



FCC Part 1 Subpart I
FCC Part 2 Subpart J

CERTIFICATION TEST REPORT

FOR

WIRELESS CHARGER

MODEL NO: A2140

FCC ID: BCGA2140

REPORT NUMBER: 13181006-E4V3

ISSUE DATE: OCTOBER 07, 2020

Prepared for
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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	09/22/2020	Initial Issue	Thu Chan
V2	10/03/2020	Added Spectrum Analyzer on Page 16	Thu Chan
V3	10/07/2020	Address TCB's question on Page 16	Chin Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

EUT DESCRIPTION: WIRELESS CHARGER

MODEL NUMBER: A2140

SERIAL NUMBER: DLCD42QH06M2

DATE TESTED: SEPTEMBER 18 - 22, 2020

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

UL Verification Services Inc. measured 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.

Reviewed By:		Prepared By:
		
Chin Pang		Tony Wang
Senior engineer		Test Engineer
UL Verification Service Inc.		UL Verification Services Inc.

2. TEST METHODOLOGY

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

3. 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	47658 Kato Rd.
<input type="checkbox"/> Chamber A (IC:2324B-1)	<input type="checkbox"/> Chamber D (IC:22541-1)	<input type="checkbox"/> Chamber I (IC: 2324A-5)
<input type="checkbox"/> Chamber B (IC:2324B-2)	<input type="checkbox"/> Chamber E (IC:22541-2)	<input type="checkbox"/> Chamber J (IC: 2324A-6)
<input type="checkbox"/> Chamber C (IC:2324B-3)	<input type="checkbox"/> Chamber F (IC:22541-3)	<input type="checkbox"/> Chamber K (IC: 2324A-1)
<input checked="" type="checkbox"/> Temperature B Room	<input type="checkbox"/> Chamber G (IC:22541-4)	<input type="checkbox"/> Chamber L (IC: 2324A-3)
	<input type="checkbox"/> Chamber H (IC:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

4. KDB 680106 D01 SECTION 5b EQUIPMENT APPROVAL CONSIDERATIONS

Requirement	Device
(1) Power transfer frequency is less than 1 MHz.	Yes. The operating frequencies are 360kHz and 128kHz.
(2) Output power from each primary coil is less than or equal to 15 watts.	Yes. The maximum power is 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.	Yes. The system includes one single primary and secondary coil and the device is designed to charge a single client.
(4) Client device is placed directly in contact with the transmitter.	Yes. The client device is placed directly in contact with the transmitter.
(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	No. It is a portable operating frequency @360kHz.
(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.	No. For 360kHz operating frequency at portable position, the measurement was taken using a probe place 0mm separate distance for all sides of standby and charging modes. Please see exposure simulation report for the worst case leakage of portable position. For 128kHz operating frequency at mobile position, the measurement was taken based on KDB 680106 D01. The worst case leakage of mobile position @128kHz is 21.66%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a magnetic charger which inductively charge other wireless charging devices. The charging function operates at 127.7kHz (Qi) and 360kHz. The charger supports charging at 5W, 7.5W and 15W power and NFC tag operation. The charger doesn't have any internal battery.

5.2. WORST-CASE CONFIGURATION AND MODE

The EUT is a single frequency magnetic charger enclosed in stainless steel case with 1 meter cable length USB -C type. For the standby mode, the measurements were taken on radiated spurious emissions due to 128kHz is un-intentional radiation coming from the response of LC resonance to the DC pulse signal. For operation mode, it was tested with the WPT clients. For the entire radiated emissions test, the EUT was investigated on the following configuration during the test at its natural orientation.

@360kHz Operating Frequency with Portable Position:

Please see exposure simulation report.

@128kHz Operating Frequency with Mobile Position:

Config	Mode	Descriptions
1	Standby	EUT Alone powered by AC/DC adapter.
2	Operating w/ 7.5W Load	Direct contact charging between the EUT & WPT Client, and the EUT is powered by AC/DC adapter via USB-C cable.
3	Operating w/ 3.5W Load	5mm airgap charging between the EUT & WPT Client 5mm offset shift to Top or Bottom, and the EUT is powered by AC/DC adapter via USB-C cable.
4	Operating w/ 1W Load	Direct contact charging between the EUT & WPT Client, and the EUT is powered by AC/DC adapter via USB-C cable.
5	Operating w/ 1W Load	2mm airgap charging between the EUT & WPT Client 5mm offset shift to Top or Bottom, and the EUT is powered by AC/DC adapter via USB-C cable.

5.3. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

SUPPORT EQUIPMENT & PERIPHERALS LIST			
Description	Manufacturer	Model	Serial Number
WPT Client (15W Load iPhone)	Apple	N/A	N/A
WPT Client (7.5W Load iPhone)	Apple	N/A	N/A
WPT Client (1W Load Airpods Charging Case)	Apple	N/A	N/A
AC/DC Adapter	Apple	A1882	C4H748200RXH80MAY

I/O CABLES

The EUT with lightning to USB-C cable powered by AC/DC Adapter.

TEST SETUP

The following 5 configurations are tested:

@360kHz Operating Frequency:

Please see exposure simulation report.

@128kHz Operating Frequency:

Configuration	Mode	Descriptions
1	Standby	EUT Alone powered by AC/DC adapter
2 (7.5W, Direct Contact)	Operating (iPhone, ~10% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, 20~50% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, >75% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
3 (3.5W, 5mm Airgap + 5mm Shift to Top or Bottom)	Operating (iPhone, ~10% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, 20~50% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, >75% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
4 (1W, Direct Contact)	Operating (iPhone, ~10% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, 20~50% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, >75% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
5 (1W, 2mm Airgap + 5mm Shift to Top or Bottom)	Operating (iPhone, ~10% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, 20~50% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client
	Operating (iPhone, >75% Power Charging)	EUT with lightning to USB-C cable powered by AC/DC Adapter & Wireless Charging to WPT Client

