RF Exposure Evaluation Report

1. Product Information

Product Name	Phone Holder
Test Model	PH06
Additional Model No.	PH06A, PH06+
Model Declaration	PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Power Supply	Input: DC 12-16V Output power: 15W(MAX)
Modulation Type	Continuous Wave
Frequency Range	110.3~205.0KHz
Antenna Type	Coil Antenna
Hardware version	V1.0
Software version	IP6808_UA_IPF_PH02B_WF5OJ__20230630
Accessories	/
Exposure category	General population/uncontrolled environment
Number of tested samples	2
Sample number	A231208082-1(Engineer sample), A231208082-2(Normal sample)
EUT Type	Production Unit
Device Type	Mobile Device

2. Evaluation Limit

2.1 Refer evaluation method

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB publication 680106 D01 Wireless Power Transfer v04: EQUIPMENT AUTHORIZATION OF WIRELESS POWER TRANSFER DEVICES.

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices

FCC CFR 47 part 18.107:Indusial, Scientific, and Medical Equipment

2.2 Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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
300-1,500	/	/	f/300	6
1,500-100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
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
30-300	27.5	0.073	0.2	30
300-1,500	/	/	f/1500	30
1,500-100,000	/	/	1.0	30

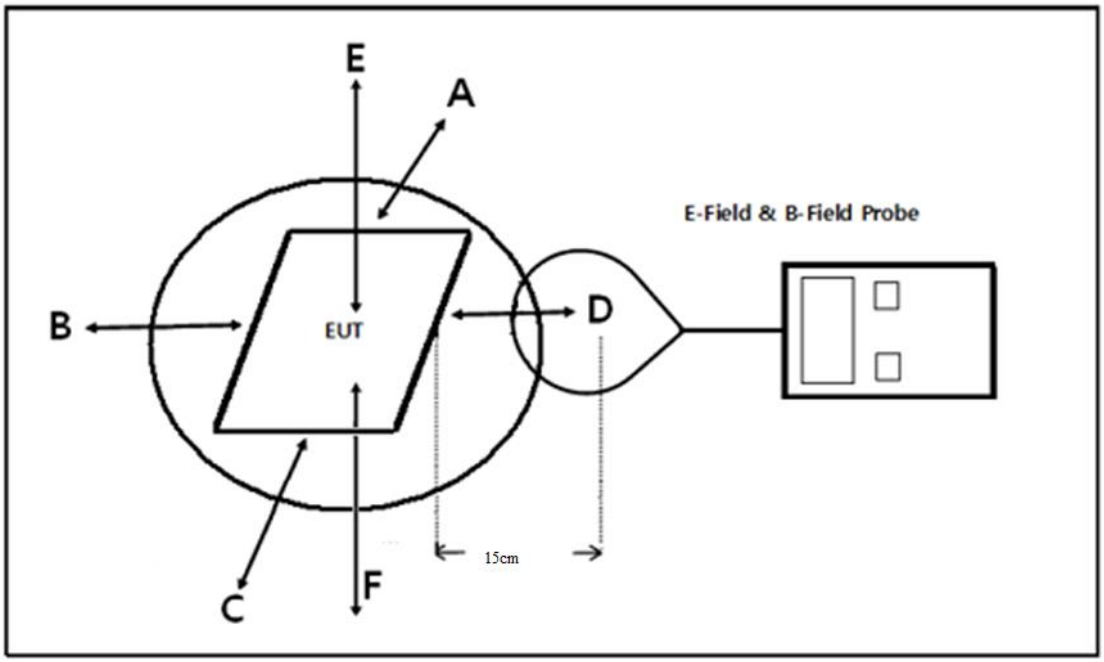
F=frequency in MHz

*=Plane-wave equivalent power density

According to FCC KDB 680106 D01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 KHz to 300 KHz should be assessed versus the limits at 300 KHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

	E-Field	*/*	B-Field
Frequency	V/m	A/m	uT
0.3 MHz – 3.0 MHz	614	1.63	2.0
3.0 MHz – 30 MHz	824/f (=27.5_{30MHz})	2.19/f (=0.073_{30MHz})	--

