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Product Specification

Version number:
HT001-20211110-Magnetic-15W

Customer Name: _____

Product model: CX-01 _____

Product type: Wireless charger (15W) _____

Proposed	Auditing	Approval

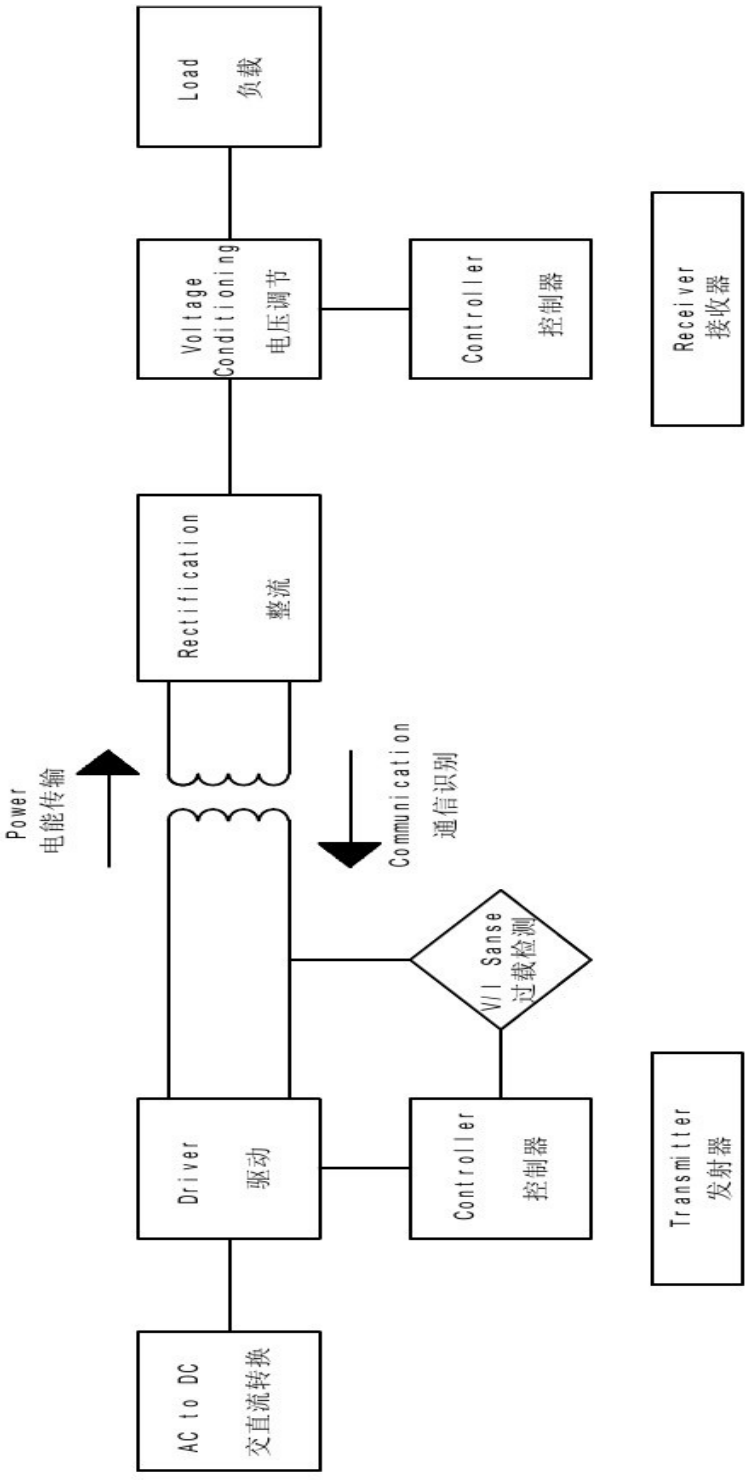
Modify History

Modify content	Participants	version	modification date
Initial Release	**Wei Guowei**	**V1.0**	**November 10, 2021**

After the document is approved for editing, it is necessary to indicate the modified item number and content. The annotation method is: new added item N+added item+brief content
Modified item M+modified item+brief content

catalogue

1 Typical electromagnetic induction wireless charging composition diagram



2 Function Description and Usage

2.1 Wireless charging function description

This product realizes short distance small power radio energy transmission through magnetic induction, and is suitable for charging and powering mobile phones, GPS, MP3, fire fighting, waterproof light small power digital products. This product belongs to QI standard wireless charger. It is necessary to use a wireless charging transmitter that matches it in order to use it on this product.

