

YULIN TECH CO., LTD

Specification

Model	WTM-H005
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Version 06 2021.06.16

Customer Approval

Approved	Checked by Sales Dept.	Standard Checked	Checked by Technical Dept.	Prepared

Revision History

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1. Caution

- 1.1.Product Name: For Wireless Charging PCBA,model is :WTM-H005
- 1.2.Storage: avoid storing the Pad in high temperature, heavy wet and dusty place.
- 1.3.Handling: avoid extra force to cause the distortion of the Wireless Charging PCBA when handling.
- 1.4.Storage and operating environment of mechanism should not contain corrosive liquid and gases (e.g. H₂S,SO₂, NO₂, Cl₂, etc.) and materials can emit harmful gases (e.g. silicic, cyanic, formalin, phenol group, sulfide, phosphide, etc.). Other materials can emit gases should be used carefully. The liquid and gases may harm the parts of the Wireless Charging PCBA.

2. Scope

- 2.1.This specification applies to Wireless Charging PCBA. . .
- 2.2.Any query over the specification should be expressed by R&D dept. of YULIN TECH CO.,LTD.
- 2.3.Components or manufacturing process may be subject to change within the specification for improvement.
- 2.4.Always use the loaders within conditions given in the specification.
- 2.5.Make sure that a finished product containing the loader is in compliance with the rules and regulations for spurious radiation.

3. Features

- 3.1.PCBA Outline dimensions: 31.0(mm) X 24.9(mm); Coil Outline dimensions:Ø50.0 X H 3.5(mm);
- 3.2.Operation conditions: Applied to commonly operation conditions.
 - (1) Operation Temperature Range : 0℃~50℃.
 - (2) Storage Temperature Range: -10℃~60℃.
- 3.3.List of Patch main electric parts

Items	Specification
Coil	A11
Main IC	Main IC YULIN

4. Condition of Performance Evaluation

- 4.1.Environment of Evaluation:

Temperature: 25±2℃

Humidity: 60±5% (RH)

We can adopt the following temperature & humidity range, if it occurs no doubt about the Judgment:

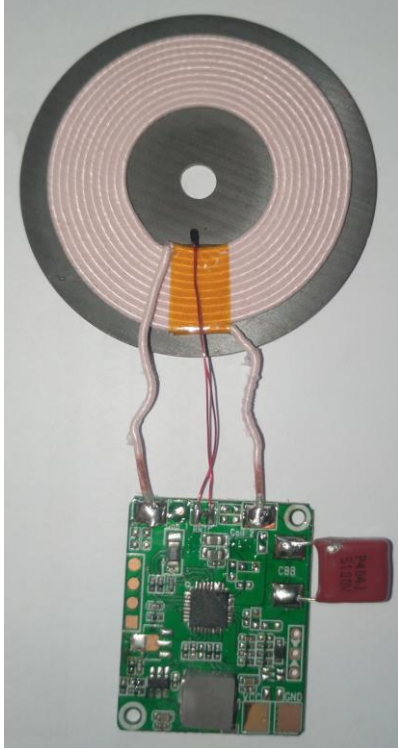
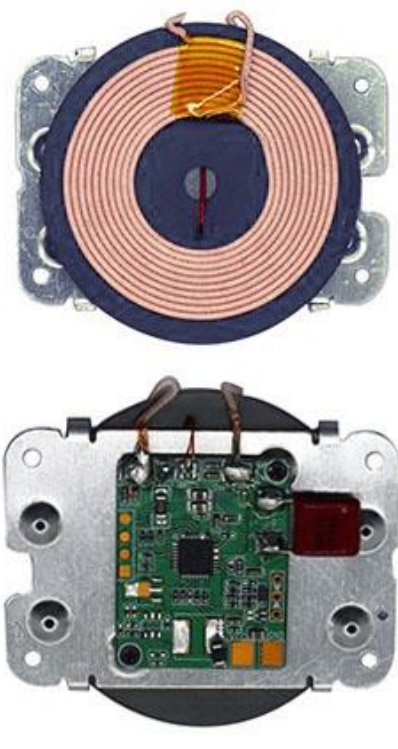
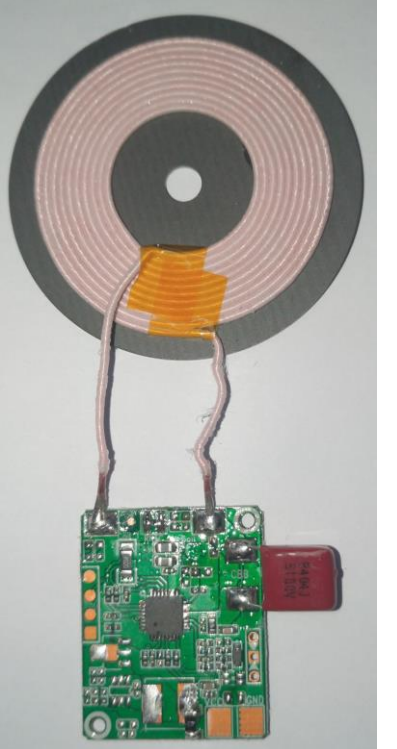
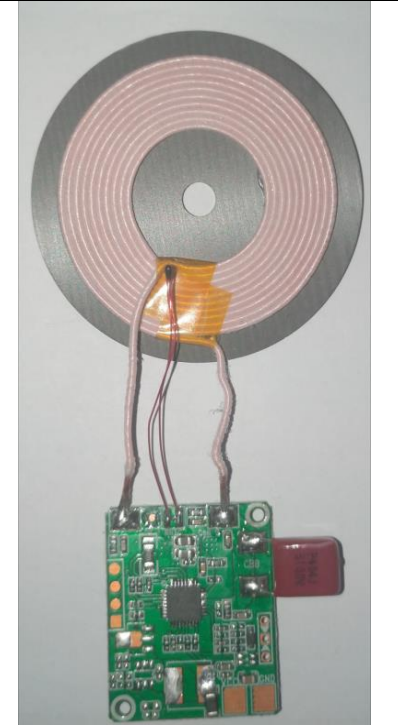
Temperature: +15℃ ~ +30℃

