TEST REPORT
No. I22Z70343-EMC01

for

Samsung Electronics Co., Ltd.

Multi-band GSM/WCDMA/LTE/5GNR Phone with Bluetooth, WLAN

Model Name: SM-A146P/DSN, SM-A146P/N

FCC ID: ZCASMA146PN

with

Hardware Version: REV1.0

Software Version: A146P.001

Issued Date: 2022-11-15

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

<u>REPORT HISTORY</u>

Report Number	Revision	Description	Issue Date
I22Z70343-EMC01	Rev.0	1st edition	2022-11-15

Note: the latest revision of the test report supersedes all previous versions.

CONTENTS

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

CTTL (BDA)

Address: No. 18A, Kangding Street, Beijing Economic-Technology Development Area, Beijing, 100176, P.R. China

1.3. Testing Environment

Normal Temperature: 15-35°C
Relative Humidity: 20-75%

1.4. Project data

Testing Start Date: 2022-09-15
Testing End Date: 2022-10-30

1.5. Signature

Li Yan

(Prepared this test report)

Zhang Ying

(Reviewed this test report)

Shi Suolan

Deputy Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Samsung Electronics Co., Ltd.
Address: 19 Chapin Rd.,Building D Pine Brook, NJ 07058
City: /
Postal Code: /
Country: /
Contact: Jenni Chun
Email: j1.chun@samsung.com
Telephone: +1-201-937-4203

2.2. Manufacturer Information

Company Name: Samsung Electronics. Co., Ltd.
Address: Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
City: /
Postal Code: /
Country: /
Contact: Sunghoon Cho
Email: ggobi.cho@samsung.com
Telephone: +82-10-2722-4159

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Multi-band GSM/WCDMA/LTE/5GNR Phone with Bluetooth, WLAN
Model Name	SM-A146P/DSN, SM-A146P/N
FCC ID	ZCASMA146PN

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL, Telecommunication Technology Labs, CAICT.

3.2. Internal Identification of EUT used during the test

EUT ID*	IME/SNI	HW Version	SW Version	Date of receipt
UT21a	2270343UT21a	REV1.0	A146P.001	2022.09.14
UT22a	2270343UT22a	REV1.0	A146P.001	2022.09.14

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	SN	Remarks
AE1	Adapter	/	/
AE2	USB Cable1	/	Type-C
AE3	USB Cable2	/	Type-C
AE4	USB Cable3	/	Type-C
AE5	USB Cable4	/	Type-C
AE6	Headset	/	/
AE7	Battery1	/	/
AE8	Battery2	/	/
AE9	USB Cable	/	USB
AE10	Mobile HD	/	/

AE1
Model	EP-T1510
Manufacturer	HAEM Co.,Ltd
Length of cable	/

AE2
Model	EP-DT725BWE
Manufacturer	RFTECH Co., Ltd..
Length of cable	/

AE3
Model	EP-DN980BWZ
Manufacturer	RFTECH Co., Ltd.
Length of cable	/

AE4
Model	EP-DT725BWE
Manufacturer	CRESYN HANOI Co., Ltd
Length of cable	/

AE5
  Model   EP-DN980BWE
  Manufacturer   Guangxi Broad Telecommunication Co.,Ltd.
  Length of cable   /

AE6
  Model   EHS61ASFWE
  Manufacturer   Shenzhen Grandsound Electronics Co.,Ltd
  Length of cable   /

AE7
  Model   WT-S-W1
  Type   Secondary Li-ion Polymer Battery
  Manufacturer   SCUD (Fujian) Electronics CO.,LTD

AE8
  Model   SCUD-WT-W1
  Type   Secondary Li-ion Polymer Battery
  Manufacturer   SCUD (Fujian) Electronics CO.,LTD

Note:

1. The USB cables are shielded.

2. AE9 and AE10 are not the AE of EUT, which are provided by Lab for relevant testing.

3.4. General Description

The Equipment under Test (EUT) is a model of Multi-band GSM/WCDMA/LTE/5GNR Phone with Bluetooth, WLAN with integrated antenna and inbuilt battery.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the client.

The device contains receivers which tune and operate between 30MHz-960MHz in the following bands: GSM850, WCDMA Band 5, LTE Band 5, LTE Band 12, LTE Band 17, LTE Band26 and NR n5.