MEASUREMENT SETUP

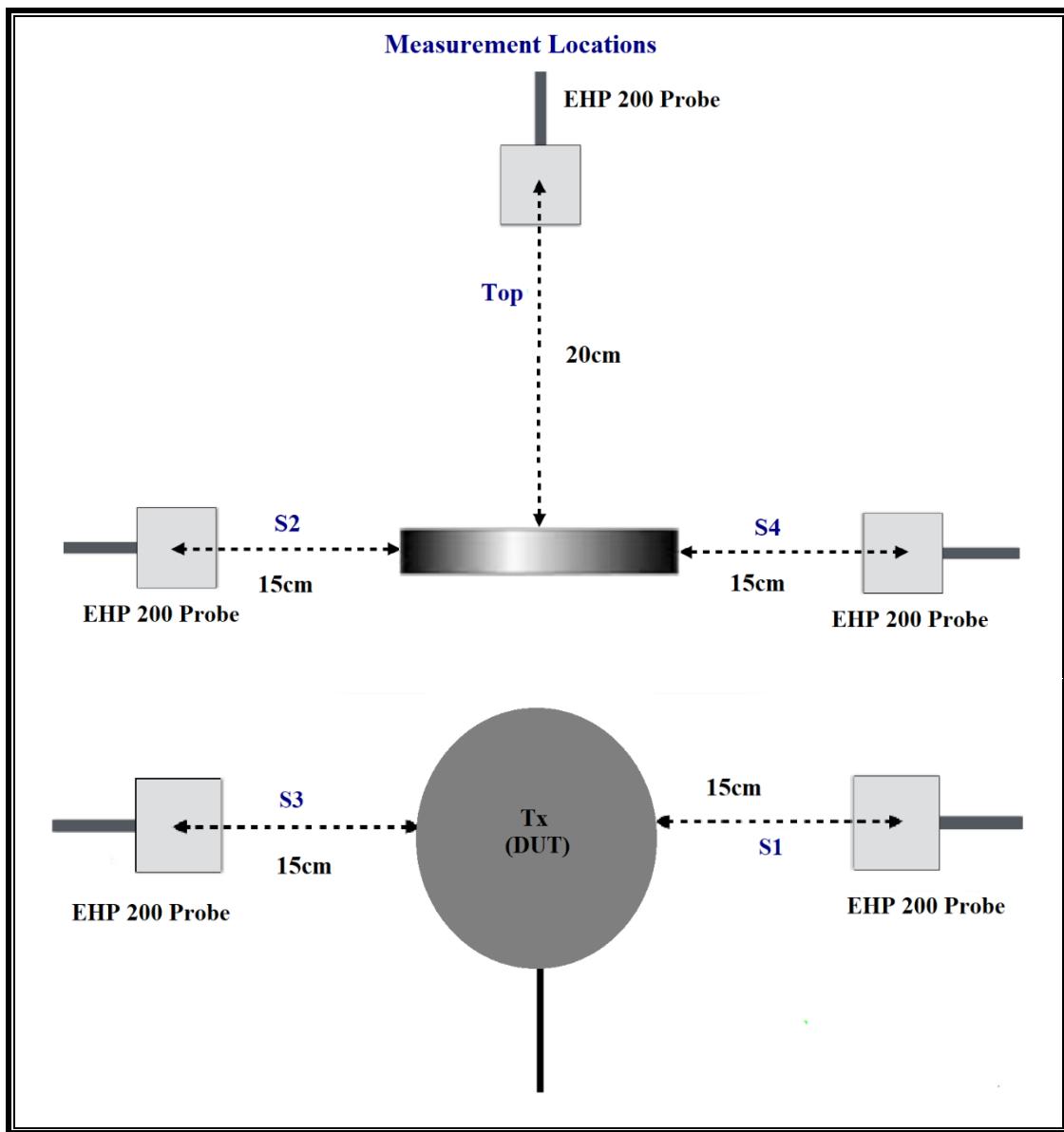
For the 360kHz charging frequency with 15W load at portable position, please see exposure simulation report.

For the 128kHz charging frequency with 7.5W and 1W loads at mobile position, the measurement was taken using a probe placed 15 cm surrounding the device and 20 cm above the top surface for all configurations per KDB 680106 D01.

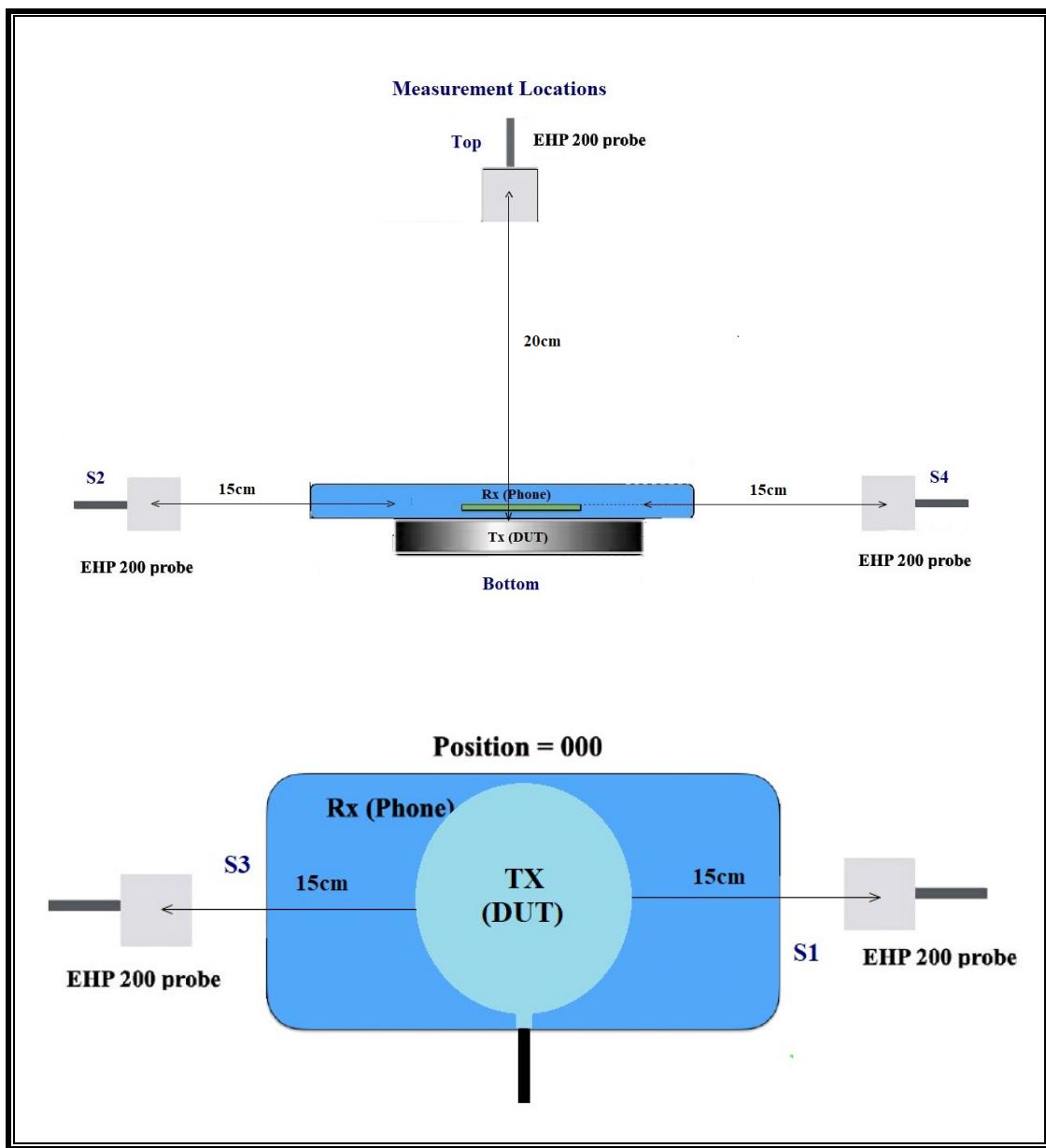
@128KHZ OPERATING FREQUENCY IN MOBILE POSITION

