SLOVENSKI STANDARD
oSIST prEN IEC 63758-5-3:2026

01-november-2026

Specifikacija Qi - Različica 2.3 - 5-3. del: Mpp - Magnetna zasnova (hitri postopek)

Qi specification - Version 2.3 - Part 5-3: Mpp - Magnetics design (Fast Track)

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ICS:

29.240.99	Druga oprema v zvezi z omrežji za prenos in distribucijo električne energije	Other equipment related to power transmission and distribution networks
33.160.99	Druga avdio, video in avdiovizuelna oprema	Other audio, video and audiovisual equipment
35.200	Vmesniška in povezovalna oprema	Interface and interconnection equipment

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100/4545/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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Japan	Ms Mahiru Uehara
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL FUNCTION(S):
TC 106,TC 108	
ASPECTS CONCERNED:	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

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TITLE:

Qi Specification - Version 2.3 - Part 5-3: MPP - Magnetics design (Fast Track)

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

As this is a fast-track process offered by WPC, the Word file is not provided.

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WIRELESS POWER

CONSORTIUM

Qi Specification

MPP – Magnetics Design

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Version 2.3

Publish Date: 08 December 2025

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1. General

The Wireless Power Consortium (WPC) is a worldwide organization that aims to develop and promote global standards for wireless power transfer in various application areas. An important application area comprises flat-surface devices such as mobile phones and chargers operating at power levels up to 25 W.

1.1 Structure of the Qi Specification

General documents

- Introduction
- Glossary, Acronyms, and Symbols
- Technical System Overview
- Power Profiles

System description documents

- Mechanical, Thermal, and User Interface
- Power Delivery
- Communications Physical Layer
- Communications Protocol
- Foreign Object Detection
- NFC Tag Protection
- Authentication Protocol
- MPP Communications Protocol
- MPP Magnetics Design
- MPP Power Delivery
- MPP Communications Physical Layer
- MPP Foreign Object Detection
- MPP Design Guidelines (Informative)
- Magnetic Covers
- Active Alignment System
- Thermal Management Protocol

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1.2 Scope

The *Qi Specification*, *MPP Magnetics Design* (this document) defines the system model and requirements for the magnetics used within both PTx and PRx products that implement the Magnetic Protocol and the magnetic attach alignment method.

1.3 Compliance

All provisions in the *Qi Specification* are mandatory, unless specifically indicated as recommended, optional, note, example, or informative. Verbal expression of provisions in this Specification follow the rules provided in ISO/IEC Directives, Part 2.

Table 1 - Verbal forms for expressions of provisions

Provision	Verbal form
requirement	“shall” or “shall not”
recommendation	“should” or “should not”
permission	“may” or “may not”
capability	“can” or “cannot”

1.4 References

For undated references, the most recently published document applies. The most recent WPC publications can be downloaded from http://www.wirelesspowerconsortium.com.

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1.5 Conventions

1.5.1 Notation of numbers

- Real numbers use the digits 0 to 9, a decimal point, and optionally an exponential part.
- Integer numbers in decimal notation use the digits 0 to 9.
- Integer numbers in hexadecimal notation use the hexadecimal digits 0 to 9 and A to F, and are prefixed by "0x" unless explicitly indicated otherwise.
- Single bit values use the words ZERO and ONE.

1.5.2 Tolerances

Unless indicated otherwise, all numeric values in the *Qi Specification* are exactly as specified and do not have any implied tolerance.

1.5.3 Fields in a data packet

A numeric value stored in a field of a data packet uses a big-endian format. Bits that are more significant are stored at a lower byte offset than bits that are less significant. Table 2 and Figure 1 provide examples of the interpretation of such fields.

