

SPECIFICATION FOR APPROVAL

CUSTOMER: Neutral receiving module

MODEL NO. : RF-6101-1

PART NO. : ILMU20FR-6101E1A0-XX-1

MODEL NAME: 20W Receiving Module

REVISION: A0

DATE: 2025-6-5

APPROVED SIGNATURES

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Model No.	RF-6101-1	Model Name	20W Receiving Module
Part No.	ILMU20FR-6101E1A0-XX-1	Size	PCBA : L54 ^{±0.5} * W31 ^{±0.5} * T7.5 ^{±1} mm Coil + Shielding : Φ 50 ^{±0.5} * 4.0 ^{±0.5} mm

Product Specification

產品規格書

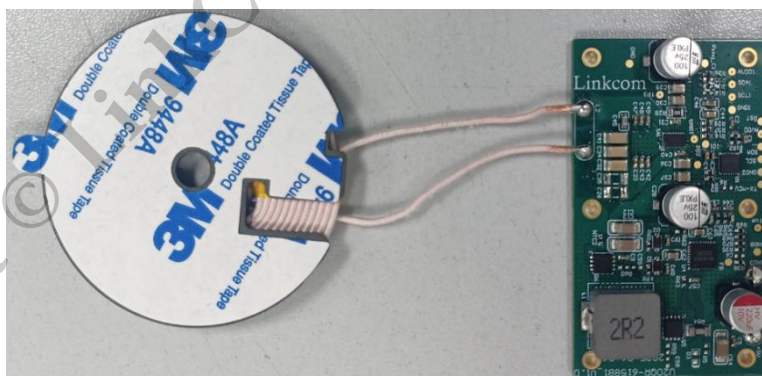
Product name/產品名稱: **20W Receiving Module**

Model No/ 產品型號: **RF-6101-1**

File number /文件編號: _____

Revision/版本號: **A0**

Date/日期: **2025-6-5**



APPROVED BY 批准	CHECKED BY 審核	DESIGNED BY 製作

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Reversion History/更新記錄

Revision	Date	Changes
A0	2025-6-5	New release

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1. Scope/概述

RF-6101-01 product is a 20W wireless charging receiver module, this product adopts private protocol to match with self-developed 30W wireless charging transmitter module to carry out wireless charging function; this product supports 5V/4A output function, supports 75%±5% high efficiency conversion performance, and does not support WPC protocol;

Remind users to pay attention to the use of this product, this product adopts the private protocol can only be self-developed 30W wireless charging transmitting module wireless charging function, you can not use other wireless charging transmitting end of the wireless charging of this product;

This product is only suitable for installation in general consumer product applications and is not applicable to any automotive aviation product applications.

RF-6101-01產品是一款20W無線充接收端模組，本產品採用私有協議專門搭配自研發30W無線充電發射模組進行無線充電功能；本產品支持5V/4A輸出功能，支持75%±5%高效轉換效能，不支持WPC協議；

提醒用戶使用注意事項，本產品採用私有協議只可以對自研發30W無線充電發射模組進行無線充電功能，不可以使用其他無線充發射端對本產品進行無線充電；

本產品僅適用於一般消費性產品應用安裝，不適用任何車規航空產品應用。

2. Product Characteristic /產品特點

- ◆ Supports DC5V/4.0A high power outputs;
支持DC5V/4.0A大功率輸出；
- ◆ Supports private protocols, does not support WPC protocols;
支持私有協議，不支持WPC協議；

3. Performance Parameter/性能參數

3.0	Compatible transmitting end/兼容發射端	Private Agreement
3.1	Input voltage & current/輸入電壓電流	6.5~15.5 VAC
3.2	Wireless charging output power/無線充電輸出功率	5V/4.0A Max
3.3	Power Transfer Efficiency/轉換效率	75% ±5%
3.4	20W Frequency/20W頻率	110KHz-205KHz
3.5	Ripple wave /紋波	≤20%
3.6	Operating temperature /工作溫度	0-40℃
3.7	Relative humidity / 相對濕度	40%~60%

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3.8	Audio noise/噪音	15cm distance less than 30dB
3.9	Check sum1/軟件版本 1	RX master control IC:0x455C
3.10	Check sum2/軟件版本 2	MCU:0x0934

4. Safety Control/安全機制

4.1. Short Circuit Protection/短路保護

In the case of short-circuit at the receiver output, the transmitter stop output. When removed the receiver or short circuit, the transmitter will resume normal operation.

在接收端輸出短路的情況下，發射端停止輸出。當移除接收或者短路解除時，發射端將恢復正常工作。

4.2. Over Current Protection/過流保護

When the receiver load exceeds the rated value (110% - 130%), the overcurrent protection is triggered and the transmitter stops working. When removed the receiver, the transmitter will resume normal operation.

