



FCC Part 1 Subpart I
FCC Part 2 Subpart J

TEST REPORT

FOR

GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC

FCC ID: PY7-83262V

REPORT NUMBER: R14176139-E8V3

ISSUE DATE: 2022-03-31

Prepared for
SONY CORPORATION
1-7-1 Konan Minato-ku
Tokyo, 108-0076, Japan

Prepared by
UL LLC
12 LABORATORY DR.
RESEARCH TRIANGLE PARK, NC 27709 USA
TEL: (919) 549-1400



Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-03-10	Initial Issue	Richard Jankovics
V2	2022-03-25	Removed model from sections 1 and 8.	Brian Kiewra
V3	2022-03-31	Added detail on use condition (mobile) to Section 5	Richard Jankovics

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Sony Corporation
1-7-1 Konan Minato-ku
Tokyo, 108-0076, Japan

EUT DESCRIPTION: GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS,
WPT & NFC

SERIAL NUMBER: QV77008VB8, QV770058B8, QV770014B8, QV77008PB8,
QV770083B8, QV77003JB8

DATE TESTED: 2022-02-22 – 2022-03-01

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

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

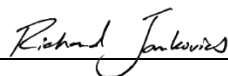
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Approved & Released For
UL LLC By:



Chin Pang
Senior Engineer
Consumer Technology Division
UL LLC

Prepared By:



Richard Jankovics
Operations Leader
Consumer Technology Division
UL LLC

2. TEST METHODOLOGY

All testing / calculations were made in accordance with FCC KDB 447498 D01, KDB 447498 D03, KDB 680106 D01 v03r01.

3. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. DECISION RULES

For all tests where the applicable $U_{LAB} \leq U_{MAX}$ the Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2, where $U_{MAX} = 30\%$ (0.3) for RF Exposure evaluations. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

For all tests where the applicable $U_{LAB} > U_{MAX}$ the Decision Rule is based on Guarded Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.3.2, with a guard band equal to $(U_{LAB} - U_{MAX})$, where $U_{MAX} = 30\%$ (0.3) for RF Exposure evaluations. (Test results are adjusted by the value of the guard band to determine conformity with a specified requirement.)

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Magnetic Field using Exposure Level Meter	+/- 0.80 dB
Electric Field using Exposure Level Meter	+/- 0.91 dB
Time	3.39%

Uncertainty figures are valid to a confidence level of 95%, $k = 2$.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC. This test report covers WPT testing. The device can function as a WPT charger operating from 110-148kHz.

While WPT is functioning, the device is limited to mobile use conditions and was evaluated for desktop applications.

5.2. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Wall Charger	Sony	AC-0540-JP	4640477	NA

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-C	2	USB-C	USB	< 3	Goes to wall charger

TEST SETUP

The following five configurations are tested:

Configuration	Mode	Descriptions
1	Standby (Power Detecting)	EUT Alone powered by AC/DC adapter
2	Operating with server (source) and client (load) aligned (With EUT charging) Note: Measurements were made when the battery level of the client was at a state of <10%, 50%, and 100%. Spot check worst-case battery level with 5 mm air gap.	EUT powered by AC/DC adapter
3	Operating with server (source) and client (load) aligned, with 90° rotation between them. (With EUT charging) Note: Measurements were made when the battery level of the client was at a state of <10%, 50%, and 100%.	EUT powered by AC/DC adapter
4	Same as configuration 2, with a worst case misalignment between the server and client.	EUT powered by AC/DC adapter
5	Same as configuration 3, with a worst case misalignment between the server and client.	EUT powered by AC/DC adapter

