FCC Part 1 Subpart I
FCC Part 2 Subpart J

CERTIFICATION TEST REPORT

FOR

WIRELESS CHARGER

MODEL NO: F7U052V2

FCC ID: K7SF7U052V2

REPORT NUMBER: 12420404-E2V1

ISSUE DATE: SEPTEMBER 12, 2018

Prepared for
BELKIN INTERNATIONAL, INC.
12045 EAST WATERFRONT DRIVE
PLAYA VISTA, CA 90094, U.S.A.

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	09/12/2018	Initial Issue	Jason Qian

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: BELKIN INTERNATIONAL, INC.
12045 EAST WATERFRONT DRIVE
PLAYA VISTA, CA 90094, U.S.A.

EUT DESCRIPTION: WIRELESS CHARGER

MODEL NUMBER: F7U052V2

SERIAL NUMBER: 27B10EH6802914

DATE TESTED: AUGUST 27 – SEPTEMBER 06, 2018

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

UL Verification Services Inc. calculated the RF Exposure of the above equipment in accordance with the requirements set forth in the above standards, using test results reported in the test report documents referenced below and/or documentation furnished by the applicant. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations of these calculations. The results show that the equipment is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

Chin Pang
Senior Engineer
UL Verification Service Inc.

Prepared By:

Jason Qian
Test Engineer
UL Verification Services Inc.

2. TEST METHODOLOGY

All calculations were made in accordance with FCC OET Bulletin 65 Edition 97-01.

3. REFERENCES

All measurements were made as documented in test report UL Verification Services Inc. Document 12420404-E1V1 for operation in the 127.7 kHz band.

Output power data is excerpted from the applicable test reports.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A (IC:2324B-1)	☐ Chamber D (IC:22541-1)
☐ Chamber B (IC:2324B-2)	☐ Chamber E (IC:22541-2)
☐ Chamber C (IC:2324B-3)	☐ Chamber F (IC:22541-3)
☒ Immunity Area	☐ Chamber G (IC:22541-4)
	☐ Chamber H (IC:22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at NVLAP Lab Search.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is wireless charging base capable of up to 10 watt power transfer.

5.2. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

SUPPORT EQUIPMENT & PERIPHERALS LIST			
Description	**Manufacturer**	**Model**	**Serial Number**
QI Receiver Simulator	AVID Technologies, Inc.	103-02	000011571817
AC Adapter	Belkin	ADS-26FSG-12 15023EPCU	N/A
Resistor Load	N/A	N/A	N/A
iPhone X	Apple	NMQAQ2LL/A	G6TVJ7H8JCLH

I/O CABLES

N/A

TEST SETUP

The following three configurations are tested:

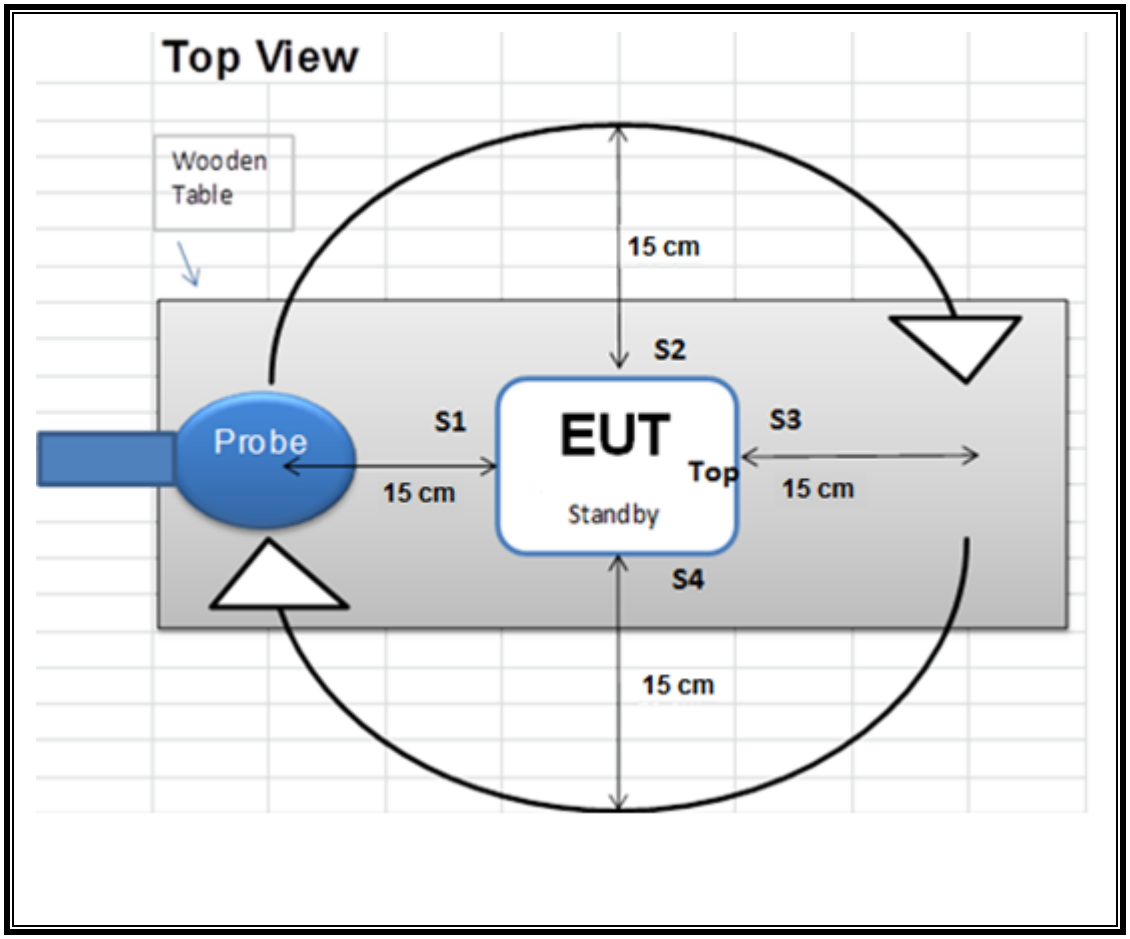
Configuration	Mode	Descriptions
1	Standby (< 10% Power Detecting)	EUT Alone powered by AC/DC adapter
2 (5mm shift L/R/T/B; with & without 3mm airgap)	Operating (Real Phone 5W, ~50% Power Charging) Note: For the configuration 2 operating with real phone, battery level of the phone was at a state of 20 – 50%.	EUT and real phone powered by AC/DC adapter
3 (5mm shift L/R/T/B; with & without 3mm airgap)	Operating (10W Load, >90% Power Charging)	EUT and 10W load powered by AC/DC adapter

Note: For the configuration 2 operating with real phone, battery level of the phone was at a state of 20 – 50%. For the configurations 2 and 3, operating with 5mm shift around four different positions (Right/Left/Top/Bottom) with and without 3mm Airgap between the phone / simulator RX and WPT EUT.