CONFIGURATION 1

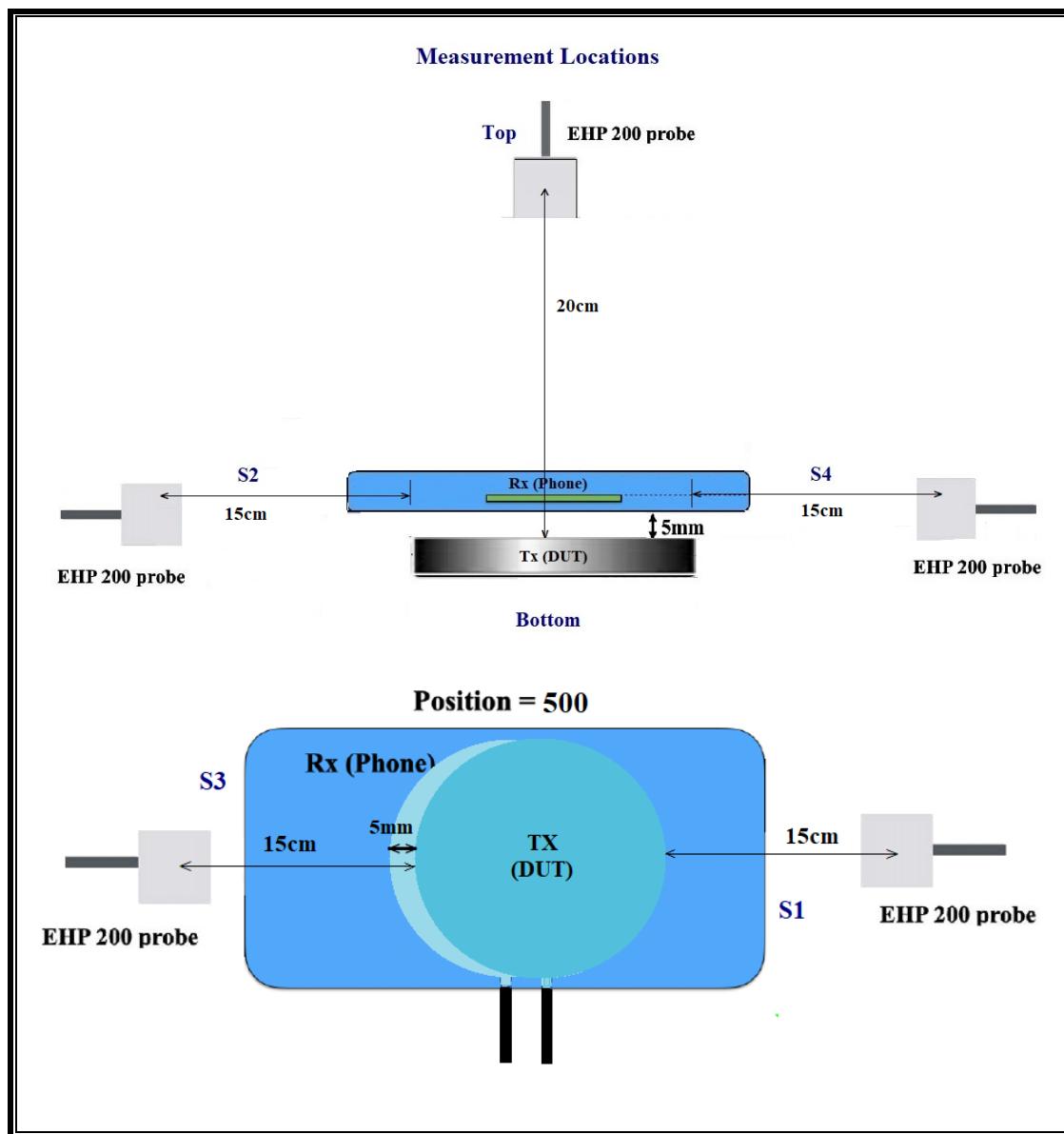
RF Exposure: 10cm Separate Distance from Probe to EUT