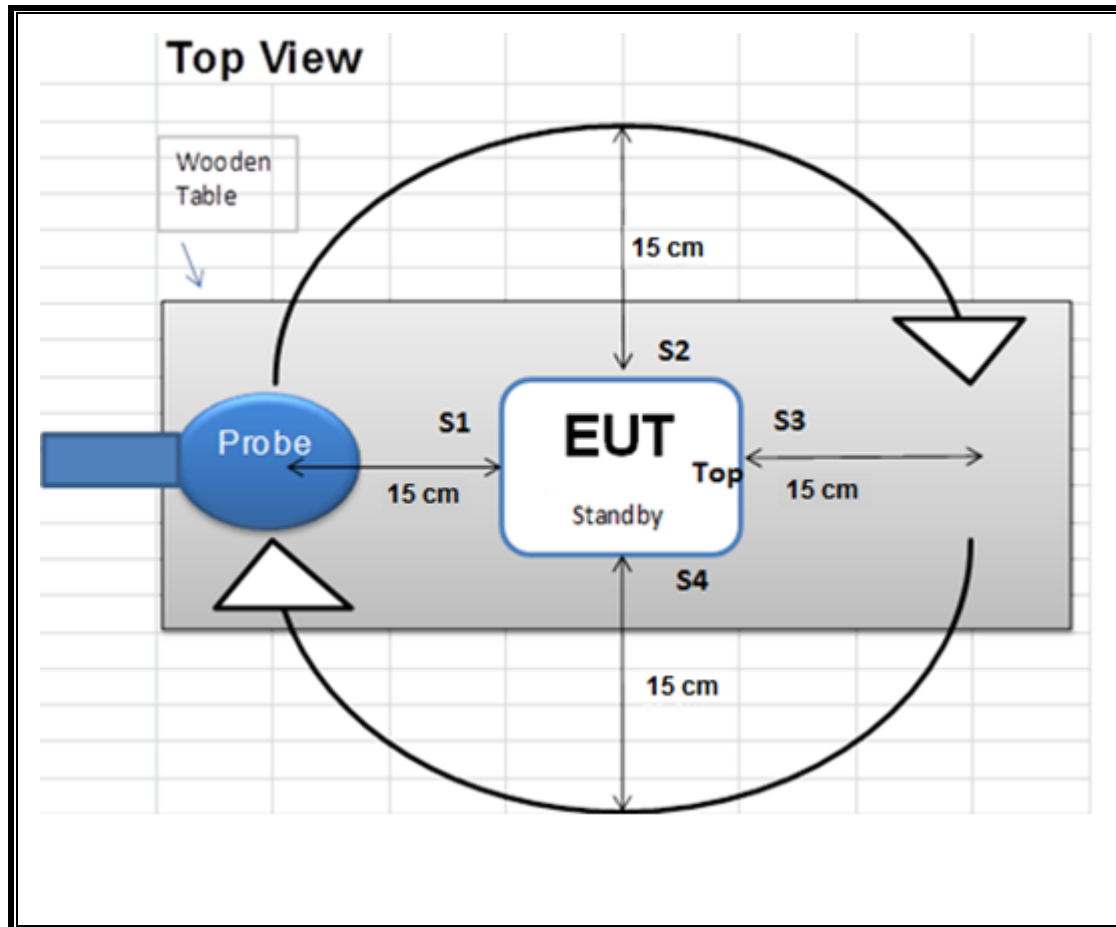
Please refer to R14176139-EP7 for setup diagrams.

MEASUREMENT SETUP

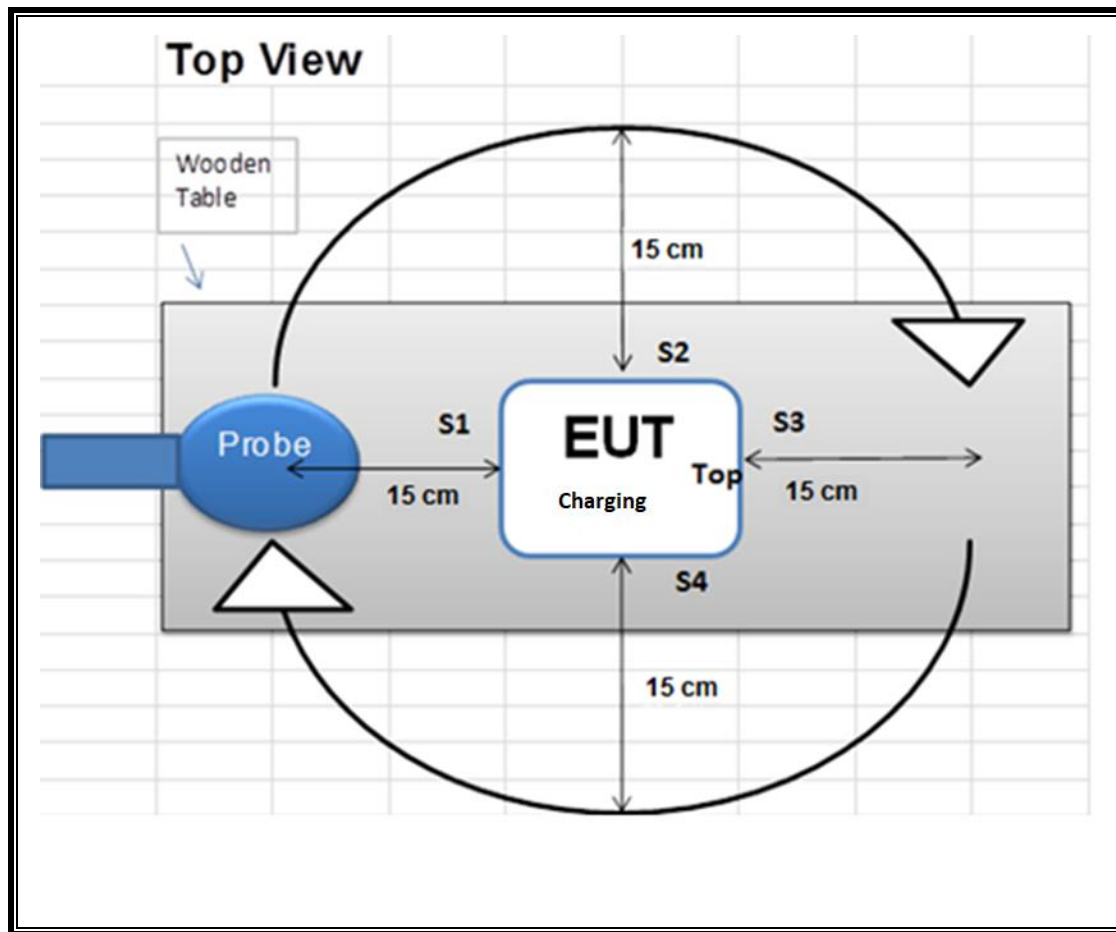
The measurement was taken using a probe placed 15cm surrounding the device and 20cm above the top surface of the EUT.

