

TEST REPORT FOR EMC TESTING

Report No: SRTC2022-9003(F)-22030103(EMC)

Product Name: Mobile Phone

Product ID: AEF004

Applicant: Sharp Corporation

Manufacturer: Sharp Corporation

FCC ID: APYHRO00308

Reference Specification
FCC Part 15B
ANSI C63.4

The State Radio_monitoring_center Testing Center (SRTC)
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1. General information	3
1.1 Notes of the test report.....	3
1.2 Information about the testing laboratory	3
1.3 Applicant’s details	3
1.4 Manufacturer’s details	3
1.5 Information of EUT	4
EUT details.....	4
Auxiliary equipment details.....	5
Operating mode	6
1.6 Reference specification.....	7
1.7 Abbreviation.....	7
2. Test information	8
2.1 Summary of the test results	8
2.2 Item description	9
Conducted Emission.....	9
Radiated emission.....	11
3 Uncertainty	13
4 Equipment	13

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
Address:	15th Building, No.30 Shixing Street, Shijingshan District, Beijing P.R.China
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Country or Region:	P.R.China
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1.3 Applicant's details

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

1.4 Manufacturer's details

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

1.5 Information of EUT

EUT details

Testing Start Date:	3.10
Testing End Date:	4.12
DUT IMEI/SN:	No.1 (1 st Source): 004401230802932 No.2 (2 nd Source): 004401230803039 No.3 (3 rd Source): 004401230803013
DUT H/W Version:	PVT
DUT S/W Version:	---
Ambient Temperature:	22°C
Humidity:	35%
Note	---

Band supported
GSM850/1900 WCDMA band V LTE Band5/38/41 BT WIFI2.4GHz/5GHz

Auxiliary equipment details

Battery	
Type:	Li-Ion
Manufacture:	Amperex Technology Limited
Model:	UBATIA305AFN2
Capacity:	Typ. 4570mAh (min. 4490mA)
Nominal voltage:	3.85

Charger	
Info:	DVE / DSA-10PF06-05 FUS 050200

Headset	
Info:	LCHSE

USB cable	
Info:	K201-05130-00

Operating mode

Strategy	
Step1	Pre-Scan has been performed to determine the worst combination of auxiliary among all the possibility of different suppliers/models when necessary.
Step2	Pre-Scan has been performed to determine the worst operating mode for different test cases.
Step3	Based on the worst cases determined above, Then perform the following measurement.

Mode No	Operating mode	Measurement case (data refer to annex A)
1.	GSM850/PCS1900 + BT + 5GHz WiFi + GPS + Playing MP4 (SD card) + Headset + USB Cable + Power Adapter	---
2.	WCDMA + BT + 5GHz WiFi + GPS + Playing MP4 (SD card)+ Headset + USB Cable + Power Adapter	CE/ RE
3.	LTE + BT + 5GHz WiFi + GPS + Playing MP4 (SD card)+ Headset + USB Cable + Power Adapter	---
4.	GSM850/PCS1900 + BT + 5GHz WiFi + GPS + Camera+ Headset + USB Cable connected with Laptop	---
5.	WCDMA + BT + 5GHz WiFi + GPS + Camera+ Headset + USB Cable connected with Laptop	CE/ RE
6.	LTE + BT + 5GHz WiFi + GPS + Camera + Headset + USB Cable connected with Laptop	---

1.6 Reference specification

Specification	Version	Title
FCC Part 15B	2022	Unintentional Radiators
ANSI C63.4	2014	American National Standard For Methods Of Measurement Of Radio-Noise Emissions From Low-Voltage Electrical And Electronic Equipment In The Range Of 9 KHz To 40 GHz




1.7 Abbreviation

Abbreviation	Meaning
CT	Performance criteria for Continuous phenomena applied to Transmitters
TT	Performance criteria for Transient phenomena applied to Transmitters
CR	Performance criteria for Continuous phenomena applied to Receiver
TR	Performance criteria for Transient phenomena applied to Receiver
CE	Conducted Emission
RE	Radiated emission

2. Test information

2.1 Summary of the test results

Test Case	Class	Verdict
Conducted Emission	B	Pass
Radiated emission	B	Pass

This Test Report Is Approved by: Mr. Peng Zhen 	Review by: Mr. Li Bin 
Tested and issued by: Mr. Chang Tianyu 	Approved date: 2022/04/12

