

TEST REPORT

Report No.: SHATBL2412029W02

Applicant : Satellite Electronics (Zhong shan) Co Ltd.

Product Name : CEILING FAN REMOTE CONTROL

Brand Name : N/A

Model Name : TR310A-L,TR311A-L

FCC ID : 2AQZU-18061

Test Standard : 47 CFR Part 2.1091

Date of Test : 2024.12.24~2024.12.27

Report Prepared by :

Chris Xu

(Chris Xu)

Report Approved by :

Guozheng Li

(Guozheng Li)

Authorized Signatory :

Terry Yang

(Terry Yang)



TABLE OF CONTENTS

| | |
|--|---|
| REVISION HISTORY | 3 |
| DECLARATION OF REPORT | 4 |
| 1. GENERAL DESCRIPTION | 5 |
| 1.1. Applicant | 5 |
| 1.2. Manufacturer | 5 |
| 1.3. Factory | 5 |
| 1.4. General Information of EUT | 6 |
| 1.5. Laboratory Information | 6 |
| 2. FCC 47CFR §2.1091 Requirement | 7 |
| 2.1. Test Standards | 7 |
| 2.2. Limit | 7 |
| 2.3. MPE Calculation Method | 8 |
| 2.4. Antenna Information | 8 |
| 2.5. Manufacturing Tolerance | 8 |
| 2.6. Test Result | 9 |

REVISION HISTORY

| Rev. | Issue Date | Revisions | Revised by |
|------|------------|-----------------|------------|
| 00 | 2024.12.27 | Initial Release | N/A |

DECLARATION OF REPORT

1. The device has been tested by ATBL, and the test results show that the equipment under test (EUT) is in compliance with the requirements of 47 CFR Part 2.1091. And it is applicable only to the tested sample identified in the report.
2. This report shall not be reproduced except in full, without the written approval of ATBL, this document only be altered or revised by ATBL, personal only, and shall be noted in the revision of the document.
3. The general information of EUT in this report is provided by the customer or manufacture, ATBL is only responsible for the test data but not for the information provided by the customer or manufacture.
4. The results in this report is only apply to the sample as tested under conditions. The customer or manufacturer is responsible for ensuring that the additional production units of this model have the same electrical and mechanical components.
5. In this report, '☐' indicates that EUT does not support content after '☐', and '☑' indicates that it supports content after '☑'

1. GENERAL DESCRIPTION

1.1. Applicant

Name : Satellite Electronics (Zhong shan) Co Ltd.

Address : No.8, Chuang Ye Road, Torch Development Zone, Zhongshan, Guangdong, China

1.2. Manufacturer

Name : Satellite Electronics (Zhong shan) Co Ltd.

Address : No.8, Chuang Ye Road, Torch Development Zone, Zhongshan, Guangdong, China

1.3. Factory

Name 1 : Satellite Electronics (Zhong shan) Co Ltd.

Address 1 : No.8, Chuang Ye Road, Torch Development Zone, Zhongshan, Guangdong, China

Name 2 : CHUNGGEAR INDUSTRIAL CO., LTD.

Address 2 : No.12, Jingke 8th Rd., Nantun Dist., Taichung City 40852, Taiwan (R.O.C.)

1.4. General Information of EUT

| | |
|-------------------------|--------------------------------------|
| Product Name | CEILING FAN REMOTE CONTROL |
| Trade Name | N/A |
| Model Name | TR310A-L |
| Series Model | TR311A-L |
| Model Difference | Only the function keys are different |
| Frequency band | 304.25MHz |
| Power supply | AC 120V 60Hz |
| Modulation Type | ASK |
| Antenna type: | PCB Antenna |
| Antenna gain: | -6dBi |
| Hardware version number | TR310A-L (241128) |
| Software version number | MCU369 (TK18) |

1.5. Laboratory Information

| | |
|--------------------------|--|
| Company Name: | Shanghai ATBL Technology Co., Ltd. |
| Address: | Building 8, No. 160, Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai |
| Telephone: | +86(0)21-51298625 |
| FCC-Registration Number: | 0031025281 |
| Designation Number: | CN1306 |
| A2LA-Lab Cert. No.: | 6184.01 |
| ISED Designation Number: | 27371 |

2. FCC 47CFR §2.1091 Requirement

2.1. Test Standards

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

KDB447498 D01: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

2.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure | | | | |
| 0.3 – 3.0 | 614 | 1.63 | (100) * | 6 |
| 3.0 – 30 | 1842/f | 4.89/f | (900/f ²)* | 6 |
| 30 – 300 | 61.4 | 0.163 | 1.0 | 6 |
| 300 – 1500 | / | / | f/300 | 6 |
| 1500 – 100,000 | / | / | 5 | 6 |

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

| Frequency Range(MHz) | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm ²) | Averaging Time (minute) |
|---|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure | | | | |
| 0.3 – 3.0 | 614 | 1.63 | (100) * | 30 |
| 3.0 – 30 | 824/f | 2.19/f | (180/f ²)* | 30 |
| 30 – 300 | 27.5 | 0.073 | 0.2 | 30 |
| 300 – 1500 | / | / | f/1500 | 30 |
| 1500 – 100,000 | / | / | 1.0 | 30 |

F=frequency in MHz

*=Plane-wave equivalent power density

2.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

2.4. Antenna Information

EUT can only use antennas certificated as follows provided by manufacturer;

| Antenna | Model No. of antenna: | Type of antenna: | Gain of the antenna (Max.) | Frequency range: (MHz) |
|---------|-----------------------|------------------|----------------------------|------------------------|
| 304.25M | / | PCB Antenna | -6dBi | 304.25 |

2.5. Manufacturing Tolerance

| Frequency (MHz) | ANT0 | | |
|------------------|--------|----|----|
| | 304.25 | -- | -- |
| Target (dBm) | -38.87 | -- | -- |
| Tolerance ± (dB) | 1.0 | -- | -- |

Note: dBm= dBuV-95.2=56.50dBuV-95.2=-38.87dBm

2.6. Test Result

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r=20\text{cm}$, as well as the gain of the used antenna is refer to section 4, the RF power density can be obtained.

| Modulation Type | Output power (Target) | | Antenna Gain (dBi) | Antenna Gain (linear) | MPE (mW/cm ²) | MPE Limits (mW/cm ²) |
|-----------------|-----------------------|----------|--------------------|-----------------------|---------------------------|----------------------------------|
| | dBm | mW | | | | |
| 304.25MHz | -37.87 | 0.000017 | 0 | 1 | 0.00016 | 0.20 |

Note:

- 1.The Maximum power is less than the limit, complies with the exemption requirements.
- 2.Output power including turn-up tolerance;
- 3.The calculated distance is 20 cm.

*****END OF THE REPORT*****