Measurements were taken from the top and all sides of the EUT per KDB 680106 D01 v03r01.

CONFIGURATION 1



CONFIGURATIONS 2-5



6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List					
Description	Manufacturer	Model	Equip. ID	Cal Date	Cal Due
Electric and Magnetic Field Probe	Narda	EHP-200AC	FA0001	2021-07-14	2022-07-14
Spectrum Analyzer	Agilent	N9030A	SA0025	2021-04-01	2022-04-01

7. DUTY CYCLE

LIMITS

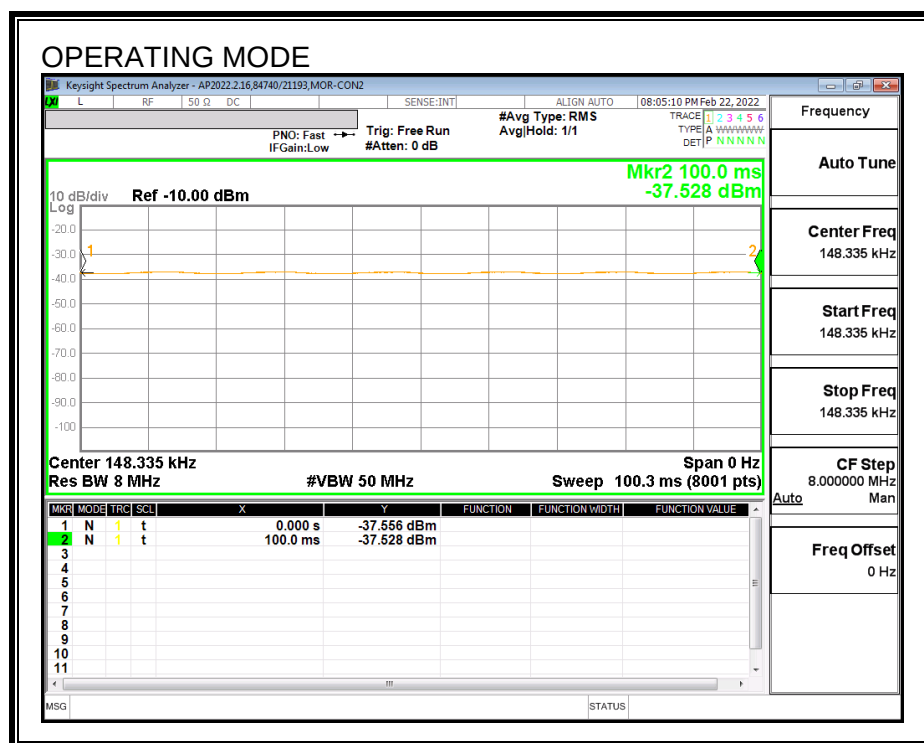
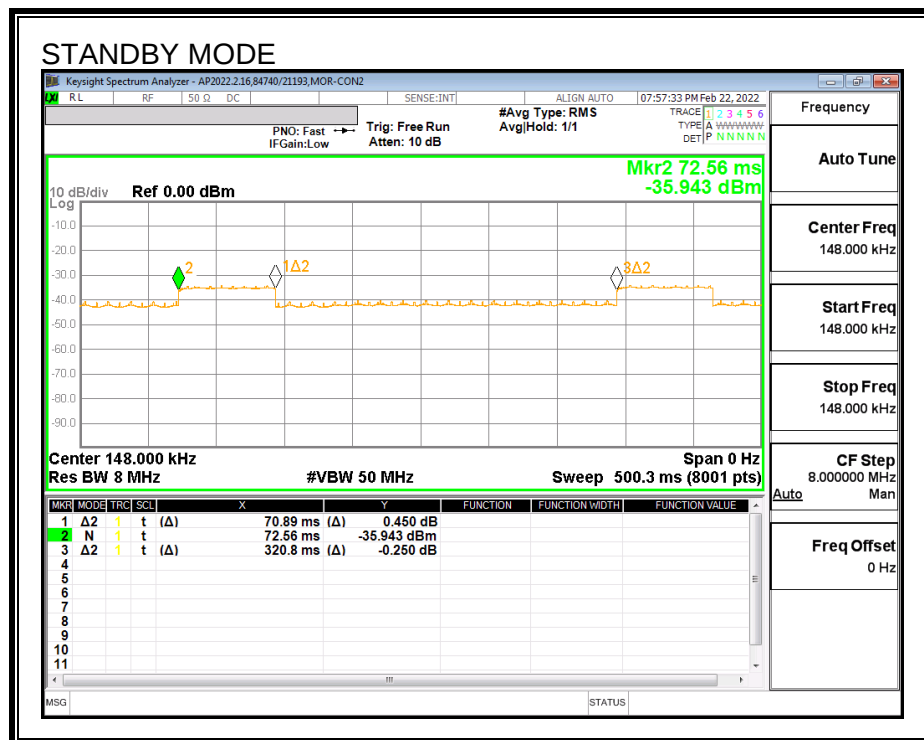
None; for reporting purposes only.

