
Radiofrekvenčni (SAW) in visokofrekvenčni (BAW) duplekserji ocenjene kakovosti
- 1. del: Splošna specifikacija

Surface acoustic wave (SAW) and bulk acoustic wave (BAW) duplexers of assessed quality - Part 1: Generic specification

iTeh STANDARD PREVIEW

Duplexeurs à ondes acoustiques de surface (OAS) et à ondes acoustiques de volume (OAV) sous assurance de la qualité - Partie 1: Spécification générique

[SIST EN 62604-1:2015](https://standards.itih.ai/catalog/standards/sist/1bb9d479-0902-4a99-a77a-6951bcdc6146/sist-en-62604-1-2015)

Ta slovenski standard je istoveten z: **EN 62604-1:2015**

ICS:

31.140	Piezelektrične in dielektrične naprave	Piezoelectric and dielectric devices
--------	--	--------------------------------------

SIST EN 62604-1:2015**en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 62604-1:2015

<https://standards.iteh.ai/catalog/standards/sist/1bb9d479-0902-4a99-a77a-d931bc6146/sist-en-62604-1-2015>

EUROPEAN STANDARD

EN 62604-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2015

ICS 31.140

English Version

**Surface acoustic wave (SAW) and bulk acoustic wave (BAW)
duplexers of assessed quality - Part 1: Generic specification
(IEC 62604-1:2015)**

Duplexeurs à ondes acoustiques de surface (OAS) et à ondes acoustiques de volume (OAV) sous assurance de la qualité - Partie 1: Spécification générique (IEC 62604-1:2015)

Oberflächenwellen-(OFW-) und Volumenwellen-(BAW-) Duplexer mit bewerteter Qualität - Teil 1: Fachgrundspezifikation (IEC 62604-1:2015)

This European Standard was approved by CENELEC on 2015-08-20. 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 62604-1:2015

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 62604-1:2015**European foreword**

The text of document 49/1143/FDIS, future edition 1 of IEC 62604-1, prepared by IEC/TC 49 "Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62604-1:2015.

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) 2016-05-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2018-08-20

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Endorsement notice

SIST EN 62604-1:2015

The text of the International Standard IEC 62604-1:2015 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 60068-2-10:2005	NOTE	Harmonized as EN 60068-2-10:2005 (not modified).
IEC 60862-1:2003	NOTE	Harmonized as EN 60862-1:2003 (not modified).
IEC 60862-2:2012	NOTE	Harmonized as EN 60862-2:2012 (not modified).
IEC 61019-1:2004	NOTE	Harmonized as EN 61019-1:2005 (not modified).
IEC 62047-7:2011	NOTE	Harmonized as EN 62047-7:2011 (not modified).
IEC 62604-2:2011	NOTE	Harmonized as EN 62604-2:2012 (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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60027	series	Letter symbols to be used in electrical technology	-	-
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60068-1	2013	Environmental testing - Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	-
IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-7	-	Basic environmental testing procedures - Part 2-7: Tests - Test Ga and guidance: Acceleration, steady state	EN 60068-2-7	-
IEC 60068-2-13	-	Basic environmental testing procedures - Part 2-13: Tests - Test M: Low air pressure	EN 60068-2-13	-
IEC 60068-2-14	-	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	-
IEC 60068-2-17	1994	Basic environmental testing procedures - Part 2-17: Tests - Test Q: Sealing	EN 60068-2-17	1994
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-

EN 62604-1:2015

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-45	-	Basic environmental testing procedures - Part 2-45: Tests - Test XA and guidance: Immersion in cleaning solvents	EN 60068-2-45	-
IEC 60068-2-52	-	Environmental testing - Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution)	EN 60068-2-52	-
IEC 60068-2-58	-	Environmental testing - Part 2-58: Tests - Test Td: Test methods for solderability, resistance to dissolution of metallization and to soldering heat of surface mounting devices (SMD)	EN 60068-2-58	-
IEC 60068-2-64	-	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance	EN 60068-2-64	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60122-1	-	Quartz crystal units of assessed quality - Part 1: Generic specification	EN 60122-1	-
IEC 60617-DB	-	Graphical symbols for diagrams	-	-
IEC 60642	-	Piezoelectric ceramic resonators and resonator units for frequency control and selection Chapter I: Standard values and conditions Chapter II: Measuring and test conditions	-	-
IEC 60695-11-5	-	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	-
IEC 60749-28	- ¹⁾	Semiconductor devices - Mechanical and climatic test methods - Part 28: Electrostatic Discharge (ESD) Sensitivity Testing Direct contact charged device model (DC-CDM)	FprEN 60749-28	- ¹⁾
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61340-3-1	-	Electrostatics - Part 3-1: Methods for simulation of electrostatic effects - Human body model (HBM) electrostatic discharge test waveforms	EN 61340-3-1	-

1) At draft stage.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61340-3-2	-	Electrostatics - Part 3-2: Methods for simulation of electrostatic effects - Machine model (MM) electrostatic discharge test waveforms	EN 61340-3-2	-
IEC 62761	-	Guidelines for the measurement method of nonlinearity for surface acoustic wave (SAW) and bulk acoustic wave (BAW) devices in radio frequency (RF)	EN 62761	-
IEC 80000	series	Quantities and units	EN 80000	series
ISO 80000	series	Quantities and units -	EN ISO 80000	series