3.5. EUT set-ups

Set-up

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	UT21a + AE1 + AE2/AE3/AE4/AE5+AE6	Adapter1 + cable+ headset
Set.2	UT21a + AE1 + AE2/AE3/AE4/AE5	Adapter1 + cable
Set.3	UT21a + AE2/AE3/AE4/AE5 +UT22a+AE6	EUT+EUT
Set.4	UT21a + AE10 + AE6	EUT+HD
Set.5	UT21a + AE2/AE3/AE4/AE5 + AE6	Type C communication with PC
Set.6	UT21a + AE9 + AE6	USB communication with PC+SD

Test mode

Mode No.	Operating mode	Remarks
mode.1	MP4 Play	RE, CE
mode.2	Front Camera	RE, CE
mode.3	Rear Camera	RE, CE
mode.4	OTG Phone to Phone+MP3	RE only
mode.5	OTG + Mobile HD+MP4	RE only
mode.6	USB DATA (TYPE C)	RE, CE
mode.7	USB DATA (USB, SD TO PC)	RE, CE
mode.8	FM RX	L/M/H Channel
mode.9	CXX RX mode	GSM850, WCDMA B5, LTE B5, LTE B2, LTE B17, LTE B26 and NR n5.

4. Reference Documents

4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices - Unintentional Radiators	2020
ANSI C63.4	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	2014

Note: The test methods have no deviation with standards.

5. LABORATORY ENVIRONMENT

Semi-anechoic chamber SAC did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	**<** ± 4 dB, 3m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

Shielded room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 35 ℃
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz－1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:		
Verdict Column	P	Pass
	NA	Not applicable
	F	Fail
	BR	Re-use test data from basic model report.

Items	Test Name	Clause in FCC rules	Section in this report	Verdict	Test Location
1	Radiated Emission	15.109(a)	A.1	P	**CTTL(BDA)**
2	Conducted Emission	15.107(a)	A.2	P	**CTTL(BDA)**

Note: The only difference between SM-A146P/DSN and SM-A146P/N is Dual SIM slot rack and Single SIM slot rack, the tests were performed on SM-A146P/DSN and SM-A146P/N shared the SM-A146P/DSN results.

7. Test Equipment Utilized

Test Equipment

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURER	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100376	R&S	2023-09-22	1 year
2	Test Receiver	ESCI	100766	R&S	2023-03-02	1 year
3	LISN	ENV216	101459	R&S	2023-03-16	1 year
4	BiLog Antenna	VULB9163	01177	Schwarzbeck	2023-08-03	1 year
5	EMI Antenna	3115	00167252	ETS-Lindgren	2022-12-26	1 year
6	Signal Generator	SMBV100A	260613	R&S	2023-01-19	1 year
7	Universal Radio Communication Tester	CMW500	159408	R&S	2023-03-01	1 year
8	Universal Radio Communication Tester	SP9500	20482	StarPoint	2022-11-01	1 Year
9	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
10	Keyboard	KU-1601	2048361	Lenovo	N/A	N/A
11	Mouse	EMS-537A	8021S3MC	Lenovo	N/A	N/A
12	PC	M4000e-17	M706RMW2	Lenovo	N/A	N/A

Test Software

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V8.53.0	R&S
Conducted Emission	EMC32 V8.53.0	R&S

ANNEX A: MEASUREMENT RESULTS

A.1 Radiated Emission
Reference
FCC: CFR Part 15.109(a).

A.1.1 Method of measurement
The field strength of radiated emissions from the unintentional radiator (USB mode of MS and charging mode of MS) at distances of 3 meters(for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 8.3.
The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept.

A.1.2 EUT Operating Mode
The MS is operating in the USB mode, charging mode, FM, MP4, MP3, CAMERA, OTG, RX and SD mode.
The WIFI and BT function was on and worked in receiving mode.
The EUT was tested while operating in licensed band RX mode. All licensed band receivers that tune in the range of 30MHz-960MHz, as listed in the Section 3.4, are investigated. Only the worst case emissions are reported.
The FM radio mode radiated testing was performed with the Low/Mid/High channel. Only the worst cases are reported.
All equipment is placed on the test table top and arranged in a typical configuration in accordance with ANSI C63.4-2014 and manipulated to obtain worst case emissions.
Note：I/O information：Printer – USB, Mouse – PS/2, Keyboard – USB.

A.1.3 Measurement Limit

Frequency range (MHz)	Field strength limit (µV/m)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

A.1.4 Test Condition

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/3MHz	15	Peak, Average

A.1.5 Measurement Results

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

Result = P_{Mea} + A_{Rpl} = P_{Mea} + G_A + G_{PL}

Where

G$_A$: Antenna factor of receive antenna

G$_{PL}$: Path Loss

P$_{Mea}$: Measurement result on receiver.

Measurement uncertainty (worst case): 30MHz-1GHz：5.37dB, 1GHz-18GHz：5.58dB, *k*=2.

Note: all the set-up and operating mode list in section 3.5 were tested, only the worst test data are showed in this section.

