BSI Standards Publication

Spatial wireless power transfer based on multiple magnetic resonances

Part 1: Requirements

bsi.

National foreword

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The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio-visual equipment.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2021

ISBN 978 0 539 04578 9

ICS 29.240.99; 35.200

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2021.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 63245-1**

EUROPÄISCHE NORM

April 2021

ICS 29.240.99; 35.200

English Version

Spatial wireless power transfer based on multiple magnetic resonances - Part 1: Requirements (IEC 63245-1:2021)

Transfert d'énergie sans fil dans l'espace reposant sur des résonances magnétiques multiples - Partie 1: Exigences (IEC 63245-1:2021)

Räumliche drahtlose Energieübertragung basierend auf mehrfachen magnetischen Resonanzen - Teil 1: Anforderungen (IEC 63245-1:2021)

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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

European foreword

The text of document 100/3548/FDIS, future edition 1 of IEC 63245-1, prepared by IEC/TC 100 "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63245-1:2021.

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) 2022-01-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-04-13

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The text of the International Standard IEC 63245-1:2021 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 62827-3	NOTE	Harmonized as EN 62827-3
IEC 63006:2019	NOTE	Harmonized as EN IEC 63006:2019 (not modified)
IEC 63028:2017	NOTE	Harmonized as EN 63028:2017 (not modified)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SPATIAL WIRELESS POWER TRANSFER BASED ON MULTIPLE MAGNETIC RESONANCES –

Part 1: Requirements

FOREWORD

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International Standard IEC 63245-1 has been prepared by technical area 15: Wireless power transfer, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

FDIS	Report on voting
100/3548/FDIS	100/3564/RVD

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 63245 series, published under the general title *Spatial wireless power transfer based on multiple magnetic resonances*, 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.

INTRODUCTION

The IEC 63245 (Spatial wireless power transfer based on multiple magnetic resonances, SWPT-MMR) series provides requirements and a reference model for implementing a spatial wireless power transfer system. The IEC 63245 series consists of the following parts:

– IEC 63245-1: *Spatial wireless power transfer based on multiple magnetic resonances – Part 1: Requirements*, which describes requirements of SWPTs with multiple magnetic resonances; and

– IEC 63245-2: *Spatial wireless power transfer based on multiple magnetic resonances – Part 2: Reference model*, which describes a reference model for SWPTs with multiple magnetic resonances.

SPATIAL WIRELESS POWER TRANSFER BASED ON MULTIPLE MAGNETIC RESONANCES –

Part 1: Requirements

1 Scope

This part of IEC 63245 specifies requirements for spatial wireless power transfer based on multiple magnetic resonances (SWPT-MMR), which is a non-radiative wireless power transfer (WPT). This document contains two categories of requirements: general requirements and functional requirements. The general requirements cover charging procedures and charging zones. The functional requirements cover each component of a SWPT-MMR system, such as transmitter coils.

2 Normative references

There are no normative references in this document.

3 Terms, definitions, and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1 Terms and definitions

3.1.1
null point
point or area in the charging zone where the magnetic field cancels out almost entirely or is below a certain specified minimum

3.1.2
quiet zone
magnetic field having an equalized energy density corresponding to each of the magnetic fields formed on the transmitter coils

3.1.3
spatial wireless power transfer
concept of wireless power transfer between multiple sources and multiple receiving devices placed at a certain distance in various positions and postures within a space

Note 1 to entry: "Spatial" means that receiving devices will take various positions and postures, and will lead to variable transfer efficiency including almost zero percent. This situation can occur when receiving devices are placed far apart from the power source and are freely rearranged.

[SOURCE: IEC 62827-3:2016, 3.1.2, modified – In the definition, "receiving devices placed at a certain distance in various positions and postures within a space" replaces "receiving devices which are placed at a distance within a spatial space".]