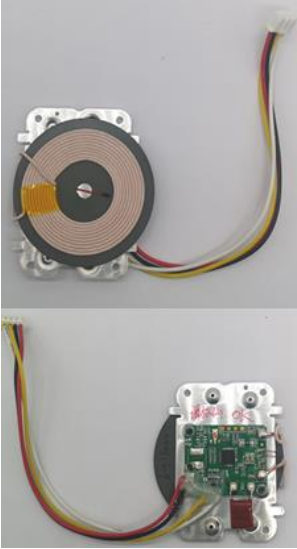
Humidity: 45% ~ 75%RH

- 4.2.Test circuit and equipment

Test equipment: standard circuit and equipment

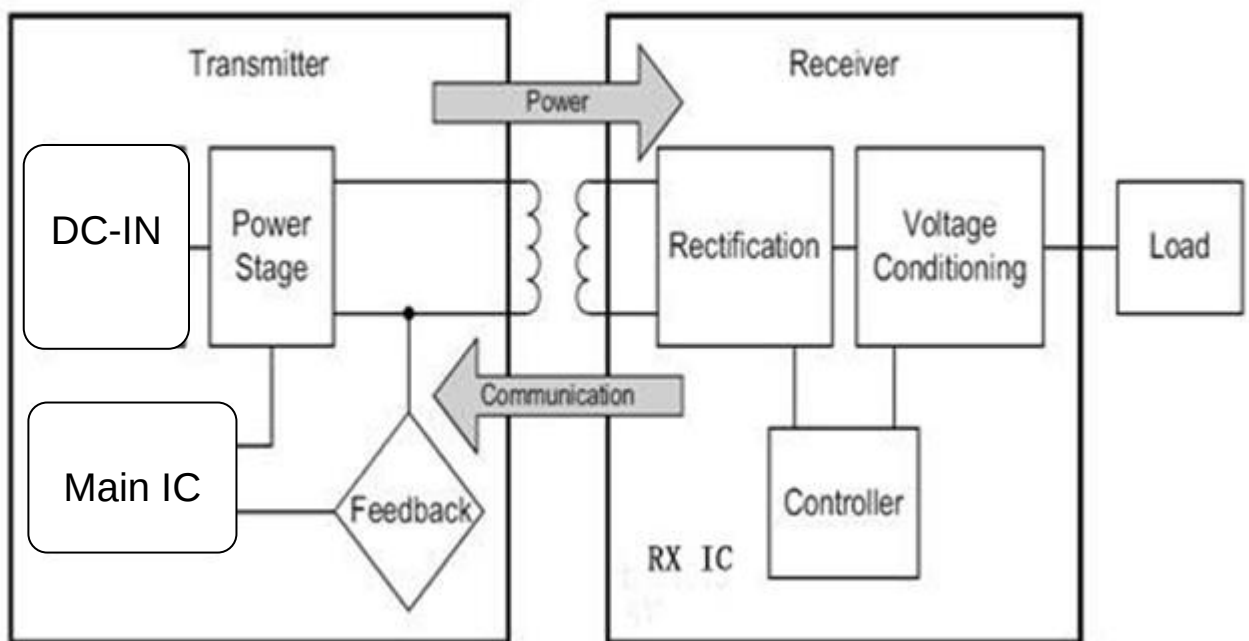
5. Series of the Product

WTM-H005-001 Input:12V; with NTC with one red&blue LED;	WTM-H005-002 Input:5.3V; with NTC with one red&blue LED;	WTM-H005-003 Input:5.3V; without NTC with one blue LED;
		
WTM-H005-004 Input:12V; with NTC without LED;	WTM-H005-005 Input:5.3V; with NTC without LED; with more RC;	WTM-H005-006 Input:5.3V; with NTC without LED; with more RC;
		

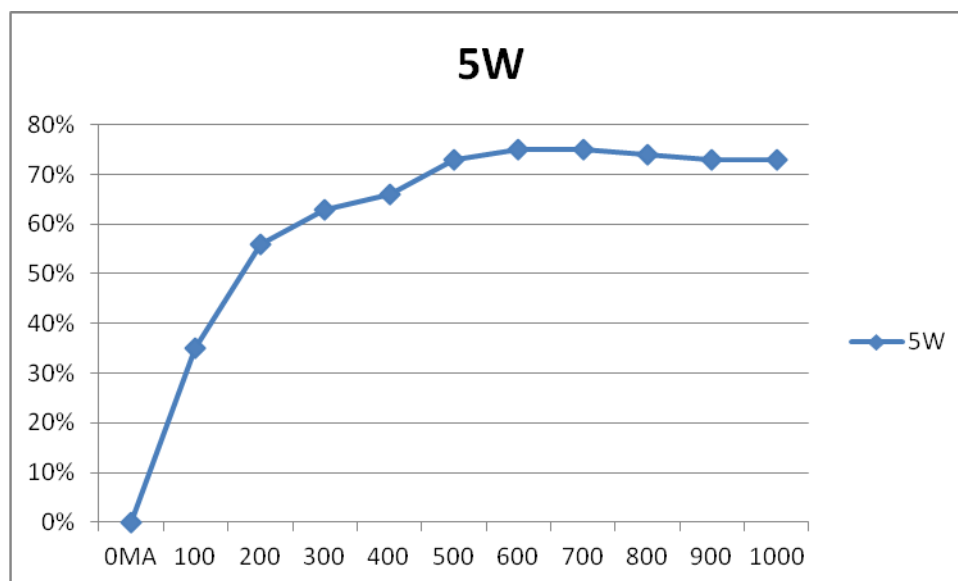
WTM-H005-007		
Input:5.3V; with NTC with one red&green LED;		
		