Measurement results for Set.1+Mode8:

Adapter+ FM + Headset /Average detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17888.140	41.7	-29.5	46.0	25.280	54.0	12.3	V
17524.680	41.7	-29.3	44.4	26.667	54.0	12.3	H
17547.800	41.6	-29.5	44.4	26.734	54.0	12.4	H
17566.840	41.6	-29.8	45.2	26.146	54.0	12.4	V
17585.880	41.6	-29.7	45.2	26.049	54.0	12.4	H
17540.320	41.6	-29.5	44.4	26.734	54.0	12.4	H

Adapter+ FM + Headset /Peak detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17538.620	52.1	-29.3	44.4	37.067	74.0	21.9	V
17978.580	51.9	-29.1	46.7	34.301	74.0	22.1	H
17450.900	51.8	-29.9	44.4	37.317	74.0	22.2	V
17574.660	51.8	-29.8	45.2	36.346	74.0	22.2	V
17474.360	51.7	-30.1	44.4	37.405	74.0	22.3	V
17449.540	51.7	-29.9	44.4	37.217	74.0	22.3	H

Measurement results for Set.2+Mode2

Adapter +F camera /Average detector

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)
17505.980	41.6	-29.3	44.4	26.503	54.0	12.4	H
17617.840	41.6	-29.5	45.2	25.872	54.0	12.4	V
17539.300	41.4	-29.3	44.4	26.367	54.0	12.6	H
17473.340	41.4	-30.1	44.4	27.105	54.0	12.6	V
17524.680	41.4	-29.3	44.4	26.367	54.0	12.6	H
17538.280	41.3	-29.3	44.4	26.267	54.0	12.7	V

Adapter +F camera /Peak detector

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.9	52.7	-29.1	46.7	35.098	74.0	21.3	V
17497.1	52.2	-29.8	44.4	37.617	74.0	21.8	V
17462.5	51.7	-30.1	44.4	37.405	74.0	22.3	H
17593.7	51.6	-29.7	45.2	36.049	74.0	22.4	V
17516.5	51.6	-29.3	44.4	36.503	74.0	22.4	H
17890.2	51.6	-29.5	46.0	35.180	74.0	22.4	H

Measurement results for Set.4+Mode5

OTG + Headset+ MP4 /Average detector

Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)
17783.080	41.3	-29.9	46.0	25.232	54.0	12.7	V
17640.960	40.6	-29.6	45.2	24.953	54.0	13.4	V
17662.720	40.5	-29.9	45.2	25.150	54.0	13.5	H
17575.340	40.5	-29.8	45.2	25.046	54.0	13.5	H
17883.380	40.4	-29.5	46.0	23.980	54.0	13.6	H
17510.740	40.4	-29.3	44.4	25.303	54.0	13.6	H

OTG + Headset+ MP4 /Peak detector

| Frequency (MHz)	Measurement Result (dBµV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBµV)	Limit (dBµV/m)	Margin (dB)	Antenna Pol. (H/V)
17527.060	51.9	-29.3	44.4	36.867	74.0	22.1	V
17905.820	51.5	-29.3	46.0	34.872	74.0	22.5	H
17904.800	51.3	-29.3	46.0	34.672	74.0	22.7	H
17649.120	51.3	-29.6	45.2	35.653	74.0	22.7	H
17816.740	51.0	-29.6	46.0	34.676	74.0	23.0	H
17805.860	51.0	-29.6	46.0	34.676	74.0	23.0	H

Measurement results for Set.6+Mode7+Mode9

USB mode (SD) + Headset + RX LTE Band5 /Average detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17645.040	41.3	-29.6	45.2	25.653	54.0	12.7	V
17530.800	40.6	-29.3	44.4	25.567	54.0	13.4	H
17616.140	40.6	-29.5	45.2	24.872	54.0	13.4	V
17885.080	40.5	-29.5	46.0	24.080	54.0	13.5	V
17465.520	40.5	-30.1	44.4	26.205	54.0	13.5	H
17921.800	40.4	-29.4	46.7	23.139	54.0	13.6	H

USB mode (SD) + Headset + RX LTE Band5 /Peak detector

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17901.400	51.4	-29.3	46.0	34.772	74.0	22.6	H
17628.380	50.8	-29.4	45.2	34.952	74.0	23.2	V
17453.280	50.7	-29.9	44.4	36.217	74.0	23.3	H
17486.940	50.5	-29.8	44.4	35.917	74.0	23.5	V
17629.060	50.5	-29.4	45.2	34.652	74.0	23.5	V
17571.600	50.5	-29.8	45.2	35.046	74.0	23.5	H

