



SLOVENSKI STANDARD
oSIST prEN IEC 63563-5:2024
01-julij-2024

Različica specifikacije Qi 2.0 - 5. del: Fizična raven komunikacije (Hitri postopek)

Qi Specification version 2.0 - Part 5: Communications physical layer (Fast track)

iTeh Standards

Ta slovenski standard je istoveten z: **prEN IEC 63563-5:2024**

Document Preview

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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en,fr,de



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SECRETARIAT: Korea, Republic of	SECRETARY: Mr Ockwoo Nam
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 106,TC 108	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING	<input checked="" type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Qi Specification version 2.0 - Part 5: Communications Physical Layer (Fast track)

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NOTE FROM TC/SC OFFICERS:

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Qi Specification

Communications Physical Layer

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Version 2.0

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RELEASE HISTORY

Specification Version	Release Date	Description
v2.0	April 2023	Initial release of the v2.0 Qi Specification.

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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. A first application area comprises flat-surface devices such as mobile phones and chargers in the Baseline Power Profile (up to 5 W) and Extended Power Profile (above 5 W).

1.1 Structure of the Qi Specification

General documents

- Introduction
- Glossary, Acronyms, and Symbols

System description documents

- Mechanical, Thermal, and User Interface
- Power Delivery
- Communications Physical Layer
- Communications Protocol
- Foreign Object Detection
- NFC Tag Protection
- Authentication Protocol

Reference design documents

- Power Transmitter Reference Designs
- Power Receiver Design Examples

Compliance testing documents

- Power Transmitter Test Tools
- Power Receiver Test Tools
- Power Transmitter Compliance Tests
- Power Receiver Compliance Tests

NOTE: The compliance testing documents are restricted and require signing in to the WPC members' website. All other specification documents are available for download on both the WPC public website and the WPC website for members.

1.2 Scope

The *Communications Physical Layer* (this document) defines the low-level (physical layer and the data link layer) formats of data bits, data bytes, and data packets. In addition, it provides requirements and guidelines for load modulation and frequency-shift keying.

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>. In addition, the *Qi Specification* references documents listed below. Documents marked here with an asterisk (*) are restricted and require signing in to the WPC website for members.

- [Product Registration Procedure Web page](#)*
- [Qi Product Registration Manual, Logo Licensee/Manufacturer](#)*
- [Qi Product Registration Manual, Authorized Test Lab](#)*
- [Power Receiver Manufacturer Codes](#),* Wireless Power Consortium
- [The International System of Units \(SI\)](#), Bureau International des Poids et Mesures
- [Verbal forms for expressions of provisions](#), International Electrotechnical Commission

For regulatory information about product safety, emissions, energy efficiency, and use of the frequency spectrum, visit [the regulatory environment](#) page of the WPC members' website.

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.

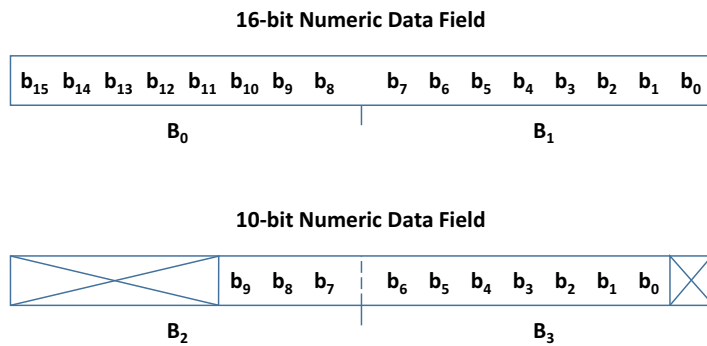
1.5.3 Fields in a data packet

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

	b ₇	b ₆	b ₅	b ₄	b ₃	b ₂	b ₁	b ₀	
B ₀	(msb) 16-bit Numeric Data Field (lsb)								
B ₁									
B ₂	Other Field					(msb)			
B ₃	10-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 field 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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