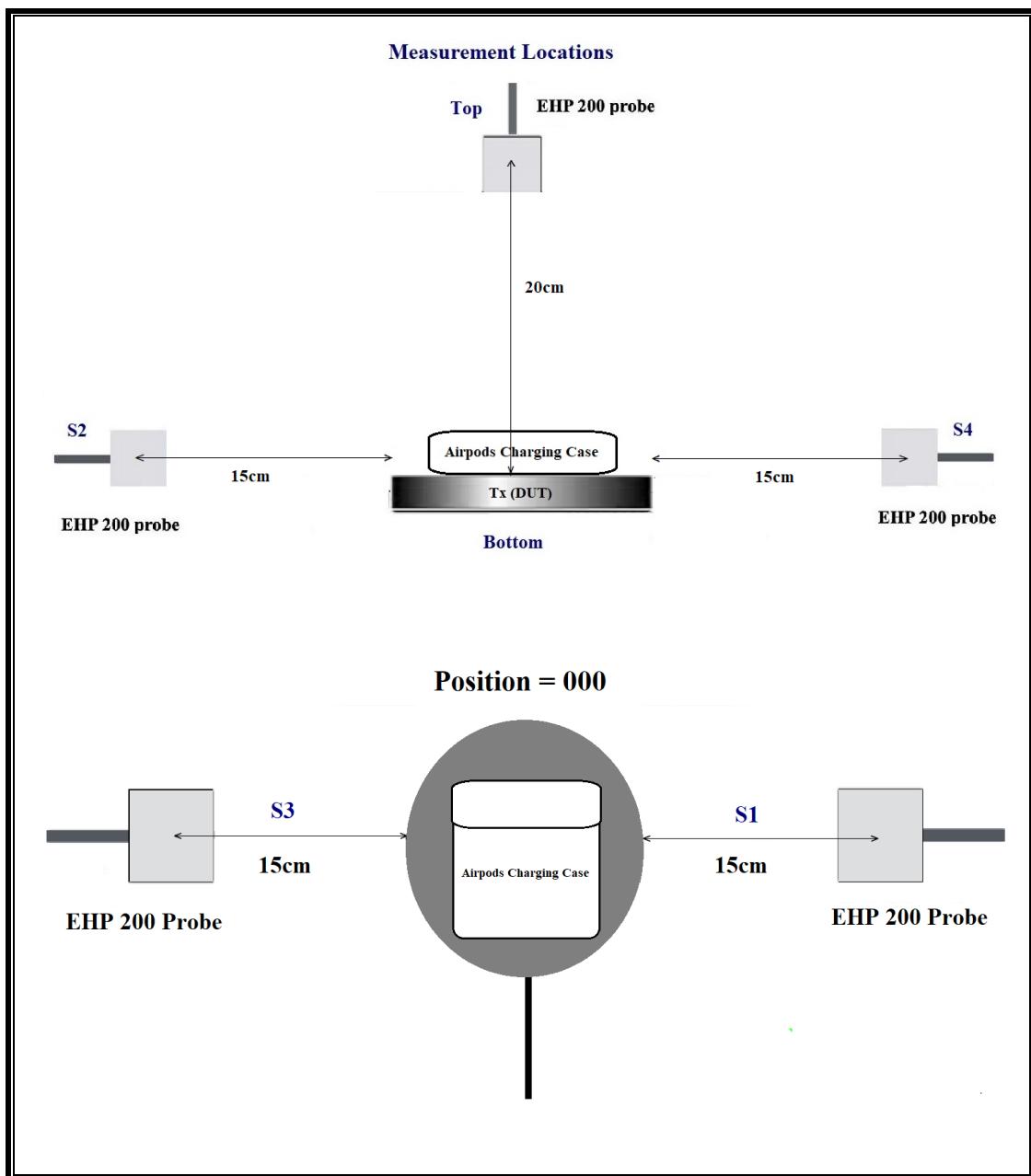
CONFIGURATION 2 for 7.5W Load



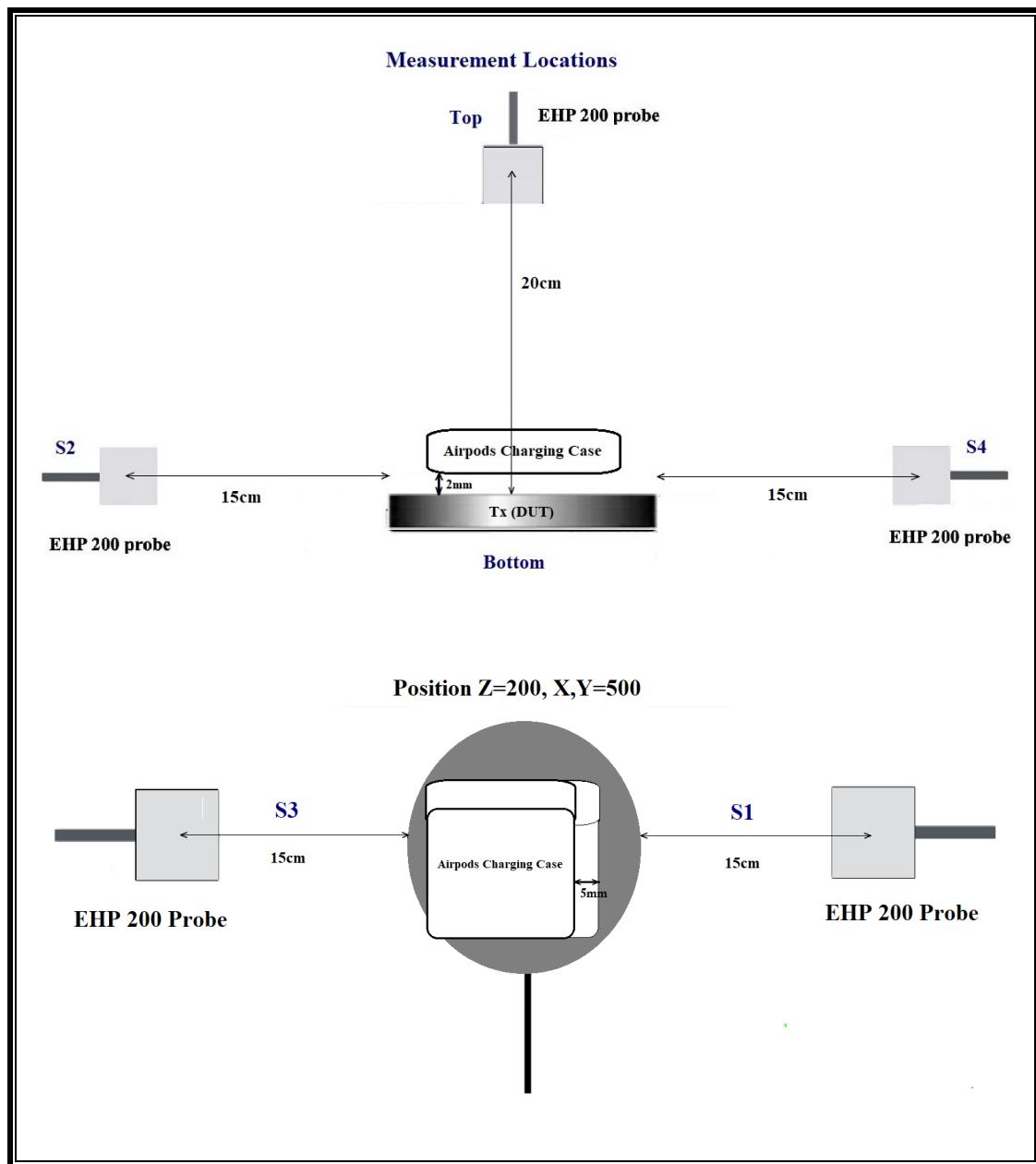
CONFIGURATION 3 for 3.5W Load



CONFIGURATION 4 for 1W Load



CONFIGURATION 5 for 1W Load



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	Label ID	Cal Due	Cal Date
