



MET Laboratories, Inc. *Safety Certification - EMI - Telecom Environmental Simulation*

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Radio Frequency Exposure Test Report

47 CFR Part 1, Subpart I, Section 1.1310

Model: AeroPro™ Cordless Propphy System

MET Report: EMC96765-FCC MPE

Company	Premier Dental Products Company
Address	1710 Romano Dr
	Plymouth meeting, PA 19462
Report date	November 14, 2018

Benjamin C. Taylor

Benjamin Taylor
Manager, EMC Wireless



Premier Dental Products Company
AeroPro™ Cordless Prophylaxis System

Radio Frequency Exposure
FCC MPE

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	August 24, 2018	Initial Issue.
1	November 14, 2018	TCB Corrections.



1.0 Scope

The Federal Communications Commission (FCC) publishes standards regarding the evaluation of RF exposure hazard of wireless communications devices. An evaluation was performed to Premier Dental Products Company, AeroPro™ Cordless Prophylaxis System, pursuant to the relevant requirements of the 47 CFR Part 1, Subpart I, Section 1.1310.

1.1 Objective

The objective of the manufacturer is to comply with the Federal Communications Commission (FCC) publishes standards referenced above.

1.2 Statement of Compliance

The evaluation of Premier Dental Products Company AeroPro™ Cordless Prophylaxis System in the configuration detailed in this test report, complied with the relevant requirements of 47 CFR Part 1, Subpart I, Section 1.1310. Maintenance of compliance is the responsibility of the manufacturer.



2.0 Equipment Configuration

2.1 Overview

MET Laboratories, Inc. was contracted by Premier Dental Products Company to perform testing on the AeroPro™ Cordless Prophylaxis System, under Premier Dental Products Company purchase order number 7396.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Premier Dental Products Company, AeroPro™ Cordless Prophylaxis System.

In accordance with §2.955(a) (3), the following data is presented in support of the verification of the Premier Dental Products Company, AeroPro™ Cordless Prophylaxis System. Premier Dental Products Company should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the AeroPro™ Cordless Prophylaxis System has been **permanently** discontinued, as per §2.955(b).

The results obtained relate only to the item(s) tested.

Model Tested:	AeroPro™ Cordless Prophylaxis System
Model Covered:	AeroPro™ Cordless Prophylaxis System
FCC ID:	2AQ77-2018-AP
Primary Power as Tested:	120 vac 50-60 Hz
Equipment Emissions Class:	A
Highest Clock Frequency:	24 MHz
Evaluated by:	Bradley Jones
Report Date:	November 14, 2018

EUT Overview



2.2 Test Site

All testing was performed at MET Laboratories, Inc., 914 West Patapsco Avenue, Baltimore, MD 21230. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

MET Laboratories is a ISO/IEC 17025 accredited site by A2LA, #0591.01.

Radiated Emissions measurements were performed in a semi-anechoic chamber. In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

2.3 Equipment Configuration

The EUT was set up as outlined in the customer provided block diagram. All equipment incorporated as part of the EUT is included in the following list.

Ref. ID	Slot #	Name / Description	Model Number	Part Number	Serial Number	Rev. #
1		Motor Component	N/A	5500520	M0000138364	
2		Outer Sheath	N/A	5500520	S0000138384	
3		Direct current powered battery charging station	N/A	5500540		
4		AC power adapter	RHD20W12 0100U	5500541		

Equipment Configuration

2.4 Support Equipment

The EUT did not require any support equipment for operation or monitoring.



2.5 Ports and Cabling Information

Ref. ID	Port name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Patient Coupled Port? (Y/N)
1	AC Adapter	2468 20AWG straight	1	74.2mm	74.2mm	No	No
2.	Charging Station	Induction Charging Coil inductance 10uH	1	N/A	N/A	No	No

Ports and Cabling Information

2.6 Modifications

2.6.1 Modifications to the EUT

No modifications were made to the EUT.

2.6.2 Modifications to the Test Standard

No modifications were made to the test standard.



3.0 Limits

The EUT shall comply with the relevant limits for general public exposure specified as basic restrictions or reference levels in the 47 CFR Part 1, Subpart I, Section 1.1310 as below table.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				



4.0 Evaluation

Environmental Conditions	
Ambient Temperature (°C)	23.7
Relative Humidity (%)	38

4.1 Results

The device was tested at a 10 cm distance both alone, and with the brush charging.