Table 2 - Example of fields in a data packet (table)

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	b_7	b_6	b_5	b_4	b_3	b_2	b_1	b_0
B_0	(msb)							
B_1	16-bit Numeric Data Field							(lsb)
B_2	Other Field					(msb)		
B_3	16-bit Numeric Data Field						(lsb)	Field

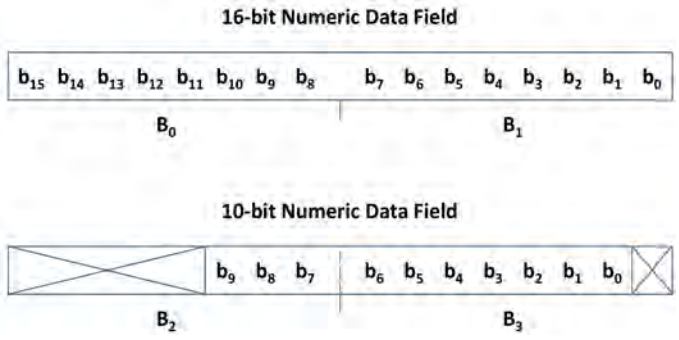


Figure 1 - Examples of fields in a data packet

1.5.4 Notation of text strings

Text strings consist of a sequence of printable ASCII characters (i.e. in the range of 0x20 to 0x7E) enclosed in double quotes ("). Text strings are stored in fields of data structures with the first character of the string at the lowest byte offset, and are padded with ASCII NUL (0x00) characters to the end of the field where necessary.

EXAMPLE: The text string “WPC” is stored in a six-byte fields as the sequence of characters 'W', 'P', 'C', NUL, NUL, and NUL. The text string “M:4D3A” is stored in a six-byte field as the sequence 'M', ':', '4', 'D', '3', and 'A'.

1.5.5 Short-hand notation for data packets

In many instances, the *Qi Specification* refers to a data packet using the following shorthand notation:

<MNEMONIC>/<modifier>

In this notation, <MNEMONIC> refers to the data packet's mnemonic defined in the *Qi Specification*, *Communications Protocol*, and <modifier> refers to a particular value in a field of the data packet. The definitions of the data packets in the *Qi Specification*,*Communications Protocol*, list the meanings of the modifiers.

For example, EPT/cc refers to an End Power Transfer data packet having its End Power Transfer code field set to 0x01.

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2. Coil Design

2.1 Introduction and Background

This book describes the MPP PTx and PRx coil system models.

The coil system models are nominal designs from which the MPP specifications are derived.

It is recommended that MPP PTx or PRx implementations follow these coil system models as closely as possible to minimize the differences with the TPT#MPP1-coil and TPR#MPP1-coil compliance test tools.

Each of the coil system model sub-sections are split into two sections:

- Mechanical specification of the individual components, full assembly, and materials.
- Nominal electrical parameters in free-air and mated conditions.

The final sub-section specifies the coil requirements for PTx and PRx implementations.

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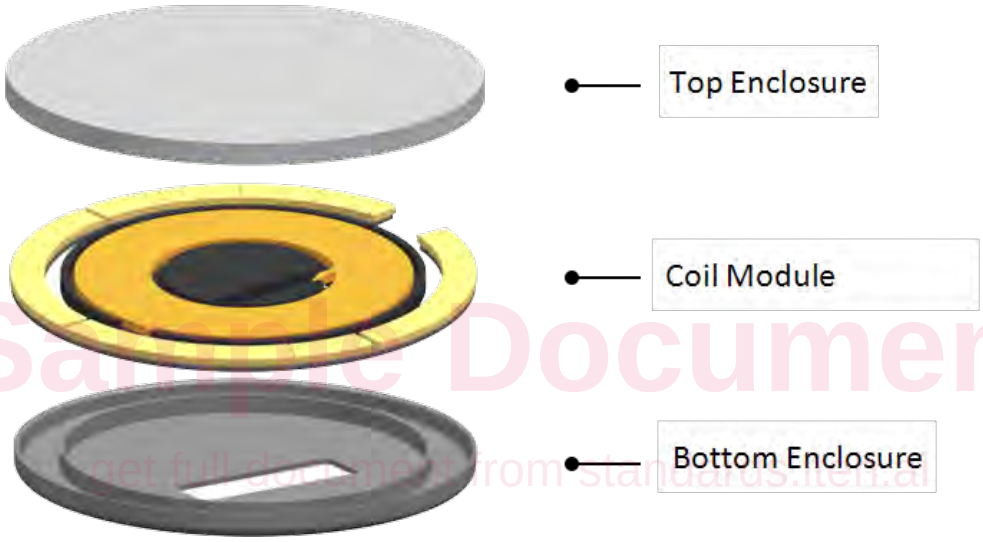
3. PTx Coil System Model

