



BSI Standards Publication

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

National foreword

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ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD..... 3

1 Scope..... 5

2 Normative references 5

3 Terms and definitions 5

4 Introduction to RF beam WPT..... 5

 4.1 Overview of the RF beam WPT type 5

 4.2 Requirements for RF beam WPT..... 6

 4.2.1 General 6

 4.2.2 Power transfer system design of RF beam WPT 7

 4.2.3 Available candidate frequencies of RF beam WPT..... 8

 4.2.4 Operating principle of omnidirectional RF beam WPT 8

 4.2.5 Operating principle of directional RF beam WPT..... 9

 4.3 Operating scenario of RF beam WPT 11

 4.3.1 Possible requirement for RF beam WPT 11

 4.3.2 Operating scenario of omnidirectional RF beam WPT 12

 4.3.3 Operating scenario of directional RF beam WPT..... 12

5 Trends in standards, regulations, and technologies related to RF beam WPT 14

 5.1 Trends in standards related to RF beam WPT 14

 5.2 Trends in regulations related to RF beam WPT 15

 5.3 Trends in global products related to RF beam WPT 19

6 Summary 22

Figure 1 – TX and RX structures of RF beam WPT 7

Figure 2 – Beam pattern diagram of omnidirectional RF beam WPT..... 8

Figure 3 – Example of high-output omnidirectional RF beam WPT in the space 9

Figure 4 – Beam pattern diagram of directional RF beam WPT 9

Figure 5 – Electromagnetic wave transmission/reception at each pattern antenna of directional RF beam WPT 10

Figure 6 – Direction RF beam WPT (a) description on delay generation at each pattern antenna (b) delay adjustment method to transmit desired signals..... 10

Figure 7 – Example of beam pattern formation by the delay and direction adjustment of the transmission signals of each antenna..... 11

Figure 8 – Expected operating scenario of omnidirectional RF beam WPT 12

Figure 9 – Expected operating scenario sequence of directional RF beam WPT – Pilot signal transmission from the single RX in case of an obstacle..... 13

Figure 10 – Expected operating scenario sequence of directional RF beam WPT – Directional WPT to the single RX in case of an obstacle 13

Figure 11 – Expected operating scenario sequence of directional RF beam WPT – Directional WPT from multiple TXs to multiple RXs in case of an obstacle 14

Table 1 – Overview of the RF beam WPT type..... 6

Table 2 – Characteristics of candidate frequencies for RF beam WPT 8

Table 3 – Activities of domestic/overseas standardization organizations related to RF beam WPT 15

Table 4 – Major recommendations and regulations of standardization organizations related to WPT for mobile devices..... 16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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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,
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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.