



**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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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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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
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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
<input type="checkbox"/> Chamber A (IC:2324B-1)	<input type="checkbox"/> Chamber D (IC:22541-1)
<input type="checkbox"/> Chamber B (IC:2324B-2)	<input type="checkbox"/> Chamber E (IC:22541-2)
<input type="checkbox"/> Chamber C (IC:2324B-3)	<input type="checkbox"/> Chamber F (IC:22541-3)
<input checked="" type="checkbox"/> Immunity Area	<input type="checkbox"/> Chamber G (IC:22541-4)
	<input type="checkbox"/> 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:

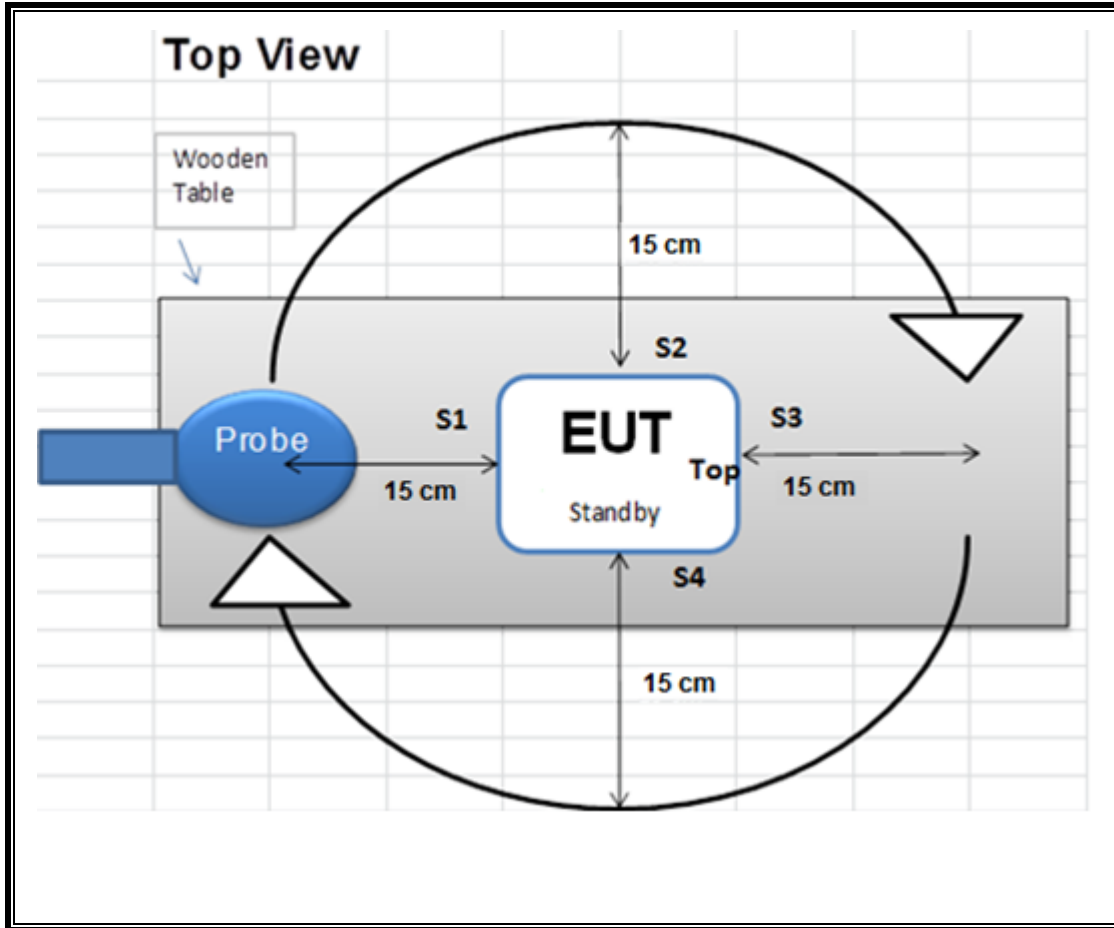
Configuration	Mode	Descriptions
1	Standby (< 10% Power Detecting)	EUT Alone powered by AC/DC adapter
2 (5mm shift L/R/T/B; with & without 3mm airgap)	Operating (Real Phone 5W, ~50% Power Charging) Note: For the configuration 2 operating with real phone, battery level of the phone was at a state of 20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