6. Hardware & Stability

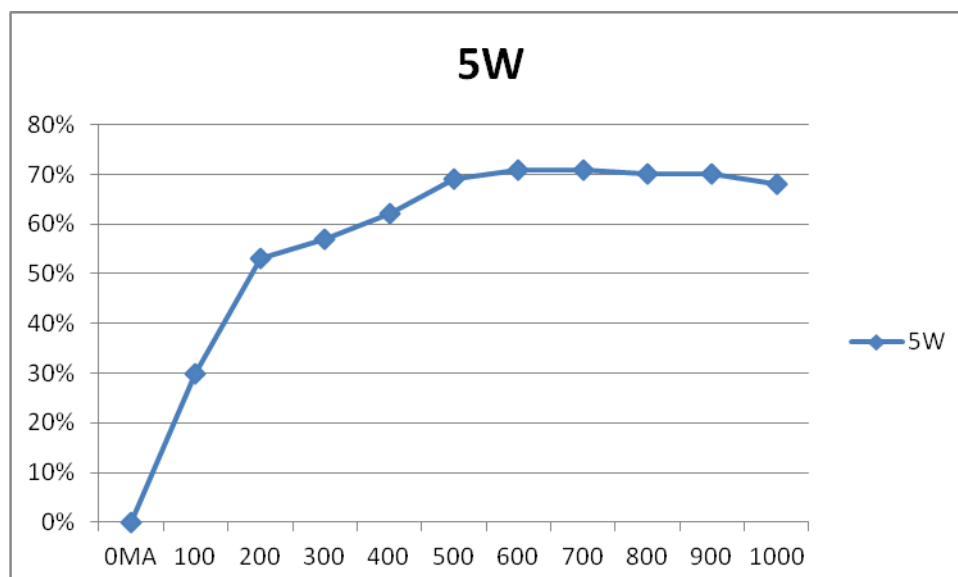
6.1. Functional Diagram



6.2. Efficiency versus Output Power



5V series Efficiency: 75%(MAX)



12V series Efficiency: 71%(MAX)

6.3. Standby Current

Test	Average Current	Standby LED
Normal Power Mode	5V/15mA ± 2mA	RED
	12V/10mA ± 2mA	

6.4. Operating Current

			
	RX Current (MAX)	TX Current (MIN)	Charging LED
	SAMSUNG S7: 5W	5V/1140mA ± 10mA	BLUE ON
		12V/510mA ± 10mA	
	iPhone 8: 5W	5V/1050mA ± 10mA	
		12V/560mA ± 10mA	

7. Approvals and Certifications

	QI	FCC (US)	CE (KU)	CCC (CN)
WTM-H005-001	TBD	TBD	TBD	TBD
WTM-H005-002	PASS	TBD	TBD	TBD
WTM-H005-003	TBD	TBD	TBD	TBD
WTM-H005-004	PASS	PASS (client)	TBD	TBD
WTM-H005-005	PASS (client)	PASS (client)	TBD	TBD
WTM-H005-006	TBD	TBD	TBD	TBD
WTM-H005-007	TBD	TBD	TBD	TBD

8. Product Specification

Size : PCBA Outline dimensions: 31.0(mm) X 24.9(mm);Coil Outline dimensions: Ø50.0X H3.5(mm).

8.1. Power Supply Input/Output

- Power Input :
5W mode: 5.3±0.2V / 1800mA (max)
12.2±0.2V / 1000mA (max)
- Power Output : 5±0.3V / 1000mA (max)

8.2. Charging Distance

- Chargeable Distance : 3mm~8mm
- Highest Efficiency Distance : 3mm

8.3.Over Temperature Protect

- Over Temperature Protect: 80°C

8.4. Over Voltage Protect

- Over Voltage Protect (5V series): 6.3V

8.5. Under Voltage Protect

- Under Voltage Protect (5V series): 4.1V

8.6. Operating frequency

- operating frequency: 112K~205KHz

8.7. Antenna gain

- Antenna gain: 0dBi

8.8. LED Indicator Color Display (optional)

WTM-H005-001:

- RED On : Standby Power On Lighting
- BLUE On: Charging Start & Charging
- RED & BLUE Blinking : Error
- RED & BLUE Off : Charging Completed

WTM-H005-003:

- BLUE Breathing : Standby Power On Lighting
- BLUE On: Charging Start & Charging
- BLUE Blinking : Error
- BLUE Off : Charging Completed

WTM-H005-002& 004& 005&006:

- RED On : Standby Power On Lighting
- BLUE On: Charging Start & Charging
- RED & BLUE Blinking : Error
- RED & BLUE On : Charging Completed

WTM-H005-004 (Customized Version) :

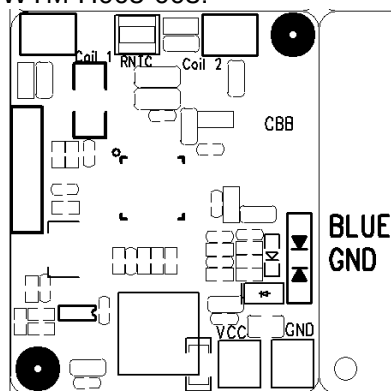
- RED & BLUE Off : Standby
- BLUE On: Charging Start & Charging
- RED & BLUE Blinking : Error
- RED On : Charging Completed

WTM-H005-007 (Customized Version) :