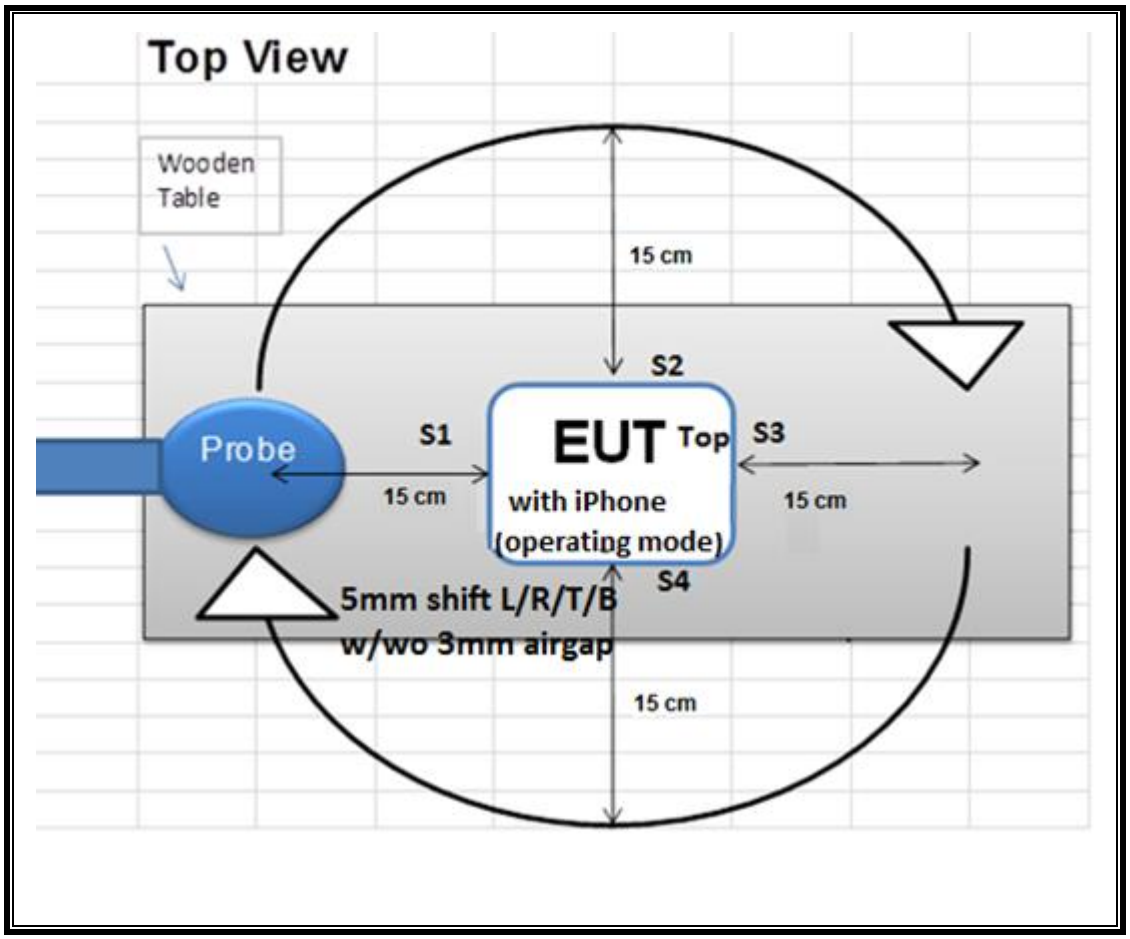
MEASUREMENT SETUP

The measurement was taken using a probe placed 15cm surrounding the device and 20cm above the top surface of the EUT. Measurements were taken from the top and all sides of the EUT per KDB680106 D01 v03.

