



MODEL NO : WTM1C10 Transmitter of WPC QI BPP
Product name : WTM1C10
ENGINEERING SPECIFICATION SHEET

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Purpose: This specification document represents the design criteria of the product identified herein, for the approval of the designated recipient (customer). Prior to production and delivery of this product by CWT, the customer shall endorse its approval of this specification document, upon review of the detailed information provided herein. The customer’s endorsement (approval) verifies that the product description is determined to be fully compliant to the customer’s design requirements. If one or more samples are included with this specification, the customer’s endorsement (approval) further verifies that the product has been tested by the customer, for which the product satisfactorily meets all aesthetic, mechanical, electrical, and operating requirements for its intended usage with the customer’s suitable indoor equipment or applications.

To Approve: An authorized employee or agent of the customer shall endorse approval of this specification. Please sign & date this cover-page, and initial each subsequent page in the lower left corner to signify all sections have been read and found to be acceptable. A completed, original copy (signed, dated, initialed) of this specification must be returned to CWT to record the approved customer design. The customer shall keep one or more copies for its records. Upon receipt, CWT shall manufacture the product to the approved customer design. If design revisions are otherwise required, a revised specification and/or modified samples shall be provided by CWT for the endorsement (approval) by the customer.

Approved

Customer Signed

Issued	Checked	Planned
Leo Chen		Dylan Ou

Channel Well Technology Co., Ltd.

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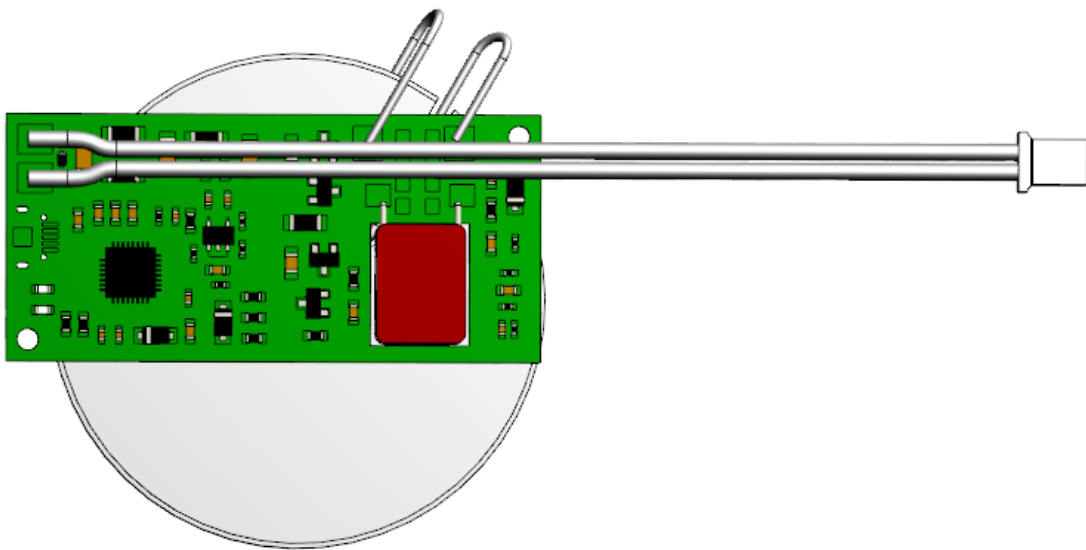


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1 SCOPE

This document describes the basic electrical characteristics of WTM1C10 wireless power transmitter module. WTM1C10 is designed based on the technology of electromagnetic induction.

It is a widely used module for many different applications. This is a new concept of charging devices without any wires and cords.



1.1 GENERAL DESCRIPTION

WTM1C10 is a Wireless Power Consortium (WPC) Qi 1.2.4 compatible wireless power transmitter module. This transmitter module is Qi certified and can function with devices compatible to Qi standard. This excellent and highly integrated transmitter module is using magnetic induction process technology with stable performance and high reliability. This specification defines the performance characteristics (include electrical function, EMC, safety, and product test requirements and so on) of a internal signal coil wireless charger (transmitter), which provide configurable charging mode to support WPC Qi 1.2.4 standard.

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2 ELECTRICAL SPECIFICATION

2.1 DESIGN STANDARDS

WTM1C10 with follow WPC QI Wireless Power Transfer System Power Class 0 Specification Power Transmitter A11a.

2.2 INPUT REQUIREMENT

The power supply must operate on a DC input voltage 9V with $\pm 5\%$ tolerance. Input current should lower than 2A.

Input Range	Minimum	Nominal	Maximum	Unit
9V	8.55	9	9.45	Vdc

Table 1 - Input Voltage Range

2.3 OUTPUT REQUIREMENT

The wireless charger can support WPC qi V1.2.4 BPP 5W , downward support BPP 5W, Apple 7.5W, Samsung Fast Charge.