3.1 Mechanical Construction

3.1.1 Overview

The overall design of the PTx coil system model is shown in Figure 2.
It consists of three main components:

- Top enclosure that defines the interface surface
- Coil module
- Bottom enclosure



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Figure 2 - Exploded view of PTx coil system model.

3.1.2 Top Enclosure

The top enclosure is constructed with plastic.

3.1.3 Coil Module (AC magnetics)

The exploded view of the coil module for the PTx coil system model is shown in Figure 3. The coil module consists of four components:

- circular wound coil
- ferrite shield
- magnet ring
- permeable magnet shunt

The side view of the coil module is shown in Figure 4.
The coil is 11 turns constructed with Type-1 Litz wire with each turn consisting of 65 strands of individually insulated 80µm diameter copper wire.
The magnetic shielding in the coil module is constructed using DMR95 ferrite.
The purpose of the magnets is to ensure tighter alignment between the transmitter and receiver coils.
Practically, a cutout in the PTx ferrite is needed to allow the external routing of the coil leads. In Figure 5, the implementation of the ferrite cutout in the system model is shown.

Key mechanical dimensions of the coil module are in Table 3.

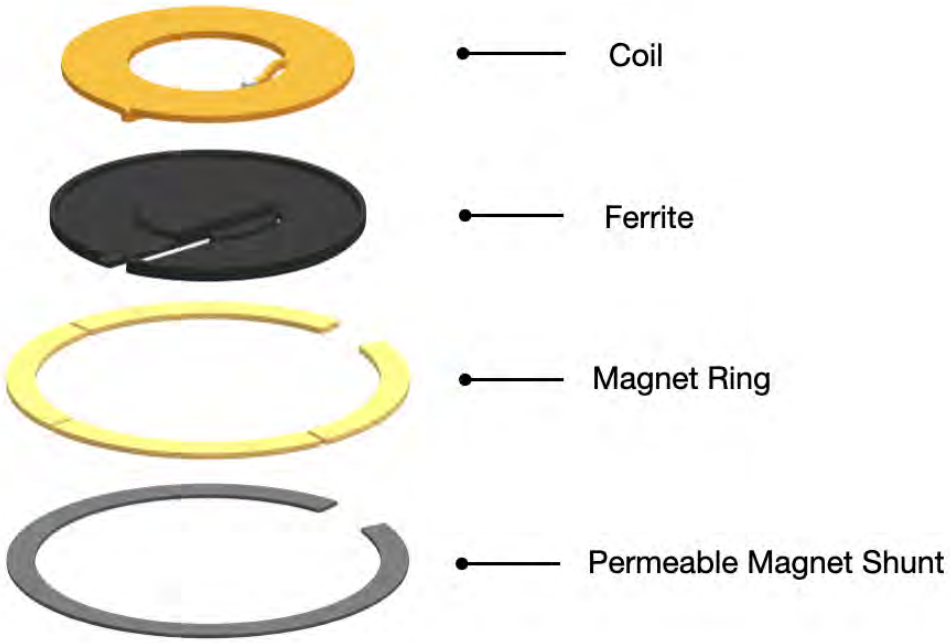


Figure 3 - Exploded view of the Coil Module for the PTx Coil System Model.