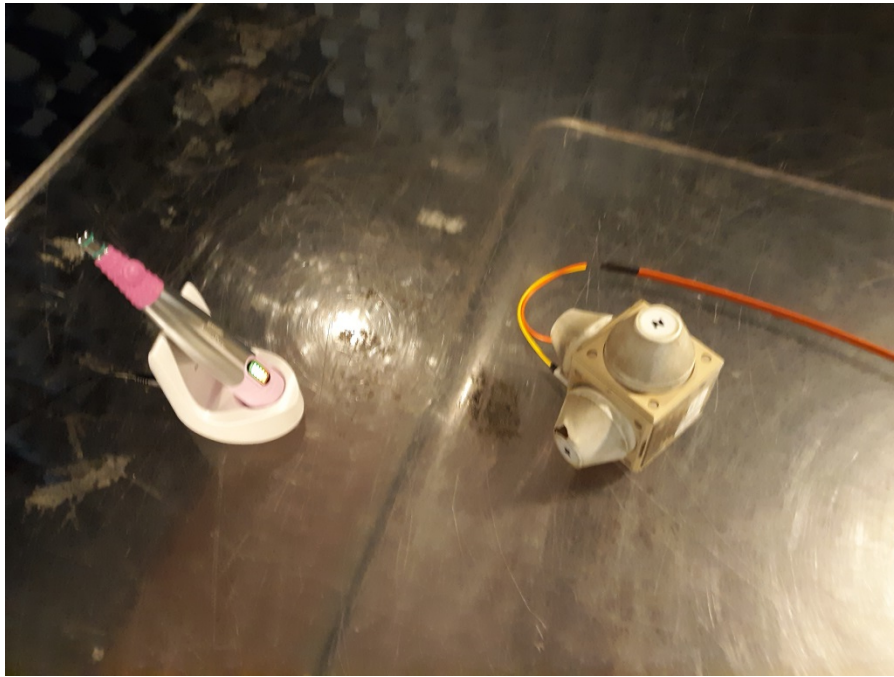
b) Inductive wireless power transfer applications with supporting field strength results and meeting all of the following requirements are not required to submit a KDB inquiry for devices approved using SDoC or a PAG for equipment approved using certification to address RF exposure compliance. However, the responsible party is required to keep a copy of the test report in accordance with KDB 865664 D02. A copy of the test report is to be submitted with the application if the device is approved using certification.

- (1) Power transfer frequency is less than 1 MHz.
- (2) Output power from each primary coil is less than or equal to 15 watts.
- (3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
- (4) Client device is placed directly in contact with the transmitter.
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- (6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

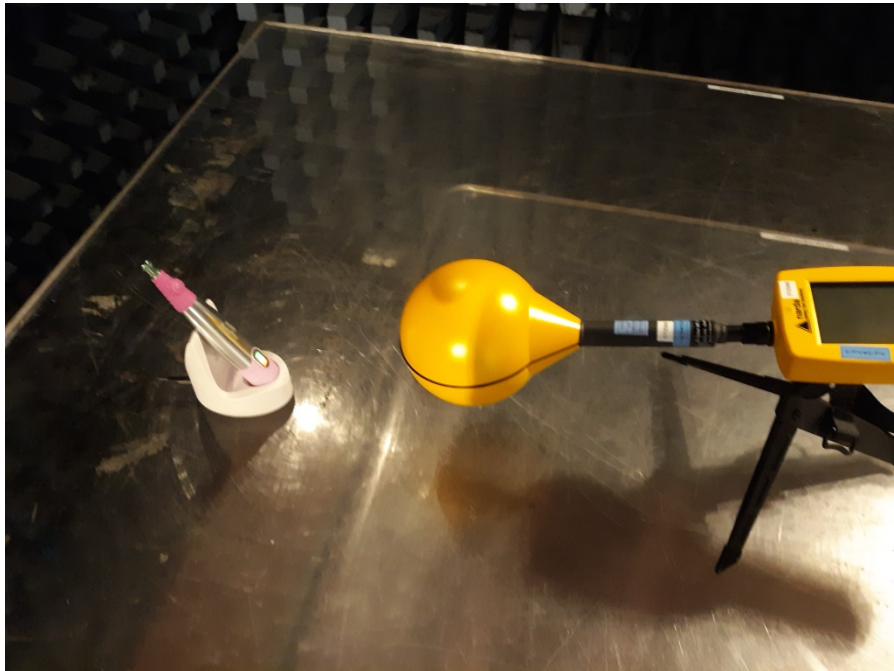
Frequency of Operation	Mode of Operation	Electric Field	50% MPE Limit (V/m)	Result
275 kHz	Charging	7.995 V/m	307	Pass
	Not Charging	6.14 V/m	307	Pass

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Frequency of Operation	Mode of Operation	Magnetic Field	50% MPE Limit (A/m)	Result
275 kHz	Charging	.4615 A/m	0.815	Pass
	Not Charging	.6498 A/m	0.815	Pass



Photograph 1. MPE, Electric Field



Photograph 2. MPE, Magnetic Field



5.0 Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

Test Name: MPE Evaluation				Test Date(s): Aug 10, 2018	
MET/EF Asset #	Nomenclature	Manufacturer	Model	Last Cal Date	Cal Due Date
1T4784	Isotropic Electric Field Probe	Holaday Industries	HI-4422	08/29/2017	02/28/2019
EF 00605	Wideband Exposure Level Tester	Narda	ELT-400	02/18/2018	02/19/2019
EF 00606	Isotropic B Field Sensor	Narda	BN 2300/90.10	02/18/2018	02/19/2019
1T4148	Shield Room #2 Semi-Anechoic	Rantec	20	NA	

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