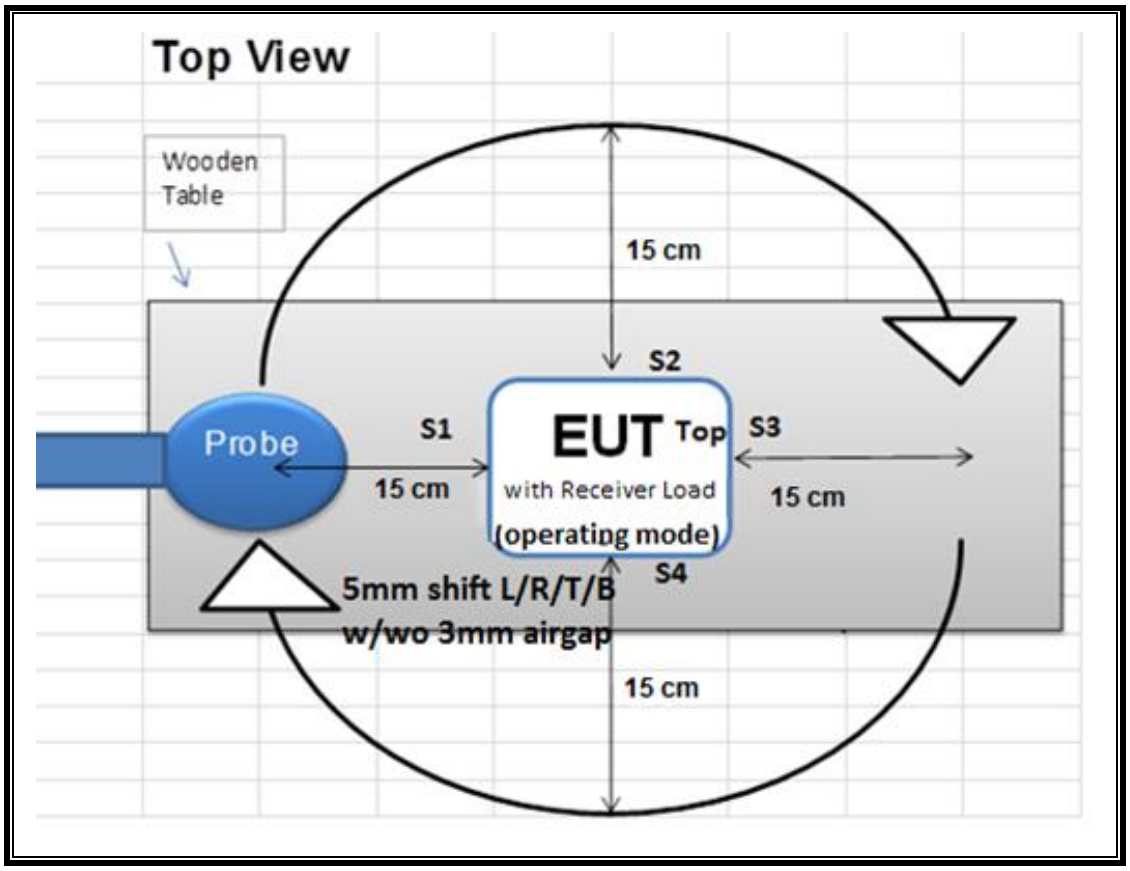
CONFIGURATION 1



CONFIGURATIONS 2



CONFIGURATIONS 3



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was used for the tests documented in this report:

Test Equipment List					
Description	**Manufacturer**	**Model**	**S/N**	**Cal Date**	**Cal Due**
Electric and Magnetic Field Probe	Narda	EHP-200A	170WX80318	04/06/2018	04/06/19

7. DUTY CYCLE

LIMITS

None; for reporting purposes only.