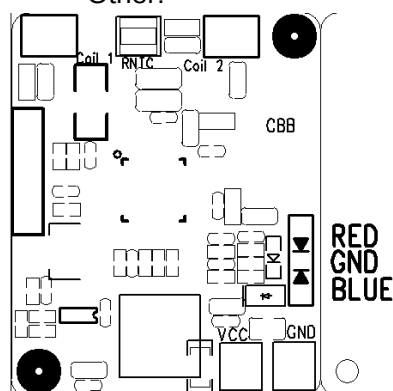
- RED & GREEN Off : Standby
- GREEN On: Charging Start & Charging
- RED & GREEN Blinking : Error
- RED On : Charging Completed

8.9. LED Port Definition

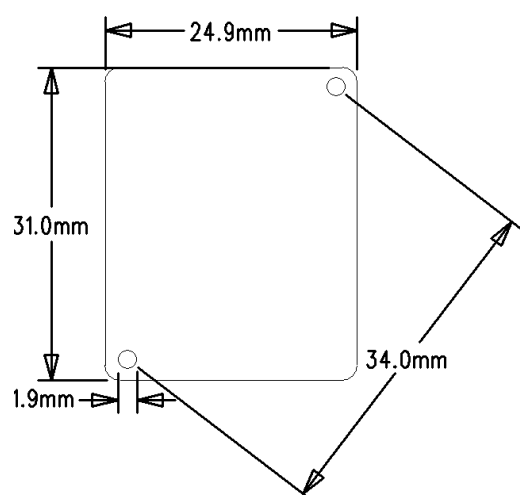
WTM-H005-003:



Other:

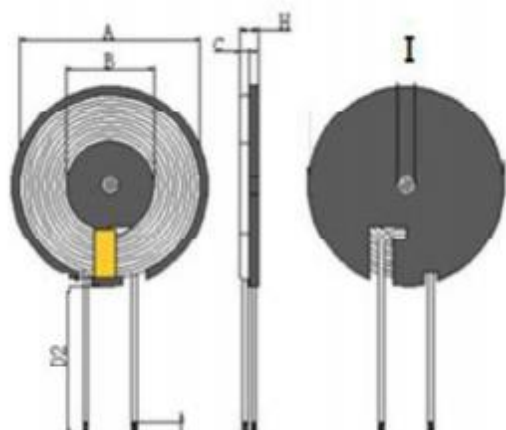


8.10. Installation dimension

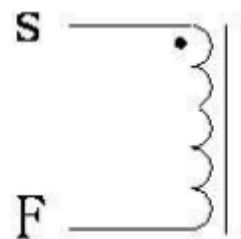


9. SPECIFICATION FOR APPROVAL

1. MECHANICAL DIMENSION (UNIT:mm)



2. SCHEMATICS :



A	B	C	D2	E	H	I			I
43.5 ±1.0	13.5 ±0.5	0.8 ±0.05	5+2	2±1.5	2.8MAX	5+0.1			

3. WINDING :

STEP	START-FINISH	WIRE TYPE	TURNS	TAPE	REMARK
N1	S-F	丝包线 $\phi 0.08 \times 105\text{mm}$ 2UEW	12TS (Ref)		

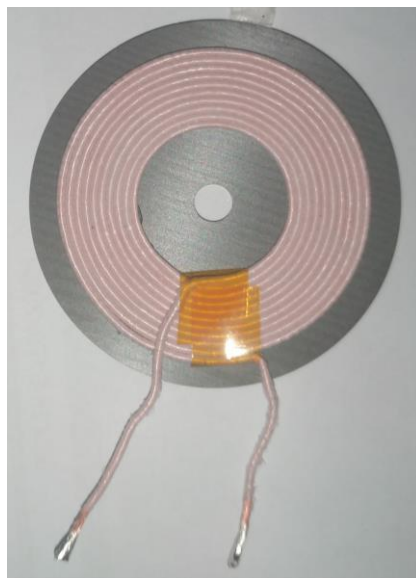
4. ELECTRICAL SPECIFICATION :

ITEM	L	DCR	L	Q值	HI-POT
TEST	线圈加磁片	S-F	单独线圈		
CON	100KHz, 0.25V	AT 25℃	100KHz, 0.25V		
SPEC	6.5uH ± 10%	60m Ω Max	3.8uH ± 15%		