Electric and Magnetic Field Probe	Narda	EHP-200A	160WX41008	T1085	11/25/2020	11/25/2019
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A-544	MY52350671	T342	01/23/2021	01/23/2020

7. DUTY CYCLE

LIMITS

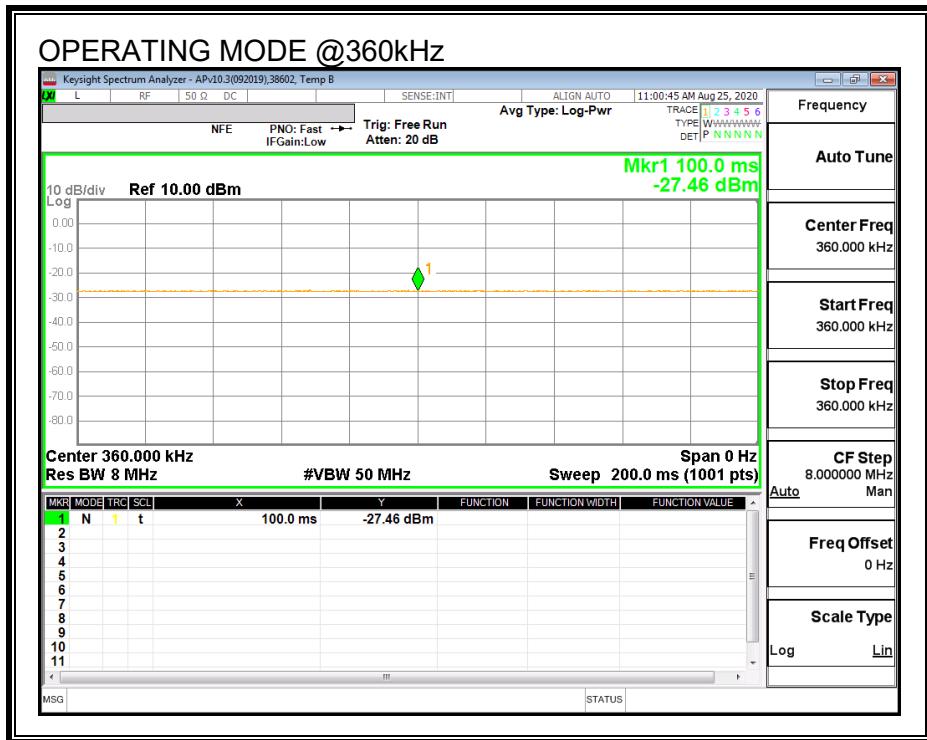
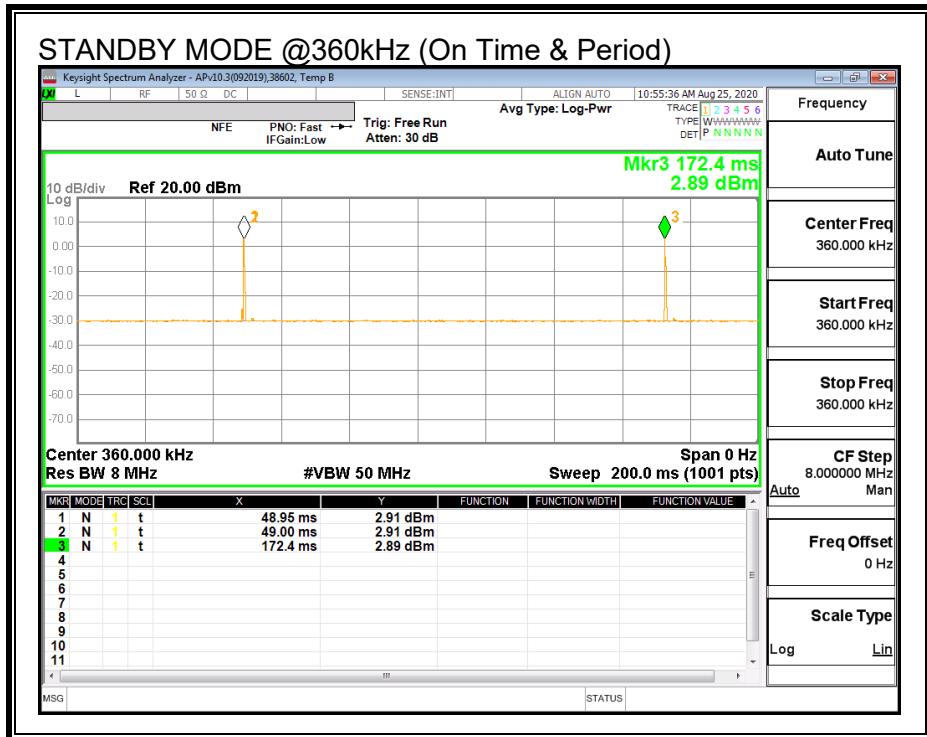
None; for reporting purposes only.