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)	70.89	320.80	0.2210	22.10%
Operating(Config 2+3)	100.00	100.00	1.00	100.00%



8. MAXIMUM PERMISSIBLE RF EXPOSURE TEST RESULTS

8.1. 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.

Note: The limit at 300 kHz was used for devices operating between 100-300 kHz.

8.2. SUMMARY OF TEST RESULTS

RESULTS

ID:	84740/21193	Date:	2022-02-22 – 2022-03-01
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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 at 110-148 kHz.

The inductive wireless power transfer device meets all of the following requirements:

- ☒ Power transfer frequency is less than 1 MHz
- ☒ Output power from each primary coil is less than or equal to 15 watts.
- ☒ 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.
- ☒ Client device is placed directly in contact with the transmitter.
- ☒ Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- ☒ 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.

FCC RF Exposure Summary of Results

Electric Field			Magnetic Field		
FCC Limit (V/m)	Maximum Average Reading (V/m)	Percentage (%)	FCC Limit (A/m)	Maximum Average Reading (A/m)	Percentage (%)
614	5.794	0.94%	1.63	0.099	6.07%

Note: since the E and H field are lower than the limit by more than 50% of the limit then a PAG is not required.

8.3. DETAILED TEST RESULTS

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

Config	Test Mode	Meas Dist (cm)	E field Limit (V/m)	Electric Field Reading				Magnetic Field Limit (A/m)	Magnetic Field Reading			
				(V/m)					(A/m)			
				FCC	Location	Peak	Duty Cycle %		FCC Average	FCC	Location	Peak
1	Standby	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.628	22.10	0.295	1.63	S1	0.043	22.10	0.020
				S2	0.587		0.276		S2	0.034		0.016
				S3	0.672		0.316		S3	0.055		0.026
				S4	0.609		0.286		S4	0.026		0.012
				Top	0.562		0.264		Top	0.077		0.036
				Max	0.672		0.316		Max	0.077		0.036
2	Operating Power <10% Charging			S1	0.586	100.00	0.586		S1	0.017	100	0.017
				S2	0.506		0.506		S2	0.007		0.007
				S3	0.580		0.580		S3	0.013		0.013
				S4	0.435		0.435		S4	0.007		0.007
				Top	0.670		0.670		Top	0.007		0.007
				Max	0.670		0.670		Max	0.017		0.017
	Operating Power 50% Charging			S1	0.524	100.00	0.524		S1	0.018	100	0.018
				S2	0.458		0.458		S2	0.008		0.008
				S3	0.520		0.520		S3	0.023		0.023
				S4	0.365		0.365		S4	0.007		0.007
				Top	0.745		0.745		Top	0.013		0.013
				Max	0.745		0.745		Max	0.023		0.023
	Operating Power 100 % Charged			S1	0.994	100.00	0.994		S1	0.020	100	0.020
				S2	0.436		0.436		S2	0.005		0.005
				S3	0.628		0.628		S3	0.020		0.020
				S4	0.391		0.391		S4	0.005		0.005
				Top	0.715		0.715		Top	0.013		0.013
				Max	0.994		0.994		Max	0.020		0.020
	Operating Power 100 % Charged with 5 mm air gap			S1	0.637	100.00	0.637		S1	0.086	100	0.086
				S2	0.488		0.488		S2	0.010		0.010