當接收器負載>額定值的110% - 130%時，觸發過電流保護，發射端停止工作，當接收器被移除時，發射端將恢復正常工作。

4.3. Over-temperature Protection/過溫保護

4.3.1. Wireless charging over-temperature protection/無線充電過溫保護

The NTC temperature protection of the PCBA is 85°C ± 5°C. The transmitter stops working when the temperature exceeds the value. Resets the receiver or cools to 60°C ± 5°C, the transmitter returns to normal operation

PCBA貼片NTC溫度保護設定值為85°C ± 5°C，當溫度超過設定值，發射端停止工作，重新放置接收或者降溫至60°C ± 5°C時，發射器恢復正常工作。

5. Reliability Requirements/可靠性要求

5.1. Reliability Test/可靠性測試

Please refer to LinkCom's reliability standard and reliability test Report.

請參考聯寶標準《可靠性測試規範》與《可靠性測試報告》

6. Environment Requirement/環境要求

6.1. Operating Temperature and Relative Humidity/操作溫度和相對濕度0°C-40°C / RH40~60%

6.2. Storage Temperature and Relative Humidity/儲存溫度和相對濕度-20°C-40°C / RH20~80%

6.2.1. Avoid direct exposure to the storage environment, and do a good temperature and humidity control, room temperature should be controlled at 5°C-25°C, relative humidity RH40~ 60%. In order to maintain good functionality of the product, please observe the following storage conditions. 儲存環境應避免產品受陽光直接照射，並作好溫濕度管控，室溫宜控制在5°C-25°C / RH40~60%。為使產品維持良

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好之功能性, 請確實遵守以下保存條件

6.2.2. Keep away from high humidity, salt spray or oil spray. 儲存需避開高濕，鹽霧或油霧之環境

6.2.3. When storing, the storage environment temperature should be avoided too drastic, and the humidity should be avoided too high or too low. High humidity and large temperature difference tend to cause water vapor condensation phenomenon, too low humidity easily cause the high electrostatic strength. Therefore, humidity will cause the electron ionization, and eventually cause the product functional abnormalities.

儲存時應避免儲存環境溫度變化過於激烈，同時避免濕度過高或過低。濕度過高和溫差過大容易導致水蒸氣凝結現象，濕度過低容易導致靜電強度過高。故濕度會造成電子遊離，最終導致產品功能性異常。

7. Execution Standards/執行標準

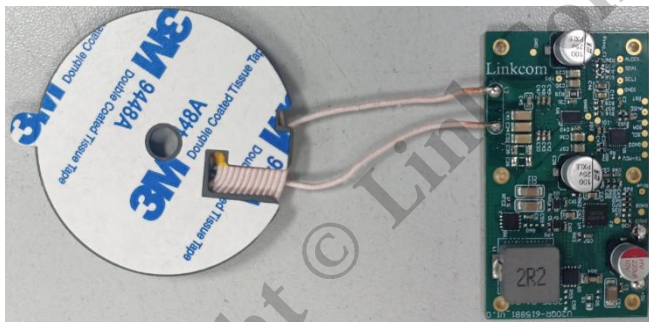
7.1. EMI Standards電磁相容標

55032

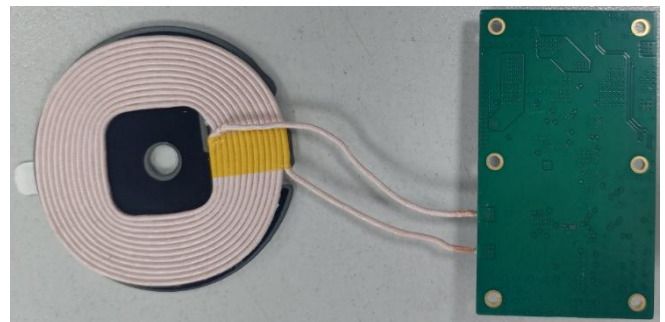
Note : The EMI test should include the actual testing of the enclosure and TX equipment.