**Adapter+ FM + Headset, Set.1+Mode8**
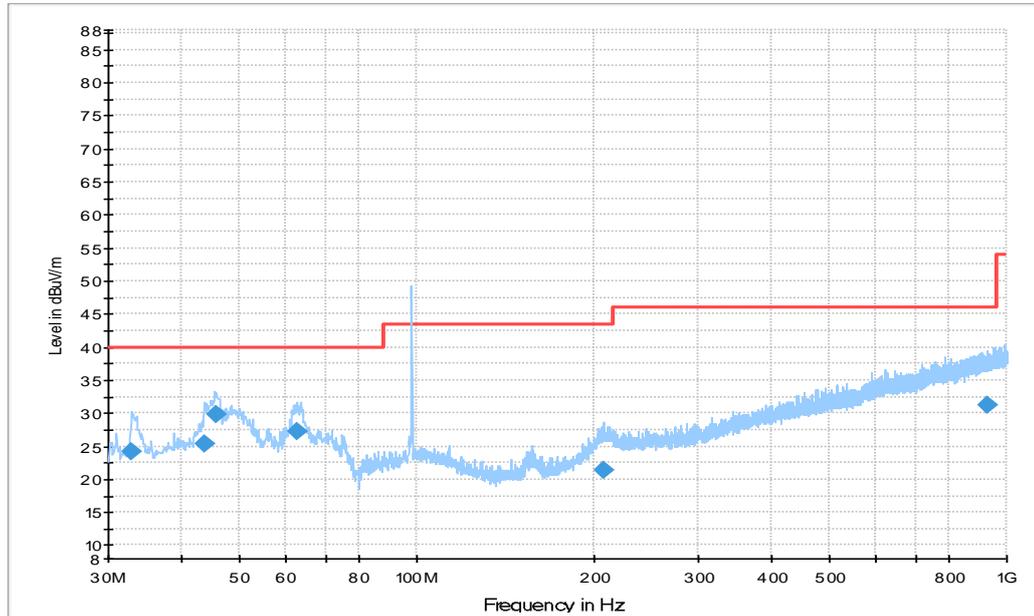
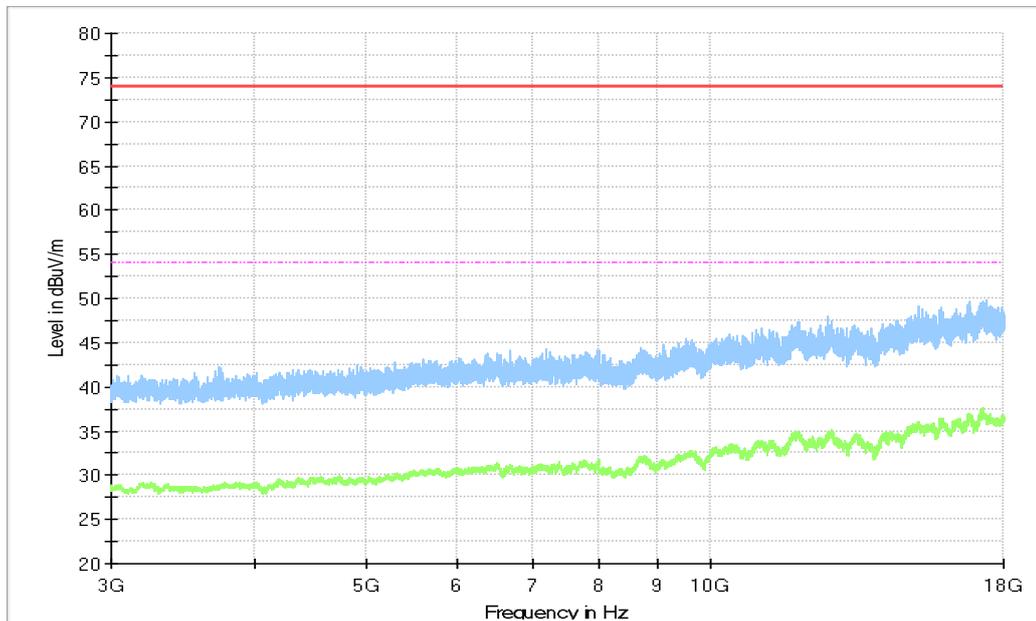**Figure A.1 Radiated Emission from 30MHz to 1GHz**