3. Test Setup Diagram



4. Test Equipment

Equipment	Manufacturer	Model	Serial no.	Calibrated date	Calibrated Due
Exposure Level Tester	Narda	ELT-400	N-0713	2023-10-18	2024-10-17
B-Field Probe	Narda	100cm^2	M-1154	2023-10-18	2024-10-17

5. Measurement Procedure

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.

b) The measurement probe was placed at test distance (15cm and 20cm) which is between the edges of the charger and the geometric center of probe.

c) The turn table was rotated 360d degree to search of highest strength.

d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.

e) The EUT were measured according to the dictates of KDB 680106 D01v04.

6. Equipment Approval Considerations

The EUT does comply with KDB 680106 D01v04 as follow table.

Requirements of KDB 680106 D01	Description
WPT operating frequency (or frequencies).	The device operate in the frequency range 110.3KHz~205KHz
Number of radiating structure(Coil)	Only one radiated Coil
Conducted power for each radiating structure.	Maximum 15W
§ 2.1091-Mobile or § 2.1093-Portable demonstrated scenarios of operation, including RF exposure compliance information	Mobile Device
Maximum distance from the WPT transmitter at which, by design, a load can be charged (including slow-charging operations)	Charing with the load directly contact

7. E and H field Strength

Test Modes		
Mode 1	AC/DC Adapter(12V)+EUT+mobile phone (Battery Status: <1%)	Record
Mode 2	AC/DC Adapter(12V)+EUT+mobile phone (Battery Status: <50%)	Record
Mode 3	AC/DC Adapter(12V)+EUT+mobile phone (Battery Status: 100%)	Record
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

H-Field Strength at 15 cm from the edges surrounding the EUT and 15cm from the top surface of the EUT

Load mode	Frequency Range (KHz)	Field Strength	Measured H - Field Strength Values (A/m)					50% Limits	Limits
			Test Position A	Test Position B	Test Position C	Test Position D	Test Position E		
Mode 1	110.3~205.0	uT	0.126	0.138	0.143	0.131	0.147	--	--
Mode 1	110.3~205.0	A/m	0.101	0.111	0.114	0.104	0.118	0.815	1.63
Mode 2	110.3~205.0	uT	0.125	0.135	0.137	0.130	0.146	--	--
Mode 2	110.3~205.0	A/m	0.100	0.108	0.110	0.104	0.117	0.815	1.63
Mode 3	110.3~205.0	uT	0.123	0.132	0.136	0.129	0.140	--	--
Mode 3	110.3~205.0	A/m	0.098	0.105	0.109	0.103	0.112	0.815	1.63

Note 1: A/m=uT/1.25

Note 2: During test the frequencies less than 1 MHz and E/H ratio less than 1/10 of the 377-ohm free space wave impedance, only record H-field measurements result.

H-Field Strength at 20 cm from the edges surrounding the EUT and 20cm from the top surface of the EUT

