optic systems in general
-----------	---------------------------------------	--------------------------------

SIST EN IEC 62343-5-2:2018 **en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 62343-5-2:2018](https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>

EUROPEAN STANDARD

EN IEC 62343-5-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2018

ICS 33.180.01, 33.180.99

English Version

**Dynamic modules - Part 5-2: Test methods - 1xN fixed-grid WSS
- Dynamic crosstalk measurement
(IEC 62343-5-2:2018)**

Modules dynamiques - Partie 5-2: Méthodes d'essai -
Commutateurs sélectifs en longueur d'onde à grille fixe 1 x
N - Mesure de diaphonie dynamique
(IEC 62343-5-2:2018)

Dynamische Module - Teil 5-2: Prüfverfahren - 1xN-
Festaster-WSS - Messung des dynamischen
Übersprechens
(IEC 62343-5-2:2018)

This European Standard was approved by CENELEC on 2018-02-19. 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.

SIST EN IEC 62343-5-2:2018

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels

EN IEC 62343-5-2:2018 (E)**European foreword**

The text of document 86C/1449/CDV, future edition 1 of IEC 62343-5-2, prepared by IEC/SC 86C "Fibre optic systems and active devices" of IEC/TC 86 "Fibre optics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62343-5-2:2018.

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) 2018-11-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-02-19

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

Endorsement notice

The text of the International Standard IEC 62343-5-2:2018 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:

- ITeH STANDARD PREVIEW**
(standards.iteh.ai)
- IEC 61300-3-50 NOTE Harmonized as EN 61300-3-50.
- IEC 62343-3-3:2014 NOTE Harmonized as EN 62343-3-3:2014 (not modified).
<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61300-3-29	-	Fibre optic interconnecting devices and passive components - Basic test and measurement procedures -- Part 3-29: Examinations and measurements - Spectral transfer characteristics of DWDM devices	EN 61300-3-29	-
IEC 62343	-	Dynamic modules - General and guidance	EN 62343	-
IEC/TR 61931	-	Fibre optic - Terminology	-	-
IEC/TS 62538	-	Categorization of optical devices	-	-
ISO/IEC Guide 99	-	International vocabulary of metrology - Basic and general concepts and associated terms (VIM)	-	-

[SIST EN IEC 62343-5-2:2018](https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN IEC 62343-5-2:2018](https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>



IEC 62343-5-2

Edition 1.0 2018-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Dynamic modules – Part 5-2: Test methods – 1 x N fixed-grid WSS – Dynamic crosstalk measurement
 (standards.iteh.ai)

Modules dynamiques – Partie 5-2: Méthodes d'essai – Commutateurs sélectifs en longueur d'onde à grille fixe 1 x N – Mesure de diaphonie dynamique

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.180.01 33.180.99

ISBN 978-2-8322-5267-3

**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.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and abbreviated terms	6
3.1 Basic terms.....	6
3.2 Performance parameter terms.....	8
3.3 Abbreviated terms.....	9
4 Apparatus.....	10
4.1 Test set-up	10
4.2 Light source	10
4.2.1 Tuneable laser source (TLS).....	10
4.2.2 Broadband light source and tuneable filter.....	11
4.3 Device under test.....	11
4.4 Detector.....	12
4.4.1 Optical power meter (OPM)	12
4.4.2 OE converter and oscilloscope	12
5 Measurement condition.....	13
5.1 General conditions.....	13
5.2 Recommendations on selection of a branching port and channel.....	13
6 Procedure.....	13
6.1 Preparation.....	13
6.2 Measurement.....	14
6.2.1 Measurement of input power and insertion loss of DUT	14
6.2.2 Measurement of noise power for dynamic crosstalk	14
6.2.3 Measurement of noise power for different channel crosstalk	14
6.2.4 Measurement of noise power for same channel crosstalk	14
7 Example of transient characteristics of noise power.....	15
8 Calculation	17
9 Measurement report	19
Bibliography.....	21
Figure 1 – Noise observed in port during conducting port switching in 1 x N WSS.....	9
Figure 2 – Test set-up to measure dynamic crosstalk.....	10
Figure 3 – Transient characteristics for measurement of different channel dynamic crosstalk	16
Figure 4 – Transient characteristics for measurement of same channel dynamic crosstalk	17
Table 1 – Example of template for measurement results for different channel dynamic crosstalk	19
Table 2 – Example of summary of crosstalk measurement	20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DYNAMIC MODULES –

Part 5-2: Test methods – 1 x *N* fixed-grid WSS –
Dynamic crosstalk measurement

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.
<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-6c5a79162a7d/iec-62343-5-2-2018>
- 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 62343-5-2 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

The text of this International Standard is based on the following documents:

CDV	Report on voting
86C/1449/CDV	86C/1480/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 62343 series, published under the general title *Dynamic modules*, can be found on the IEC website.

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

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 62343-5-2:2018](https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>

INTRODUCTION

Dynamic crosstalk is attributed to both channel crosstalk (due to same wavelength and/or other wavelengths) and port isolation. It is predicted to change during port switching operations and is a significant performance issue studied and summarized in IEC TR 62343-6-9 for $1 \times N$ ($N \geq 3$) wavelength selective switches (WSSs).

It was revealed that dynamic crosstalk exists in actual $1 \times N$ ($N \geq 3$) WSSs in IEC TR 62343-6-9 and predicted that it would influence transmission properties to some extent when a specific channel passes through the WSS.

This document standardizes the measurement method of dynamic crosstalk of $1 \times N$ ($N \geq 3$) WSSs.

This document is based on OITDA DM 01 from the Optoelectronic Industry and Technology Development Association (OITDA).

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 62343-5-2:2018](https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018)

<https://standards.iteh.ai/catalog/standards/sist/31f6ba09-a292-4458-a0da-cd830773ff72/sist-en-iec-62343-5-2-2018>