

Model: DCM-XX-WXC-V1

Size: 100×60×12mm

	Approved	Reviewed	Prepared
signature block			
Date			

Version History

Release	dates	PCB Version	Description	note
V0	June 8, 2022	DC-XX-WXC(MXS)-V0.2	First edition.	
V0.1	May 19, 2023	DC-XX-WXC(MXS)-V0.2	standardized naming.	

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Chapter1 Overview

1. Scope of application

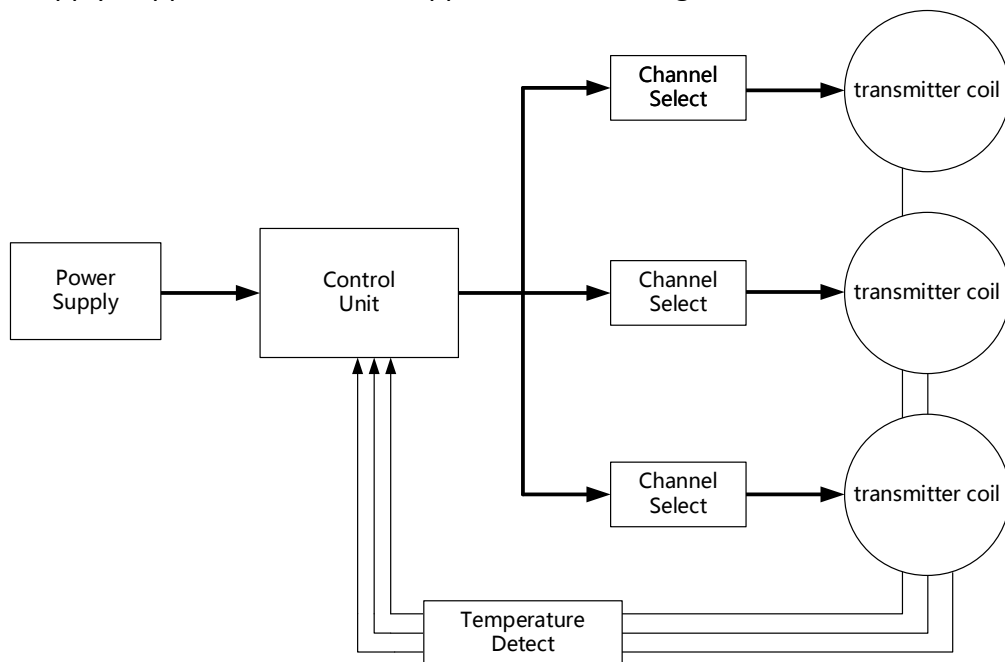
The wireless charging module is composed of a single-chip, highly integrated solution, which mainly provides wireless charging function for peripherals that support wireless charging.

The module is three-coil scheme design, which can improve the problem of poor charging effect caused by the positional offset between the charging coil and the device. At the same time, it is simple to use and only requires external DC power supply to work without other control or communication control.

2. General Introduction

This wireless charging module consists of a control board and a transmitting coil as shown below.

DC12V power supply, support standard 5W, Apple 7.5W, Samsung 10W/15W and other charging power.

