

# PUBLICLY AVAILABLE SPECIFICATION

## PRE-STANDARD



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**The Qi wireless power transfer system power class 0 specification –  
Parts 1 and 2: Interface Definitions**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## Contents

<b>1</b>	<b>General.....</b>	<b>8</b>
1.1	Introduction.....	8
1.2	Scope.....	8
1.2.1	Current Specification structure (introduced in version 1.2.1).....	8
1.2.2	Earlier Specification structure (version 1.2.0 and below).....	9
1.3	Main features of the Qi Wireless Power Transfer System.....	9
1.4	Conformance and references.....	10
1.4.1	Conformance.....	10
1.4.2	References.....	10
1.5	Definitions.....	11
1.6	Acronyms.....	14
1.7	Symbols.....	16
1.8	Conventions.....	17
1.8.1	Cross references.....	17
1.8.2	Informative text.....	17
1.8.3	Terms in capitals.....	17
1.8.4	Units of physical quantities.....	17
1.8.5	Decimal separator.....	17
1.8.6	Notation of numbers.....	18
1.8.7	Bit ordering in a byte.....	18
1.8.8	Byte numbering.....	18
1.8.9	Multiple-bit fields.....	19
1.9	Operators.....	19
1.9.1	Exclusive-OR.....	19
1.9.2	Concatenation.....	19
1.10	Measurement equipment.....	19

<b>PART 1: Primary Interface Definition .....</b>	<b>20</b>
<b>2 Mechanical interface .....</b>	<b>21</b>
2.1 Power Receiver design requirements (PRx).....	21
2.1.1 Interface Surface .....	21
2.1.2 Alignment Aid .....	21
2.2 Power Transmitter design requirements (PTx).....	22
<b>3 Electromagnetic interface .....</b>	<b>23</b>
3.1 Power Receiver design requirements (PRx).....	23
3.1.1 Dual resonant circuit .....	26
3.1.2 Rectification circuit.....	28
3.1.3 Sensing circuits .....	28
3.1.4 Communications modulator.....	28
3.1.5 Communications demodulator.....	28
3.1.6 Output disconnect .....	28
3.1.7 Meaningful functionality .....	29
3.1.8 Shielding .....	29
3.2 Power Transmitter design requirements (PTx).....	30
3.2.1 Load step and load dump (informative) .....	30
3.2.2 Load step test procedure .....	30
3.2.3 Load dump test procedure .....	32
3.2.4 Power Receiver over-voltage protection.....	35
<b>4 Thermal interface .....</b>	<b>42</b>
4.1 Interface Surface temperature rise.....	42
<b>5 Information interface.....</b>	<b>43</b>
5.1 System Control.....	43
5.1.1 Overview (informative) .....	43
5.1.2 Power Transmitter (PTx) perspective.....	48
5.1.3 Power Receiver (PRx) perspective.....	69
5.1.4 State diagram (informative) .....	83
5.2 Power Receiver to Power Transmitter communications interface.....	84
5.2.1 Introduction.....	84
5.2.2 Physical and data link layers (PRx to PTx).....	84
5.2.3 Logical layer (PRx to PTx).....	89