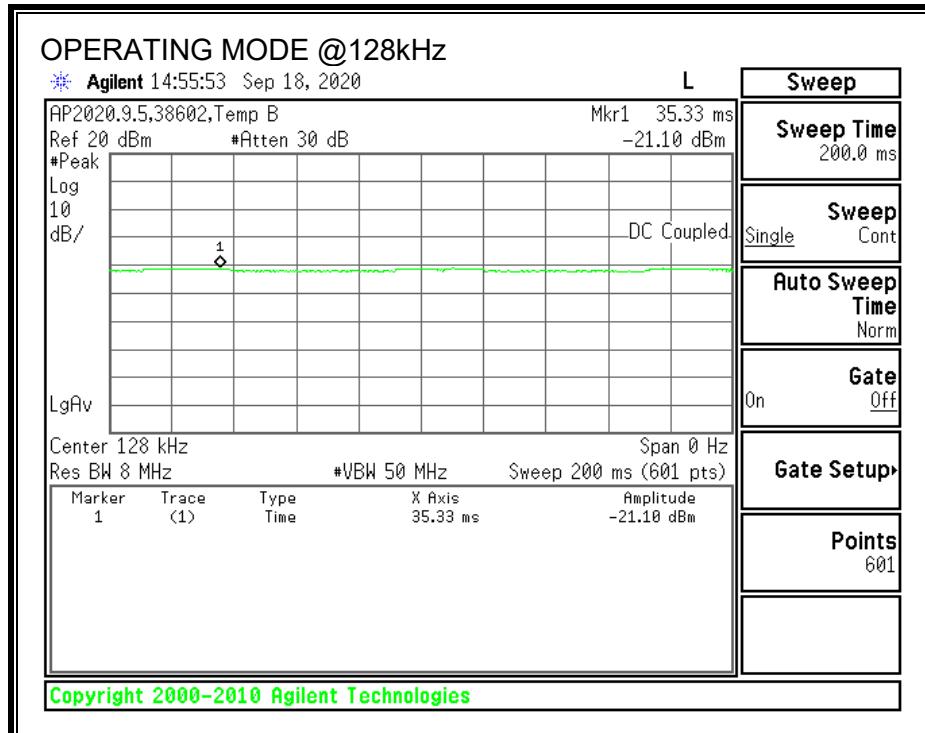
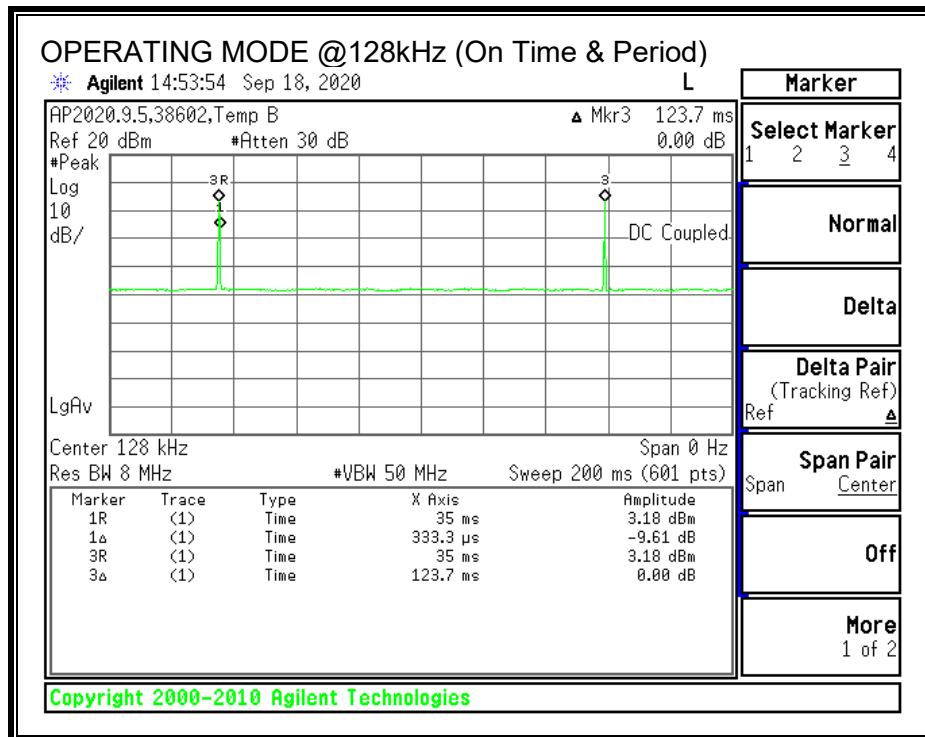
PROCEDURE

Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
Standby @ 360kHz	0.50	172.40	0.00	0.29%	25.38
Operating Frequency @360kHz	100.00	100.00	1.00	100.00%	0.00
Standby @ 128kHz	0.33	123.70	0.00	0.27%	25.74
Operating Frequency @128kHz	100.00	100.00	1.00	100.00%	0.00





8. MAXIMUM PERMISSIBLE RF EXPOSURE

8.1. FCC LIMITS AND SUMMARY

§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.

RESULTS

ID:	38602	Date:	9/18/2020 - 9/22/2020
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Configuration #1:

Electric Field Limit			Magnetic Field Limit		
FCC RF Exposure Limit	Maximum Average (V/m)	Percentage (%)	FCC RF Exposure	Maximum Average (A/m)	Percentage (%)
614	0.422	0.07%	1.63	0.038	2.34%

Configuration #2:

Electric Field Limit			Magnetic Field Limit		
FCC RF Exposure Limit	Maximum Average (V/m)	Percentage (%)	FCC RF Exposure	Maximum Average (A/m)	Percentage (%)
614	1.353	0.22%	1.63	0.118	7.25%

Configuration #3:

Electric Field Limit			Magnetic Field Limit		
FCC RF Exposure Limit	Maximum Average (V/m)	Percentage (%)	FCC RF Exposure	Maximum Average (A/m)	Percentage (%)
614	0.986	0.16%	1.63	0.353	21.66%

Configuration #4:

Electric Field Limit			Magnetic Field Limit		
FCC RF Exposure Limit	Maximum Average (V/m)	Percentage (%)	FCC RF Exposure	Maximum Average (A/m)	Percentage (%)
614	1.014	0.17%	1.63	0.164	10.06%

Configuration #5:

Electric Field Limit			Magnetic Field Limit		
FCC RF Exposure Limit	Maximum Average (V/m)	Percentage (%)	FCC RF Exposure	Maximum Average (A/m)	Percentage (%)
614	1.013	0.16%	1.63	0.170	10.44%

E- FIELD AND H- FIELD MEASUREMENTS

Note: Peak measurements were performed. RMS values were calculated from the peak measurement. Please refer to the formula for calculating the RMS values: [Field Strength x $\sqrt{\text{Duty Cycle}}$].

