

TEST REPORT

Reference No...... : WTD24D04093365W002
FCC ID : 2BCSY-TM4
Applicant..... : TMT AUTOMATION INC.
Address..... : 4F., No. 108, Minquan Rd., Xindian Dist., New Taipei City 231033, Taiwan
Manufacturer : Dongguan Hongguan Co., Ltd.
Address..... : Shiyong Mingying Industrial Zone, Hengli Town, DongGuan City, GuangDong, China
Product..... : Remote Controller
Model(s) : TM4
Standards..... : FCC 47CFR Part 2 Subpart J Section 2.1093
Date of Receipt sample : 2024-04-25
Date of Test : 2024-04-27 to 2024-07-16
Date of Issue..... : 2024-07-17
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
WTD24D04093365W002	2024-04-25	2024-04-26 to 2024-07-16	2024-07-17	Original	-	Valid

4. General Information

4.1. General Description of E.U.T.

Product Name:	Remote Controller
Model No.:	TM4
Model Description:	N/A
Test Sample No.:	1-1/1
Hardware Version:	40121P-854-A
Software Version:	N/A

4.2. Details of E.U.T.

Frequency Range:	433.67MHz~434.17MHz
Type of Modulation:	ASK, FSK
The Lowest Oscillator:	13.56MHz
Antenna installation:	PCB Antenna
Antenna Gain	0dBi

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 CR2032 Lithium 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 (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 ≤ 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 ≤ 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_{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

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 (dBuV/m)	Measurement Distance (m)	EIRP (dBm)
433.955	74.67	3	-20.49

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

Frequency (GHz)	Antenna Gain (dBi)	Antenna Gain (numeric)	Max Power (dBm)	Max Tune-up Power (dBm)	Max Tune-up Power (mW)	Distance (mm)	Result	Limit
0.433955	0	1	-22.64	-21.64	0.01	5	0.0009	3

Note:

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

Conclusion:

No SAR measurement is required.

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