



Report No.: PTC25061619601E-FC03

FCC TEST REPORT

FCC ID: 2BQG6TW-5-P1

Product	:	tracker wheel
Model Name	:	TW-5-P1
Additional Model	:	TW-4-P1,TW-3-P1
Brand	:	N/A
Report No.	:	PTC25061619601E-FC03
Prepared for		
QUZHOU SANMAX HARDWARE TECHNOLOGY CO., LTD		
Room 36, No. 2 Juhai Rd., Qujiang District, Quzhou City, Zhejiang Province, China		
Prepared by		
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TEST RESULT CERTIFICATION

Applicant's name : QUZHOU SANMAX HARDWARE TECHNOLOGY CO., LTD
Address : Room 36, No. 2 Juhai Rd., Qujiang District, Quzhou City, Zhejiang Province, China
Manufacture's name : QUZHOU SANMAX HARDWARE TECHNOLOGY CO., LTD
Address : Room 36, No. 2 Juhai Rd., Qujiang District, Quzhou City, Zhejiang Province, China
Product name : tracker wheel
Model name : TW-5-P1
Additional Model : TW-4-P1, TW-3-P1
Test procedure : FCC CFR47 Part 1.1307(b)(1)
Test Date : June 18, 2025 to July 16, 2025
Date of Issue : July 16, 2025
Test Result : PASS

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu / Manager



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2 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	15.247 (i)	PASS
Remark:		
N/A: Not Applicable		



3 General Information

3.1 General Description of E.U.T.

Product Name	:	tracker wheel
Model Name	:	TW-5-P1
Additional Model	:	TW-4-P1,TW-3-P1
Operation Frequency	:	BLE:2402-2480MHz Lora:902.3-914.9MHz
Number of Channels	:	BLE:40 channels Lora:64 Channels
Type of Modulation	:	BLE:GFSK Lora:FSK
Antenna installation	:	FPC Antenna
Antenna Gain	:	BLE:2.85 dBi Lora:1.75 dBi
Power supply	:	Battery: Li-ion Battery :ER18505 Rated Voltage: 3.6V Rated Capacity:120mAh
Hardware Version	:	N/A
Software Version	:	N/A



4 RF Exposure

Test Requirement : FCC Part 1.1307(b)(1)

Evaluation Method : KDB 447498 D01 General RF Exposure Guidance v06

4.1 Requirements

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 levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

4.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density



4.3 MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } P_d \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$P_d = \frac{30 \times P \times G}{377 \times d^2} \theta_{\phi}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

4.4 Manufacturing tolerance

Freq. (MHz)	Field strength(max)(dBuV/m)	EIRP (max) (dBm)
902.3	92.48	-2.72
908.7	92.63	-2.57
914.9	91.25	-3.95
Note: EIRP=E-104.8+20logD, Where E is the electric field strength in dBμV/m EIRP is the equivalent isotropically radiated power in dBm d is the specified measurement distance in m where D=3, EIRP=E-95.2.		



4.5 Test Result

Mode	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Tune up tolerance (dBm)	Max Tune Up Power (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)	Result
908.7MHz	1.50	-2.57	-2.57±1	0.696627	0.000207	0.605800	Pass
2402MHz(BLE)	1.93	0.10	0.10±1	1.288250	0.000494	1.000000	Pass

Simultaneous SAR Evaluation:

The device can't support simultaneous transmitter.

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