2.4 NO LOAD CONSUMPTION

Vin	Load	Power consumption
9V	No Receiver	< 0.15W

Table 2 - No load consumption

2.5 EFFICIENCY

The efficiency shall be >70% at 9V maximum loading, 5V/1A efficiency measurements are performed at coil center with 2mm vertical distance between TX coil and RX coil.

Vin	Load	Efficiency	Receiver
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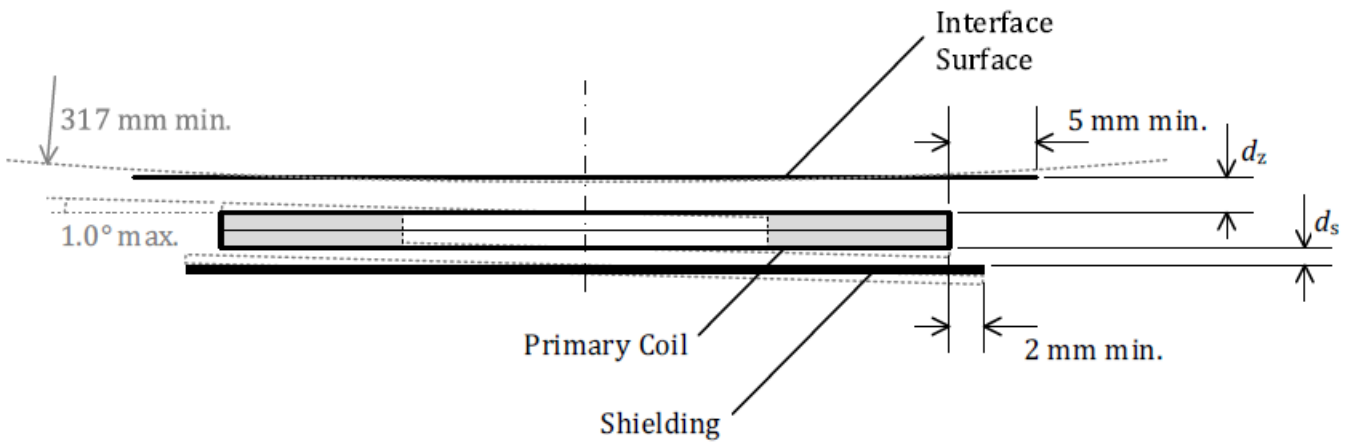
9V	5W	70%	IDT P9225

Table 3 - Efficiency

2.6 FREQUENCY

The operating frequency is 110~148±5 kHz.

2.7 INTERFACE SURFACE



2.7.1 DISTANCE

Distance from the Primary Coil to the Interface Surface of the Base Station is $d_z = 2.0 \pm 0.5$ mm across the top face of the Primary Coil.

2.7.2 WITHOUT METAL

The Interface Surface of the Base Station extends at least 5.0 mm beyond the outer dimensions of the Primary Coil.

2.8 LED INDICATE

LED*/Color	Standby	Transfer	Charge Complete	Fault Condition
LED1-Red	OFF	OFF	OFF	Blink 4Hz
LED2-Blue	OFF	ON	ON	OFF

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Table 4 - LED indicate

3 ENVIRONMENTAL SPECIFICATION

3.1 COOLING

Natural Air Cooling

3.2 TEMPERATURE

Operation within specification: -10 to 50 degrees C.

Storage: -20 to 85 degrees C

3.3 HUMIDITY

Operation: 10% to 85% relative humidity, non-condensation.

Storage: 10% to 85% relative humidity, including condensation.

3.4 CALCULATED MEAN TIME BETWEEN FAILURES (MTBF)

Wireless charging module shall have a calculated MTBF of greater than 400,000 hours, calculated utilizing MIL-HDBK-217F with the following assumptions:

Output load: Rated full load

Ambient temperature: 25 degrees C

3.5 WEIGHT

<70g

4 REGULATORY COMPLIANCE

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4.1 EMC SPECIFICATION

4.1.1 FCC REQUIREMENTS

WTM1C10 shall comply with the radiated and conducted emission requirements for FCC Part 15 Class B.

4.1.2 CISPR REQUIREMENTS

WTM1C10 shall comply with the radiated and conducted emission requirements for CISPR 22 Class B.

4.2 AGENCIES CERTIFICATIONS

The WTM1C10 is designed to meet Comply to WPC QI V1.2.4 BPP compliance testing, and will also be tested by the relevant verification unit

