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**Surface acoustic wave (SAW) and bulk acoustic wave (BAW) duplexers of assessed quality –
Part 2: Guidelines for the use**

**Duplexeurs à ondes acoustiques de surface (OAS) et à ondes acoustiques de volume (OAV) sous assurance de la qualité –
Partie 2: Lignes directrices d'utilisation**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SURFACE ACOUSTIC WAVE (SAW) AND BULK
ACOUSTIC WAVE (BAW) DUPLEXERS
OF ASSESSED QUALITY –****Part 2: Guidelines for the use**

FOREWORD

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IEC 62604-2 has been prepared by IEC technical committee 49: Piezoelectric, dielectric and electrostatic devices and associated materials for frequency control, selection and detection. It is an International Standard.

This third edition cancels and replaces the second edition published in 2017. This edition constitutes a technical revision.

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

- a) the term "cross-isolation" has been added to Clause 3;
- b) multiplexers are described.

NOTE In this document, SAW and BAW duplexers are treated simultaneously because both duplexers are used in the same manner, especially in mobile phone systems and have the same requirements of characteristics, test method and so on.

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

Draft	Report on voting
49/1361/CDV	49/1376/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts in the IEC 62604 series, published under the general title *Surface acoustic wave (SAW) and bulk acoustic wave (BAW) duplexers of assessed quality*, can be found on the IEC website.

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INTRODUCTION

While in 2G systems mainly dielectric duplexers have been used, the ongoing miniaturization in 3G and 4G mobile communication systems promoted the development and application of acoustic wave duplexers due to their small size, light weight and good electrical performance. While standard surface acoustic wave (SAW) duplexers have been employed for applications with moderate requirements regarding the steepness of individual filters, applications with narrow duplex gap (e.g. Bands 2, 3, 8, 25), i.e., the frequency gap between receiving and transmitting bands, require the application of temperature-compensated (TC) SAW or bulk acoustic wave (BAW) technology, because of their better temperature characteristics and resonator Q-factors.

Standard specifications, such as those of IEC, of which these guidelines form a part, and national specifications or detail specifications issued by manufacturers will define the available combinations of centre frequency, pass bandwidth and insertion attenuation for each sort of transmitting and receiving filters and the isolation level between transmitter and receiver ports, etc. These specifications are compiled to include a wide range of SAW and BAW duplexers with standardized performances. It cannot be over-emphasized that the user should, wherever possible, select his duplexers from these specifications, when available, even if it can lead to making small modifications to his circuit to enable the use of standard duplexers. This applies particularly to the selection of the nominal frequency band.