

SPECIFICATION FOR APPROVAL

CUSTOMER: Neutral Emission Module

MODEL NO. : TF-6101-1

PART NO. : ILMU30FT-6101E1A0-XX-1

MODEL NAME: 30W Wireless Charging Transmitter Module

REVISION: A0

DATE: 2025-6-5

APPROVED SIGNATURES

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- ☐ 聯寶電子股份有限公司
☒ 東莞聯寶光電科技有限公司
☐ LinkCom USA, Inc.
☐ 其他

(Taiwan Headquarter)

5F., No.127, Ln. 235, Baoqiao Rd., Xindian Dist, New Taipei City 231, Taiwan(R.O.C.)

Tel: (886) 2-8919-1380

Fax: (886) 2-8919-1370

E-mail: sales@linkcom.com.tw

(China Plant)

Building 1. No. 21 Huanqi Avenue, Qishi Town, Dongguan City,
Guangdong Province, China 523519

Tel: (86-769) 8678-6368

Fax: (86-769) 8678-8988

E-mail: sales@linkcom.com.tw

Model No.	TF-6101-01	Model Name	30W Wireless Charging Transmitter Module
Part No.	ILMU30FT-6101E1A0-XX-1	Size	PCBA : L54 ^{±0.5} *W38 ^{±0.5} *T7.5 ^{±1} mm Coil : Φ50 ^{±0.5} *T2.5 ^{±0.5} mm

Product Specification

產品規格書

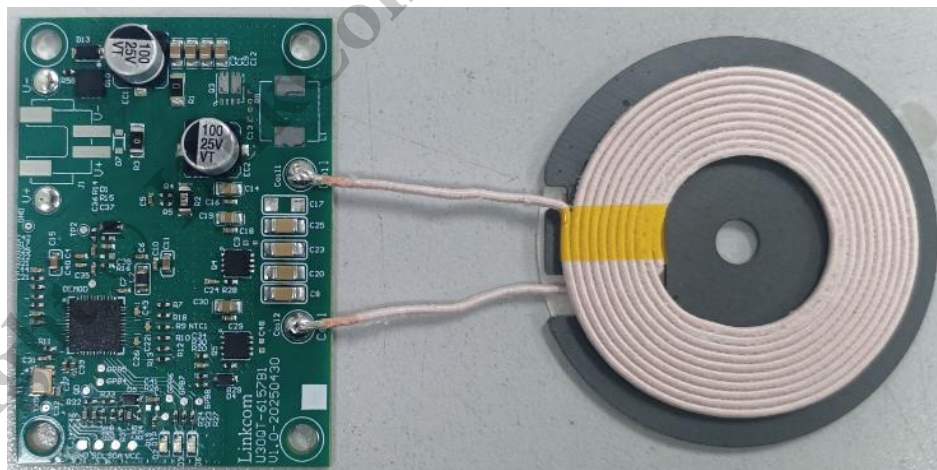
Product name/產品名稱: **30W Wireless Charging Transmitter Module**

Model No/ 產品型號: **TF-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

[illegible]

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1. Scope/概述

TF-6101-01 product is a 30W wireless charging transmitter module, this product adopts private protocol specifically with self-developed 20W wireless charging receiver module for wireless charging function; this product can support 75% ± 5% high efficiency conversion performance, and support the input side of the anti-reverse connection protection function, does not support the WPC protocol;

Remind users to pay attention to the use of this product, the use of private protocols can only be self-developed 20W wireless charging receiver module wireless charging function, not for other wireless charging receiver, such as: with wireless charging function of the cell phone or other wireless charging devices.

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

TF-6101-01產品是一款30W無線充發射端模組，本產品採用私有協議專門搭配自研發20W無線充電接收模組進行無線充電功能；本產品可以支持75%±5%高效轉換效能，並且支持輸入端防反接保護功能，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20W無線充電接收模組進行無線充電功能，不可以對其他無線充接收端例如：帶無線充電功能的手機或者其他無線充電設備。

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

- ◆DC12V direct power supply;
DC12V 電源直接供電；
- ◆This product uses private protocols;
本產品採用私有協議；
- ◆Supports input anti-reverse protection;
支持輸入端防反接保護；
- ◆Supports charging indicator LED display;
支持充電指示燈LED顯示；
- ◆Supports 4-8mm transmission distance.
支持 4~8mm 傳輸距離。