Note: the spike over the limit is coming from FM signal source

Final Result 1

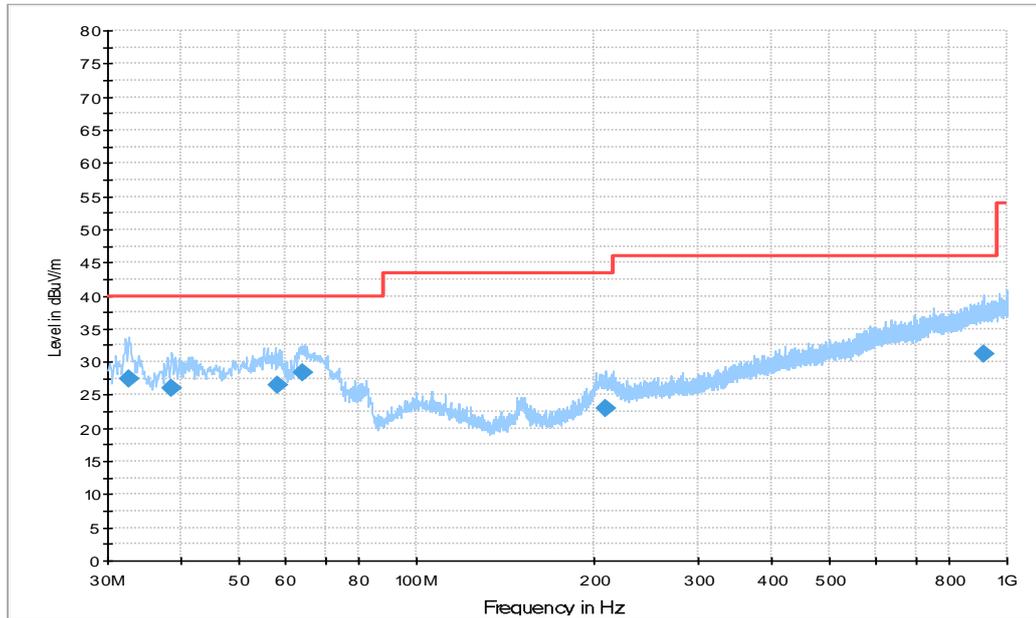| Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
32.910000	24.3	100.0	V	269.0	-2.4	15.7	40.0
43.822500	25.4	100.0	V	-45.0	0.3	14.6	40.0
45.762500	29.9	100.0	V	-2.0	0.6	10.1	40.0
62.495000	27.3	100.0	V	288.0	-1.5	12.7	40.0
207.02500	21.3	113.0	V	160.0	-0.2	22.2	43.5
930.52375	31.2	100.0	V	275.0	13.0	14.8	46.0
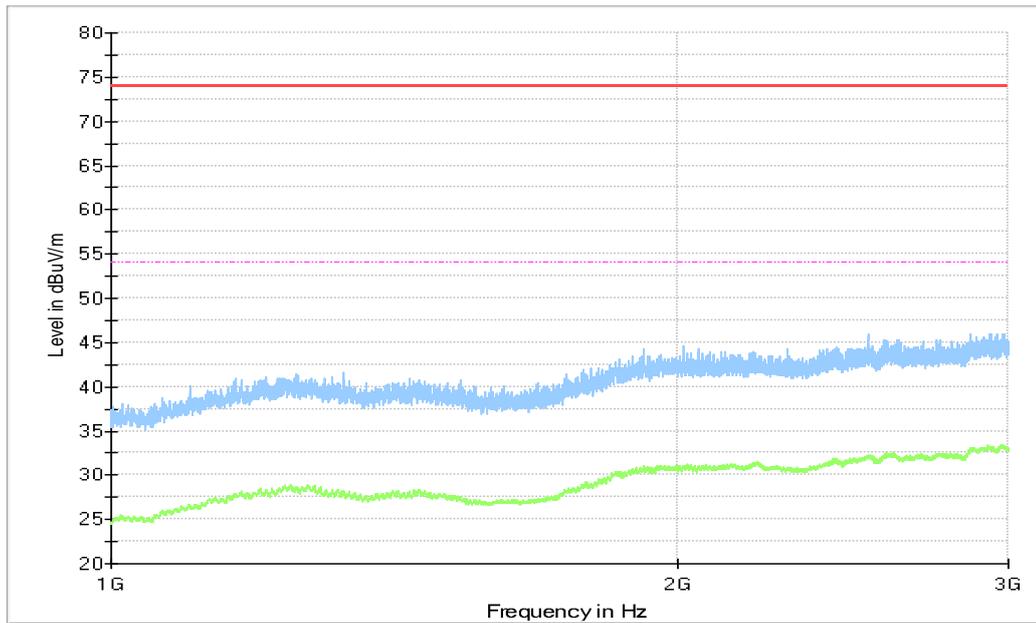
Figure A.2 Radiated Emission from 1GHz to 3GHz

