



## **Compliance Testing, LLC**

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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### **Test Report**

**Prepared for: Garmin International**

**Model: Trashbreaker**

**Description: Wireless Dog Training Collar**

**To**

**FCC Part 1.1310**

**Date of Issue: March 17, 2014**

**On the behalf of the applicant:**

**Garmin International  
1200 East 151<sup>st</sup> Street  
Olathe, KS 66062**

**Attention of:**

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Project No: p1420003**

**Mike Graffeo  
Project Test Engineer**

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All results contained herein relate only to the sample tested



### Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	March 17, 2014	Mike Graffeo	Original Document



### ILAC / A2LA

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless below

Please refer to <http://www.compliancetesting.com/labscope.html> for current scope of accreditation.

Testing Certificate Number: **2152.01**



**FCC Site Reg, #349717**

**IC Site Reg. #2044A-2**

**Non-accredited tests contained in this report:**

**N/A**



This is a portable device such that it is a hand held transmitter with the Low Duty Cycle SAR exclusion from KDB 447498 Appendix A being used as a reference before applying formula from section 4.3.1.

Three frequencies were evaluated:

**Exclusion Ratio:**

Formula 1 from Section 4.3.1 of KDB 447498 D01

$$[(\text{conducted max. power of channel in mW} \times \text{duty cycle}) / (\text{test separation distance in mm})] \times (\sqrt{f(\text{GHz})})$$

Where the documented duty cycle from the theory of operation is stated at 0.29%

Minimum test separation distance = 5 mm

Minimum test separation distance is less than 5mm, so default value of 5mm is used per Formula 1

**1) For 151.82 MHz**

$(1970 \times 0.0029 / 5) \times (\sqrt{.15182}) = \text{Exclusion Ratio}$

$(1.1426) \times (0.3896) = \text{Exclusion Ratio}$

0.445 = Exclusion Ratio

Exclusion Threshold = 7.5 for 10-g extremity SAR

The final ratio of 0.445 is below the exclusion threshold of 7.5 therefore SAR testing is excluded.

**2) For 151.94 MHz**

$(1660 \times 0.0029 / 5) \times (\sqrt{.15194}) = \text{Exclusion Ratio}$

$(0.9628) \times (0.3898) = \text{Exclusion Ratio}$

0.375 = Exclusion Ratio

Exclusion Threshold = 7.5 for 10-g extremity SAR

The final ratio of 0.375 is below the exclusion threshold of 7.5 therefore SAR testing is excluded.

**3) For 154.60 MHz**

$(1820 \times 0.0029 / 5) \times (\sqrt{.15460}) = \text{Exclusion Ratio}$

$(1.0556) \times (0.3932) = \text{Exclusion Ratio}$

0.415 = Exclusion Ratio

Exclusion Threshold = 7.5 for 10-g extremity SAR

The final ratio of 0.415 is below the exclusion threshold of 7.5 therefore SAR testing is excluded.



**Summary of SAR Measurement Necessity:**

<b>Tuned Frequency</b>	<b>Conducted Output Power in dBm (mW)</b>	<b>Exemption Ratio "ER"</b>	<b>Exclusion Threshold "ET"</b>	<b>SAR Required (ER &gt; ET) ?</b>
151.82 MHz	32.94 (1970mW)	0.445	7.5	No
151.94 MHz	32.20 (1660mW)	0.375	7.5	No
154.60 MHz	32.60 (1820mW)	0.415	7.5	No

**PER the exclusion requirement of KDB 447498 a SAR measurement is not necessary.**

END OF TEST REPORT