



BSI Standards Publication

Radio frequency beam wireless power transfer (WPT) for mobile devices

National foreword

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TECHNICAL REPORT

Radio frequency beam wireless power transfer (WPT) for mobile devices

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIO FREQUENCY BEAM
WIRELESS POWER TRANSFER (WPT) FOR MOBILE DEVICES**

FOREWORD

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IEC TR 63239, which is a Technical Report, has been prepared by technical area 15: Wireless power transfer, of IEC technical committee TC 100: Audio, video and multimedia systems and equipment.

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Draft TR	Report on voting
100/3212/DTR	100/3317/RVDTR

Full information on the voting for the approval of this Technical Report 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.

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- withdrawn,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.

RADIO FREQUENCY BEAM WIRELESS POWER TRANSFER (WPT) FOR MOBILE DEVICES

1 Scope

This Technical Report presents the surveyed technologies, product development trends, international standards, and regulation trends of RF beam WPT. This report can be used for the research and analysis of projects that apply small-output remote WPT to mobile devices, such as smartphones, Internet of Things (IoT) devices, and ultra-small sensors.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

IoT

Internet of Things

service-based facilities to provide advanced services by connecting the various things of the physical world and the virtual world based on information communication technology

Note 1 to entry: Infrastructure computing devices for realizing ubiquitous space are embedded in environments and things to make them intelligent and to expand the machine-to-machine (M2M) concept, which is capable of intelligent communication between humans and things or between things to the internet.

Note 2 to entry: The concept has evolved into a concept that interacts with all the information of reality and the virtual world as well as things. The major technologies of IoT include sensing technology, wired and wireless communication and network infrastructure technology, IoT interface technology, and service technology through IoT.

3.2

Wi-Fi

Wireless-Fidelity

certification mark provided to products compatible with the regulations determined by the wireless LAN (WLAN) specifications (IEEE 802.11b) using 2,4 GHz

Note 1 to entry: Among the products manufactured in accordance with these specifications, the ones that passed the test of the Wireless Ethernet Compatibility Alliance (WECA), a group founded by wireless-network-related companies, can have this mark.

4 Introduction to RF beam WPT

4.1 Overview of the RF beam WPT type

RF beam WPT performs remote WPT using omnidirectional or directional antenna beam patterns. This type is divided into the omnidirectional type, in which electromagnetic waves are radiated in all directions to achieve constant radiation intensity in any direction, and the directional type, in which radio waves are transmitted in a certain direction. Table 1 shows the Overview of the RF beam WPT type.