2.2 Wireless charging supports mobile phone models

brand	model
Samsung	S20/20+ Note10/10+5GS10/10+ S9/9+ S8/8+ Note9 Note8 .....
Huawei	P40Pro+ P30ProMate30Mate30Pro Mate30RsMate20ProMate20Rs
apple	IP14iP13iP12 IP11
millet	Xiaomi 10/10Pro Xiaomi 9/9Pro Xiaomi Mix3 Xiaomi Mix2s

2.3 Working sequence and testing method of transmitter indicator light

Test method: Align the center position of the transmitting coil of the wireless charging transmitter with the center position of the receiving coil of the wireless charging receiver, and place a 4mm thick organic glass plate in the middle for isolation and load testing. The wireless charging distance cited in this report is the most ideal charging distance determined by the load output, and the larger the distance, the lower the load output efficiency.

3. Electrical parameters of the transmitting end

3.1 Maximum rated value

parameter	symbol	Rated value	unit
Working environment temperature	Ta	-40 to+85	° C
Storage temperature	Tstg	-65 to+150	° C
Storage	Tstr	<95%	RH

3.2 Transmitting end performance

Test conditions: ambient temperature 25° C

	Test conditions	Rated value	minimum value	Maximum value	unit
Power consumption in standby mode	Vcc=9V	110	80	130	MW
working frequency	Adjusting load and distance	/	110	205	KHz
9V output transmission efficiency	1.66A	82	79	85	%
working voltage	10W output	9	9	9.5	V
working voltage	15W output	9	9	9.5	V
output power	Quick mode	15	5	15	W
Working distance	Bq51013xEVM testing	4	1	8	Mm
Overvoltage protection	Adjust input	/	4.0	/	V
Software overcurrent protection	9V input adjustment load output	/	/	2.1	A

3.3 Transmitting end protection measures

Overcurrent protection	Automatically adjust the power when the current exceeds 2.1 A to prevent burning of components and products
Overvoltage protection	If the input voltage is too high, the power will be automatically adjusted.
Undervoltage	Stop charging when the input voltage is below 4.0V.

protecti on	
Short circuit protecti on	If a short circuit occurs, it will automatically stop working.
Foreign object protecti on	If foreign objects are found in the charging position, stop working.
Overcha rge protecti on	Switch to trickle low current mode when fully charged to prevent damage to the phone due to overcharging

3.4 Test equipment parameter specifications
adjustable power supply: Zhaoxin 305D
electronic load tester: IT8511A+
Wireless charging receiver: intelligent wireless charging full function testing module

3.5 Receiving end placement offset description

The receiving coil is placed at a distance of ±2mm away from the center point of the transmitting coil, and it automatically shuts off when the distance exceeds. The load is lifted and then placed (with an interval of 5 seconds), and the device is reconnected and enters the charging state; The higher the partition, the smaller the deviation distance, and the larger the deviation distance, the lower the charging efficiency.

3.6 Automatic protection function description

When the transmitter detects that the output voltage and current of the load connected to it are too high (the voltage and current exceed the rated output value), the PD protocol automatically adjusts the output power of the transmitter and receiver.

