Wireless charger

10W Single Coil User Munual

Model: AuraPad-3

1 product introduction

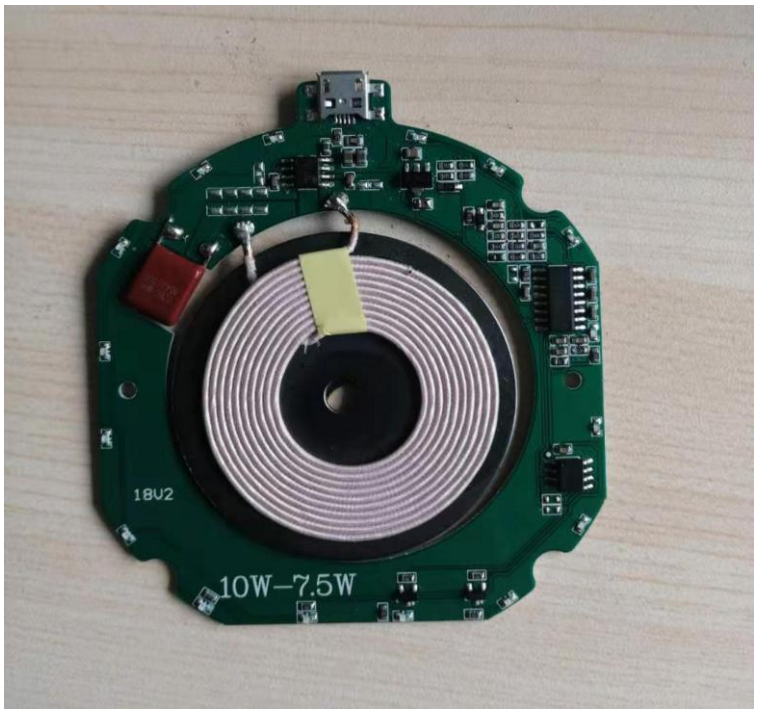
1.1 application introduction

This module is a fast wireless charging dual coil scheme, which can charge Samsung's note5, s6edge +, S7, Note7, S7 edge and S8 in a fast wireless way, and can be perfectly compatible with iPhone x, iPhone 8, etc. for 7.5W wireless charging; meanwhile, it has good compatibility with 5W wireless charging mobile phones, and can support Ti, IDT, Panasonic and other Qi standard receivers.

1.2 Product Description: a11

1. Conform to the specifications of qi1.2a11, and perfectly support Samsung note5, S6 edge +, S7, S7 edge, and S8 fast charging
2. Compatible with apple series fixed frequency 7.5W fast charging
3. Adapter requirements. Qc2.0, qc3.0 fast charging adapter
4. Input voltage range: 5V, 9V input
5. Rated output power of receiving terminal: 5W, 7.5W, 10W
6. Sensing distance: ~ 6mm
7. Working frequency: 110k ～ 205k
8. Metal foreign object detection (FOD)
9. Efficiency up to 75%
10. Over-high temperature&Surge&overload protection

2 Sample picture



2.2Rating

Test conditions:Ambient temperature:25° C

	Test conditions	rating	Min	Max	unit
Normal mode power consumption	Vcc=5V	100	80	150	MW
efficiency	Adjust load and distance	/	105	189	KHz
Transmission efficiency	bq51013xEVM Test	70	50	75	%
Voltage	5W output	5	4.5	5.5	V
Voltage	10W output	9	8.5	10	V
Output	Fast chargering	9.5	9	10	W
Distance	bq51013xEVMy test	8	2	10	mm
Temperature protection	Temperature protection on PCB	70	68	73	° C
Apple fast charging frequency	Apple x test	127	127.5	128	KHZ

3 Test items and report

3.1 wireless transmission test items

3.1.1 system efficiency:

The ratio of output power to input power is the actual efficiency of wireless charging.

3.1.1.1 test method: connect the DC power supply, adjust the input voltage to 5.1V, connect the output of the receiving end to the load meter, and the load meter outputs in a constant current way, and adjust the output to 1a with 100mA as a gear.

3.1.1.2 precautions: the wiring from DC power supply to product input terminal shall be as short and thick as possible to reduce DC loss. The measured input voltage point shall be placed at the product interface, and the actual input voltage shall prevail. Similarly, the wiring from the output terminal to the load meter shall be as short and thick as possible, and the output voltage shall be subject to the output terminal voltage of the receiver. The effective distance between the transmitter and the receiver is about 2 ~ 4mm, so as to achieve the best test results