Configuration #1

FCC Limit		Spurious @128kHz		Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)						
Configuration	Test Mode	FCC	Location			Peak	Duty Cycle %	FCC Average	FCC		Location	Peak	Duty Cycle %	FCC Average			
						S1	0.258	0.27			S1	0.036	0.27	0.036			
1	Standby	614	S1	0.258	0.27	0.266	0.320	0.345	1.63	S2	0.036	0.27	0.036				
			S2	0.256		0.320	0.345	0.422		S3	0.036		0.036				
			S3	0.320		0.345	0.422	0.422		S4	0.038		0.038				
			S4	0.345		0.422				Top	0.036		0.036				
			Top	0.422						Max	0.036		0.036				
			Max	0.422													

Configuration #2

FCC Limit		Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)						
Configuration	Test Mode			FCC	Location	Peak	Duty Cycle %	FCC Average	FCC	Location	Peak	Duty Cycle %	FCC Average		
										S1	0.094	100	0.094		
2	Operating Real Product (Power ~10% Charging)	614	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	100	S1	0.800		0.800	1.63	S2	0.082	100	0.082		
	Operating Real Product (Power 20% ~ 60% Charging)				S2	0.650		0.650		S3	0.073		0.073		
	Operating Real Product (Power >75% Charging)				S3	0.799		0.799		S4	0.049		0.049		
					S4	0.679		0.679		Top	0.049		0.049		
					Top	0.959		0.959		Max	0.097		0.097		
					Max	0.965		0.965		S1	0.070		0.070		
					S1	0.835		0.835		S2	0.106		0.106		
					S2	0.683		0.683		S3	0.076		0.076		
					S3	0.872		0.872		S4	0.099		0.099		
					S4	0.685		0.685		Top	0.049		0.049		
					Top	1.229		1.229		Max	0.118		0.118		
					Max	1.353		1.353		S1	0.050		0.050		
					S1	0.668		0.668		S2	0.100		0.100		
					S2	0.574		0.574		S3	0.076		0.076		
					S3	0.682		0.682		S4	0.079		0.079		
					S4	0.561		0.561		Top	0.049		0.049		
					Top	0.942		0.942		Max	0.050		0.050		
					Max	0.943		0.943							

Configuration #3

FCC Limit		Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)							
Configuration	Test Mode			FCC	Location	Peak	Duty Cycle %		FCC	Location	Peak	Duty Cycle %				
3	Operating Real Product (Power >10% Charging) (5mm Airgap at Center)	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	100	S1	0.751	0.751		100	S1	0.289		0.289			
	S2	0.499	0.499		S2	0.096		0.096		S3	0.323		0.323			
	S3	0.657	0.657		S3	0.115		0.115		S4	0.059		0.059			
	S4	0.557	0.557		S4	0.325		0.325		Top	0.059		0.059			
	Top	0.584	0.584		Top	0.322		0.322		Max	0.325		0.325			
	Max	0.585	0.585	100	S1	0.778		0.778		S2	0.098		0.098			
	S1	0.778	0.778		S2	0.332		0.332		S3	0.111		0.111			
	S2	0.846	0.846		S4	0.059		0.059		Top	0.059		0.059			
	S3	0.658	0.658		Max	0.322		0.322		Max	0.325		0.325			
	S4	0.574	0.574		S1	0.322		0.322		S2	0.322		0.322			
	Top	0.903	0.903	100	S1	0.322		0.322		S3	0.332		0.332			
	Max	0.904	0.904		S2	0.098		0.098		S4	0.111		0.111			
	S1	0.723	0.723		Top	0.059		0.059		Max	0.322		0.322			
	S2	0.512	0.512		S1	0.317		0.317		S2	0.098		0.098			
	S3	0.676	0.676		S3	0.341		0.341		S4	0.133		0.133			
	S4	0.524	0.524	100	Top	0.067		0.067		Top	0.067		0.067			
	Top	0.913	0.913		Max	0.341		0.341		S1	0.317		0.317			
	Max	0.934	0.934		S2	0.096		0.096		S3	0.341		0.341			
	S1	0.771	0.771		Max	0.341		0.341		S4	0.133		0.133			
	S2	0.499	0.499		S1	0.309		0.309		S2	0.098		0.098			
	S3	0.641	0.641	100	S3	0.320		0.320		S4	0.098		0.098			
	S4	0.585	0.585		Top	0.072		0.072		Top	0.072		0.072			
	Top	0.986	0.986		Max	0.336		0.336		S1	0.309		0.309			
	Max	0.986	0.986		S2	0.098		0.098		S3	0.320		0.320			
	S1	0.744	0.744		Max	0.353		0.353		S4	0.111		0.111			
	S2	0.508	0.508	100	S1	0.309		0.309		S2	0.106		0.106			
	S3	0.658	0.658		S3	0.344		0.344		S3	0.344		0.344			
	S4	0.593	0.593		S4	0.111		0.111		S4	0.059		0.059			
	Top	0.916	0.916		Top	0.059		0.059		Max	0.353		0.353			
	Max	0.935	0.935		S1	0.311		0.311		S2	0.099		0.099			
	S1	0.752	0.752	100	S3	0.351		0.351		S3	0.351		0.351			
	S2	0.517	0.517		S4	0.094		0.094		S4	0.094		0.094			
	S3	0.639	0.639		Top	0.071		0.071		Top	0.071		0.071			
	S4	0.577	0.577		Max	0.351		0.351		S1	0.311		0.311			
	Top	0.942	0.942		S2	0.099		0.099		S2	0.106		0.106			
	Max	0.942	0.942	100	S3	0.351		0.351		S3	0.351		0.351			
	S1	0.744	0.744		S4	0.114		0.114		S4	0.114		0.114			
	S2	0.521	0.521		Top	0.062		0.062		Top	0.062		0.062			
	S3	0.671	0.671		Max	0.317		0.317		S1	0.309		0.309			
	S4	0.708	0.708		S2	0.106		0.106		S2	0.106		0.106			
	Top	0.927	0.927	100	S3	0.304		0.304		S3	0.304		0.304			
	Max	0.965	0.965		S4	0.114		0.114		S4	0.114		0.114			
	S1	0.778	0.778		Top	0.062		0.062		Top	0.055		0.055			
	S2	0.547	0.547		Max	0.335		0.335		Max	0.335		0.335			
	S3	0.647	0.647		S1	0.296		0.296		S1	0.313		0.313			
	S4	0.663	0.663	100	S2	0.100		0.100		S2	0.097		0.097			
	Top	0.846	0.846		S3	0.335		0.335		S3	0.326		0.326			
	Max	0.857	0.857		S4	0.114		0.114		S4	0.109		0.109			
	S1	0.765	0.765		Top	0.055		0.055		Top	0.063		0.063			
	S2	0.538	0.538		Max	0.327		0.327		Max	0.327		0.327			
	S3	0.651	0.651	100	S1	0.313		0.313		S2	0.097		0.097			
	S4	0.726	0.726		S2	0.097		0.097		S3	0.326		0.326			
	Top	0.917	0.917		S4	0.109		0.109		S4	0.109		0.109			
	Max	0.917	0.917		Top	0.063		0.063		Max	0.327		0.327			
	S1	0.765	0.765		Max	0.327		0.327		S1	0.313		0.313			