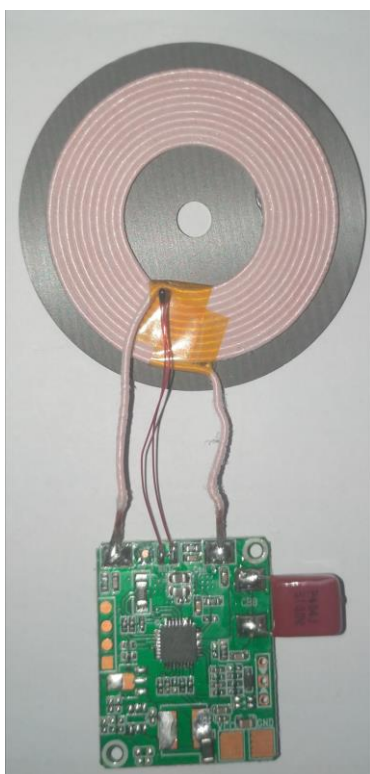
5. BILF OF MATERIAL :

NO.	ITEM	MATERIAL SPECIFICATION	MANUFACTURER	SGS NO.
1	丝包线 0.08×105 股	丙酮丝包线 0.08×105 股	NANJINGJINNINGCO,LTD	
2	无铅锡条	无铅锡条	QIAODO	
3	磁片	$\phi 44 \times 0.8$ 锰锌硬磁片开L槽	TAIYI CO.,LTD	
4	胶水	黄胶9999	LIANCHENG CO.,LTD	
5	高温胶纸	7mm 宽高温胶纸	CUDAK CO.,LTD	
6	背胶	$\phi 41.5 \times 0.1$	CUDAK CO.,LTD	
7	铜线温度	155 ℃		

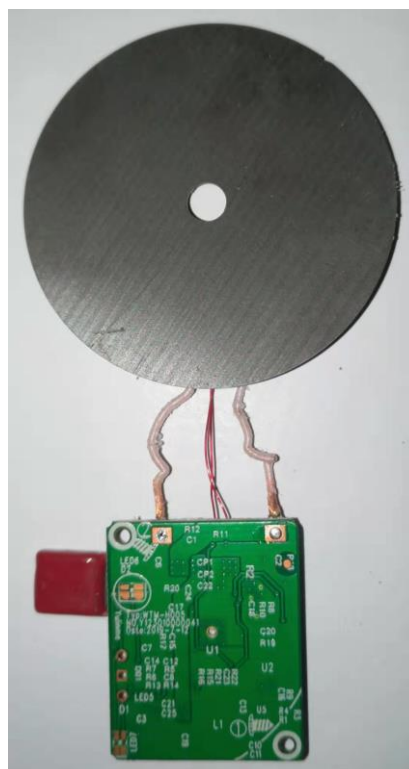
Part	Material / Sepc. / Color
Tx Coil	A11, Magnet
PCBA	FR4 2-Layer, Size : 31.0 (mm) X 24.9 (mm)