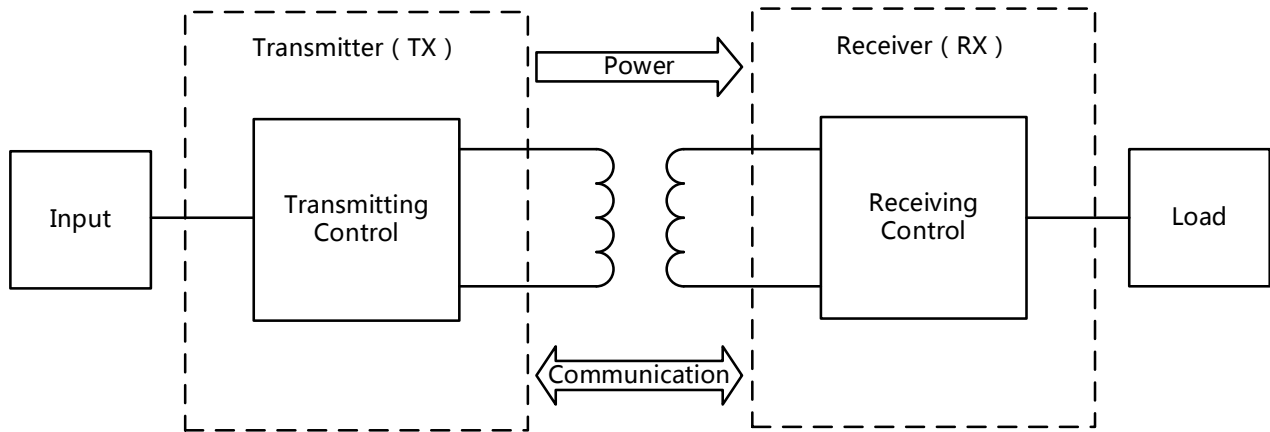


3. Theory of Operation

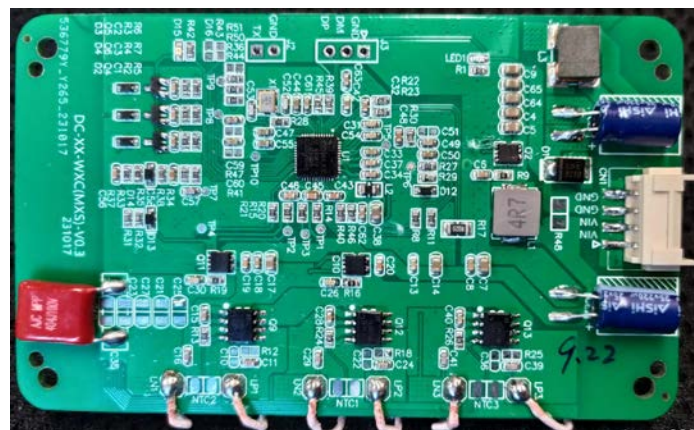
The wireless power system uses magnetic induction to transfer power from a power transmitter (Tx) to a power receiver(Rx).

Before power transfer begins, the Rx and Tx communicate with each other to establish that the Rx is indeed capable of power receiving, whether it needs power transfer, how much power is required. etc. In short, the communication ensures an appropriate power transfer from the power transmitter to the power receiver.

When power transfer begins, the power transmitter runs an alternating electrical current through its coil(s), which generates an alternating magnetic field in accordance with Faraday's law. Varying electric field generates varying magnetic field; varying magnetic field generates varying electric field. Therefore the power transfer is achieved.



4. Appearance and interface layout



Chapter2 Specifications

1. Module Configuration

No.	Content	Quantities	Note
1	Wireless Charging Module control board	1	Support EPP
2	Wireless Charging coil	3	

2. Interface Definition

Power (CN1): HX25037-WAP(2.5mm pitch, right angle 4pin with latch), or compatible.

No.	Content	Note
1	12V	DC 12V, power supply
2	12V	DC 12V, power supply
3	GND	Ground
4	GND	Ground

3. Electrical specifications

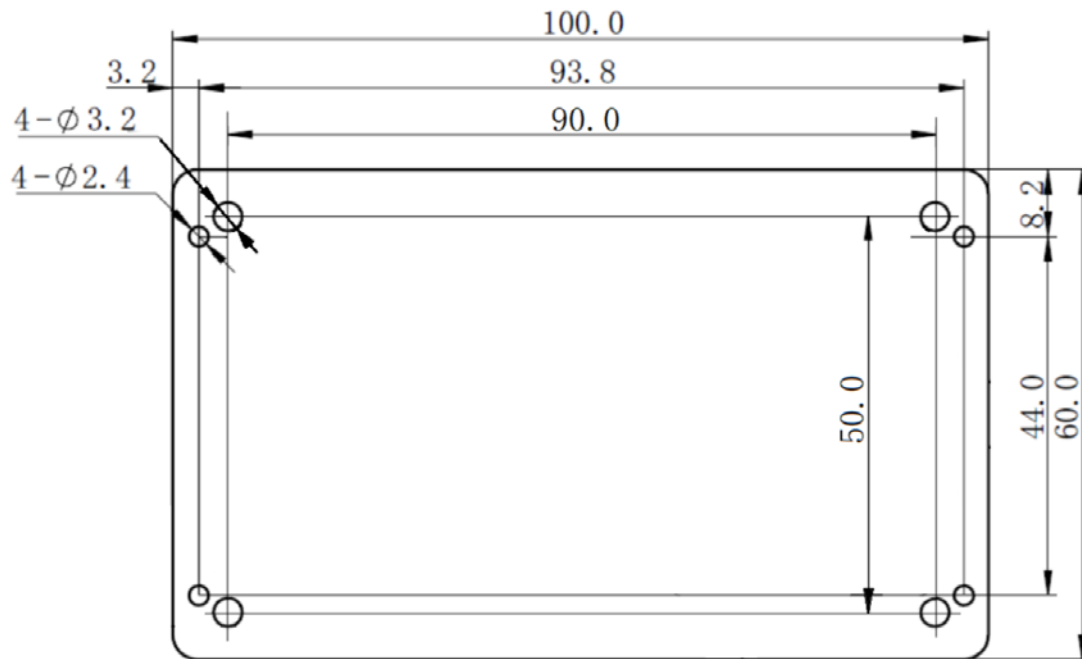
Rated Working Voltage:	DC12±0.5V
Working current:	0-2A
Working frequency:	111-148kHz
Working Mode:	Voltage Regulation Mode
Operating Temperature Range:	-20~60℃