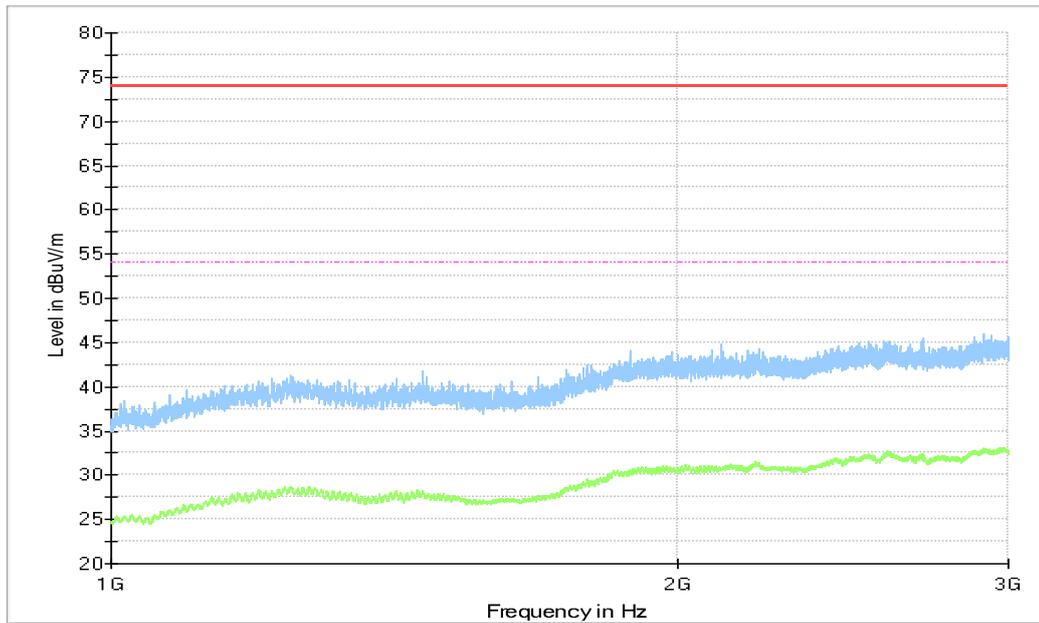**Figure A.3 Radiated Emission from 3GHz to 18GHz**
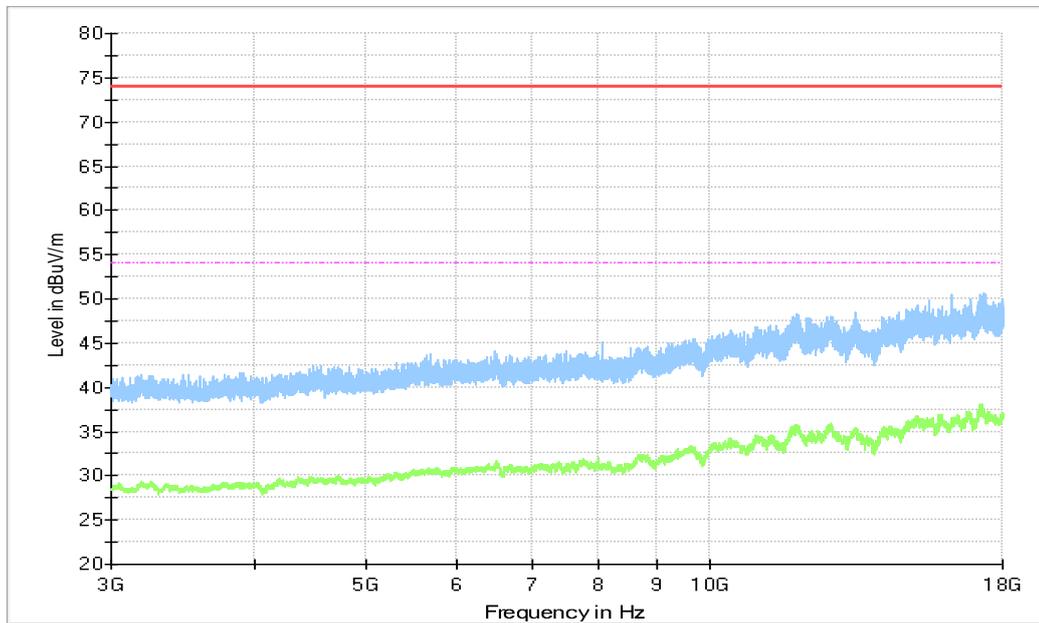
Adapter +F camera, Set.2+Mode2