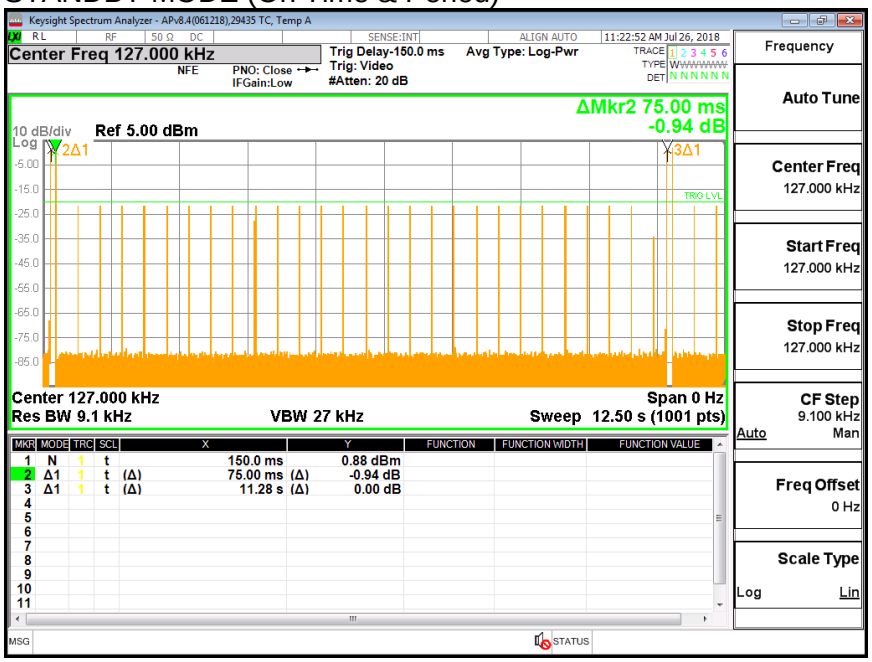
PROCEDURE

Zero-Span Spectrum Analyzer Method.

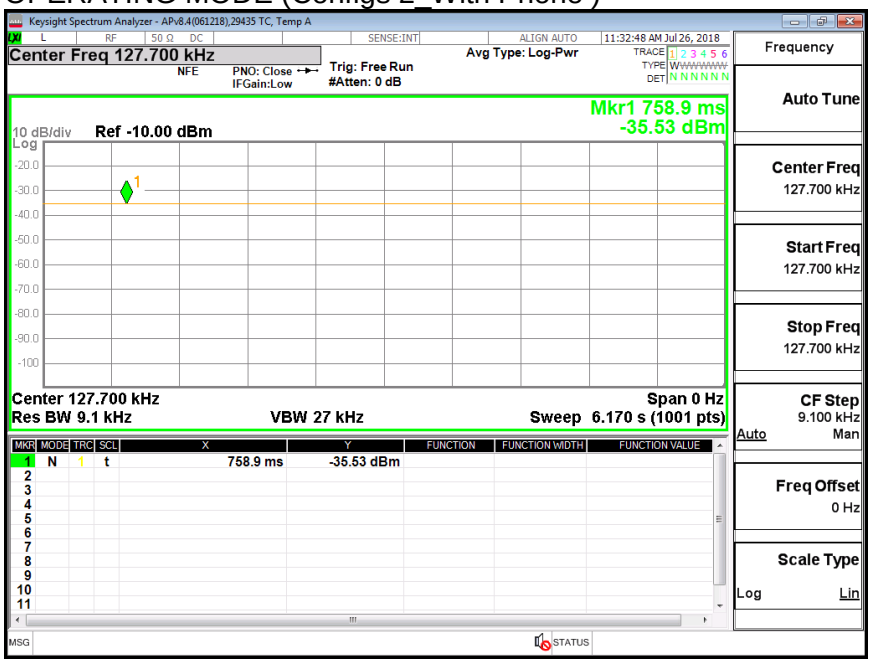
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)
Standby (Config 1)	75.00	11280.00	0.01	0.66%
Operating(Config 2)	100.00	100.00	1.00	100.00%
Operating(Config 3)	100.00	100.00	1.00	100.00%

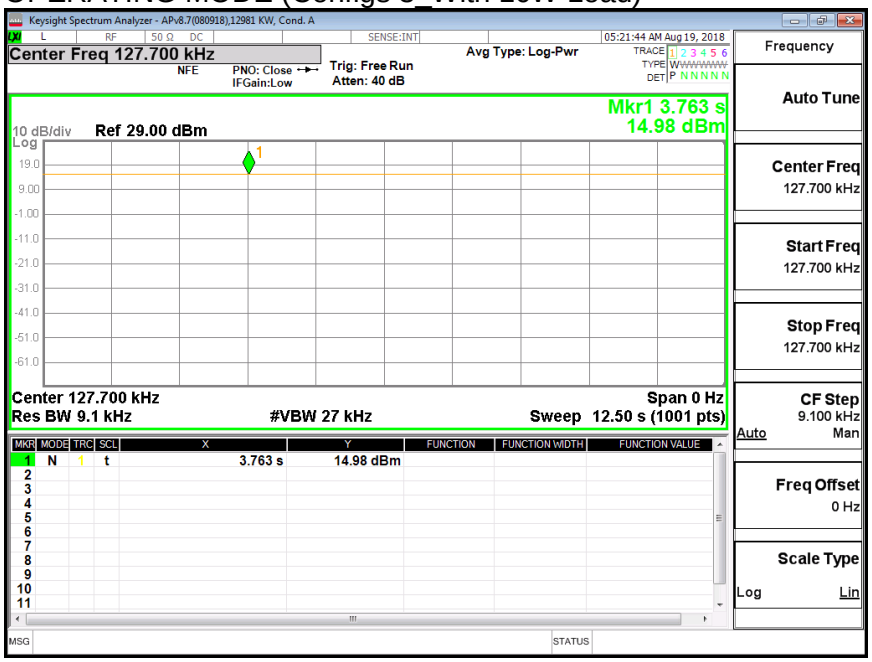
STANDBY MODE (On Time & Period)



