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RF Exposure Evaluation Report

Report No.: CQASZ20240601135E-02
Applicant: Shenzhen YiGuo Electronic Technology Co., Ltd.
Address of Applicant: 3F-10 Building, JiaYiDa Industrial Park, LiaoKeng New Village, Langxin community, Shiyan Street, Baoan District, ShenZhen, China
Equipment Under Test (EUT):
EUT Name: Solar tire pressure monitoring
Model No.: KM-2T, KM-4T, KM-6T, KM-BT, KM-TK, KM-OE
Test Model No.: KM-6T
Brand Name: N/A
FCC ID: 2BHIA-KM-6T
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2024-06-21
Date of Test: 2024-06-21 to 2024-07-10
Date of Issue: 2024-07-12
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Lewis Zhou
(Lewis Zhou)

Reviewed By: Timo Lei
(Timo Lei)

Approved By: Alex
(Alex Wang)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20240601135E-02	Rev.01	Initial report	2024-07-12

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3 General Information

3.1 Client Information

Applicant:	Shenzhen YiGuo Electronic Technology Co., Ltd.
Address of Applicant:	3F-10 Building, JiaYiDa Industrial Park, LiaoKeng New Village, Langxin community, Shiyan Street, Baoan District, ShenZhen, China
Manufacturer:	Shenzhen YiGuo Electronic Technology Co., Ltd.
Address of Manufacturer:	3F-10 Building, JiaYiDa Industrial Park, LiaoKeng New Village, Langxin community, Shiyan Street, Baoan District, ShenZhen, China
Factory:	Shenzhen YiGuo Electronic Technology Co., Ltd.
Address of Factory:	3F-10 Building, JiaYiDa Industrial Park, LiaoKeng New Village, Langxin community, Shiyan Street, Baoan District, ShenZhen, China

3.2 General Description of EUT

Product Name:	Solar tire pressure monitoring
Model No.:	KM-2T, KM-4T, KM-6T, KM-BT, KM-TK, KM-OE
Test Model No.:	KM-6T
Trade Mark:	N/A
Software Version:	V01
Hardware Version:	V5
Sample Type:	☐ Mobile ☒ Portable
Operation Frequency:	433.92MHz
Channel Numbers:	1
Modulation Type:	FSK
Antenna Type:	PCB antenna
Antenna Gain:	-5.76dBi
Power Supply:	Button battery: DC 3V

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

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

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

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

where

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

Channel	EIRP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
Lowest (2403MHz)	-20.31	0.01	1

$EIRP = 74.89 - 95.2 = -20.31 \text{ dBm} = 0.01 \text{ mW} < 1 \text{ mW}$

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20240601135E-01.