5.3	Power Transmitter to Power Receiver communications interface.....	104
5.3.1	Introduction.....	104
5.3.2	Physical and data link layers (PTx to PRx).....	104
5.3.3	Logical layer (PTx to PRx).....	110
<b>PART 2: Secondary Interface Definition .....</b>		<b>112</b>
<b>6</b>	<b>External Power Input (Informative).....</b>	<b>113</b>
6.1	Available power—Extended Power Profile only .....	113
<b>7</b>	<b>Power Levels—Extended Power Profile only .....</b>	<b>114</b>
7.1	Guaranteed Power .....	114
7.2	Light load .....	114
<b>8</b>	<b>System Efficiency (Informative).....</b>	<b>115</b>
8.1	Definition .....	115
8.2	Power Transmitter efficiency.....	116
8.2.1	Baseline Power Profile.....	116
8.2.2	Extended Power Profile .....	117
8.3	Power Receiver efficiency.....	118
<b>9</b>	<b>Stand-by Power (Informative).....</b>	<b>119</b>
9.1	Transmitter Measurement Method.....	119
<b>10</b>	<b>Object Detection (Informative) .....</b>	<b>120</b>
10.1	Resonance shift.....	120
10.2	Capacitance change .....	122
<b>11</b>	<b>Foreign Object Detection .....</b>	<b>123</b>
11.1	Introduction .....	123
11.2	Baseline Power Profile without FOD extensions.....	124
11.3	FOD based on quality factor change—FOD extensions .....	125
11.3.1	Q-factor measurement (Informative).....	126
11.3.2	Expected operation (Informative) .....	127
11.3.3	Definition of the Reference Quality Factor .....	128

11.4	FOD based on calibrated power loss accounting—FOD extensions .....	129
11.4.1	Introduction.....	129
11.4.2	Received Power accuracy .....	131
11.4.3	Calibration .....	132
11.5	FOD by Power Receiver (Informative) .....	135
<b>12</b>	<b>Unintentional Magnetic Field Susceptibility (Informative).....</b>	<b>136</b>
12.1	Limits.....	136
12.2	Protection .....	136
12.3	Power Transmitter detection.....	136
<b>13</b>	<b>User Interface .....</b>	<b>137</b>
13.1	User interaction with a Base Station .....	137
13.2	User interaction with a Mobile Device .....	138
<b>Annex A</b>	<b>EMC Standards and Regulations (informative) .....</b>	<b>139</b>
A.1	EMC.....	139
A.1.1	Regulatory obligation .....	139
A.1.2	Product category .....	139
A.1.3	Applicable standards .....	139
A.2	User Exposure to Magnetic Fields (informative) .....	140
A.2.1	Introduction.....	140
A.2.2	Applicable standards .....	140
A.2.3	Measurement method .....	141
A.2.4	Limits (reference levels) .....	141
A.2.5	Intended use.....	145
A.2.6	Application notes.....	145
<b>Annex B</b>	<b>Power Receiver Localization (Informative).....</b>	<b>146</b>
B.1	Guided Positioning.....	146
B.2	Primary Coil array based Free Positioning.....	146
B.2.1	A single Power Receiver covering multiple Primary Cells.....	146
B.2.2	Two Power Receivers covering two adjacent Primary Cells.....	147
B.2.3	Two Power Receivers covering a single Primary Cell .....	148
B.3	Moving Primary Coil based Free Positioning .....	149

B.4	User-assisted positioning.....	151
B.4.1	Example 1 .....	151
B.4.2	Example 2 .....	153
<b>Annex C</b>	<b>Power Receiver design guidelines (informative).....</b>	<b>154</b>
C.1	Large-signal resonance check .....	154
C.2	Power Receiver coil design .....	155
<b>Annex D</b>	<b>Mechanical Design Guidelines (Informative).....</b>	<b>156</b>
D.1	Base Station .....	156
D.2	Mobile Device .....	156
D.3	Base Station Alignment Aid.....	157
D.4	Mobile Device Alignment Aid .....	157
<b>Annex E</b>	<b>History of Changes.....</b>	<b>158</b>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**THE QI WIRELESS POWER TRANSFER SYSTEM  
POWER CLASS 0 SPECIFICATION –**

**Parts 1 and 2: Interface Definitions**

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The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document

Draft PAS	Report on voting
100/2826/PAS	100/2864/RVDPAS

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# 1 General

## 1.1 Introduction

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, designated Power Class 0, is wireless charging of low and medium power devices, such as mobile phones and tablet computers. The Wireless Power Consortium maintains the Qi logo for this application area.