備註：EMI 測試需包含外殼與 TX 設備實際測試。

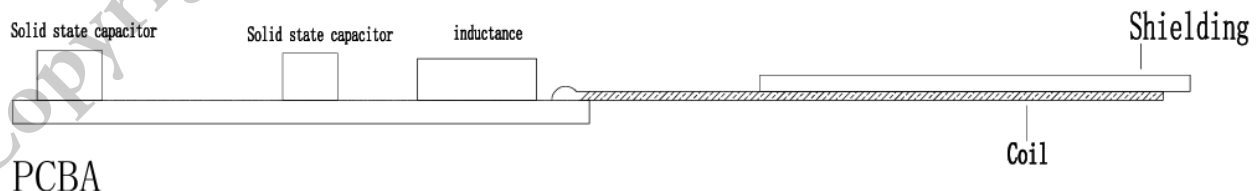
8. Photo of Product/產品照片



Module Front Side 模組前面



Module Back Side 模組後面



Module diagram 模組示意圖

9. Module/模組

9.1. Product design proposal/產品設計要求

Wireless charging design should pay attention to the following points:

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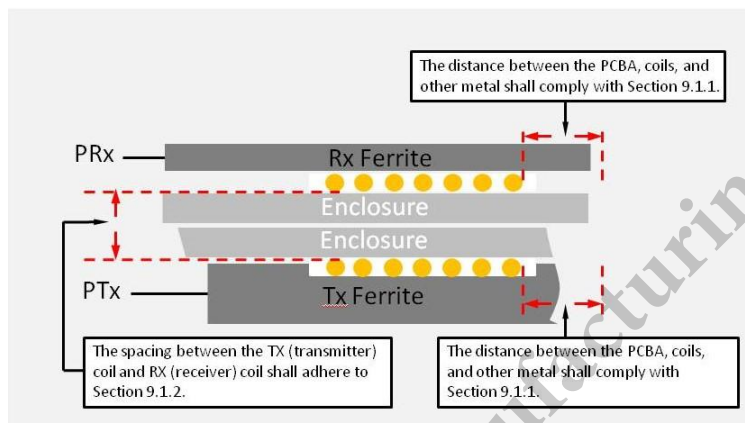
無線充產品設計，需要注意以下幾點：

9.1.1 The distance between Coil with PCBA and other metal components is Min: 4.50mm.

線圈，PCBA和其他金屬部件之間的最小距離：4.50mm.

9.1.2 The surface distance between Tx Coil and Rx Coil is 4.0 – 8.0mm.

輸出線圈和接收線圈之間的表面距離為4.0 – 8.0mm.

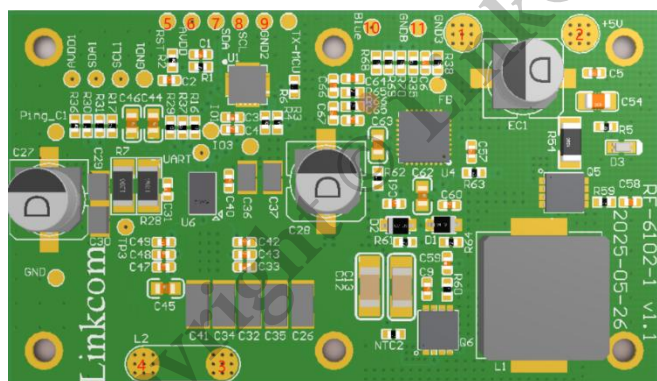


9.1.3 In order to achieve better temperature performance, it is recommended to add heat dissipation measures when designing, such as adding thermal conductive silicone pads to the PCBA to increase the heat dissipation area.

為了有更好的溫度表現，使用時建議增加散熱對策，如增加導熱矽膠墊於PCBA增加散熱面積。

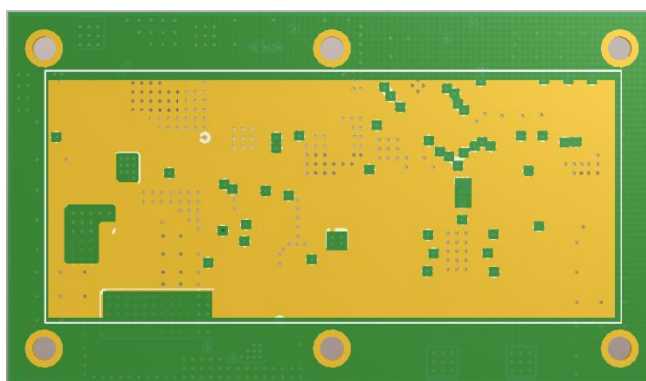
9.2. PCBA Port Functional Illustration/PCBA功能說明