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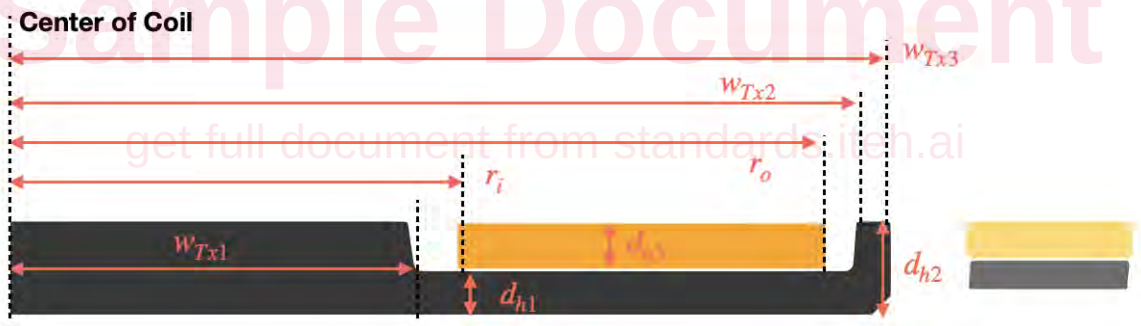
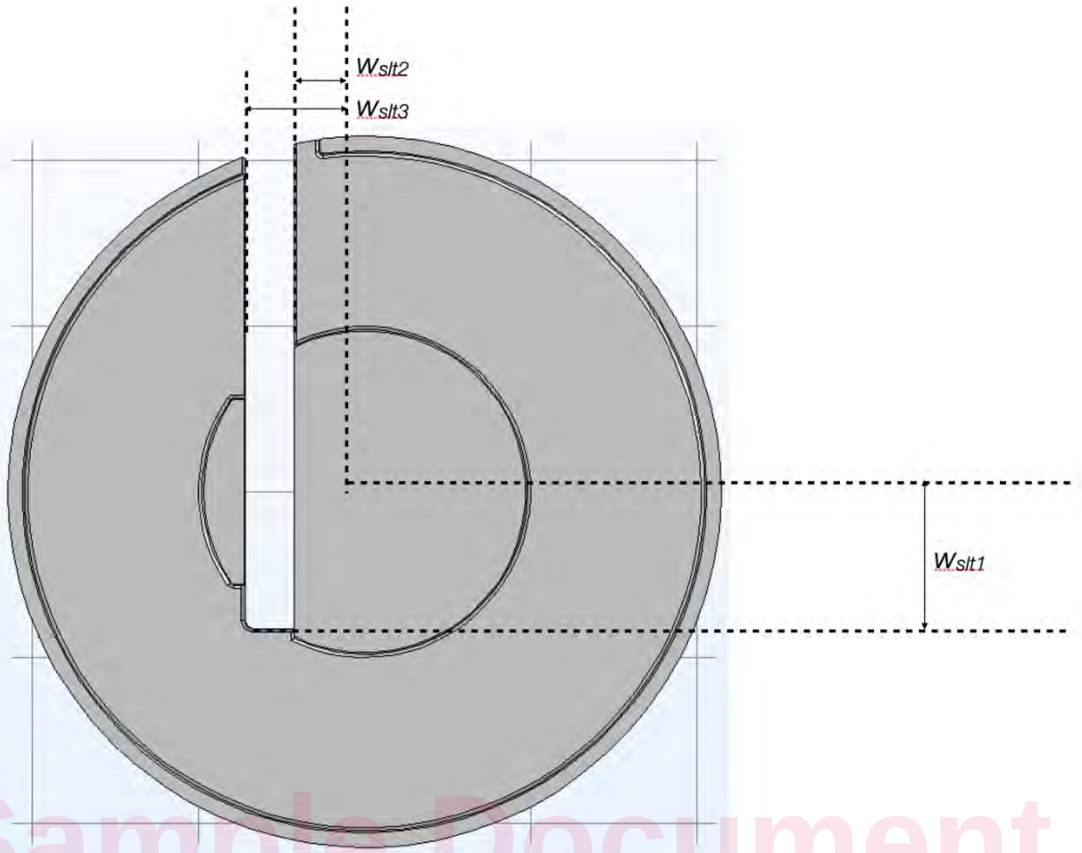


Figure 4 - Side view of PTx Coil Module.



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Figure 5 - Top view of PTx ferrite.

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