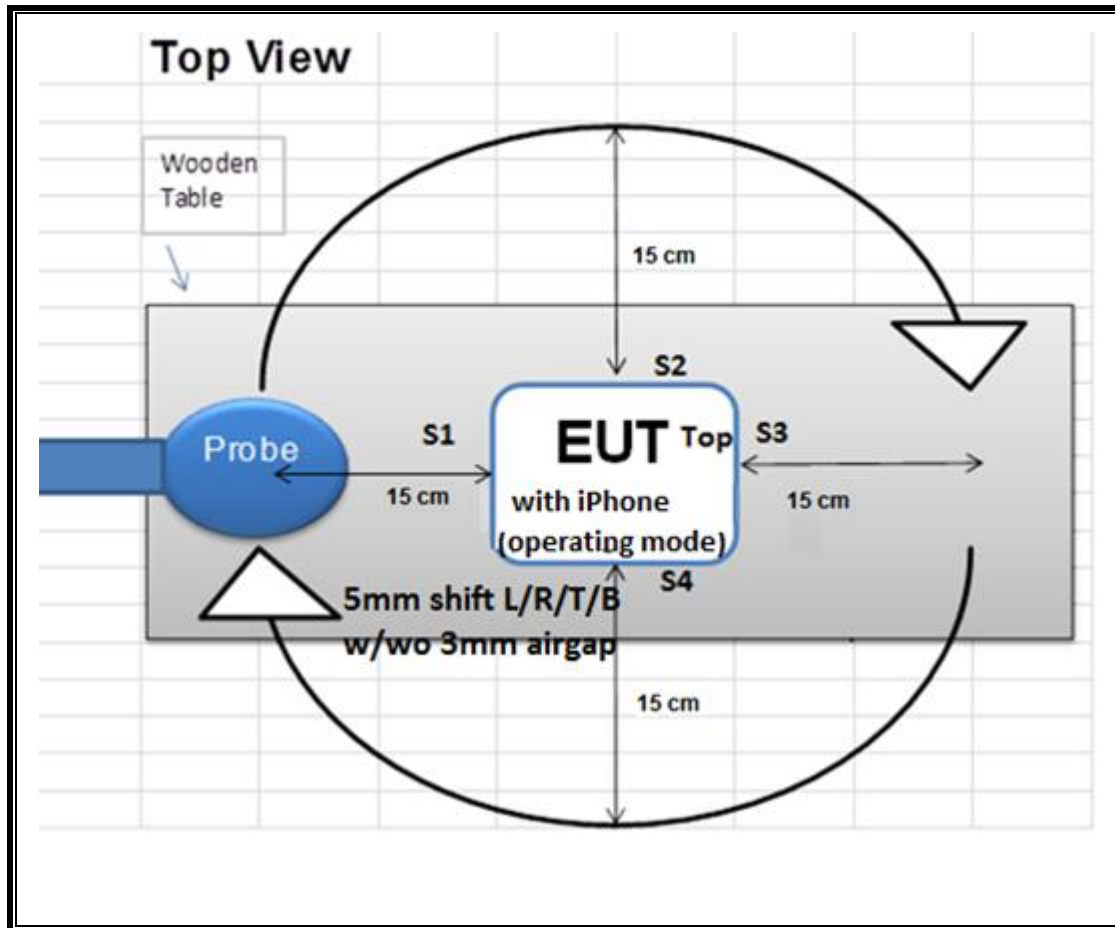
MEASUREMENT SETUP

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.