4 Climatic condition specifications

4.1 climatic conditions

Working temperature: 0℃~40℃

Working humidity: 10%~80%

(without water vapor

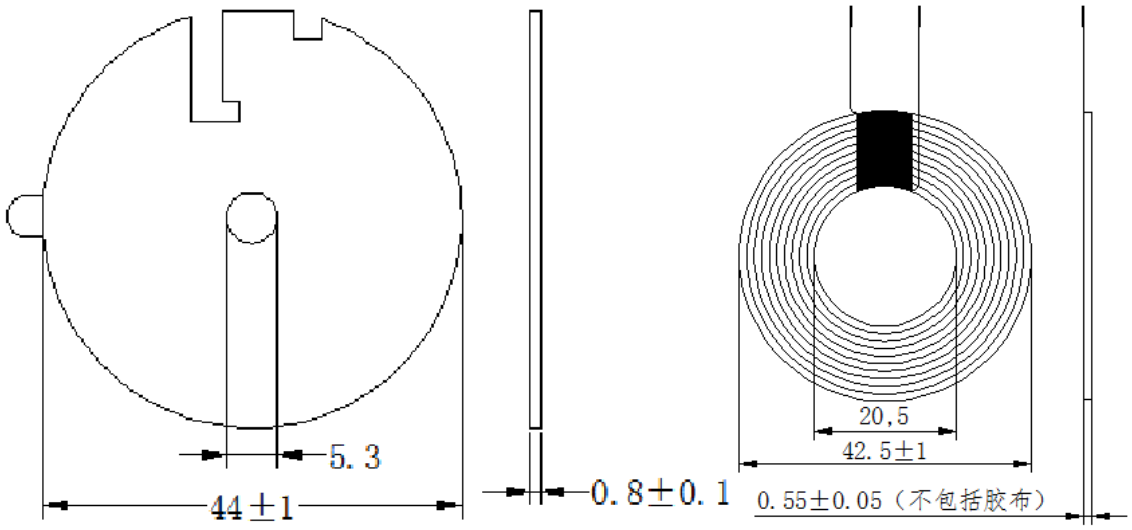
condensation) Storage

temperature: -20℃~70℃

4.2 Heat dissipation conditions

The product is completely enclosed and naturally cooled to ensure the normal operation of the equipment.

5. External dimensions of transmission coil (unit: mm)

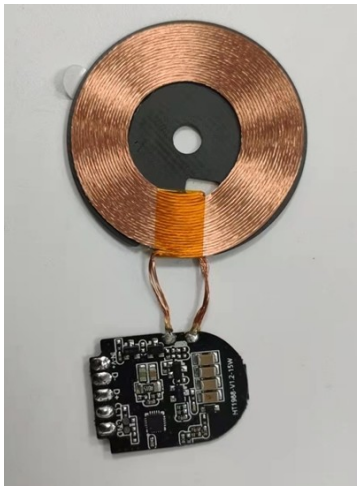


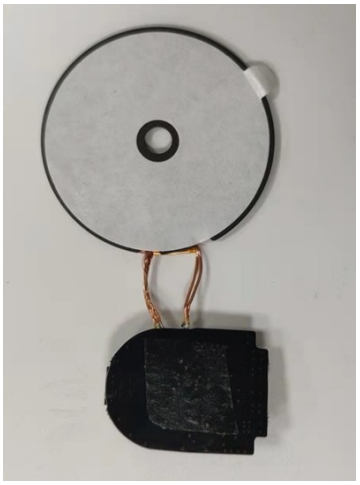
5.1 Electrical characteristics:

Temperature:25±10°C,Humidity:65±20%

Serial number NO	project ITEM	terminal Terminnal	standard Specification	Test conditions TEST FREQUENCY	Testing instruments TEST EQUIPMENTS
1	IND	S-F	Coil: 3.6UH±10%	1kHz/1V	LCZ Meter 1062
2	IND	S-F	Coil with magnetic disc: 6.77UH±5%	1kHz/1V	LCZ Meter 1062