OPERATING MODE (Configs 2_With Phone)



OPERATING MODE (Configs 3_With 10W Load)



8. MAXIMUM PERMISSIBLE RF EXPOSURE

8.1. FCC LIMITS AND SUMMARY

8.1.1. FCC LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

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 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

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
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

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequenoe of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

8.1.2. FCC SUMMARY OF RESULTS

RESULTS

ID:	10629	Date:	9/1/18

Note: Both magnetic and electric field strengths have been investigated from 9 kHz to 30 MHz at 15cm surrounding the device and 20cm above the top surface of the EUT operation frequency is at 127.7 kHz.

FCC RF Exposure Summary of Results

Single Unit:

Electric Field Limit			Magnetic Field Limit		
FCC	Maximum Average (V/m)	Percentage (%)	FCC	Maximum Average (A/m)	Percentage (%)
614	4.289	0.70%	1.63	0.153	9.39%

8.2. TEST RESULTS

8.2.1. FCC RF EXPOSURE

E- FIELD AND H- FIELD MEASUREMENTS

Note: Peak measurements were performed. RMS values (except for the testing for 6 mins.), were calculated from the peak measurement. Please refer to the formula for calculating the RMS values: [Field Strength x √Duty Cycle].

Configuration	Test Mode	Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
1	Standby power < 10% detecting	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.354	0.85	0.003	1.63	S1	0.048	0.85	0.000
				S2	0.389		0.003		S2	0.048		0.000
				S3	0.378		0.003		S3	0.047		0.000
				S4	0.377		0.003		S4	0.047		0.000
				Top	0.283		0.002		Top	0.054		0.000
				Max	0.395		0.003		Max	0.055		0.000
				6 mins	0.345		0.003		6 mins	0.051		0.000
2	Operating, 5W Real Product (Center) Power ~ 50% Charging			S1	0.482	100.00	0.482		S1	0.054	100	0.054
				S2	0.531		0.531		S2	0.062		0.062
				S3	0.486		0.486		S3	0.055		0.055
				S4	0.554		0.554		S4	0.052		0.052
				Top	0.622		0.622		Top	0.066		0.066
				Max	0.655		0.655		Max	0.069		0.069
	Operating, 5W Real Product (Shift 5mm to Right) Power ~ 50% Charging			S1	0.576	100.00	0.576		S1	0.048	100	0.048
				S2	0.427		0.427		S2	0.051		0.051
				S3	0.487		0.487		S3	0.058		0.058
				S4	0.538		0.538		S4	0.056		0.056
				Top	0.689		0.689		Top	0.064		0.064
				Max	0.702		0.702		Max	0.066		0.066
	Operating, 5W Real Product (Shift 5mm to Left) Power ~ 50% Charging			S1	0.478	100.00	0.478		S1	0.056	100	0.056
				S2	0.436		0.436		S2	0.062		0.062
				S3	0.543		0.543		S3	0.073		**0.073**
				S4	0.576		0.576		S4	0.041		0.041
				Top	0.624		0.624		Top	0.064		0.064
				Max	0.645		0.645		Max	0.073		**0.073**
	Operating, 5W Real Product (Shift 5mm to Top) Power ~ 50% Charging			S1	0.533	100.00	0.533		S1	0.047	100	0.047
				S2	0.476		0.476		S2	0.052		0.052
				S3	0.434		0.434		S3	0.057		0.057
				S4	0.521		0.521		S4	0.048		0.048
				Top	0.721		0.721		Top	0.068		0.068
				Max	0.756		**0.756**		Max	0.070		0.070
	Operating, 5W Real Product (Shift 5mm to Bottom) Power ~ 50% Charging			S1	0.423	100.00	0.423		S1	0.054	100	0.054
				S2	0.543		0.543		S2	0.043		0.043
				S3	0.467		0.467		S3	0.058		0.058
				S4	0.578		0.578		S4	0.061		0.061
				Top	0.705		0.705		Top	0.065		0.065
				Max	0.712		0.712		Max	0.067		0.067