PCBA Version : 1.1



PCBA正面

PCBA front side



PCBA背面

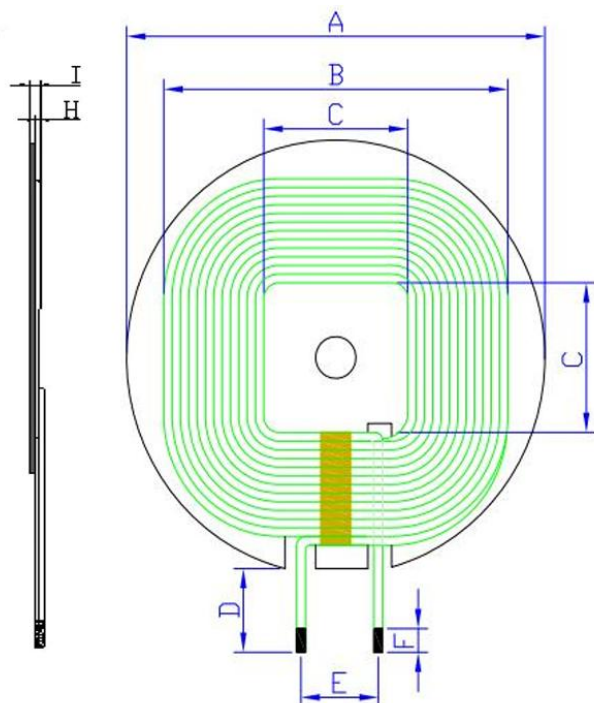
PCBA backside

PCBA Size: $L54^{\pm 0.5} * W31^{\pm 0.5} * T7.5^{\pm 1}$ mm

Port	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6
Function	GND	+5V_OUT	Coil_1	Coil_2	RST	VDD
Port	Pin7	Pin8	Pin9	Pin10	Pin11	Pin12
Function	SDA	SCL	GND	Blue_LED	GND	

9.3. TX Coil Spec/TX線圈規範:

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Coil + Shielding : $\Phi 50^{\pm 0.5} * 4.0^{\pm 0.5}$ mm

(单位: mm)	
A	50.0 ±1.5
B	46.0 ±2.0
C	19.0 ±1.5
D	40.0 ±2.0
E	10.0 Ref
F	3.0 ±2.0
I	4.0 ±0.5
H	1.0 ±0.2
备注	
(1)线径: 0.08*105P	
(2)绕线圈数:12TS	
(3)起尾线是否交叉: 是	
(4)线圈包8mm宽高温胶带	
(5)线圈与磁片需粘贴居中	
(6)磁片背49圆开槽带孔3M胶	
正面贴49圆开槽带孔黑膜	

Electrical Characteristics/電氣特性:

参数	规格	测试条件	测试仪器
L0	10 ±10% μ H	100KHz/1V	■TH1816B
Q	>70 min	100KHz/1V	■TH1816B
DCR	<90 m Ω	@ 25℃	■CH-502BC

9.4. Aluminum heat sink : 鋁散熱片

It can be evaluated whether a "heat dissipation device" needs to be designed based on the product's usage environment

可根據產品使用環境評估是否需要設計《散熱裝置》。

10.Indicator light/指示燈

No indicator light/無指示燈

11.Attentions/使用注意事項

11.1.Please use the correct rated TX Module, to ensure the normal function.

請使用配置的正确規格TX模組，保證功能正常。

11.2.This product is only suitable for general consumer product application installation and is not suitable for any automotive or aviation product application.

本產品僅適用於一般消費性產品應用安裝，不適用於任何汽車或航空產品應用。

12.Weight/重量

23.5g±2g

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13.Packaging/包裝

RF-6101-1_Carton Packing Method

2025.07.16

outer carton : 100 pcs 材質: K=K (4 boxes)	size : W 315 × D 310 × H 210 mm NW : kg GW : kg
inner carton : 25 pcs 材質: A3A (boxes)	size : W 290 × D 145 × H 93 mm NW : kg GW : kg

天地蓋 (材質: A3A): 280 x 135mm (2PCS/內箱)

PRODUCT

weight:

開口

20mm

130mm

70mm

將模組裝入气泡袋

气泡袋封蓋

每5PCS模組入1白盒

5PCS 模組入1白盒

白盒封蓋

135mm

75mm

D55mm

INNER

shipping mark: 4 faces

line:

pcs: 25

280 x 135mm (2PCS/內箱)

93mm

145mm

290mm

OUTER

shipping mark: faces

line:

pcs: 100

210mm

310mm

315mm

Inner Material: A3A

Outer Material: K=K

Designer: Bruce

Coordinate:

Please make sure to get our approval of following issues before you start mass production of the cartons:

- printing of the shipping mark (ink color, printing date etc.)
- weight and size of the carton
- fitting between product & Inner carton, Inner carton & outer carton

Rev. C

10/11

QR-0717-019

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14.Statement/聲明

All rights reserved by LinkCom Manufacturing Co., Ltd. for all of this specification for approval. About warranty, please refer to LinkCom company warranty policy.
