

# TEST REPORT

**Reference No.**..... : WTH23D11248735W002  
**FCC ID** ..... : 2ANPS-KS-WL02C  
**Applicant**..... : Shenzhen King-Serry Electronics Co.,ltd  
**Address**..... : Floor 4, Building 3, Dingyu Science Park, No.6 Caiyun Road,  
Longcheng Street, Longgang District, Shenzhen, Guangdong China  
**Manufacturer** ..... : Shenzhen King-Serry Electronics Co.,ltd  
**Address**..... : Floor 4, Building 3, Dingyu Science Park, No.6 Caiyun Road,  
Longcheng Street, Longgang District, Shenzhen, Guangdong China  
**Product**..... : Cool Color Bike Tail Light with Turn Signals and Brake Light  
/Smart Bicycle Headlight  
**Model(s)** ..... : KS-SF34R, KS-SF35R, KS-SF36R, KS-WL02C, KS-WL11C  
**Standards**..... : FCC 47CFR Part 2 Subpart J Section 2.1093  
**Date of Receipt sample** .... : 2023-11-23  
**Date of Test** ..... : 2023-11-23 to 2023-12-04  
**Date of Issue**..... : 2023-12-12  
**Test Result**..... : **Pass**

**Remarks:**

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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3. Revision History

| Test Report No.    | Date of Receipt Sample | Date of Test                   | Date of Issue | Purpose  | Comment | Approved |
|--------------------|------------------------|--------------------------------|---------------|----------|---------|----------|
| WTH23D11248735W002 | 2023-11-23             | 2023-11-23<br>to<br>2023-12-04 | 2023-12-12    | Original | -       | Valid    |

## 4. General Information

### 4.1. General Description of E.U.T.

|                    |                                                                                       |
|--------------------|---------------------------------------------------------------------------------------|
| Product Name:      | Cool Color Bike Tail Light with Turn Signals and Brake Light /Smart Bicycle Headlight |
| Model No.:         | KS-SF34R, KS-SF35R, KS-SF36R, KS-WL02C, KS-WL11C                                      |
| Model description: | Only the model names are different.<br>Model KS-WL02C was tested in the report.       |
| Hardware Version:  | KS-WL02C-PCB-V10                                                                      |
| Software Version:  | KS_WL02C_JZ8P1521_SOP14_3BCB_Mar2023_V3.0                                             |

### 4.2. Details of E.U.T.

|                        |                     |
|------------------------|---------------------|
| Frequency Range:       | 433.92MHz           |
| Type of Modulation:    | FSK                 |
| The Lowest Oscillator: | 26.2982MHz          |
| Antenna installation:  | PCB Printed Antenna |
| Antenna Gain           | -8dBi               |

Note:

#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTERK lab has not verified the authenticity of its information.

Battery: DC 3V from battery

### 4.3. Test Facility

The test facility has a test site registered with the following organizations:

**ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.**

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2016.

**FCC Designation No.: CN1201. Test Firm Registration No.: 523476.**

Waltek Testing Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration number 523476, September 10, 2019.

### 4.4. Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

#### **4.5. Abnormalities from Standard Conditions**

None.

## 5. Test Summary

| Test Items                                                        | Test Requirement | Result |
|-------------------------------------------------------------------|------------------|--------|
| Maximum Permissible Exposure<br>(Exposure of Humans to RF Fields) | FCC Part 2.1093  | PASS   |

## 6. RF Exposure

Test Requirement: FCC 47CFR Part 2 Subpart J Section 2.1093  
 Evaluation Method: FCC 47CFR Part 1 Subpart I Section 1.1307,  
 KDB 447498 D01 General RF Exposure Guidance v06

### 6.1. Procedures and Requirements

According to §15.247 (i) and §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.

For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, where

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to qualify for TCB approval.

### 6.2. MPE Calculation Method

$$\text{Result} = P\sqrt{F} / D$$

P= Maximum turn-up power in mW

F= Channel frequency in GHz

D= Minimum test separation distance in mm

### 6.3. Radio Frequency Radiation Exposure Evaluation

According to ANSI C63.10:2013 clause 9.5

Calculate the EIRP from the radiated field strength in the far field using Equation (22):

$$\text{EIRP} = E_{\text{Meas}} + 20 \log(d_{\text{Meas}}) - 104.7 \quad (22)$$

where

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| EIRP              | is the equivalent isotropically radiated power, in dBm                             |
| $E_{\text{Meas}}$ | is the field strength of the emission at the measurement distance, in dB $\mu$ V/m |
| $d_{\text{Meas}}$ | is the measurement distance, in m                                                  |

NOTE—Because this equation yields the identical result whether the field strength is extrapolated using the default 20 dB/decade of distance extrapolation factor, or the field strength is not extrapolated for distance, this equation can generally be applied directly (with no further correction) to determine EIRP. In some cases, a different distance correction factor may be required; see 9.1.

| Frequency(MHz) | E-Field Strength<br>(dBuV/m) | Measurement<br>Distance (m) | EIRP (dBm) |
|----------------|------------------------------|-----------------------------|------------|
| 433.92         | 93.74                        | 3                           | -1.42      |

A distance of 5mm normally can be maintained between the user and the device.

| Frequency<br>(GHz) | Max<br>Power<br>(dBm) | Max Tune-up<br>Power<br>(dBm) | Max Tune-up<br>Power<br>(mW) | Distance<br>(mm) | Result | Limit |
|--------------------|-----------------------|-------------------------------|------------------------------|------------------|--------|-------|
| 0.43392            | 4.43                  | 5.43                          | 3.49                         | 5                | 0.4602 | 3     |

Note:

1. EIRP (dBm)= Max Power (dBm) + G +2.15.
2. Chose the maximum power to do MPE analysis.

**Conclusion:**

No SAR measurement is required.

=====End of Report=====