Configuration	Test Mode	Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
2	Operating, 5W Real Product (3mm Airgap at Center) Power > 50% Charging	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.486	100.00	0.486	1.63	S1	0.047	100	0.047
				S2	0.539		0.539		S2	0.047		0.047
				S3	0.412		0.412		S3	0.052		0.052
				S4	0.499		0.499		S4	0.058		0.058
				Top	0.538		0.538		Top	0.051		0.051
				Max	0.557		0.557		Max	0.061		**0.061**
	Operating, 5W Real Product (3mm Airgap & 5mm Shift to the Right) Power > 50% Charging			S1	0.587	100.00	0.587		S1	0.046	100	0.046
				S2	0.563		0.563		S2	0.048		0.048
				S3	0.486		0.486		S3	0.052		0.052
				S4	0.645		0.645		S4	0.051		0.051
				Top	0.539		0.539		Top	0.058		0.058
				Max	0.656		**0.656**		Max	0.058		0.058
	Operating, 5W Real Product (3mm Airgap & 5mm Shift to the Left) Power > 50% Charging			S1	0.547	100.00	0.547		S1	0.047	100	0.047
				S2	0.474		0.474		S2	0.042		0.042
				S3	0.573		0.573		S3	0.048		0.048
				S4	0.552		0.552		S4	0.053		0.053
				Top	0.535		0.535		Top	0.052		0.052
				Max	0.578		0.578		Max	0.054		0.054
	Operating, 5W Real Product (3mm Airgap & 5mm Shift to the Top) Power > 50% Charging			S1	0.475	100.00	0.475		S1	0.049	100	0.049
				S2	0.557		0.557		S2	0.051		0.051
				S3	0.487		0.487		S3	0.057		0.057
				S4	0.534		0.534		S4	0.042		0.042
				Top	0.634		0.634		Top	0.058		0.058
				Max	0.635		0.635		Max	0.058		0.058
	Operating, 5W Real Product (3mm Airgap & 5mm Shift to the Bottom) Power > 50% Charging			S1	0.486	100.00	0.486		S1	0.052	100	0.052
				S2	0.423		0.423		S2	0.057		0.057
				S3	0.537		0.537		S3	0.042		0.042
				S4	0.538		0.538		S4	0.058		0.058
				Top	0.639		0.639		Top	0.059		0.059
				Max	0.640		0.640		Max	0.061		**0.061**