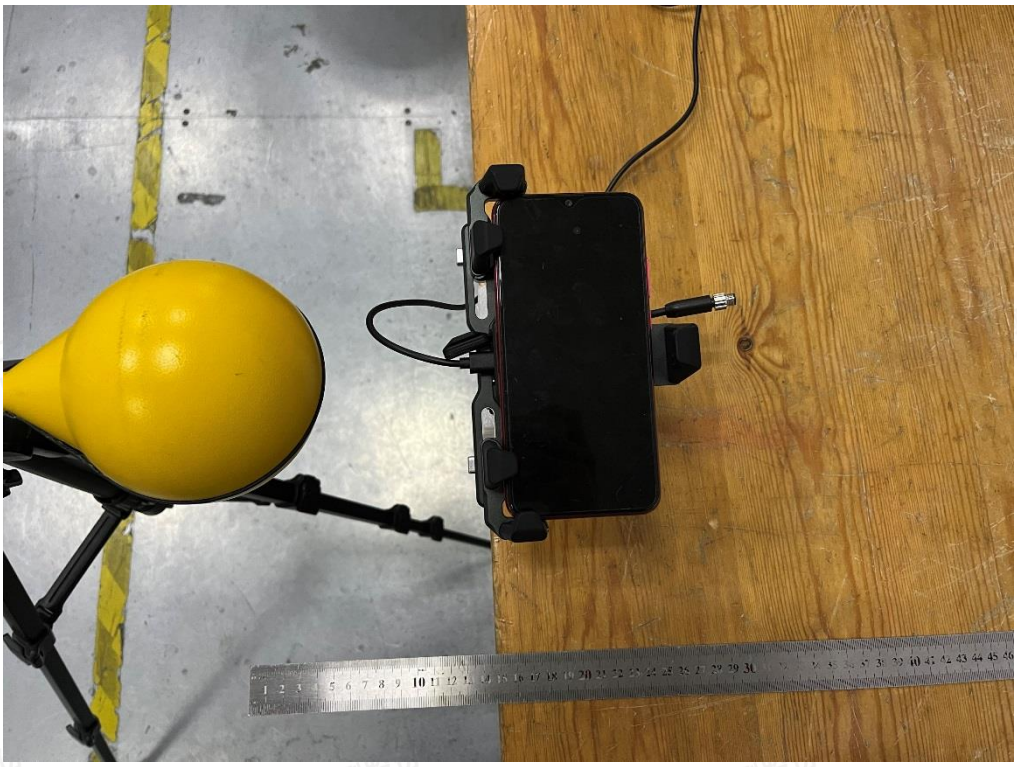
Load mode	Frequency Range (KHz)	Field Strength	Measured H - Field Strength Values (A/m)	50% Limits	Limits
			Test Position E		
Mode 1	110.3~205.0	uT	0.144	--	--
Mode 1	110.3~205.0	A/m	0.115	0.815	1.63
Mode 2	110.3~205.0	uT	0.143	--	--
Mode 2	110.3~205.0	A/m	0.114	0.815	1.63
Mode 3	110.3~205.0	uT	0.141	--	--
Mode 3	110.3~205.0	A/m	0.113	0.815	1.63

Note 1: A/m=uT/1.25

Note 2: During test the frequencies less than 1 MHz and E/H ratio less than 1/10 of the 377-ohm free space wave impedance, only record H-field measurements result.