6. Structural dimension diagram and physical drawing of transmitter PCBA

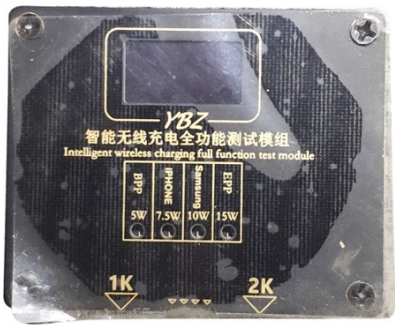
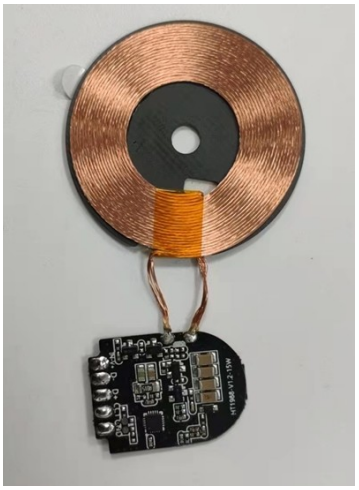
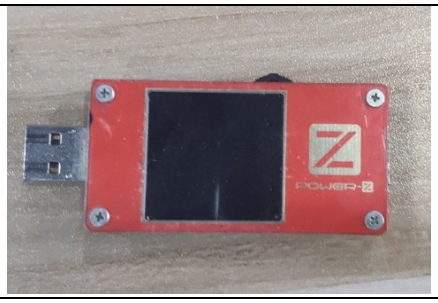




PCBA specifications	Coil specifications
Length28.75mm*Width21.4mm*1.8mm Greenoil/Blackoil	Diameter44mm*Height1.4mm* Leadlength15mm

7. Attached Table<<Engineering Prototype Electrical Performance Test Report>>

7.1 RX combined with TX test sample diagram

Test fixture	Tested sample
	
	

7.2 Wireless transmitter performance conversion test

Note: The power input in the table below refers to the voltage from the TX end to the board, and the distance from the TX coil surface to the RX coil surface partition is 4mm, which is the test data obtained

	TX			RX			October 11, 2020		
Sample number	Power supply In	Power supply Flow	Emission work Rate (W)	Receiving electricity Pressure (V)	Receiving electricity Flow	Receiving power Rate (W)	Working temperature Deg(C)	Conversion efficiency Rate (%)	7.3 Physical compatibility testing
1	9.1	2.01	18.291	9	1.66	14.94	25	81.7	

try

Compatibility model	input voltage (V)	Input current (A)	Does it interfere with phone operation, such as the accuracy and sensitivity of the touch screen	Does it interfere with the phone's backlight and screen display, such as screen flashing, water ripple, etc	Does it interfere with the hand Machine video playback and other functions, such as current sound, noise, playback not streaming Smooth, flickering screen etc.	conclusion
Apple12	9.02	1.08	Okay	Okay	Okay	Okay

AppleX	9.02	0.75	Okay	Okay	Okay	Okay
Samsung NOTE10	9.03	1.2	Okay	Okay	Okay	Okay
Xiaomi 9	9.08	1.45	Okay	Okay	Okay	Okay
LG v40	9.1	1.2	Okay	Okay	Okay	Okay
Huawei P30pro	9.1	1.36	Okay	Okay	Okay	Okay

7.4 Charging height distance test

Testing tool: electronic load tester+intelligent wireless charging full function testing module

