

TEST REPORT

Reference No...... : WTD24D11258118W002
FCC ID : KE3-3003812
Applicant..... : Radio Systems Corp
Address..... : 10427 PetSafe Way, Knoxville, Tennessee, 37932, United States
Manufacturer : Radio Systems Corp
Address..... : 10427 PetSafe Way, Knoxville, Tennessee, 37932, United States
Product..... : PetSafe Basic Dog Trainer PDT00-18034
Model(s) : RFA-654
Standards..... : FCC 47CFR Part 2 Subpart J Section 2.1093
Date of Receipt sample : 2024-11-07
Date of Test : 2024-11-07 to 2024-11-18
Date of Issue..... : 2024-12-04
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
WTD24D11258118W002	2024-11-07	2024-11-07 to 2024-11-18	2024-12-04	Original	-	Valid

4. General Information

4.1. General Description of E.U.T.

Product Name:	PetSafe Basic Dog Trainer PDT00-18034
Model No.:	RFA-654
Model Description:	N/A
Test Sample No.:	1-1/1
Hardware Version:	#007
Software Version:	V1.05

4.2. Details of E.U.T.

Frequency Range:	433.97MHz
Transmitted Power:	71.99dBuV/m @3m distance
Type of Modulation:	FSK
Antenna installation:	Spring Antenna

Note:

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

Charge Voltage:	DC 5V
Battery:	Lithium-ion 3.7V 200mAh

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: 47 CFR Part 1 §1.1307
 47 CFR Part 1 §1.1310
 KDB 447498 D01 General RF Exposure Guidance v07

6.1. Definitions

According to § 2.1093(b), A portable device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that the RF source's radiating structure(s) is/are within 20 centimeters of the body of the user.

This device belongs to portable device and with single RF source.

6.2. MPE Calculation Method

Determination of Exemption:
For single RF sources

Option A

Option A 1-mW Test Exemption

Applies to all frequencies and all distances

- Could be considered SAR-based and MPE-based exclusions
- $P < 1\text{mW}$
- Limitation—when there are simultaneously operating transmitters this exclusion only applies when all simultaneously operating transmitters meet this exemption
- Refer 1.1307(b)(3)(i)(A) and 1.1307(b)(3)(ii)(A)

Option B SAR-Based Exemption

Frequency range 300 MHz -6 GHz, $5\text{mm} \leq \text{distance} \leq 40\text{cm}$

- The maximum time-averaged power or effective radiated power (ERP), whichever is greater, $\leq P_{th}$.
- P_{th} is calculated based on separation distance d cm from transmitter to person for the device operating at f GHz.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20\text{ cm}} (d/20\text{ cm})^x & d \leq 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \leq 40\text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20\text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} < f < 6\text{ GHz} \end{cases}$$

d = the separation distance (cm);

Option C MPE-Based Exemption

1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance R between the person and the antenna / radiating structure, where $R > \lambda / 2\pi$.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2f$.
1,500-100,000	$19.2R^2$.
Note: R in meters, f in MHz	

For multiple RF sources

According to 47CFR 1.1307(b)(3)(ii), the calculation formula is as follow:

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

6.3. Evaluation Results

This device belongs to portable device and with single RF source.

E dB μ V/m	EIRP dBm	EIRP mW
71.99	-23.21	0.004775

Note:

$$E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{m}]) + 104.77,$$

$$\text{if } d \text{ is } 3 \text{ m, } \text{EIRP}[\text{dBm}] = E[\text{dB}\mu\text{V/m}] - 95.2$$

0.004775mW < 1mW

Option A is applicable.

Conclusion:

RF Exposure is FCC compliant.

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