3. Performance Parameter/性能參數

3.0	Power input protocol/電源輸入協定	DC12V
3.1	Input voltage & current/輸入電壓電流	12.25V±0.25V * 2.5A

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3.2	Working voltage & current/工作電壓電流	12V/0.10~2.15A Max
3.3	Wireless charging output power/ 無線充電輸出功率	30W Max
3.4	Power Transfer Efficiency/轉換效率	75%±5% Max
3.5	30W Frequency/30W頻率	frequency conversion 110KHz-205KHz
3.6	Distance/傳輸距離	4~8mm
3.7	ripple wave /紋波	≤ 20%
3.8	Operating temperature /工作溫度	0-40℃
3.9	Relative humidity / 相對濕度	40%~60%
3.10	Audio noise/噪音	15cm distance less than 30dB
3.11	Check sum/軟件版本	0xCB6A

4. Safety Control/安全機制

4.1. Anti reverse connection protection /防反接保護

When the positive/negative terminal of the input is reversed, the anti-reverse connection protection of the module will be activated and the product will stop working; when the positive/negative reverse connection fault is lifted, the module will resume normal operation.

輸入端的正極/負極反接時，模組設置的防反接保護啟動，產品停止工作；解除正極/負極反接故障，模組恢復正常工作。

4.2. Over Current Protection/過流保護

When the receiver load exceeds the rated value (110% - 130%), the over current 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. Overvoltage Protection/過壓保護

When the input exceeds the set overvoltage value of 13.5V±0.25V, the transmitter stops working. When the voltage returns to the set value of 12.5V±0.25V, it will restart the work.

Attention: The input voltage must not exceed 13.8V to prevent damage to the product.

輸入端超过设定过压电压值13.5V±0.25V时，发射端停止工作。电压恢复设定值12.5V±0.25V时重新启动工作。

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注意：輸入電壓不可以超過13.8V，以防損壞本產品。

4.4. Foreign object detection(FOD)(based on 1 RMB coin)/異物檢測（以一元RMB硬幣為標準）

4.4.1. When placing the coin onto the center of the product under no-load condition, the transmitter detected foreign object and reports an error, then stops working. Removes the foreign object to resume normal operation.

空載時放置產品中心，發射端檢測到異物並報錯，停止工作，移除異物可恢復正常工作。

4.4.2. When the load and coin are placed together in the center of the product, it will report an error and shut down the output within 10 seconds (the time varies with different phone models), and the normal operation can be resumed by removing the foreign object.

負載和硬幣一起放置產品中心時，10秒（不同手機型號時間不同）之內報錯並關閉輸出，移除異物可恢復正常工作。

4.5. Over-temperature Protection/過溫保護

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

PCBA SMD NTC temperature protection set value is 85±5℃, when the temperature exceeds the set value, the transmitter stops working, re-placing the receiver or lowering the temperature to 60±5℃, the transmitter will resume normal operation. (Can be replaced by external NTC)

PCBA貼片NTC溫度保護設定值為85±5℃，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±5℃時，發射器恢復正常工作。（可選擇更換成外接NTC）

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℃-40℃ / RH40~60%

6.2. Storage Temperature and Relative Humidity/儲存溫度和相對濕度-20℃-40℃ / 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℃-25℃, 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℃-25℃ / RH40~ 60%。為使產品維持良好之功能性，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.

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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

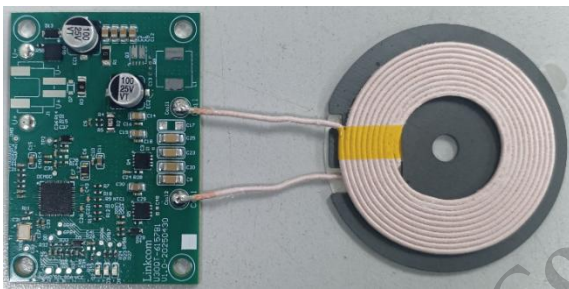
7.1. EMI Standards電磁相容標

55032

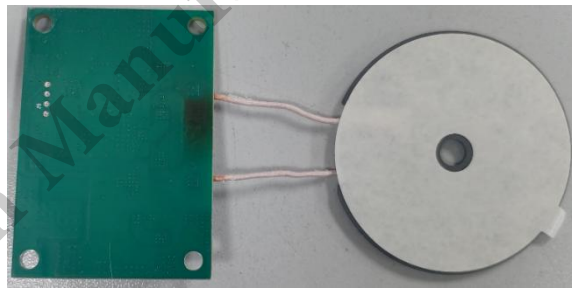
Note : The EMI test should include the actual testing of the enclosure and RX equipment.