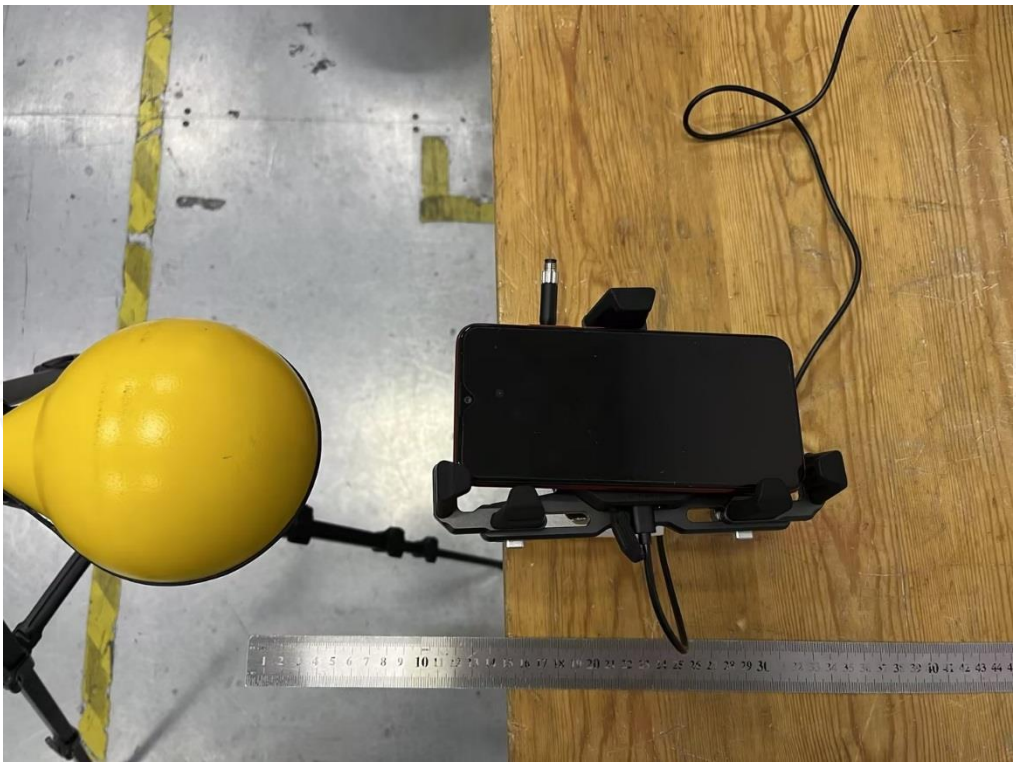
8. Test Setup Photos

Test Position A - Exposure photo from side edge surface-Rear(15cm)



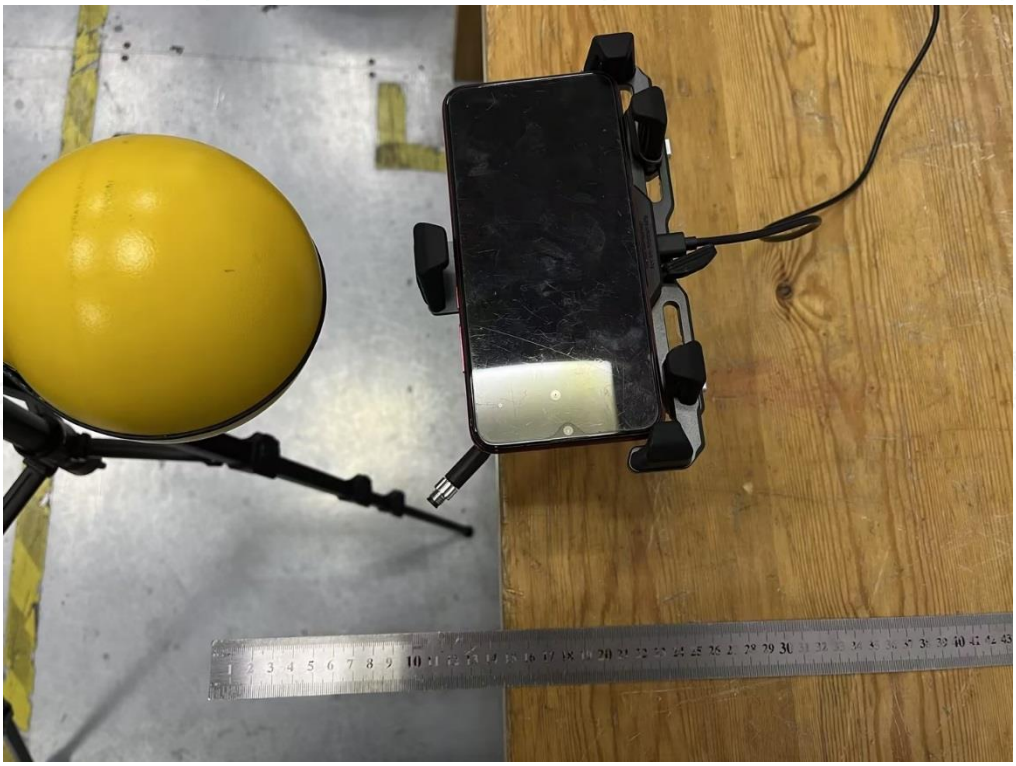
(TM1)

Test Position B - Exposure photo from side edge surface-Left(15cm)