Figure A.4 Radiated Emission from 30MHz to 1GHz

Final Result 1

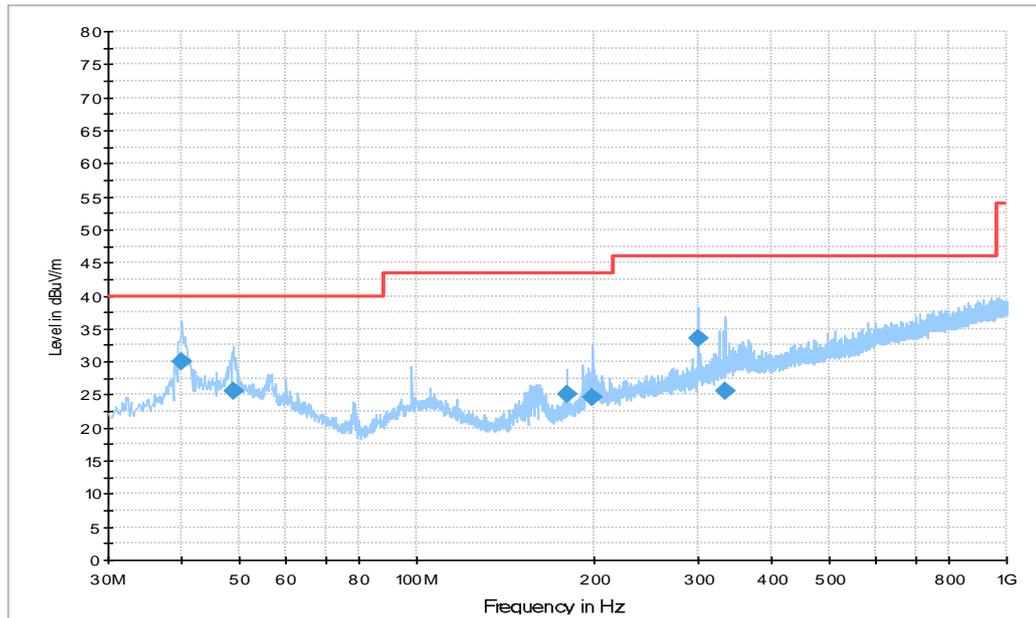| Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
32.546250	27.4	100.0	V	39.0	-2.5	12.6	40.0
38.487500	26.1	100.0	V	90.0	-0.5	13.9	40.0
58.251250	26.4	100.0	V	90.0	-0.5	13.6	40.0
64.071250	28.5	100.0	V	38.0	-2.0	11.5	40.0
209.20750	23.1	100.0	V	174.0	-0.1	20.4	43.5
913.42750	31.2	125.0	H	-20.0	12.9	14.8	46.0

Figure A.5 Radiated Emission from 1GHz to 3GHz

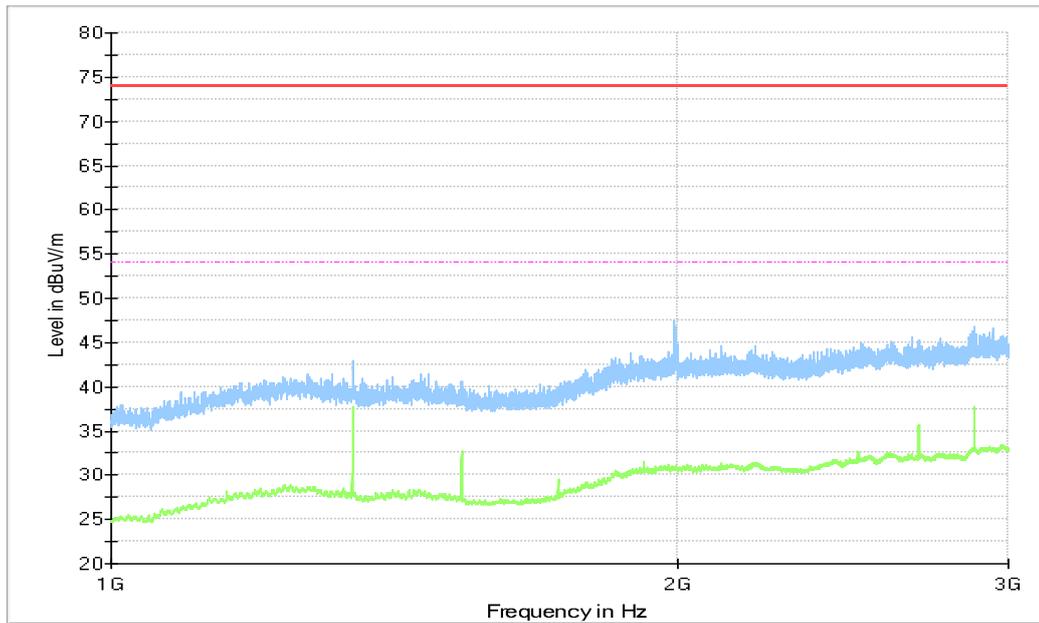**Figure A.6 Radiated Emission from 3GHz to 18GHz**
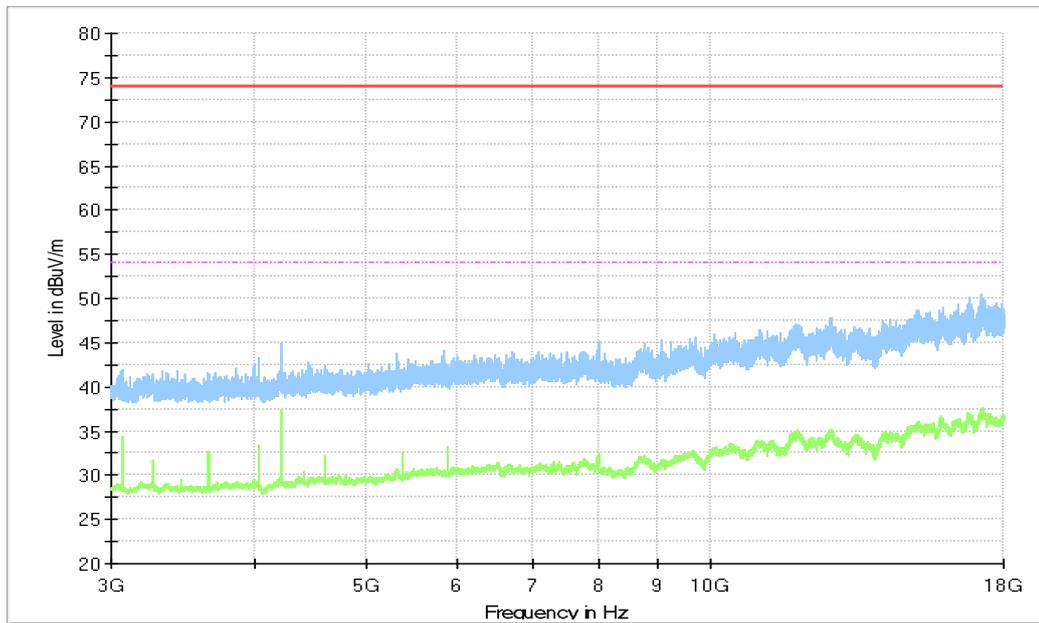
OTG + Headset+ MP4, Set.4+Mode5