Configuration #4

FCC Limit		Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)						
Configuration	Test Mode			FCC	Location	Peak	Duty Cycle %		FCC	Location	Peak	Duty Cycle %			
4	Operating Real Product (Power ~10% Charging)	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.346			0.346	1.63	S1	0.047		0.047		
				S2	0.366			0.366		S2	0.152		0.152		
				S3	0.334			0.334		S3	0.105		0.105		
				S4	0.392			0.392		S4	0.147		0.147		
				Top	0.897			0.897		Top	0.073		0.073		
				Max	0.901			0.901		Max	0.152		0.152		
	Operating Real Product (Power 20% ~60% Charging)			S1	0.301			0.301		S1	0.045		0.045		
				S2	0.391			0.391		S2	0.128		0.128		
				S3	0.336			0.336		S3	0.047		0.047		
				S4	0.301			0.301		S4	0.151		0.151		
	Operating Real Product (Power >75% Charging)			Top	1.014			1.014		Top	0.073		0.073		
				Max	1.014			1.014		Max	0.164		0.164		
				S1	0.294			0.294	100	S1	0.046		0.046		
				S2	0.319			0.319		S2	0.099		0.099		
				S3	0.314			0.314		S3	0.055		0.055		
				S4	0.315			0.315		S4	0.065		0.065		
				Top	0.725			0.725		Top	0.068		0.068		
				Max	0.876			0.876		Max	0.107		0.107		

Configuration #5

FCC Limit		Measuring Distance (cm)	Electric Field Limit (V/m)	Electric Field Reading (V/m)				Magnetic Field Limit (A/m)	Magnetic Field Reading (A/m)						
Configuration	Test Mode			FCC	Location	Peak	Duty Cycle %		FCC	Location	Peak	Duty Cycle %			
5	Operating Real Product (Power ~10% Charging) (2mm Airgap at Center)	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.281	0.281			S1	0.054			0.054		
	Operating Real Product (Power ~10% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.311	0.311			S2	0.142			0.142		
	Operating Real Product (Power ~10% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.332	0.332			S3	0.079			0.079		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap at Center)			S4	0.357	0.357			S4	0.085			0.085		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.851	0.851			Top	0.084			0.084		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.851	0.851			Max	0.142			0.142		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap at Center)			S1	0.273	0.273			S1	0.057			0.057		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.281	0.281			S2	0.105			0.105		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.341	0.341			S3	0.051			0.051		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.346	0.346			S4	0.040			0.040		
614	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)	1.63	100	Top	0.700	0.700			Top	0.083			0.083		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.707	0.707			Max	0.083			0.083		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap at Center)			S1	0.281	0.281			S1	0.059			0.059		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.294	0.294			S2	0.158			0.158		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.328	0.328			S3	0.122			0.122		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap at Center)			S4	0.357	0.357			S4	0.089			0.089		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.282	0.282			Top	0.167			0.167		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.357	0.357			Max	0.167			0.167		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap at Center)			S1	0.266	0.266			S1	0.062			0.062		
	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.306	0.306			S2	0.170			0.170		
1.63	Operating Real Product (Power 20% ~ 60% Charging) (2mm Airgap & 5mm Shift to the Bottom)	100	100	S3	0.334	0.334			S3	0.101			0.101		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.353	0.353			S4	0.115			0.115		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	1.013	1.013			Top	0.091			0.091		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	1.013	1.013			Max	0.170			0.170		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S1	0.358	0.358			S1	0.056			0.056		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.282	0.282			S2	0.121			0.121		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.350	0.350			S3	0.081			0.081		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.381	0.381			S4	0.058			0.058		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.511	0.511			Top	0.078			0.078		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.511	0.511			Max	0.121			0.121		
100	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)	100	100	S1	0.278	0.278			S1	0.064			0.064		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.362	0.362			S2	0.158			0.158		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.355	0.355			S3	0.125			0.125		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.376	0.376			S4	0.097			0.097		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.984	0.984			Top	0.133			0.133		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.984	0.984			Max	0.168			0.168		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S1	0.277	0.277			S1	0.068			0.068		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.301	0.301			S2	0.164			0.164		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.337	0.337			S3	0.102			0.102		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.320	0.320			S4	0.110			0.110		
100	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)	100	100	Top	0.921	0.921			Top	0.094			0.094		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.921	0.921			Max	0.119			0.119		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S1	0.281	0.281			S1	0.044			0.044		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.301	0.301			S2	0.112			0.112		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			S3	0.351	0.351			S3	0.057			0.057		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.352	0.352			S4	0.056			0.056		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.392	0.392			Top	0.079			0.079		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.392	0.392			Max	0.115			0.115		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S1	0.269	0.269			S1	0.055			0.055		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			S2	0.274	0.274			S2	0.134			0.134		
100	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)	100	100	S3	0.323	0.323			S3	0.085			0.085		
	Operating Real Product (Power >75% Charging) (2mm Airgap at Center)			S4	0.338	0.338			S4	0.107			0.107		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Top)			Top	0.443	0.443			Top	0.088			0.088		
	Operating Real Product (Power >75% Charging) (2mm Airgap & 5mm Shift to the Bottom)			Max	0.501	0.501			Max	0.118			0.118		

9. SETUP PHOTO

Please see setup photo report 13181006-EP1V1

END OF TEST REPORT