備註：EMI 測試需包含外殼與 RX 設備實際測試。

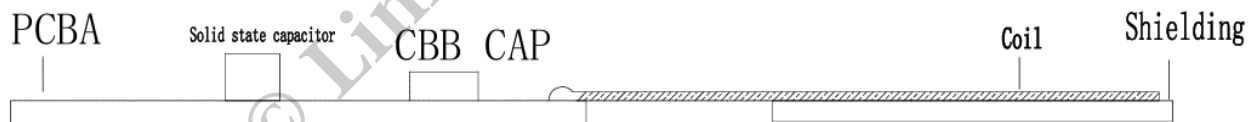
8. Photo of Product/產品照片



Module Front Side 模組前面



Module Back Side 模組後面



Module Back Side 模組後面

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:

無線充產品設計，需要注意以下幾點：

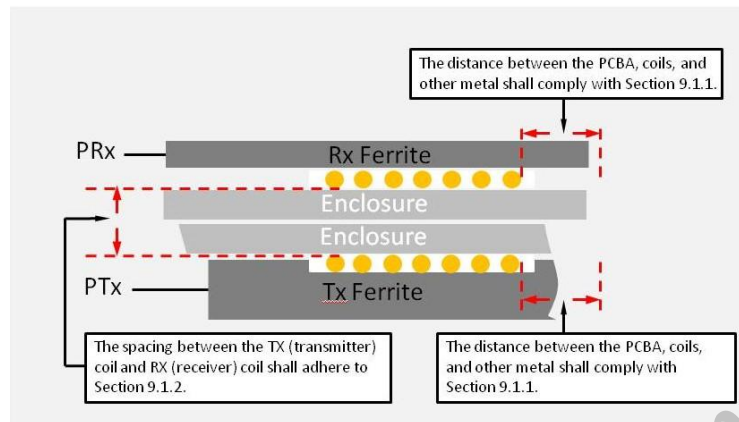
9.1.1 The distance between Coil with PCBA and other metal components is Min: 4.50mm.

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.

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9.1.3 In order to pass the EMI test, it is recommended to use a DC power supply plus a common mode inductor and then connect to the PCBA.

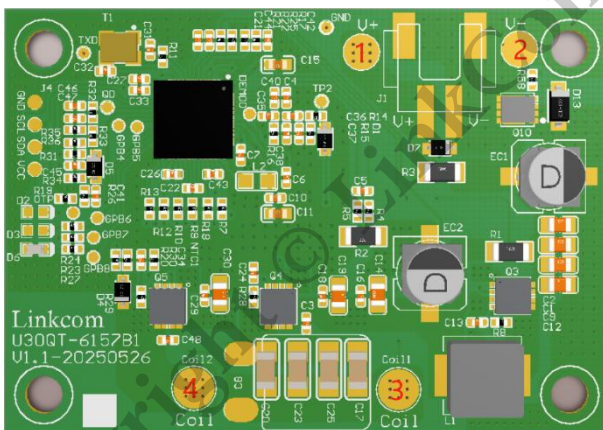
為了通過EMI測試，建議使用DC電源外加共模電感後連接PCBA。

9.1.4 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。

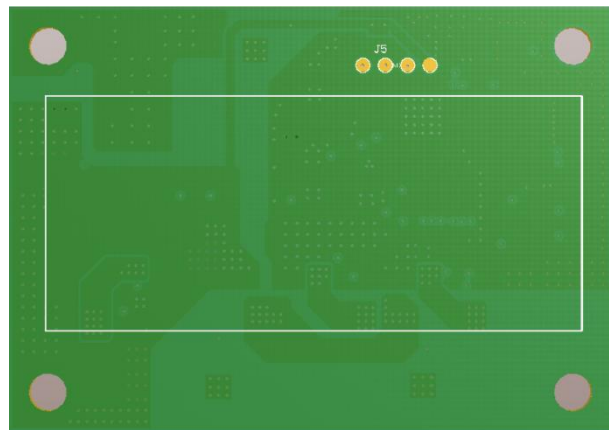
9.2. PCBA Port Functional Illustration/PCBA功能說明