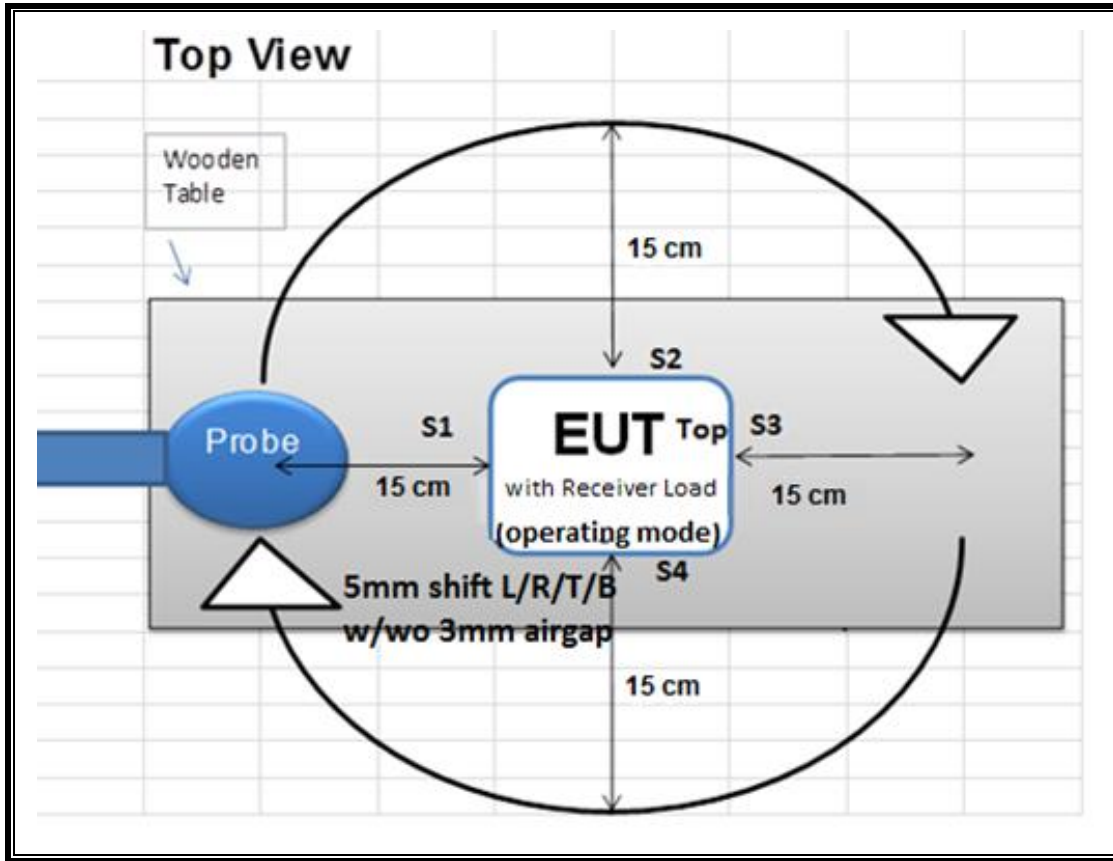
CONFIGURATION 1



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

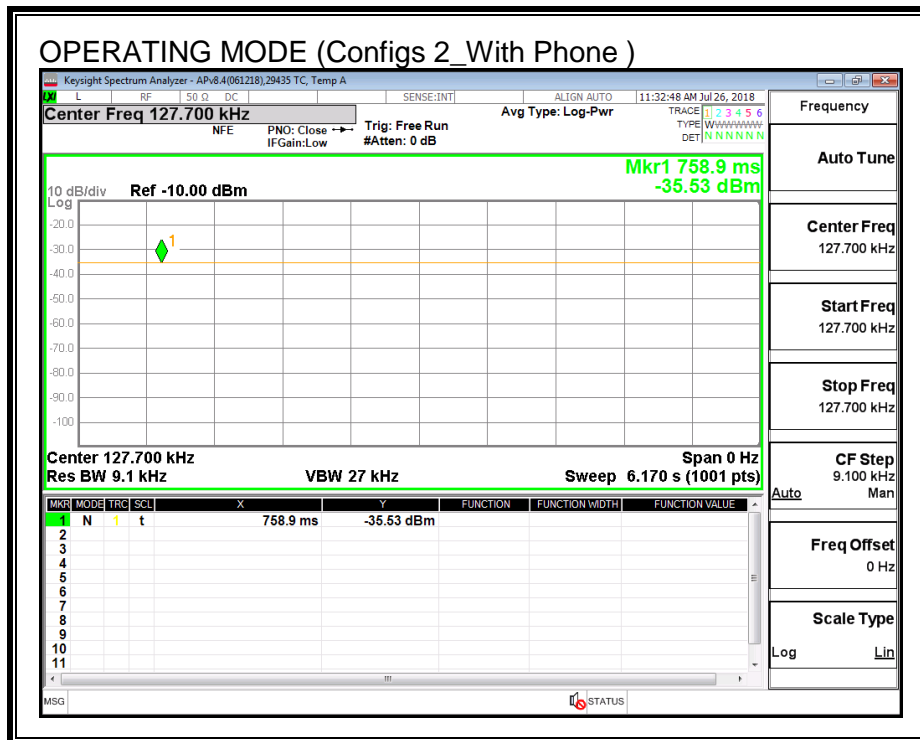
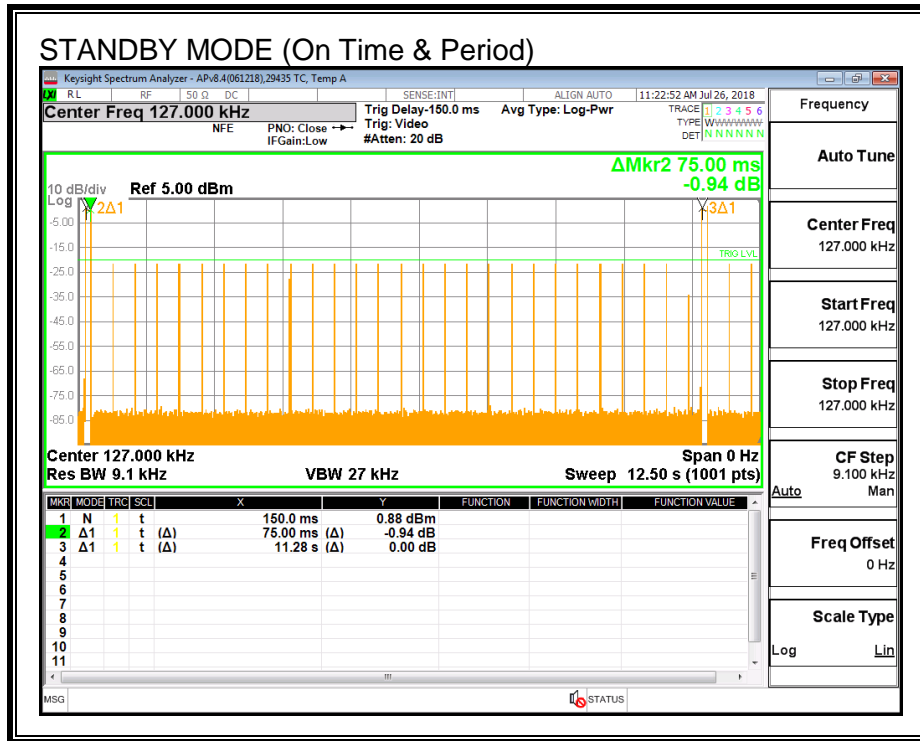
None; for reporting purposes only.

