



CERTIFICATION TEST REPORT

Report Number : 4789994989-FR2V2

Applicant : STATIC
#506, 205 Gasan Digital 1-Ro(KCC Welltz vally Building),
Geumcheon-gu, Seoul, 08501, South Korea

Model : STC-IP12P

FCC ID : 2AY4GSTC-IP12P

EUT Description : MAGPLUS Power bank with WPT

Test Standard(s) : FCC 47 CFR PART 1 SUBPART I
FCC 47 CFR PART 2 SUBPART J

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	12/17/21	Initial issue	Robby Lee
V2	01/13/22	Add data by measurement distance	Robby Lee

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: STATIC

EUT DESCRIPTION: MAGPLUS Power bank with WPT

MODEL: STC-IP12P

SERIAL NUMBER: Proto type

DATE TESTED: DEC 17, 2021 - JAN 12, 2022

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

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested 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 Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. 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 IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
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Tested By:



Anthony Kim
Suwon Lab Engineer
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Robby Lee
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UL Korea, Ltd.

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 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 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.

218 Maeyeong-ro
☒ Shield Room 5

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

UL Korea, Ltd. is accredited by National Radio Research Agency, Designation Number KR0161, for all testing performed within the scope of this report.

ISED CABID	ISED Company Number	FCC Registration
KR0161	2324L	644529

4. EQUIPMENT UNDER TEST

4.1. DESCRIPTION OF EUT

The EUT has WPT (Wireless Power Transfer) feature which has inductive charging coil to charge phone. The charging frequency is between 110 kHz to 191 kHz, and the maximum power consumption is 15.0 W in charging status.

4.2. WORST-CASE CONFIGURATION

Test configuration	Description
DUT to Phone test configuration 1	Charging from DUT to Client
DUT to Phone test configuration 2	Charging from DUT to Client (DUT from TA Charging)

Note:

Configuration 2 was tested with the worst case of configuration 1.

4.3. KDB 680106 D01 v03 SECTION 5.b) EQUIPMENT APPROVAL CONSIDERATIONS

Requirement	Device
(1) Power transfer frequency is less than 1 MHz.	Yes. Operating Frequency is between 110.01 kHz to 146 kHz.
(2) Output power from each primary coil is less than or equal to 15 watts.	Yes. Maximum power is 15.0 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.	The transfer system includes only single primary and secondary coils.
(4) Client device is placed directly in contact with the transmitter.	Yes.
(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	No.
(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.	Yes. The aggregate field at 15 cm from the device are 11.9 % of the FCC H field limit.

4.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT & PERIPHERALS

SUPPROT EQUIPMENT & PERIPHERALS LIST				
Description	Manufacturer	Model	Serial Numver	FCC ID
Phone	Apple Inc.	iPhone X	C39VX5YBJCLH	BCG-E3175A
AC Adapter	Wendeng Any Electronics Co.,Ltd.	BZQ312	N/A	-

TEST SETUP

The following three modes are tested in test configurations;