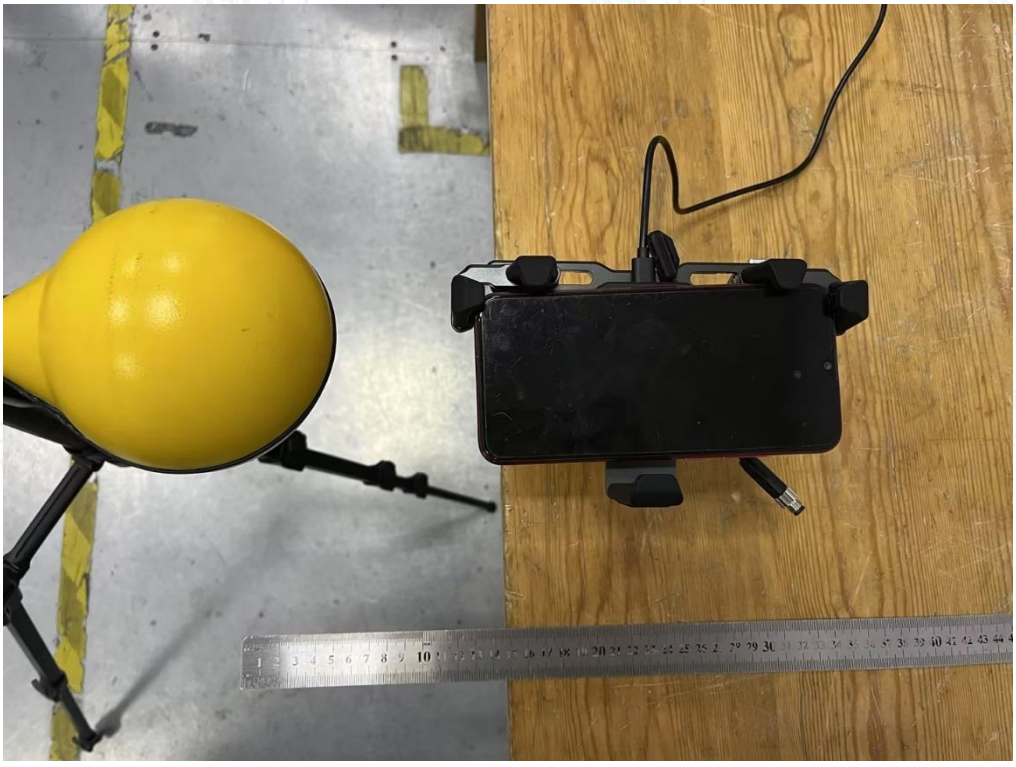
(TM1)

Test Position C - Exposure photo from side edge surface-Front(15cm)



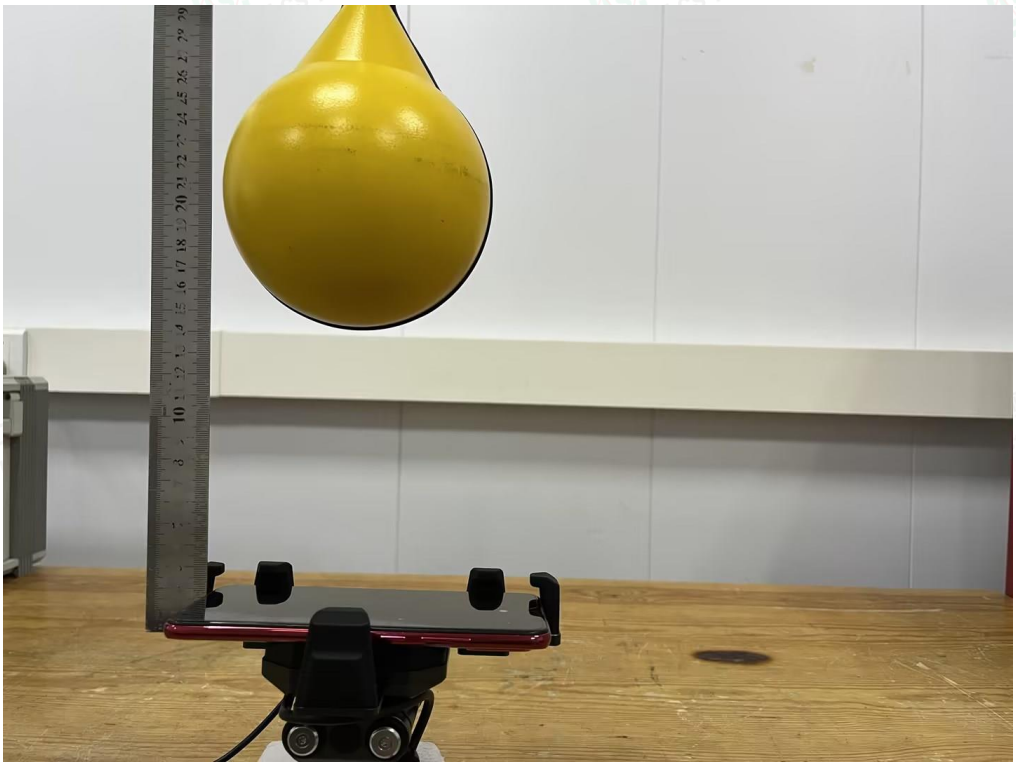
(TM1)