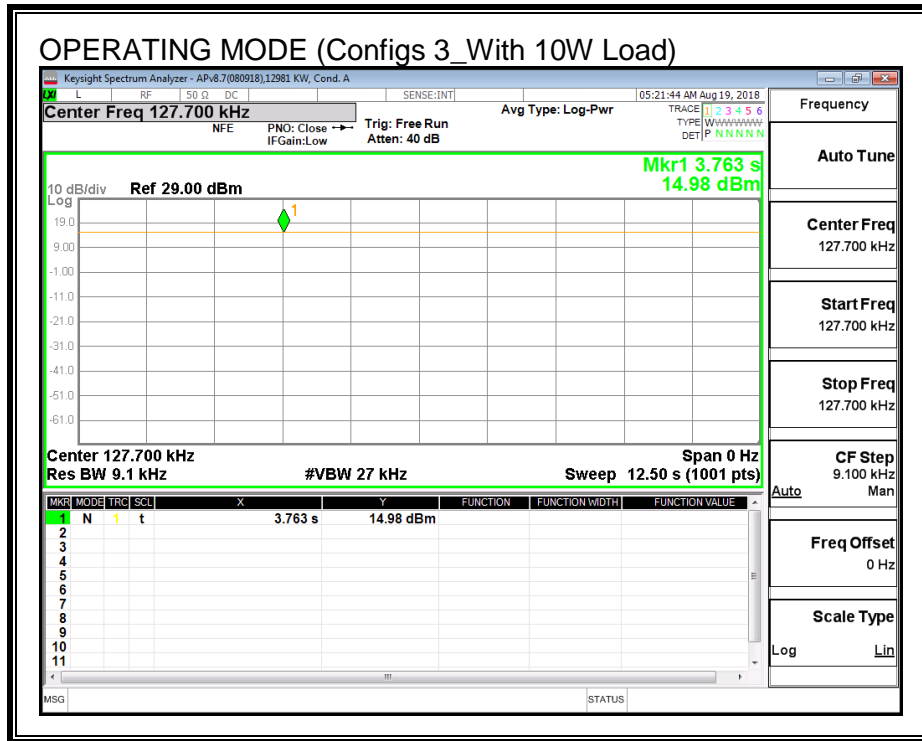
PROCEDURE

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%





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 consequence 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
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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 $\sqrt{\text{Duty Cycle}}$].

Configuration	Test Mode	Measuring Distance (cm)	Electric Field Limit	Electric Field Reading				Magnetic Field Limit	Magnetic Field Reading			
			(V/m)	(V/m)				(A/m)	(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	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	0.295		0.003	Max	0.055	0.000		
				6 mins	0.345		0.003	6 mins	0.051	0.000		
				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		
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						
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						
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						
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	100.00	2.245	1.63	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						