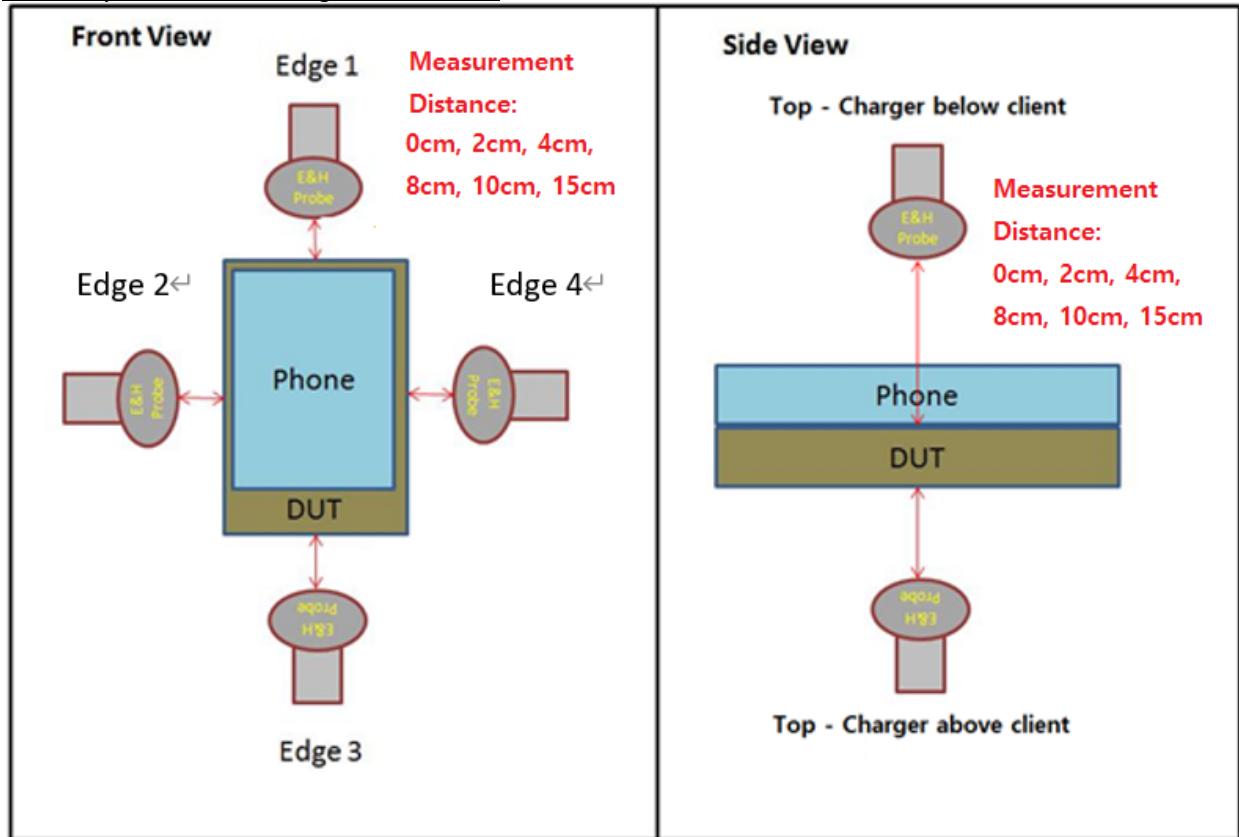
Mode
Operating (Client device, <10% Power Charging)
Operating (Client device, 50~55% Power Charging)
Operating (Client device, 90~95% Power Charging)

All 3 charging statuses have been investigated and no signification change in configuration 1, and therefore, configuration 2 with battery status 50~55% was set for final test.

MEASUREMENT TEST SETUP

The measurement was taken using a probe placed 15 cm surrounding the device and 20 cm above the top surface of the EUT. Measurements were taken the top (charger below/above client) and all sides of the EUT per KDB680106 D01 v03 and RF Exposure Procedures (Wireless Power Transfer) in TCB Workshop October, 2018.

DUT to phone test Configuration 1 & 2



5. 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	Serial Numver	Cal Date	Cal Due
Electric and Magnetic Field Probe	Narda	EHP-200AC	170WX91008	8-6-2021	8-6-2022

6. MAXIMUM PERMISSIBLE RF EXPOSURE

6.1. FCC LIMITS AND SUMMARY

6.1.1. 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.

6.2. TEST RESULTS

6.2.1. FCC RF EXPOSURE

H-FIELD MEASUREMENTS

Note: Peak measurement were performed. RMS values were calculated from the peak measurement.

Please refer to the formula for calculating the RMS values: $[\text{Field Strength} \times \sqrt{\text{Duty Cycle}}]$.

Additional test was performed in each Test mode by moving the probe surrounding the device to find the maximum exposure.

The EUT has 100% Duty cycle.

TEST results of DUT to phone test Configuration 1 & 2

FCC RF Exposure Result									
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)		
Configuration 1	Operating Real Product (Power <10% charging)	15 cm probe to edges of EUT and 20 cm probe to top surface of the EUT	Top - charger above client	614	0.398	1.63	0.194		
			Top - charger below client		0.398		0.194		
			Edge 1		0.398		0.194		
			Edge 2		0.398		0.194		
			Edge 3		0.398		0.194		
			Edge 4		0.398		0.194		
			max		0.398		0.194		
	Operating Real Product (Power 50~55% charging)		Top - charger above client		0.398		0.194		
			Top - charger below client		0.398		0.194		
			Edge 1		0.398		0.194		
			Edge 2		0.398		0.194		
			Edge 3		0.398		0.194		
			Edge 4		0.398		0.194		
			max		0.398		0.194		
	Operating Real Product (Power 90~95% charging)		Top - charger above client		0.398		0.194		
			Top - charger below client		0.398		0.194		
			Edge 1		0.398		0.194		
			Edge 2		0.398		0.194		
			Edge 3		0.398		0.194		
			Edge 4		0.398		0.194		
			max		0.398		0.194		
			Configuration 2		Operating Real Product (Power 50~55% charging)		Edge 4	0.398	0.194
							max	0.398	0.194