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 62604-1:2015

<https://standards.iteh.ai/catalog/standards/sist/1bb9d479-0902-4a99-a77a-d931bc6146/sist-en-62604-1-2015>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 62604-1:2015

<https://standards.iteh.ai/catalog/standards/sist/1bb9d479-0902-4a99-a77a-d931bc6146/sist-en-62604-1-2015>



IEC 62604-1

Edition 1.0 2015-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Surface acoustic wave (SAW) and bulk acoustic wave (BAW) duplexers of assessed quality –
Part 1: Generic specification**

**Duplexeurs à ondes acoustiques de surface (OAS) et à ondes acoustiques de volume (OAV) sous assurance de la qualité –
Partie 1: Spécification générique**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 31.140

ISBN 978-2-8322-2777-0

**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	5
1 Scope	7
2 Normative references	7
3 Terms, definitions, units and symbols	8
3.1 Terms and definitions	8
3.1.1 General terms	9
3.1.2 Response characteristics related terms	10
3.1.3 SAW and BAW duplexers related terms	14
3.2 Units and graphical symbols	16
4 Order of precedence of documents	16
5 Preferred values for ratings and characteristics	16
5.1 General	16
5.2 Nominal frequency bands	16
5.3 Operating temperature ranges, in degrees Celsius (°C)	16
5.4 Climatic category	17
5.5 Bump severity	17
5.6 Vibration severity	17
5.7 Shock severity	18
5.8 Fine leak rate	18
6 Marking	18
6.1 Duplexer marking	18
6.2 Package marking	18
7 Quality assessment procedures	19
7.1 General	19
7.2 Primary stage of manufacture	19
7.3 Structurally similar components	19
7.4 Subcontracting	19
7.5 Incorporated components	19
7.6 Manufacturer's approval	19
7.7 Approval procedures	19
7.7.1 General	19
7.7.2 Capability approval	19
7.7.3 Qualification approval	20
7.8 Procedures for capability approval	20
7.8.1 General	20
7.8.2 Eligibility for capability approval	20
7.8.3 Application for capability approval	20
7.8.4 Granting of capability approval	20
7.8.5 Capability manual	20
7.9 Procedures for qualification approval	20
7.9.1 General	20
7.9.2 Eligibility for qualification approval	20
7.9.3 Application for qualification approval	21
7.9.4 Granting of qualification approval	21
7.9.5 Quality conformance inspection	21
7.10 Test procedures	21

7.11	Screening requirements	21
7.12	Rework and repair work	21
7.12.1	Rework	21
7.12.2	Repair work	21
7.13	Certified records of released lots	21
7.14	Validity of release	21
7.15	Release for delivery	21
7.16	Unchecked parameters	21
8	Test and measurement procedures	22
8.1	General	22
8.2	Test and measurement conditions	22
8.2.1	Standard conditions for testing	22
8.2.2	Precision of measurement	22
8.2.3	Precautions	22
8.2.4	Alternative test methods	23
8.3	Visual inspection	23
8.3.1	General	23
8.3.2	Visual test A	23
8.3.3	Visual test B	23
8.4	Dimensions test	23
8.5	Electrical test procedures	23
8.5.1	S parameters measurement	23
8.5.2	Intermodulation distortion measurement	25
8.5.3	Insulation resistance	25
8.5.4	Voltage proof	25
8.6	Mechanical and environmental test procedures	25
8.6.1	Sealing tests (non-destructive)	25
8.6.2	Soldering (solderability and resistance to soldering heat) (destructive)	26
8.6.3	Rapid change of temperature: severe shock by liquid immersion (non-destructive)	26
8.6.4	Rapid change of temperature with prescribed time of transition (non-destructive)	26
8.6.5	Bump (destructive)	26
8.6.6	Vibration (destructive)	27
8.6.7	Shock (destructive)	27
8.6.8	Free fall (destructive)	27
8.6.9	Acceleration, steady state (non-destructive)	28
8.6.10	Low air pressure (non-destructive)	28
8.6.11	Dry heat (non-destructive)	28
8.6.12	Damp heat, cyclic (destructive)	28
8.6.13	Cold (non-destructive)	28
8.6.14	Climatic sequence (destructive)	28
8.6.15	Damp heat, steady state (destructive)	29
8.6.16	Salt mist cyclic (destructive)	29
8.6.17	Immersion in cleaning solvents (non-destructive)	29
8.6.18	Flammability test (destructive)	29
8.6.19	Electrostatic discharge (ESD) sensitivity test (destructive)	29
8.7	Endurance test procedure	30
	Bibliography	31

Figure 1 – FBAR configuration	9
Figure 2 – SMR configuration.....	10
Figure 3 – Frequency response of SAW and BAW duplexers	15
Figure 4 – S parameters measurement.....	24
Table 1 – Frequency allocation of typical UMTS bands	16

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 62604-1:2015

<https://standards.iteh.ai/catalog/standards/sist/1bb9d479-0902-4a99-a77a-d931bc6146/sist-en-62604-1-2015>