Configuration	Test Mode	Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
3	Operating, 10W Load (Center) Power > 90% Charging	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	1.345	100.00	1.345	1.63	S1	0.103	100	0.103
				S2	2.005		2.005		S2	0.055		0.055
				S3	3.158		3.158		S3	0.136		0.136
				S4	2.561		2.561		S4	0.082		0.082
				Top	3.561		3.561		Top	0.135		0.135
				Max	3.681		3.681		Max	0.141		0.141
	Operating, 10W Load (Shift 5mm to Right) Power > 90% Charging			S1	1.535	100.00	1.535		S1	0.143	100	0.143
				S2	2.348		2.348		S2	0.123		0.123
				S3	3.183		3.183		S3	0.126		0.126
				S4	2.276		2.276		S4	0.129		0.129
				Top	3.765		3.765		Top	0.153		**0.153**
				Max	3.778		3.778		Max	0.153		**0.153**
	Operating, 10W Load (Shift 5mm to Left) Power > 90% Charging			S1	2.017	100.00	2.017		S1	0.112	100	0.112
				S2	2.430		2.430		S2	0.117		0.117
				S3	3.234		3.234		S3	0.132		0.132
				S4	2.763		2.763		S4	0.134		0.134
				Top	4.012		4.012		Top	0.122		0.122
				Max	4.052		**4.052**		Max	0.135		0.135
	Operating, 10W Load (Shift 5mm to Top) Power > 90% Charging			S1	1.789	100.00	1.789		S1	0.123	100	0.123
				S2	2.046		2.046		S2	0.128		0.128
				S3	3.012		3.012		S3	0.136		0.136
				S4	2.748		2.748		S4	0.133		0.133
				Top	3.270		3.270		Top	0.145		0.145
				Max	3.440		3.440		Max	0.145		0.145
	Operating, 10W Load (Shift 5mm to Bottom) Power > 90% Charging			S1	2.340	100.00	2.340		S1	0.123	100	0.123
				S2	2.837		2.837		S2	0.126		0.126
				S3	2.988		2.988		S3	0.129		0.129
				S4	2.981		2.981		S4	0.135		0.135
				Top	3.972		3.972		Top	0.137		0.137
				Max	4.012		4.012		Max	0.137		0.137

Configuration	Test Mode	Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)			
			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average
3	Operating, 10W Load (3mm Airgap at Center) Power > 90% Charging	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	2.245	100.00	2.245	1.63	S1	0.125	100	0.125
				S2	2.346		2.346		S2	0.135		0.135
				S3	1.937		1.937		S3	0.128		0.128
				S4	3.346		3.346		S4	0.135		0.135
				Top	3.235		3.235		Top	0.126		0.126
				Max	3.355		3.355		Max	0.136		0.136
	Operating, 10W Load (3mm Airgap & 5mm Shift to the Right) Power > 90% Charging			S1	1.870	100.00	1.870		S1	0.131	100	0.131
				S2	2.183		2.183		S2	0.132		0.132
				S3	2.346		2.346		S3	0.123		0.123
				S4	2.546		2.546		S4	0.112		0.112
				Top	3.359		3.758		Top	0.145		**0.145**
				Max	3.445		3.758		Max	0.145		**0.145**
	Operating, 10W Load (3mm Airgap & 5mm Shift to the Left) Power > 90% Charging			S1	2.183	100.00	2.183		S1	0.126	100	0.126
				S2	2.458		2.458		S2	0.126		0.126
				S3	3.245		3.245		S3	0.137		0.137
				S4	2.366		2.366		S4	0.125		0.125
				Top	3.988		3.988		Top	0.135		0.135
				Max	4.289		**4.289**		Max	0.137		0.137
	Operating, 10W Load (3mm Airgap & 5mm Shift to the Top) Power > 90% Charging			S1	2.985	100.00	2.985		S1	0.124	100	0.124
				S2	2.345		2.345		S2	0.127		0.127
				S3	3.851		3.851		S3	0.129		0.129
				S4	2.466		2.466		S4	0.114		0.114
				Top	3.572		3.572		Top	0.127		0.127
				Max	3.891		3.891		Max	0.130		0.130
	Operating, 10W Load (3mm Airgap & 5mm Shift to the Bottom) Power > 90% Charging			S1	2.986	100.00	2.986		S1	0.126	100	0.126
				S2	2.340		2.340		S2	0.129		0.129
				S3	3.256		3.256		S3	0.141		0.141
				S4	2.629		2.629		S4	0.132		0.132
				Top	3.764		3.764		Top	0.137		0.137
				Max	3.827		3.827		Max	0.141		0.141