TEST results of DUT to phone test Configuration 1 & 2 (10 cm)

RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	10 cm	Top of EUT	614	0.482	1.63	0.195
			Bottom of EUT		0.584		0.196
			Edge 1		0.452		0.194
			Edge 2		0.467		0.194
			Edge 3		0.452		0.194
			Edge 4		0.467		0.194
			max		0.584		0.196
	Operating Real Product (Power 50~55% charging)		Top of EUT		0.485		0.194
			Bottom of EUT		0.587		0.194
			Edge 1		0.452		0.194
			Edge 2		0.468		0.194
			Edge 3		0.452		0.194
			Edge 4		0.464		0.194
			max		0.587		0.194
	Operating Real Product (Power 90~95% charging)		Top of EUT		0.483		0.194
			Bottom of EUT		0.585		0.194
			Edge 1		0.452		0.194
			Edge 2		0.466		0.194
			Edge 3		0.452		0.194
			Edge 4		0.463		0.194
			max		0.585		0.194
Configuration 2	Operating Real Product (Power 50~55% charging)	Bottom of EUT	614	0.585	1.63	0.196	
		max		0.585		0.196	

TEST results of DUT to phone test Configuration 1 & 2 (8 cm)

RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	8 cm	Top of EUT	614	0.484	1.63	0.199
			Bottom of EUT		0.591		0.200
			Edge 1		0.454		0.194
			Edge 2		0.462		0.194
			Edge 3		0.453		0.194
			Edge 4		0.464		0.194
			max		0.591		0.200
	Operating Real Product (Power 50~55% charging)		Top of EUT		0.486		0.199
			Bottom of EUT		0.586		0.200
			Edge 1		0.452		0.194
			Edge 2		0.465		0.194
			Edge 3		0.452		0.194
			Edge 4		0.463		0.194
			max		0.586		0.200
	Operating Real Product (Power 90~95% charging)		Top of EUT		0.483		0.198
			Bottom of EUT		0.589		0.199
			Edge 1		0.454		0.194
			Edge 2		0.467		0.194
			Edge 3		0.453		0.194
			Edge 4		0.462		0.194
			max		0.589		0.199
Configuration 2	Operating Real Product (Power 50~55% charging)	Bottom of EUT		0.590		0.199	
		max		0.590		0.199	

TEST results of DUT to phone test Configuration 1 & 2 (6 cm)

RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	6 cm	Top of EUT	614	0.485	1.63	0.199
			Bottom of EUT		0.591		0.200
			Edge 1		0.454		0.194
			Edge 2		0.463		0.194
			Edge 3		0.455		0.194
			Edge 4		0.467		0.194
			max		0.591		0.200
	Operating Real Product (Power 50~55% charging)		Top of EUT		0.486		0.199
			Bottom of EUT		0.593		0.200
			Edge 1		0.453		0.194
			Edge 2		0.464		0.194
			Edge 3		0.452		0.194
			Edge 4		0.463		0.194
			max		0.593		0.200
	Operating Real Product (Power 90~95% charging)		Top of EUT		0.485		0.198
			Bottom of EUT		0.592		0.199
			Edge 1		0.454		0.194
			Edge 2		0.463		0.194
			Edge 3		0.453		0.194
			Edge 4		0.468		0.194
			max		0.592		0.199
Configuration 2	Operating Real Product (Power 50~55% charging)	Bottom of EUT	614	0.591	1.63	0.199	
		max		0.591		0.199	

TEST results of DUT to phone test Configuration 1 & 2 (4 cm)

RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	4 cm	Top of EUT	614	0.485	1.63	0.199
			Bottom of EUT		0.591		0.200
			Edge 1		0.454		0.194
			Edge 2		0.464		0.194
			Edge 3		0.456		0.194
			Edge 4		0.468		0.194
			max		0.591		0.200
	Operating Real Product (Power 50~55% charging)		Top of EUT		0.487		0.199
			Bottom of EUT		0.594		0.200
			Edge 1		0.453		0.194
			Edge 2		0.464		0.194
			Edge 3		0.452		0.194
			Edge 4		0.463		0.194
			max		0.594		0.200
	Operating Real Product (Power 90~95% charging)		Top of EUT		0.485		0.198
			Bottom of EUT		0.593		0.199
			Edge 1		0.454		0.194
			Edge 2		0.464		0.194
			Edge 3		0.454		0.194
			Edge 4		0.469		0.194
			max		0.593		0.199
Configuration 2	Operating Real Product (Power 50~55% charging)	Bottom of EUT	614	0.592	1.63	0.199	
		max		0.592		0.199	

TEST results of DUT to phone test Configuration 1 & 2 (2 cm)

RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	4 cm	Top of EUT	614	0.499	1.63	0.199
			Bottom of EUT		1.218		0.202
			Edge 1		0.454		0.194
			Edge 2		0.465		0.194
			Edge 3		0.458		0.194
			Edge 4		0.469		0.194
			max		1.218		0.202
	Operating Real Product (Power 50~55% charging)		Top of EUT		0.503		0.199
			Bottom of EUT		1.219		0.203
			Edge 1		0.455		0.194
			Edge 2		0.465		0.194
			Edge 3		0.454		0.194
			Edge 4		0.464		0.194
			max		1.219		0.203
	Operating Real Product (Power 90~95% charging)		Top of EUT		0.497		0.199
			Bottom of EUT		1.215		0.202
			Edge 1		0.455		0.194
			Edge 2		0.465		0.194
			Edge 3		0.455		0.194
			Edge 4		0.470		0.194
			max		1.215		0.202
Configuration 2	Operating Real Product (Power 50~55% charging)	Bottom of EUT		0.594		0.199	
		max		0.594		0.199	

TEST results of DUT to phone test Configuration 1 & 2 (0 cm)

FCC RF Exposure Result							
Test Configuration	Test mode	Test distance	Test Position	E-Field Limit (V/m)	E-Field meas data (V/m)	H-Field Limit (A/m)	H-Field meas data (A/m)
Configuration 1	Operating Real Product (Power <10% charging)	0 cm probe to edges of EUT	Top - charger above client	614	2.114	1.63	0.201
			Top - charger below client		0.782		0.247
			Edge 1		0.428		0.194
			Edge 2		0.623		0.280
			Edge 3		0.582		0.219
			Edge 4		0.782		0.199
			max		2.114		0.280
	Operating Real Product (Power 50~55% charging)		Top - charger above client		2.122		0.208
			Top - charger below client		0.785		0.251
			Edge 1		0.430		0.194
			Edge 2		0.620		0.283
			Edge 3		0.580		0.216
			Edge 4		0.785		0.198
			max		2.122		0.283
	Operating Real Product (Power 90~95% charging)		Top - charger above client		2.117		0.203
			Top - charger below client		0.780		0.248
			Edge 1		0.428		0.194
			Edge 2		0.624		0.282
			Edge 3		0.586		0.221
			Edge 4		0.781		0.199
			max		2.117		0.282
Configuration 2	Operating Real Product (Power 50~55% charging)	Top - charger below client		0.608		0.263	
		Edge 2		0.608		0.263	

6.2.2. FCC SUMMARY OF RESULTS

Distance (cm)	E-Field Limit			H-Field Limit		
	FCC RF Exposure	Maximum meas data (V/m)	Percentage (%)	FCC RF Exposure	Maximum meas data (A/m)	Percentage (%)
15 or 20	614	0.398	0.06	1.63	0.194	11.90
10	614	0.587	0.10	1.63	0.196	12.02
8	614	0.591	0.10	1.63	0.200	12.27
6	614	0.593	0.10	1.63	0.200	12.27
4	614	0.594	0.10	1.63	0.200	12.27
2	614	1.219	0.20	1.63	0.203	12.45
0	614	2.122	0.35	1.63	0.283	17.36

Conclusion:

E-Field & H-Field result is less than 25% of the MPE limit.

END OF TEST REPORT