PCBA Version : V1.1



PCBA正面

PCBA Front Side



PCBA背面

PCBA Backside

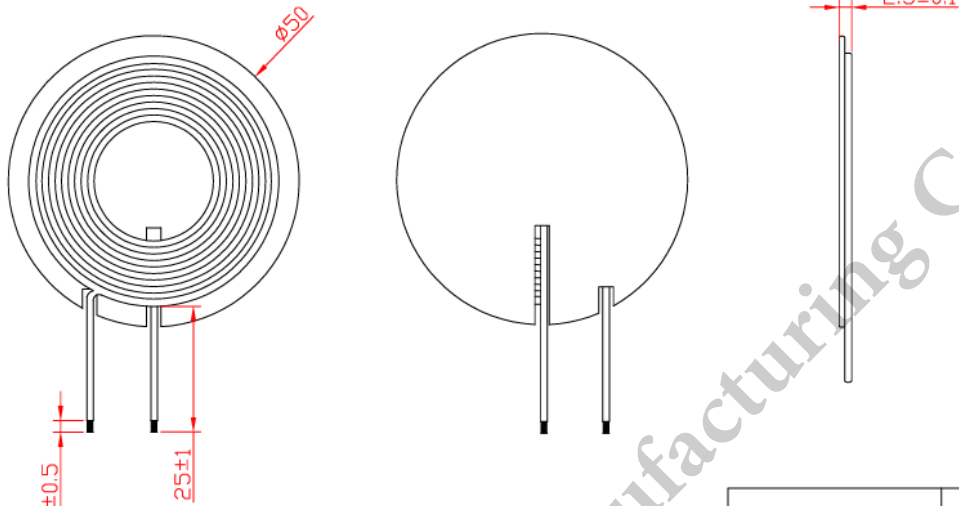
PCBA Size: $L54^{\pm 0.5} * W38^{\pm 0.5} * T7.5^{\pm 1}$ mm

Port	Pin1	Pin2	Pin3	Pin4			
Function	V+	V-	Coil-1	Coil-2			

9.3. TX Coil Spec : TX線圈規範

Coil + Shielding : $\Phi 50^{\pm 0.5} * T2.5^{\pm 0.5}$ mm

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ELECTRICAL SPECIFICATION@25 °C

PARAMETERS	UNIT	LIMIT
Inductance,LS@100KHz,1.0V , 0.08mm*105 ~10Turns	uH	6.5±10%uH
Q	---	65±10%
DCR	mΩ	35±10%

ERP PART	A11线圈绕组
DESCRIPTION	
Dimensions	mm
Modified version	A0
Modified by	CAI
Modified Date	2020-4-3

9.4. Aluminum heat sink gauge Spec 铝散热片规格

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

- ◆ Standby: The green light is constantly on / 待機: 綠色燈常亮
- ◆ Power on: The green light is on / 通電: 綠色燈亮
- ◆ When charging: Blue light flashes / 充電時: 藍燈閃亮
- ◆ Charge Complete: Blue LED Off / 充電完成: 藍燈熄滅
- ◆ Abnormal: Red light always on / 異常: 紅燈長亮
- ◆ FOD: red light on continuously / 檢測到異物: 紅燈長亮

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11. Attentions/使用注意事項

- 11.1. Please use the correct rated AC Adapter, to ensure the normal function.
請使用配置的正确規格電源適配器，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

25.5g±2g

13. Packaging/包裝

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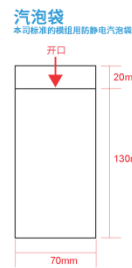
TF-6101-1_Carton Packing Method

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:



①將模組裝入汽泡袋

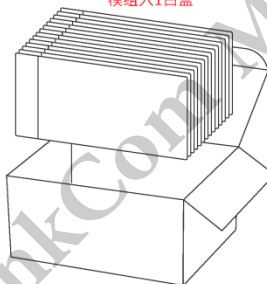


②汽泡袋封蓋

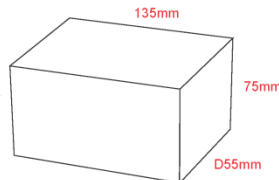


③每5PCS模組入1白盒

5PCS
模組入1白盒



④白盒封蓋

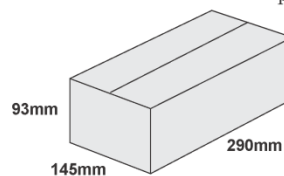
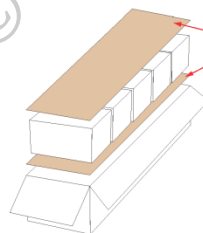


INNER

shipping mark: 4 faces

line:

pcs: 25

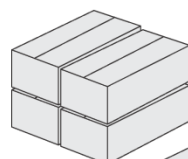


OUTER

shipping mark: faces

line:

pcs: 100



210mm

310mm

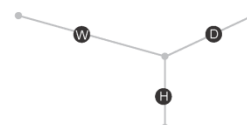
315mm

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

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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.