RF exposure Estimation

1. Introduction

Model	:	Elite Wireless Charging Stand
Product Type	:	Wireless Charger
Applicant	:	Theragun, Inc.
Address	:	2803 Colorado Avenue, Santa Monica, California, 90404, United States
Manufacturer	:	Theragun, Inc.
Address	:	2803 Colorado Avenue, Santa Monica, California, 90404, United States

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC Rules and Regulations.

2. Product information

Product:	Elite Wireless Charging Stand
Model no.:	Wireless Charger
FCC ID:	2AU6TELITEWCS-01
IC:	25672-ELITEWCS01
Rating:	100-240VAC, 50-60Hz, 1.5A (for adapter) 20VDC, 2.25A (for Hand held Massager)
RF Transmission Frequency:	110-165KHz
Antenna Type:	Integrated coil antenna
Antenna gain:	0dBi
Description of the EUT:	The Equipment Under Test (EUT) is a Hand held Massager which operated at 110-165KHz for Wireless charging transmit function.

3. Limit and Guidelines on Exposure to Electromagnetic Fields

According to §1.1310 system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

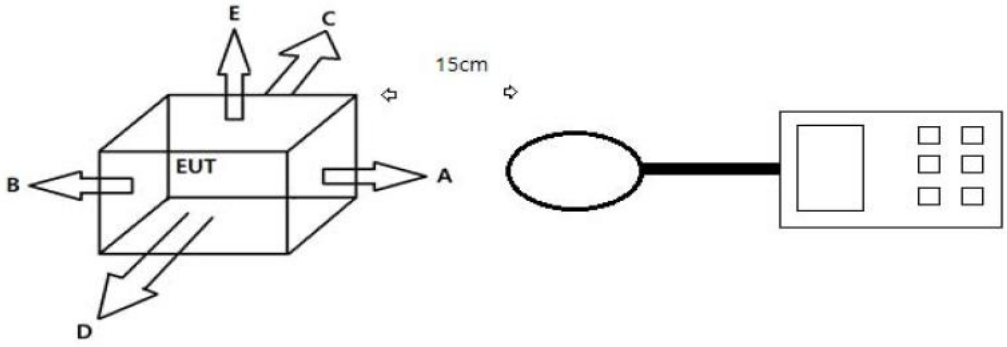
TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Per the guidance of KDB 680106, the E-field and H-field limits shown in the table above are extended down to 100kHz.

4. Test setup



5. Measurement procedure

a) The RF exposure test was performed on the table in anechoic chamber.
b) The measurement was investigated between the edge of the charger and center of the field probe in the closest state.
c) Maximum E-field and H-field measurements were made on each of five sides of the EUT that could come in contact with a user. Five sides are defined as follows: Right (C), Top (E), Left (D), Rear (B) and Front (A). Refer to the test position diagram above.
d) According to the guidance of KDB 680106 D01 v03 test distance was 15 cm on the surrounding sides from the EUT.
e) Equipment approval considerations item 5.b) of KDB 680106 D01 v03
(1) Power transfer frequency is less than 1 MHz
- The device operates at a frequency of 110 KHz to 165 KHz.

(2) Output power from each primary coil is less than or equal to 15 watts.
- Output power from primary coil: 27 Watts (Max.) so we have Submitted an Inquiry to FCC official. The Inquiry tracking number 339066.

(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.
- The transfer system includes only single primary and secondary coils. Refer to a photo in the Internal.

(4) Client device is placed directly in contact with the transmitter.
- Client device is placed directly in contact with the transmitter.

(5) The aggregate H-field strengths at 15 cm surrounding the device surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
- Refer to following worst test result (For more detail, please refer to section 7)
1) The worst E-Field Strength levels at 15 cm < 50 % of the MPE E-Field Strength limit 614 V/m
Quickly charging test mode: 5.24 V/m < 307 V/m
2) The worst H-Field Strength levels at 15 cm < 50 % of the MPE H-Field Strength limit 1.63 A/m
Quickly charging test mode: 0.0139 A/m < 0.815 A/m

6. Test Laboratory and test Equipment List

Details about the Test Laboratory:

Company name: Shenzhen Microtest Co., Ltd.

No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China

IC Registration No.: 21760

Telephone: Phone: +86-755-88850135
Fax: Fax: +86-755-88850136

Equipment list

Description	Manufacturer	Model no.	Serial no.	Cal. due date
Broadband Field Meter	Narda Safety Test Solutions GmbH	NBM-520	D-1699	2021/4/16
Probe E-Field	Narda Safety Test Solutions	EF0691	H-0571	2021/4/16

7. Test Result

Quickly Charging test mode:

Electric Field Emissions					
Test Position	Test Distance (cm)	Measure Value (V/m)	Limit (V/m)	50% Limit (V/m)	Result
Front	15	0.42	614	307	Pass
Rear	15	1.06	614	307	Pass
Right	15	3.27	614	307	Pass
Left	15	**5.24**	614	307	Pass
Top	15	1.15	614	307	Pass
Bottom	15	1.71	614	307	Pass
Magnetic Field Emissions					
Test Position	Test Distance (cm)	Measure Value (A/m)	Limit (A/m)	50% Limit (A/m)	Result
Front	15	0.0011	1.63	0.815	Pass
Rear	15	0.0028	1.63	0.815	Pass
Right	15	0.0087	1.63	0.815	Pass
Left	15	**0.0139**	1.63	0.815	Pass
Top	15	0.0031	1.63	0.815	Pass
Bottom	15	0.0046	1.63	0.815	Pass

Remark: test standard refers to KDB 680106 D01 v03.

The test result compliance with §1.1310 requirement.

Reviewed by:	Prepared by:	Tested by:
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