

# Philips Oral Healthcare LLC

## RF Exposure Exhibit

### SCOPE OF WORK

EMC TESTING – Rechargeable Electric Toothbrush Handle, Model: HX999C

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104498238MPK-015

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**RF Exposure Exhibit  
(Portable devices)****Report Number: 104498238MPK-015****Project Number: G104498238****Report Issue Date: March 11, 2021****Product Designation: Rechargeable Electric Toothbrush Handle****Model Tested: HX999C****FCC ID: 2ADZNHX999****IC: 20109-HX999**

to

**47CFR 2.1093****RSS-102 Issue 5**

for

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<b>Report No. 104498238MPK-015</b>	
<b>Equipment Under Test:</b>	Rechargeable Electric Toothbrush Handle
<b>Trade Name:</b>	Philips Oral Healthcare LLC
<b>Model(s) Tested:</b>	HX999C
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<b>Applicable Regulation:</b>	47CFR 2.1093 RSS-102 Issue 5

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**1.0 RF Exposure Summary**

Test	Reference FCC	Reference Industry Canada	Result
Radio frequency Radiation Exposure Evaluation	47 CFR§2.1093	RSS-102 Issue 5	Complies

**2.0 RF Exposure Limits**

**2.1 FCC Limits**

According to FCC KDB 447498 D01 v06 Appendix A, at frequency 2450 MHz and separation distance of  $\leq 5$  mm SAR Exemption limit is  $\leq 10$  mW.

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g SAR Test Exclusion Thresholds indicated above.

**2.2 Industry Canada Limits**

According to RSS-102 sec. 2.5.1 table 1, at frequency 2450 MHz and separation distance of  $\leq 5$  mm SAR Exemption limit is  $\leq 4$  mW.

Note: For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 of RSS-102 are multiplied by a factor of 2.5.

**3.0 Test Results (Portable Configuration)**

**3.1 Classification**

For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Per the applicant, the Rechargeable Electric Toothbrush Handle is intended to be worn at the knees.

**3.2 EIRP calculations**

The Rechargeable Electric Toothbrush Handle consists of Bluetooth Low Energy radio.

**3.3 Maximum RF Power**

Frequency Range (MHz)	RF Output (dBm)	Antenna Gain <sup>1</sup> (dBi)	Note
2402-2480	0.60	-5.0	Conducted power measurements were taken from Report # 104498238MPK-001.

<sup>1</sup>As declared by the manufacturer.

### 3.4 RF Exposure Calculation for Rechargeable Electric Toothbrush Handle

#### 3.4.1 RF Exposure calculation for FCC KDB 447498 D01 v06

According to FCC KDB 447498 D01 v06 Appendix A, at frequency 2450 MHz and separation distance of  $\leq 5$  mm SAR Exemption limit is  $\leq 10$  mW.

Max Peak Conducted Power measured = 0.60 dBm or 1.148 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is 0.60 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = 0.60 dBm or 1.148 mW.

***Results: SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (EIRP) source-based, time averaged output power is below the exemption limit.***

Note: Antenna gains below 0 are considered as 0dBi.

#### 3.4.2 RF Exposure calculation for RSS-102 Issue 5

According to RSS-102 sec. 2.5.1, at frequency 2450 MHz and separation distance of  $\leq 5$  mm SAR Exemption limit is  $\leq 4$  mW.

Max Peak Conducted Power measured = 0.60 dBm or 1.148 mW

No duty cycle was considered.

Therefore, the Maximum EIRP calculated is 0.60 dBm (RF Conducted Power) + 0 dBi (Antenna Gain) = 0.60 dBm or 1.148 mW.

***Results: SAR evaluation is not required since the higher of the maximum conducted or equivalent isotopically radiated power (EIRP) source-based, time averaged output power is below the exemption limit.***

Note: Antenna gains below 0 are considered as 0dBi.

**4.0 Document History**

<b>Revision/ Job Number</b>	<b>Writer Initials</b>	<b>Reviewers Initials</b>	<b>Date</b>	<b>Change</b>
1.0/ G104498238	AC	KV	March 11, 2021	Original document