2.2 Item description

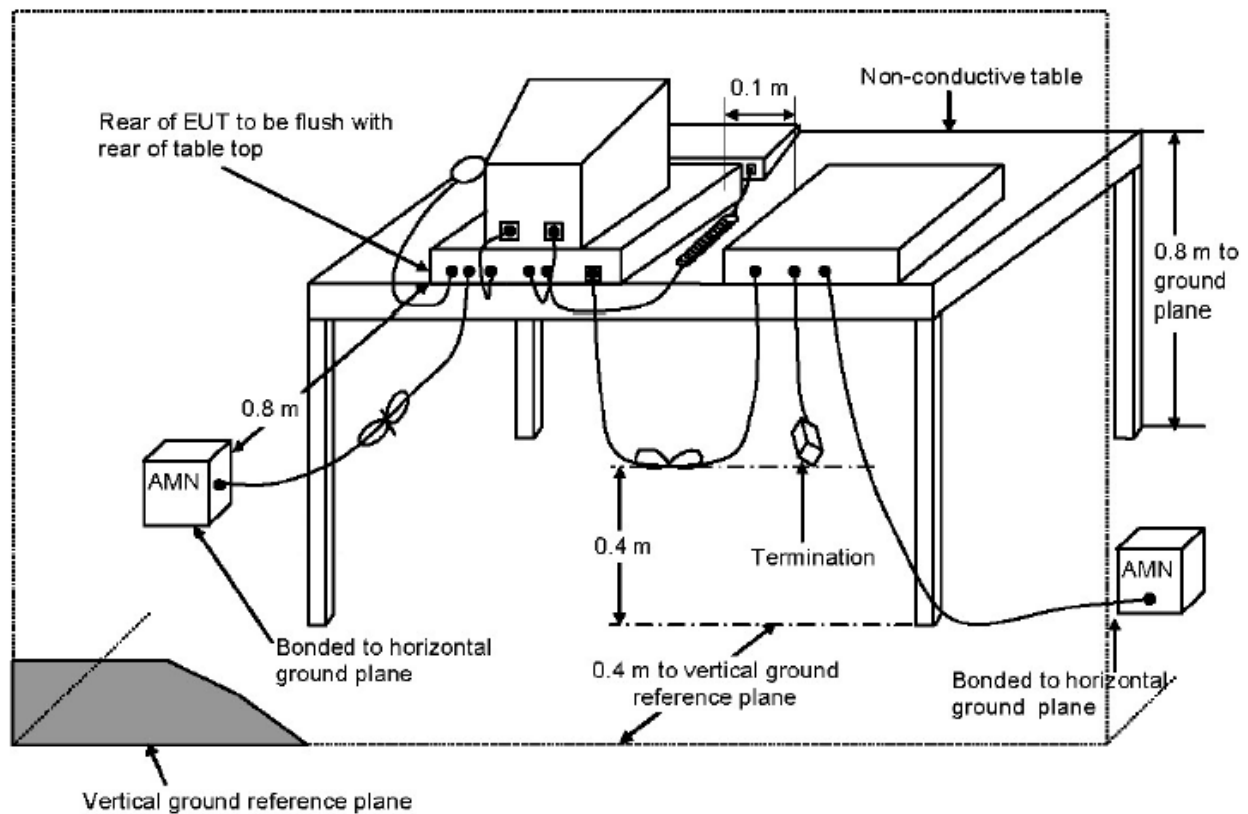
Conducted Emission

Refer to FCC Part15.107

Criteria:

Frequency Range (MHz)	Detector Type / Bandwidth	Class B limits (dB μ V)
0.15 to 0.5	Quasi Peak / 9 kHz	66 to56
0.5 to 5		56
5 to 30		60
0.15 to 0.5	Average / 9 kHz	56 to46
0.5 to 5		46
5 to 30		50

Setup:



Test Procedure:

Step	Note
1	The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter conducting wall of the shielding room and it was kept at least 0.8 meter from any other grounded conducting surface.
2	Connect EUT to the power mains through a line impedance stabilization network (LISN)
3	All the support units are connected to the other LISN.
4	The frequency range from 150 kHz to 30 searched.
5	Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6	6 frequency points closest to the limit of each line shall be performed the final measurement by Quasi Peak detector.