## 1.2 Scope

This document, *Parts 1 and 2: Interface Definitions*, defines the interface between a Power Transmitter and a Power Receiver, i.e. Power Class 0 Base Stations and Mobile Devices. Power Class 0 is the WPC designation for flat-surface devices, such as chargers, mobile phones, tablets, cameras, and battery packs, in the Baseline Power Profile ( $\leq 5$  W) and Extended Power Profile ( $\leq 15$  W).

### 1.2.1 Current Specification structure (introduced in version 1.2.1)

The Qi Wireless Power Transfer System for Power Class 0 Specification consists of the following documents.

- ***Parts 1 and 2: Interface Definitions*** (this document)
  - *Part 1: Primary Interface Definition*
  - *Part 2: Secondary Interface Definition*
- *Part 3: Compliance Testing*
- *Part 4: Reference Designs*

NOTE WPC publications prior to version 1.2.1 were structured differently, and are listed in Section 1.2.2 below. In particular, the Low Power and Medium Power publications were divided into separate System Description documents. Beginning with version 1.2.1, the Low Power and Medium Power System Descriptions have been merged into the Specification structure shown in this section. Additionally, the terms *Low Power* and *Medium Power* have been replaced in the current Specification by the terms *Baseline Power Profile* and *Extended Power Profile* respectively.



### **1.2.2 Earlier Specification structure (version 1.2.0 and below)**

Before release 1.2.1, the Wireless Power Transfer specification comprised the following documents.

- System Description, Wireless Power Transfer, Volume I: Low Power, Part 1: Interface Definition.
- System Description, Wireless Power Transfer, Volume I: Low Power, Part 2: Performance Requirements.
- System Description, Wireless Power Transfer, Volume I: Low Power, Part 3: Compliance Testing.
- System Description, Qi Wireless Power Transfer, Volume II: Medium Power.

## **1.3 Main features of the Qi Wireless Power Transfer System**

- A method of contactless power transfer from a Base Station to a Mobile Device that is based on near-field magnetic induction between coils.
- A Baseline Power Profile supporting transfer of up to about 5 W and an Extended Power Profile supporting transfer of up to about 15 W of power using an appropriate Secondary Coil (having a typical outer dimension of around 40 mm).
- Operation at frequencies in the 87...205 kHz range.
- Support for two methods of placing the Mobile Device on the surface of the Base Station:
  - Guided Positioning helps a user to properly place the Mobile Device on the surface of a Base Station. The Base Station provides power through a single or a few fixed locations on that surface.
  - Free Positioning enables arbitrary placement of the Mobile Device on the surface of a Base Station. The Base Station can provide power through any location on that surface.
- A simple communications protocol enabling the Mobile Device to take full control of the power transfer.
- Considerable design flexibility for integration of the system into a Mobile Device.
- Very low stand-by power is achievable (implementation dependent).

## 1.4 Conformance and references

### 1.4.1 Conformance

All provisions in The Qi Wireless Power Transfer System, Power Class 0 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 Annex H of ISO/IEC Directives, Part 2. For clarity, the word “**shall**” indicates a requirement that is to be followed strictly in order to conform to The Qi Wireless Power Transfer System, Power Class 0 Specification, and from which no deviation is permitted. The word “**should**” indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that in the negative form a certain possibility or course of action is deprecated but not prohibited. The word “**may**” indicates a course of action permissible within the limits of The Qi Wireless Power Transfer System, Power Class 0 Specification. The word “**can**” indicates a possibility or capability, whether material, physical, or causal.

### 1.4.2 References

For undated references, the most recently published Specification applies. The most recent WPC publications can be downloaded from <http://www.wirelesspowerconsortium.com>. (See Section 1.2.1 for a list of documents included in The Qi Wireless Power Transfer System for Power Class 0 Specification.) In addition, the following documents are referenced within The Qi Wireless Power Transfer System for Power Class 0 Specification.

- Product Registration Procedure Web page (WPC Web site for members, Testing & Registration section)
- 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