4. Overall dimensions

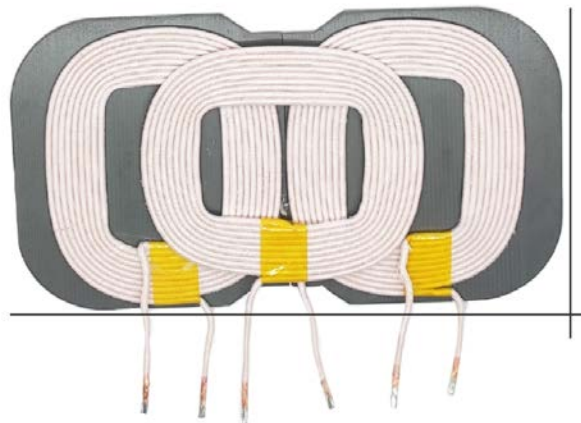
1) control board

100mm×60mm×12mm (with pins, without coil) .

There are four $\phi 3.2\text{mm}$ screw holes and four $\phi 2.4\text{mm}$ positioning holes at the corners of PCB.



2) Charging coil



(93×51.5×3.8mm)

5. Instructions for use

The wireless charging module requires an external 12V DC power supply to operate. To ensure that the module can work reliably and adapt to the maximum power output, the 12V DC power supply should ensure an output capacity of not less than 2A.

When in use, the distance between the coil and the peripheral is kept within the range of 3-6mm to keep the module in the best working condition. Within this range, there can be no other metal objects except the coil and peripherals.

When fixing the coil, you can use flame retardant type foam with adhesive to fix it on the side of the magnetic sheet, and then paste it to fix it inside the product. Do not use metal parts to fix the coil directly.

When the module is installed in the host, the corresponding shielding layer needs to be added to meet the risk of electromagnetic leakage.

The current module RF exposure test is a stand alone, and there may be a greater risk of electromagnetic leakage after installation on the host. This requires the attention of the host manufacturer.

6. Additional Testing and Evaluation for Host Product

The module is a limited module and complies with the requirement of FCC Part 15.207 and 15.209.

According to FCC Part 15 Subpart C section 15.212 (a) (1) (i), the radio elements must have their own shielding. However, due to there is no shielding for this module, this module is granted as a Limited Modular Approval.

A Class II Permissive Change certification is required for new host product application. Only Grantees are permitted to make permissive changes. Please contact us for further process with IMPULSE(QINGDAO) HEALTHTECH LTD.

The OEM integrators should follow the following C2PC test plan, based on Module RF test report No.: CTC20231864E02, CTC20231864E03 under FCC ID: 2BDAZ-DCM-XX-WXC-V1.

For the host product installed this module exactly according to this guide, and did not make any hardware and/or software modifications to the module or modified the software but does not affect the radio characteristics, the host product will need to evaluate according to FCC Part 15 Subpart C §15.207 and 15.209 for WPS:

- a. Maximum filed strength of fundamental.
- b. Radiated spurious emissions from 9 kHz to 1GHz with the other co-located transmitters (if applicable).

The host product shall be evaluated for ensuring the continuous compliance for the FCC rules that apply to the host product. Additional guidance for testing host products is provided in KDB Publication 996369 D02 and D04. This module was tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host product. The host will still need to be reassessed for compliance to this portion of rule requirements.

For the host product is not installed according to this guide, the module certification will be invalid and a new grant certification will be required for the host product.

FCC Statements

This device complies with part 15 of the FCC Rules. 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording

such as the following: "Contains Transmitter Module FCC ID: 2BDAZ-DCM-XX-WXC-V1 Or Contains FCC ID: 2BDAZ-DCM-XX-WXC-V1"

When the module is installed inside another device, the user manual of this device must contain below warning statements:

1. This device complies with Part 15 of the FCC Rules. 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.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

The end user manual shall include all required regulatory information/warning as shown in this manual.

When the module is installed in the host, a Class II Permissive Change should be done due to the RF exposure condition change.

The host manufacturer should conduct Radial Spurious Emissions testing according to FCC 15.209 and RF exposure testing according to FCC Part 1.1310