

TEST REPORT FOR RF EXPOSURE TESTING

Report No.: SRTC2024-9004(F)-24081205(I)
Product Name: Smart Phone
Applicant: Sharp Corporation
FCC ID: APYHRO00333

Reference Specification
Part 1.1310 Part 1.1307(b) KDB 680106 D01 KDB 447498 D04

The State Radio_monitoring_center Testing Center (SRTC)

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CONTENTS

1. GENERAL INFORMATION	2
1.1 NOTES OF THE TEST REPORT	2
1.2 INFORMATION ABOUT THE TESTING LABORATORY	2
1.1 APPLICANT’ S DETAILS	2
1.2 MANUFACTURER’ S DETAILS	2
2 DESCRIPTION OF THE DEVICE UNDER TEST	3
2.1 FINAL EQUIPMENT BUILD STATUS	3
2.2 AUXILIARY EQUIPMENT USED DURING TEST	3
3 REFERENCE SPECIFICATION	4
4 SUMMARY	5
5 TEST RESULTS	6
5.1 TEST SETUP	6
5.2 TEST PROCEDURE	6
5.3 LIMIT	7
5.4 E-FIELD AND H-FIELD STRENGTH	8
6 TEST EQUIPMENTS	9
7 TEST SETUP	10

1. GENERAL INFORMATION

1.1 Notes of the test report

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1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Designation number:	CN1267
Registration number:	239125
CAB identifier	CN0049
Test lab Number	7308A
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
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1.1 Applicant's details

Company:	Sharp Corporation
Address:	1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

1.2 Manufacturer's details

Company:	Sharp Corporation
Address:	1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

NFC

Manufacturer:	Sharp Corporation
Frequency Range:	11.810MHz~15.310MHz

Wireless Charger

Manufacturer:	Sharp Corporation
Frequency Range:	110 kHz ~ 148 kHz

2.2 Auxiliary Equipment Used During Test

Smart phone

Manufacturer:	Sharp Corporation
Model:	APYHRO00333




3 REFERENCE SPECIFICATION

Specification	Version	Title
Part 1.1310	2022	Radiofrequency radiation exposure limits.
Part 1.1307(b)	2022	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
KDB 680106 D01	v03r01	RF Exposure Wireless Charging Apps
447498 D04	2021	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices

4 SUMMARY

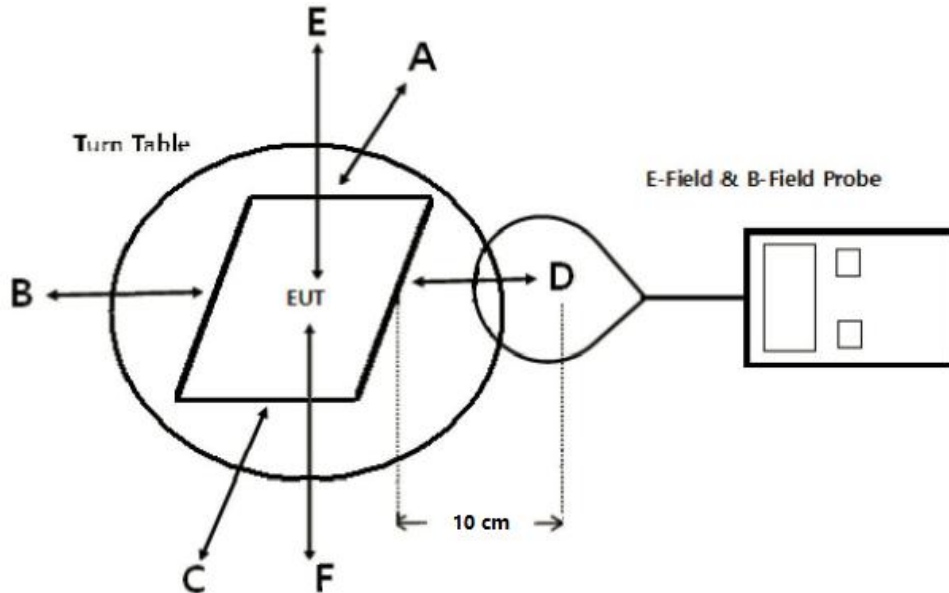
NO.	Requirement	Verdict
(1)	Power transfer frequency is less than 1 MHz	Yes (0.110-0.148 MHz)
(2)	Output power from each primary coil is less than or equal to 15 watts.	Yes (Output power <15 watts)
(3)	The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	Yes (only one primary and secondary coils)
(4)	Client device is placed directly in contact with the transmitter.	Yes (Directly against)
(5)	Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes (Fixation device)
(6)	The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	Yes (Distance= 15cm,E/H-field comply with limit)