Tx Coil



PCBA Top



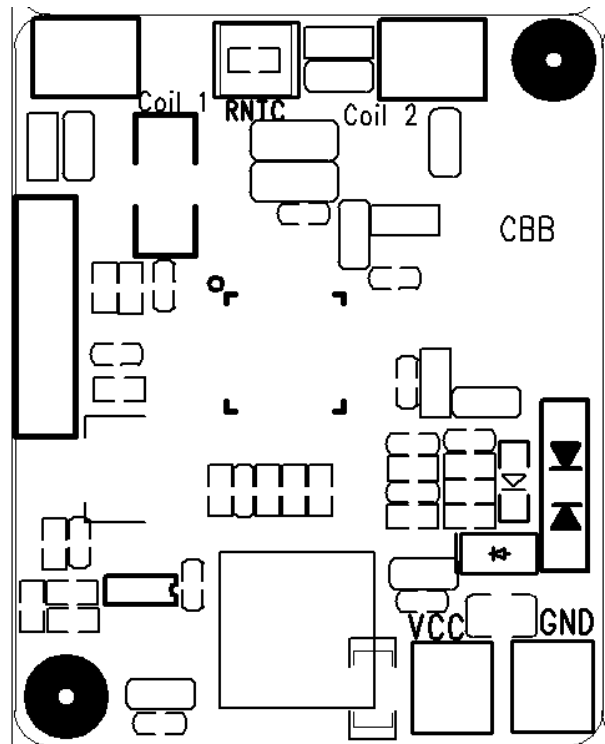
PCBA Bottom

11. Reliability Test

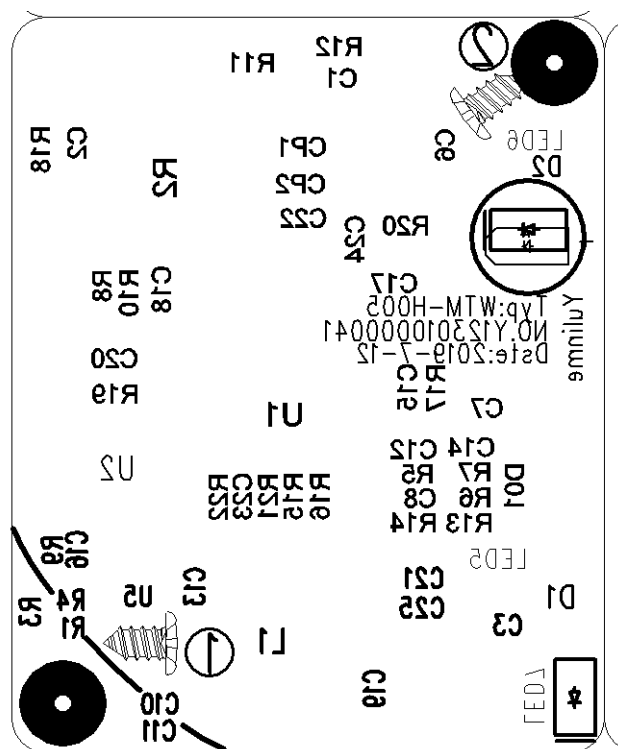
区分 Distinguish between	测试项目 Test project	测试方法及 条件 Test methods and conditions	判定基准 Denchmark of determine	Determination
电气性能测试 Electrical performance test	功能检查 Functional check	※测试感应时间 Test induction time.	感应时间小于 0.5S Induction time $\leq 0.5s$.	PASS
		※测试 TX 空载时输入功率 Test TX no-load input power.	输入功率小于 150mW Input power is less than 150 mW.	PASS
	表面温度测试 Surface temperature test	※ 常温 在 25℃下进行测试。 Test under 25 °C. ※ 充电 1 小时后测试。 test after Charging for 1 hour. ※ 测试充电器表面温度。 Test charger surface temperature.	最高表面温度低于 50℃。 The highest surface temperature is lower than 50 °C.	PASS
	交互匹配测试 Interactive matching test	抽取 5 台 TX 和挑选 5 台不同的 RX 交叉搭配测试记录。 Extract 5pcs TX and choosing five different of RX cross matching test.	不同的 TX 和 RX 搭配工 作稳定 Different TX and RX match work stability.	PASS
	高温高湿测试 High temperature and humidity test	※充电器高温+50℃、90%RH 的条件下保存 24H，常温放置 24H 后，开机进行测试。 ※ ※After 24 hours kept at +50℃, 90%RH, and then recover to room temperature for 24 hours.	※功能、性能、外观、 结构无异常。 After tested the function、 performance、 appearance of the chargers have no any abnormal.	PASS