Radiated emission

Refer to FCC Part15.109

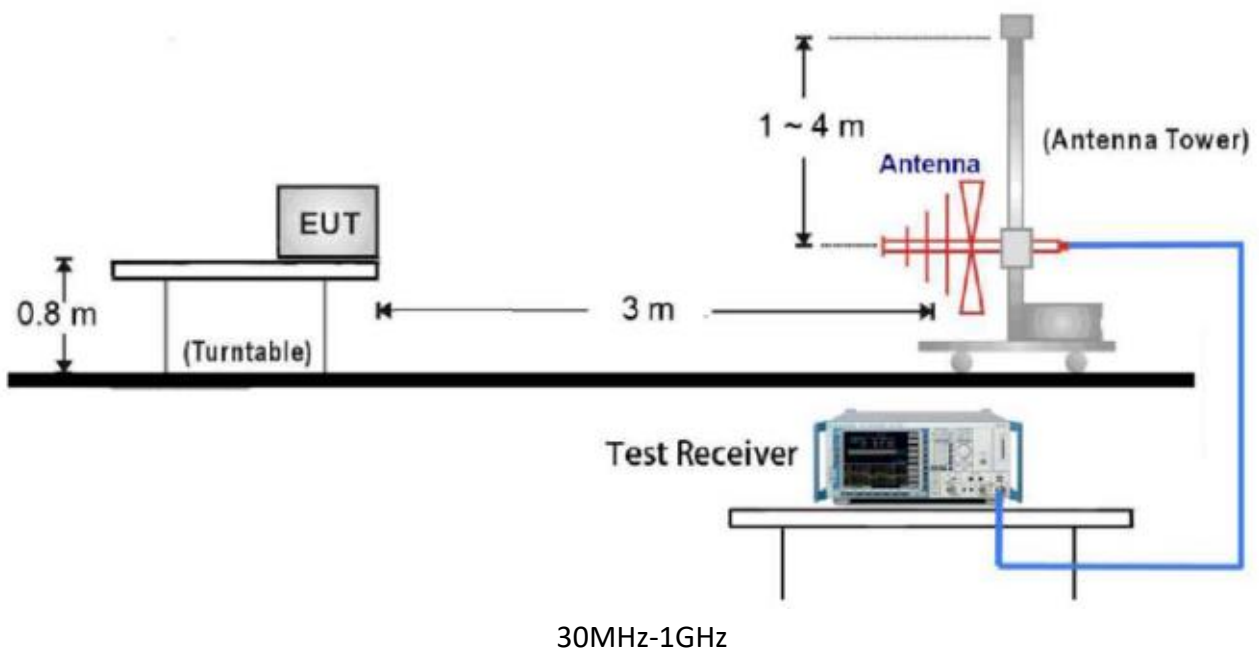
Criteria:

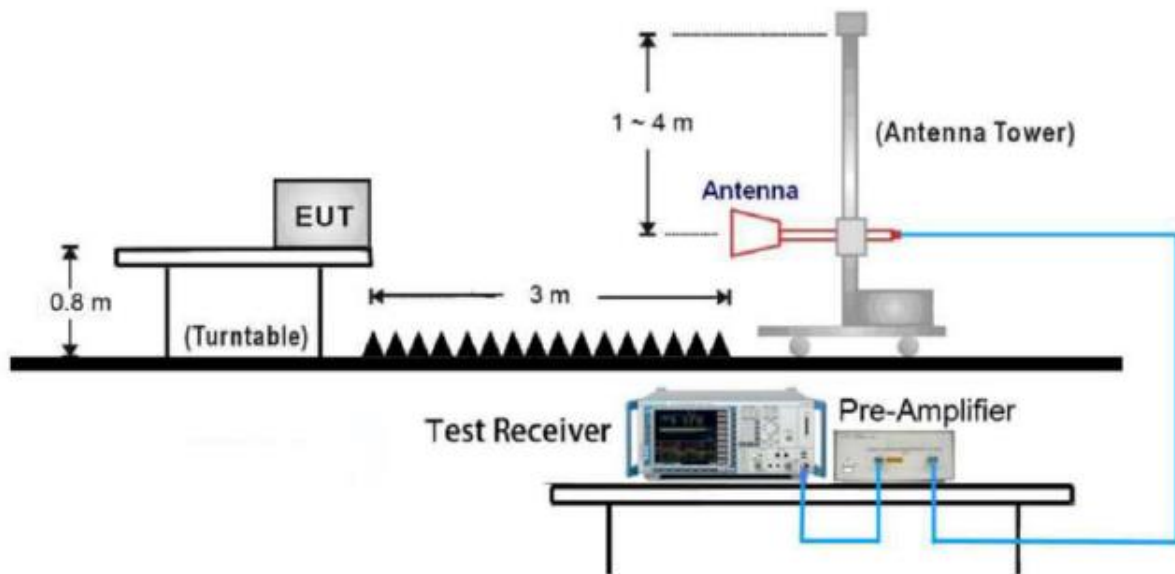
Frequency (MHz)	Field Strength		Measurement Distance (meters)
	uV/m	dBuV/m	
30 - 88	100	40.0	3
88 - 216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3

Frequency (MHz)	Class B Limits dBuV/m		Measurement Distance (meters)
	Peak	Average	
Above 1000	74	54	3

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705~108	1000
108~500	2000
500~1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Setup:





Above 1GHz

Test Procedure:

Step	Note
1	The EUT was placed on a rotatable tabletop 0.8 meter above ground.
2	The EUT was set 3 meters from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.
3	The table was rotated 360 to determine the position of the highest radiation.
4	The antenna is hybrid antenna and its height are varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
5	For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 to 4 meters) and turn table(from 0 degree to 360 degrees) to find the maximum reading.
6	Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode; Then the quasi-peak or average scan is carried out at points with relatively high peak value.

3 Uncertainty

CE	Ulab	Note
Quasi-peak	3.92dB	The reported uncertainty is an expanded uncertainty calculated using a coverage factor of 2 which gives a level of confidence of approximately 95%.
Average	3.92dB	

RE	Ulab	Note
30MHz-100MHz	4.95 dB	expanded uncertainty with 95% confidential level just for reference. maximum between H and V pol.
100MHz-1000MHz	4.73 dB	
1000MHz-40000MHz	4.58 dB	

4 Equipment

No.	Name/ Model	Manufacturer	S/N	Cal date	Cal Due date
7.	Fully-Anechoic Chamber / 12.65m×8.03m×7.50m	FRANKONIA	----	----	----
8.	Semi-Anechoic/Chamber / 23.18m×16.88m×9.60m	FRANKONIA	---	----	----
9.	Turn table Diameter:1m	FRANKONIA	----	----	----
10.	Turn table Diameter:5m	FRANKONIA	----	----	----
11.	Antenna master FAC(MA4.0)	MATURO	----	----	----
12.	Antenna master SAC(MA4.0)	MATURO	----	----	----
13.	Shielding room / 9.080m×5.255m×3.525m	FRANKONIA	----	----	----
14.	Double-Ridged Waveguide Horn Antenna / HF 907	R&S	100512	2022.06.21	2023.06.20
15.	Double-Ridged Waveguide Horn Antenna / HF 907	R&S	100513	2022.06.21	2023.06.20
16.	Ultra log antenna / HL562	R&S	100016	2022.06.21	2023.06.20
17.	Receive antenna /3160-09	SCHWARZ-BECK	002058-002	2022.06.21	2023.06.20
18.	EMI test receiver / ESI 40	R&S	100015	2022.06.21	2023.06.20
19.	EMI test receiver / ESCS30	R&S	100029	2022.06.21	2023.06.20
20.	Receive antenna / HL562	R&S	100167	2022.06.21	2023.06.20
21.	AMN / ENV216	R&S	3560.6550.12	2022.06.21	2023.06.20
22.	WLAN AP WIA3300-20	SKSpruce	8152017060700339	---	---
23.	Notebook E470c	Lenovo	PF10UZW7	---	---
24.	Loop Antenna	R&S	100340	2022.08.20	2023.08.20