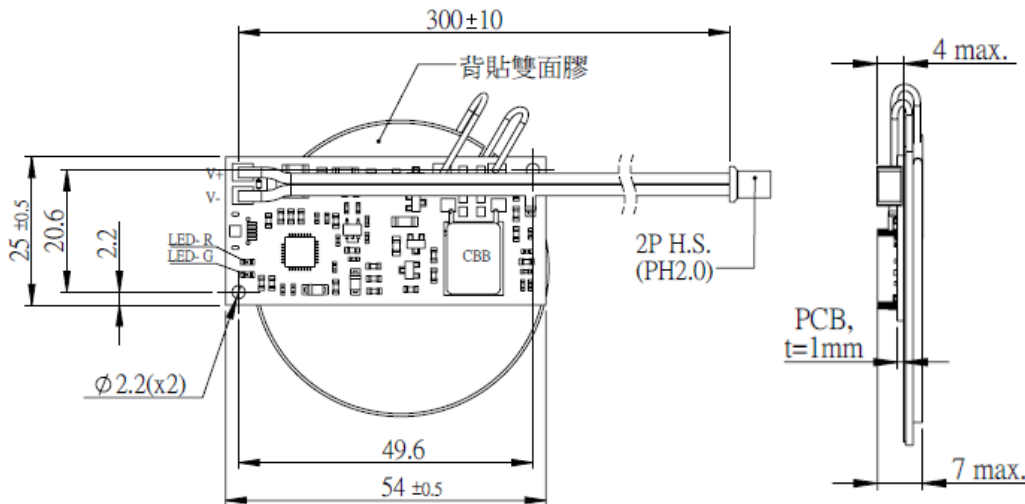
4.2.1 PRODUCT SAFETY COMPLIANCE

Certification	Certification
FCC(option)	CE(option)
NCC(option)	BSMI(option)
	WPC QI BPP(option)

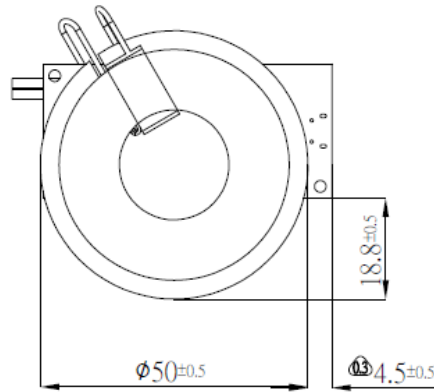
Table 5 - safety compliance

5 MECHANICAL

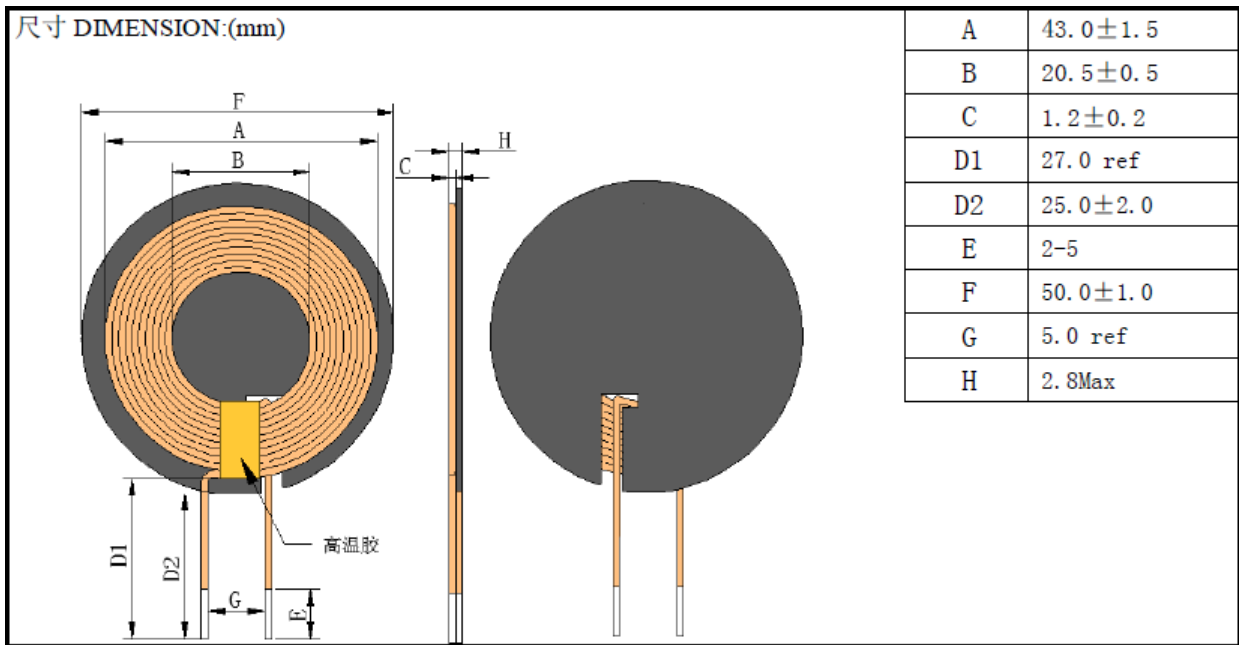
Refer to drawing



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FCC

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC/IC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
 2. This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 15 cm between the radiator and your body.
1. Cet émetteur ne doit pas être situé au même endroit ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.
 2. Cet équipement est conforme aux limites d'exposition aux rayonnements IC définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 15 cm entre le radiateur et votre corps.

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