	高低温冲击测试 High and low temperature impact test	※ 充电器按高低温-10℃（2H） -->+60℃（1H）--->-10℃（2H） 条件 6 次循环，恢复至常温常 湿状态，放置 2H 后进行测试 ※Under the condition of -10℃(2H)←→+60℃(1H) , with 6cycles test, then recover to room temperature for 2 hours.		PASS
	高温保存测试 High temperature storage test	※充电器在高温+60℃条件下 保存 48H，然后在常温常湿下 放置 2H 后测试。 ※After 48 hours kept at +60℃, and then recover to room temperature for 2 hours.		PASS

环境测试 Environmental test	低温保存测试 Low temperature storage test	※充电器在低温-10℃条件下保存 48H，然后在常温常湿下放置 2H 后测试 ※After 48 hours kept at -10℃, and then recover to room temperature for 2 hours.		PASS
	高温运行测试 High temperature operation test	※ 充电器在高温 + 50℃条件下保存 5min，开机进行 2H 充电测试 ※After 5min kept at 50℃, and then playing in +50℃ for 2H continuously.		PASS
	低温运行测试 Low temperature operation test	※充电器在低温 0℃条件下保存 5min，开机进行 2H 充电测试. ※After 5min kept at 0℃, and then playing in 0℃ for 2H continuously.		PASS

12. PCB Top Silk and Bottom Silk



Top silk



Bottom silk

Thank You.

To receive sales literature and technical assistance,
contact YULIN TECH CO., LTD.

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Zhongkai Hi-tech Industry Park,Huizhou,Guangdong

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