Test Position D - Exposure photo from side edge surface-Right(15cm)



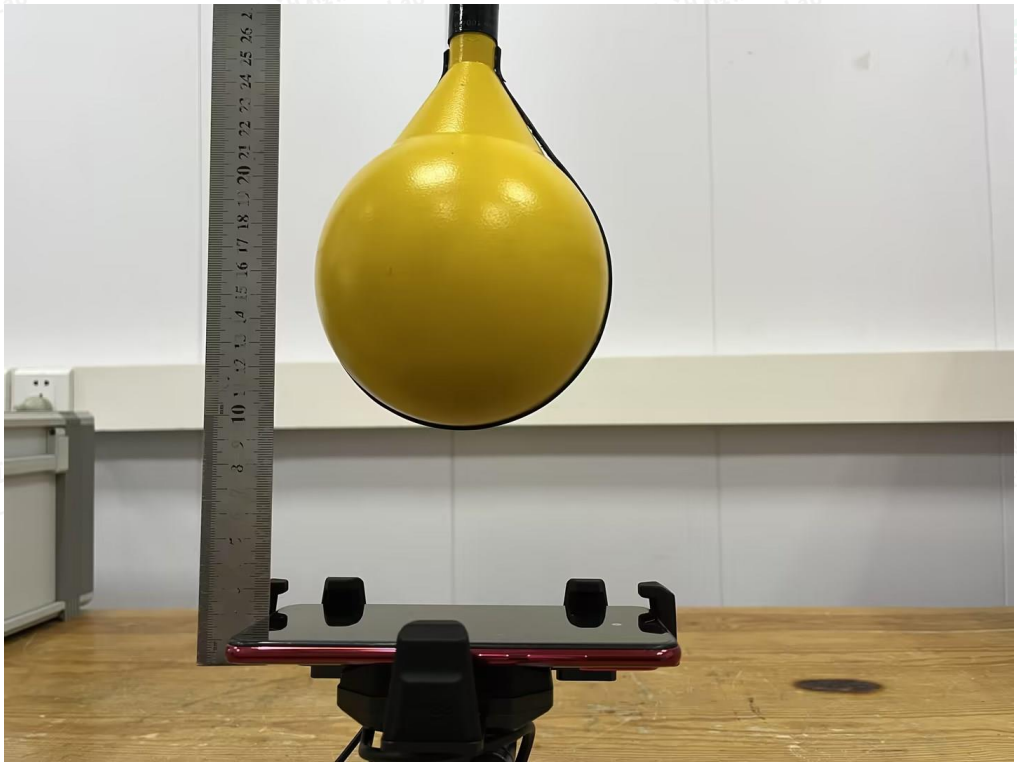
(TM1)

Test Position E - Exposure photo from top surface (20cm)



(TM1)

Test Position E- Exposure photo from top surface (15cm)



(TM1)

9. Conclusion

A minimum safety distance of at 15 cm surrounding the device and 20 cm above the top surface of the device is required when the device is charging a smart phone. The detected emissions with a distance of 15 cm surrounding the device and 20 cm above the top surface of the device are below the limitations according to FCC KDB 680106 D01 Section 3. RF Exposure Requirement Clause 3.

Revision History

Report Version	Issue Date	Revision Content	Revised By
000	December 22, 2023	Initial Issue	--

.....END OF REPORT.....