3.1.1.35Wefficiency test results are as follows：

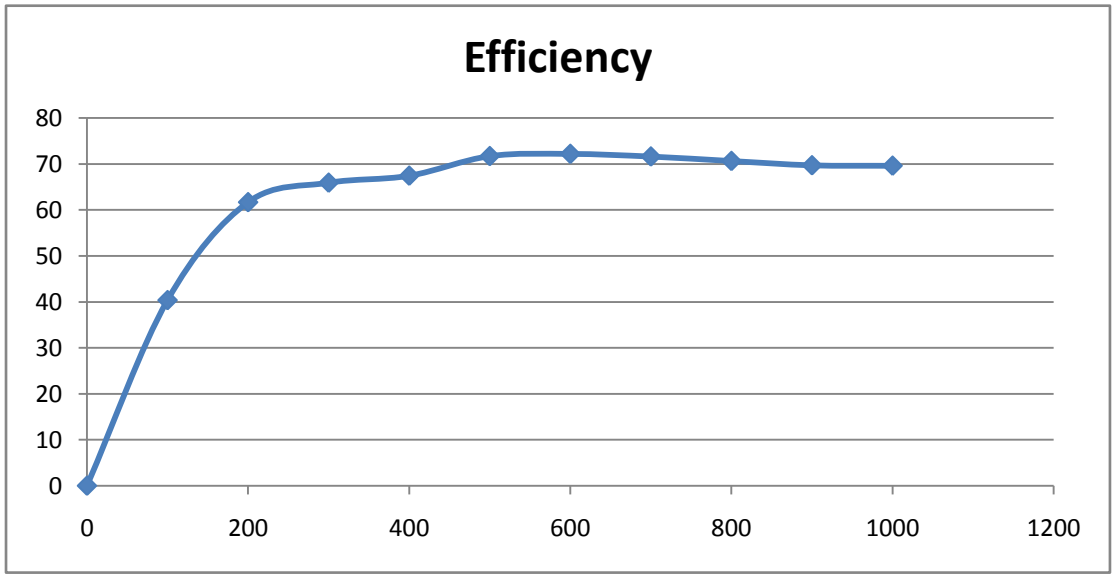
1、Efficiency table：

Input voltage（V）	Input current（mA）	Outputvoltage（V）	Outputcurrent（A）	efficiency（%）
5. 08	244	5	100	**40. 34%**
5. 07	315	5	200	**62. 62%**
5. 04	447	5	300	**66. 58%**

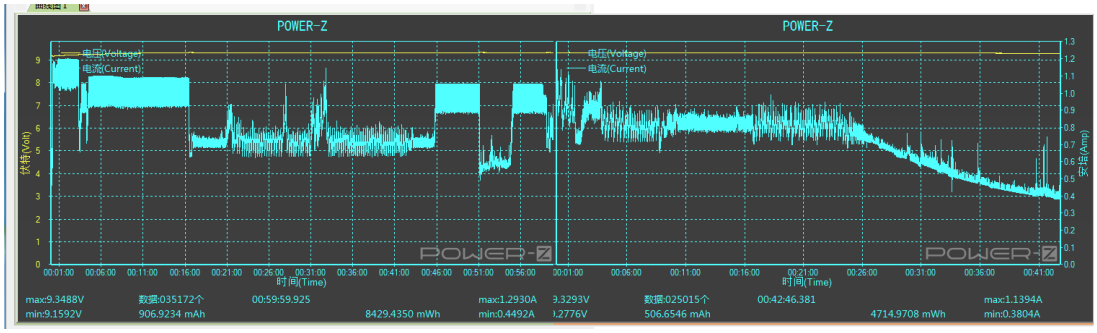
5. 03	590	5	400	**67. 39%**
5. 02	670	5	500	**74. 33%**
5	800	4. 99	600	**74. 98%**
4. 98	935	4. 99	700	**75. 11%**
4. 96	1120	4. 99	800	**72. 30%**
4. 93	1290	4. 98	900	**70. 48%**
4. 91	1455	4. 97	1000	**69. 57%**

Remark：The theoretical maximum efficiency of Ti scheme is 75%. The test results of different receivers may be different.

2、Efficiency curve：



3.23 Apple charging current curve, input voltage 9V



The fast charging series of iPhones can reach 90% in 120 minutes. 100% in 150 minutes

3.2.4 foreign matter detection (FOD)

3.2.4.3. Put metal foreign matters between the coil and the mobile phone: FOD alarm (blue-green light flashes);

3.2.5 maximum load capacity test (current limiting effect);

The maximum load capacity is about 1.2A. (need to receive and support 1.2A output) s

3.2.6 standby current:

3.2.6.1 standby current: 10-100ma;

3.2.6.2 standby power consumption: 22mA @ 5V = 110MW; (Digital Ping);

3.2.6 over current protection test:

If the current is greater than 1.8A at 5V, the charging will be stopped; if the current is greater than 1.5A at 9V, the charging will be stopped.

3.2.7 coil voltage limit test: 30V.

3.2.8 compatibility: scheme passes WPC v1.2.3 certification test

Self test object: most of the digital products that have passed Qi certification can be bought in the market, such as mobile phones, tablet computers, mobile power supplies, etc. the following are some test objects:

Google Mobile nexus 4, nexus 5

NOKIA Lumia820

NOKIA Lumia920

LG G3

Samsung S6+

Samsung S7

Samsung S8

Apple 8

Apple x

This device complies with Part 18 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 explicitly approved by the party responsible for compliance could void the user's authority to operate this equipment.
Note: this equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 18 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.

The equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. During the operation of device a distance of 15 cm surrounding the device and 20 cm above the top surface of the device must be respected.