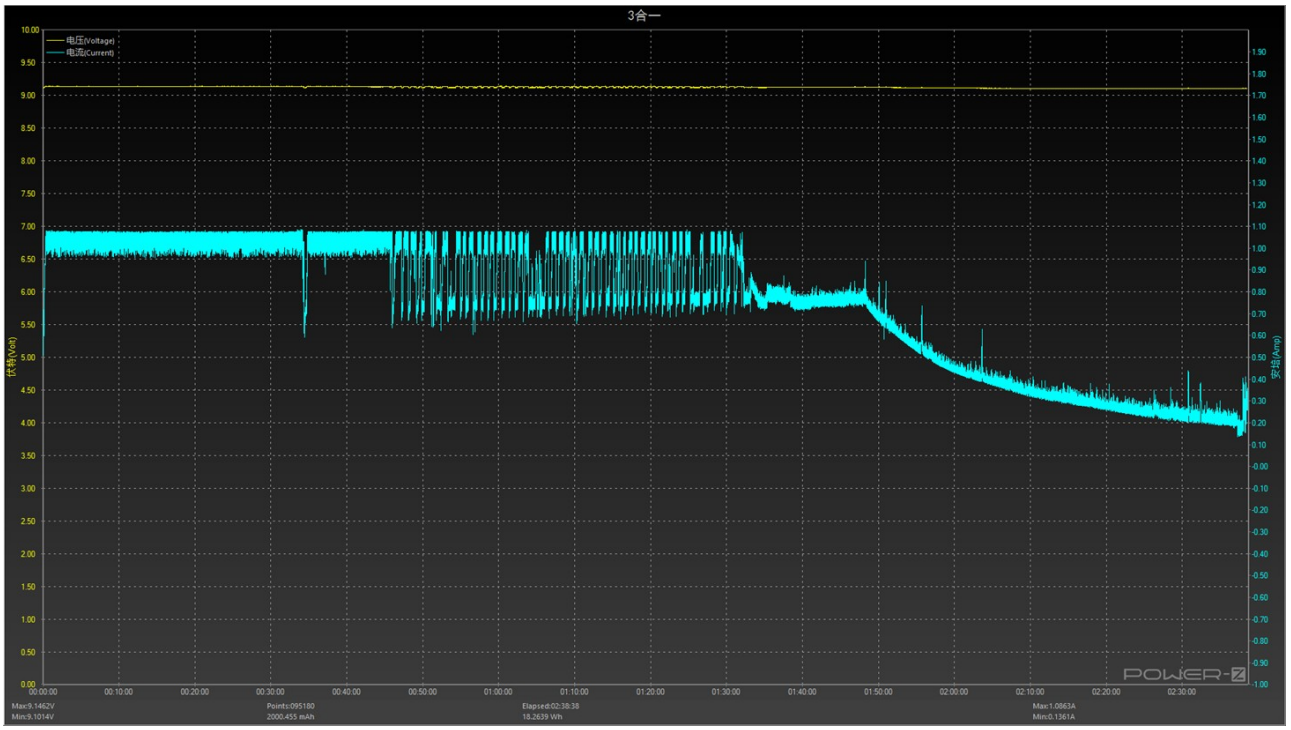
Test condition standards	Partition thickness (mm)	input voltage (V)	Input current (A)	30 minutes	90 minutes	150 points clock	conclusion
The standard distance is 1mm to 4mm, and it works normally within the effective range, and there should be no leakage Obvious phenomena such as smoke and burning out	1	Voltage to board end 9.1V	2.1	Okay	Okay	Okay	Okay
	2	Voltage to board end 9.1V	2.1	Okay	Okay	Okay	Okay
	3	Voltage to board end 9.1V	2.05	Okay	Okay	Okay	Okay
	4	Voltage to board end 9.1V	2.0	Okay	Okay	Okay	Okay