No.	Test case	FCC reference
1	MPE Calculation	FCC KDB447498 D04

This Test Report Is Approved by: Mr. Peng Zhen 	Review by: Mr. Li Bin 
Tested and issued by: Mr. Hui Wen 	Approved date: 20240929

5 TEST RESULTS

5.1 Test Setup



Note: position F of the charging device shall be test with underside up.

5.2 Test Procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric center of probe.
- 3) Evaluate ambient noise. (Reflection influence can be ignore in the relatively empty anechoic chamber)
- 4) Adjust the measurement probe to search of highest strength.
- 5) Choose the worst mode among battery with zero/partial/full charge, then perform measurement. (If the charger without phone attached, duty cycle is lower, so it's not the worst case.)
- 6) The highest emission level was recorded and compared with limit as soon as measurement of each surfaces were completed.
- 7) Calculate the final E/H-field strength.

5.3 Limit

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

Note: **E-field and H-field limits shown in the table above are extended down to 100kHz**, Below 100 kHz, applicable reference levels for maximum instantaneous exposure field strengths are 83 V/m for the electric field and 90 A/m for the magnetic field.

5.4 E-field and H-field strength

Wireless Charger

Worst Mode: Partial battery power with phone attached					
Test Position	Measured E-field strength(V/m)	Ambient noise(V/m)	Final E-field strength(V/m)	limit(V/m)	50% Limit(V/m)
A	0.74	0.06	0.68	614	307
B	0.71	0.06	0.65	614	307
C	0.65	0.06	0.59	614	307
D	0.73	0.06	0.67	614	307
E	0.83	0.06	0.77	614	307
F	0.74	0.06	0.68	614	307
Test Position	Measured H-field strength(A/m)	Ambient noise(A/m)	Final H-field strength(A/m)	limit(A/m)	50% Limit(A/m)
A	0.05	0.00	0.05	1.63	0.815
B	0.03	0.00	0.03	1.63	0.815
C	0.03	0.00	0.03	1.63	0.815
D	0.04	0.00	0.04	1.63	0.815
E	0.06	0.00	0.06	1.63	0.815
F	0.05	0.00	0.05	1.63	0.815

NFC

Worst Mode: Partial battery power with phone attached					
Test Position	Measured E-field strength(V/m)	Ambient noise(V/m)	Final E-field strength(V/m)	limit(V/m)	50% Limit(V/m)
A	0.41	0.06	0.35	614	307
B	0.45	0.06	0.39	614	307
C	0.43	0.06	0.37	614	307
D	0.48	0.06	0.42	614	307
E	0.53	0.06	0.47	614	307
F	0.51	0.06	0.45	614	307
Test Position	Measured H-field strength(A/m)	Ambient noise(A/m)	Final H-field strength(A/m)	limit(A/m)	50% Limit(A/m)
A	0.03	0.00	0.03	1.63	0.815
B	0.03	0.00	0.03	1.63	0.815
C	0.03	0.00	0.03	1.63	0.815
D	0.04	0.00	0.04	1.63	0.815
E	0.04	0.00	0.06	1.63	0.815
F	0.03	0.00	0.05	1.63	0.815

6 TEST EQUIPMENTS

Name	Model	Manufacturer	Serial Number	Calibration Date	Cal. Interval
H/E-Field probe	WP400	WaveControl	20WP100628	2022.06.08	3 years
H/E-Field meter	SMP2	WaveControl	20SN1281	2022.06.08	3 years
H/E-Field probe	TES-593	TES	151101394	2022.07.21	3 years

7 TEST SETUP