				S3	0.624		0.624		S3	0.088		0.088
				S4	0.402		0.402		S4	0.012		0.012
				Top	0.599		0.599		Top	0.006		0.006
				Max	0.637		0.637		Max	0.088		0.088
3	Operating Power <10% Charging			S1	5.002	100.00	5.002		S1	0.021	100	0.021
				S2	0.455		0.455		S2	0.007		0.007
				S3	1.962		1.962		S3	0.013		0.013
				S4	0.427		0.427		S4	0.007		0.007
				Top	0.631		0.631		Top	0.013		0.013
				Max	5.002		5.002		Max	0.021		0.021
	Operating Power 50% Charging			S1	3.640	100.00	3.640		S1	0.027	100	0.027
				S2	0.402		0.402		S2	0.010		0.010
				S3	1.965		1.965		S3	0.016		0.016
				S4	0.416		0.416		S4	0.010		0.010
				Top	1.075		1.075		Top	0.013		0.013
				Max	3.640		3.640		Max	0.027		0.027
	Operating Power 100 % Charged			S1	5.794	100.00	5.794		S1	0.021	100	0.021
				S2	0.549		0.549		S2	0.007		0.007
				S3	2.907		2.907		S3	0.012		0.012
				S4	0.437		0.437		S4	0.008		0.008
				Top	2.027		2.027		Top	0.008		0.008
				Max	5.794		5.794		Max	0.021		0.021

Config	Test Mode	Meas Dist (cm)	E 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
4	Operating Power <10% Charging	15 cm surrounding the device (S1 - S4) and 20 cm above the top surface of the EUT	614	S1	0.911	100.00	0.911	1.63	S1	0.081	100	0.081		
				S2	0.476		0.476		S2	0.049		0.049		
				S3	0.537		0.537		S3	0.099		0.099		
				S4	0.449		0.449		S4	0.058		0.058		
				Top	0.729		0.729		Top	0.030		0.030		
				Max	0.911		0.911		Max	0.099		0.099		
	Operating Power 50% Charging			S1	0.961	100.00	0.961		S1	0.028	100	0.028		
				S2	0.494		0.494		S2	0.050		0.050		
				S3	0.549		0.549		S3	0.088		0.088		
				S4	0.551		0.551		S4	0.062		0.062		
				Top	0.810		0.810		Top	0.042		0.042		
				Max	0.961		0.961		Max	0.088		0.088		
	Operating Power 100 % Charged			S1	0.812	100.00	0.812		S1	0.037	100	0.037		
				S2	0.364		0.364		S2	0.024		0.024		
				S3	0.404		0.404		S3	0.042		0.042		
				S4	0.396		0.396		S4	0.031		0.031		
				Top	0.692		0.692		Top	0.012		0.012		
				Max	0.812		0.812		Max	0.042		0.042		
5	Operating Power <10% Charging	S1	3.060	100.00	3.060	S1	0.045	100	0.045					
		S2	0.411		0.411	S2	0.012		0.012					
		S3	1.708		1.708	S3	0.030		0.030					
		S4	0.455		0.455	S4	0.011		0.011					
		Top	1.243		1.243	Top	0.010		0.010					
		Max	3.060		3.060	Max	0.045		0.045					
	Operating Power 50% Charging	S1	3.766	100.00	3.766	S1	0.014	100	0.014					
		S2	0.342		0.342	S2	0.019		0.019					
		S3	1.740		1.740	S3	0.018		0.018					
		S4	0.378		0.378	S4	0.013		0.013					
		Top	0.881		0.881	Top	0.014		0.014					
		Max	3.766		3.766	Max	0.019		0.019					
	Operating Power 100 % Charged	S1	3.070	100.00	3.070	S1	0.034	100	0.034					
		S2	0.390		0.390	S2	0.015		0.015					
		S3	1.808		1.808	S3	0.014		0.014					
		S4	0.382		0.382	S4	0.014		0.014					
		Top	0.868		0.868	Top	0.009		0.009					
		Max	3.070		3.070	Max	0.034		0.034					

9. SETUP PHOTO

Please refer to R14176139-EP7 for setup photos.

END OF REPORT