7.5 Charging test

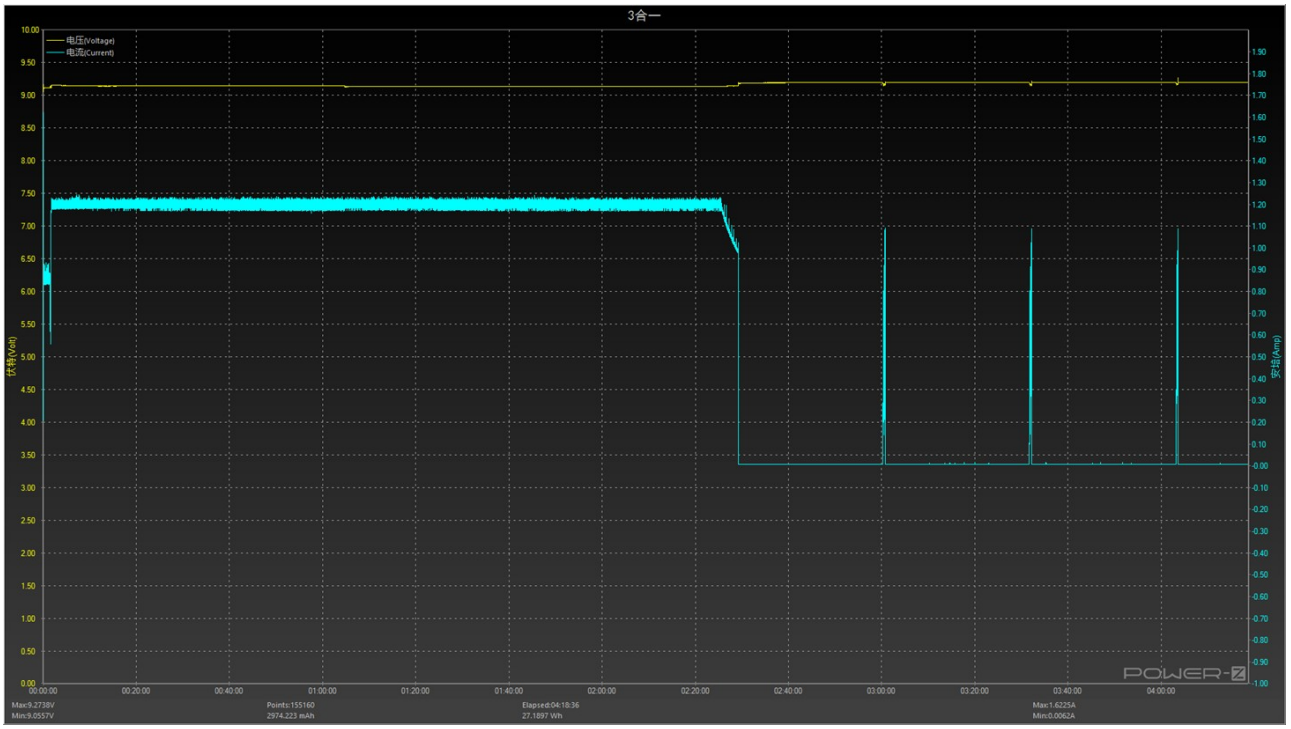
Test conditions: constant temperature 23±1 degrees, DC-9V as power input, distance between PCBA and mobile phone 2mm, parameters are as follows:

(Note: The following data is for reference only. The charging duration of a mobile phone has a significant impact on its own battery capacity, charging power, and environmental temperature.)

Iphone12: The phone's battery level ranges from 0% to 100%, taking 2 hours and 40 minutes to fully charge:



Samsung S20: Mobile phone charge ranges from 0% to 100%, takes 2 hours and 32 minutes to fully charge:



7.7 Aging test

Note: Use an aging test fixture as a load simulation tool to maintain a thickness of about 4mm on the coil surface partition between TX and RX ends. Simulate actual application for aging the TX end, and there should be no abnormal phenomena such as damage, smoke, or odor during aging. It is recommended that the minimum aging time should not be less than 2 hours.

Sample number	input voltage (V)	Input current (A)	Load voltage (V)	Output current (A)	4 hours	8 hours	16 hours
1	Voltage to board end 9.1V	2.1	9	1.66	Okay	Okay	Okay
2	Voltage to board end	2.05	9	1.66	Okay	Okay	Okay

8 CX-01 product sheet图

8.1 Product图

Product	

On the	

8.2 Product specifications and parameters

Serial number	project	content
1	input	5V-3A/9V-2.22A
2	output power	5W/7.5W/10W/15W
3	Product size	56 * 56 * 5.3MM
4	material	Aluminum alloy bottom shell+PC cover
5	colour	Silver white
6	Protection function	Overcurrent protection, overvoltage protection, short circuit protection, foreign object detection protection
7	compatibility	Compatible with supporting qi with wireless charging devices
8	Net weight	
9	Input Port	USB-C

9 Mechanical characteristics of CX-01 product

9.1 Appearance requirements

The appearance should be free of defects such as breakage, scars, cracks, glue marks,

stains, etc. The label handwriting should be clear and free of omissions. The handwriting cannot be erased using organic solvents such as alcohol, and the plug should not rust again. The structural dimensions should meet the requirements of the design drawings.

9.2 Product Material

material	material quality
PCBA	HT1988
Surface shell	PC
Bottom shell	aluminium alloy
magnet	N40 Double Pinned Four Group Magnetic Rings
wire rod	1M
port	Type-C
assemble	Complete machine assembly

10.1 Neutral packaging:图

10.2 Packaging list:

Packaging List	Packaging color box * 1
	Cardboard sleeve tray * 1
	Instructions * 1
	Magnetic suction wireless charging body * 1

Blank below