



FCC Part 1 Subpart I  
FCC Part 2 Subpart J

**RF EXPOSURE REPORT**

**FOR**

**RECHARGEABLE TOOTHBRUSH**

**MODEL NAME: PD1**

**FCC ID: 2AL5Y-PD1**

**REPORT NUMBER: R14124093-S1V1**

**ISSUE DATE: 2022-02-25**

*Prepared for*  
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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2021-12-30	Initial Issue	Haley Ackun
V2	2022-02-15	Updated Antenna Gain	Haley Ackun
V3	2022-02-25	Updated Antenna Gain	Haley Ackun

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Colgate-Palmolive Company  
909 Rive Road  
Piscataway, NJ, 08855 USA

**EUT DESCRIPTION:** RECHARGEABLE TOOTHBRUSH

**MODEL NAME:** PD1

**SERIAL NUMBER:** Non-serialized

**DATE TESTED:** 2021-12-28

**SAMPLE RECEIPT DATE:** 2021-12-21

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 1 SUBPART I & PART 2 SUBPART J	Complies

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released  
For UL LLC By:



Mike Antola  
Staff Engineer  
UL – Consumer Technology Division



Haley Ackun  
Engineering Project Handler  
UL – Consumer Technology Division

## 2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 1.1310, 2.1091, 2.1093, KDB 447498 D01 v06, KDB 447498 D03 V01, IEEE Std C95.1-2005, and IEEE Std C95.3-2002.

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer

## 3. REFERENCES

Duty cycle and Output Power are excerpted from the applicable test reports.

Antenna gain is excerpted from the client declarations.

## 4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input type="checkbox"/>	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
<input checked="" type="checkbox"/>	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

## 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 5.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 5.2. DECISION RULES

For all tests where the applicable  $U_{LAB} \leq U_{MAX}$  the Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2, where  $U_{MAX} = 30\% (0.3)$  for RF Exposure evaluations. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

For all tests where the applicable  $U_{LAB} > U_{MAX}$  the Decision Rule is based on Guarded Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.3.2, with a guard band equal to  $(U_{LAB} - U_{MAX})$ , where  $U_{MAX} = 30\% (0.3)$  for RF Exposure evaluations. (Test results are adjusted by the value of the guard band to determine conformity with a specified requirement.)

### 5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	$U_{Lab}$	$U_{MAX}$
Test method used to measure the power of the fundamental transmitting signal.	0.45	30%

Uncertainty figures are valid to a confidence level of 95%.

## 6. Device under test

The EUT is a rechargeable toothbrush that supports BLE. The user to antenna separation distance is specified as 0mm.

## 7. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

### 7.1. FCC

SAR test exclusion in accordance with KDB 447498.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$\lceil (max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm) \rceil \cdot \lceil f(GHz) \rceil \leq 3.0$ , for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

- $f_{(GHz)}$  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

This test exclusion is applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $> 50$  mm are determined by:

1.  $\{[Power \text{ allowed at numeric threshold for } 50 \text{ mm}] + [(test \text{ separation distance} - 50 \text{ mm}) \cdot (f(MHz)/150)]\}$  mW, for 100 MHz to 1500 MHz
  - $f_{(MHz)}$  is the RF channel transmit frequency in MHz
2.  $\{[Power \text{ allowed at numeric threshold for } 50 \text{ mm}] + [(test \text{ separation distance} - 50 \text{ mm}) \cdot 10]\}$  mW, for  $> 1500$  MHz and  $\leq 6$  GHz

**SAR Exclusion Calculation Table for Portable Devices (separation distance  $< 50$ mm)**

Tx	Frequency (MHz)	Avg Output power		Separation distances (mm)	Calculated Threshold
		dBm	mW		
BLE	2480	0.00	1.00	0	0.30

#### Conclusion:

The computed values are  $< 3$ ; therefore, the device qualifies for Standalone SAR test exclusion.

## END OF TEST REPORT