Figure A.7 Radiated Emission from 30MHz to 1GHz

Final Result 1

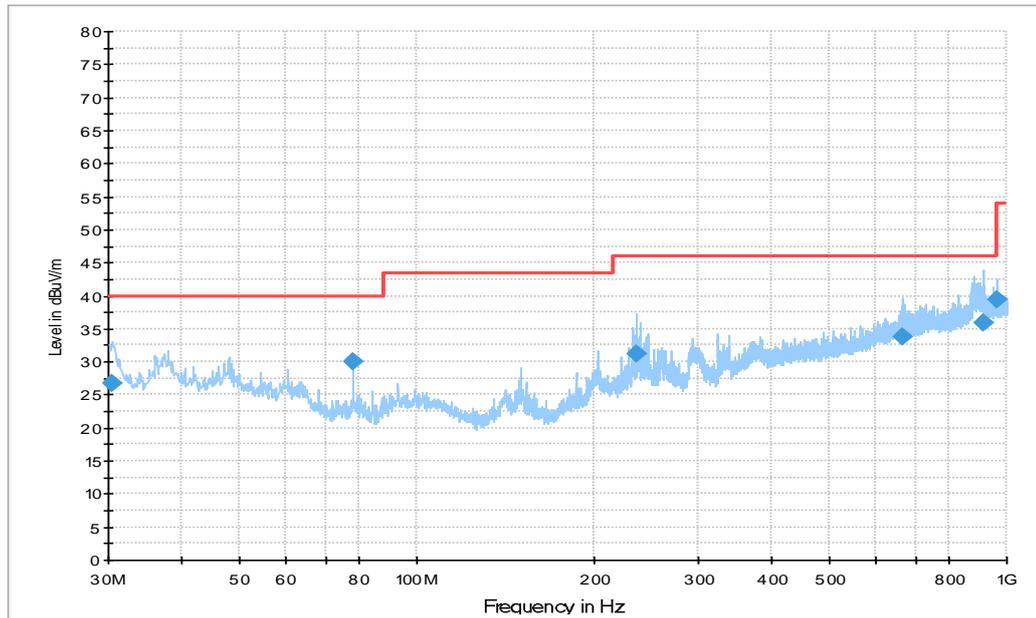| Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
40.063750	30.0	100.0	V	-33.0	-0.1	10.0	40.0
48.915000	25.5	113.0	V	167.0	1.0	14.5	40.0
180.22875	25.0	100.0	H	225.0	-2.5	18.5	43.5
199.02250	24.6	125.0	H	270.0	-0.6	18.9	43.5
300.02375	33.5	100.0	H	225.0	1.8	12.5	46.0
332.51875	25.6	113.0	H	264.0	3.2	20.4	46.0

Figure A.8 Radiated Emission from 1GHz to 3GHz

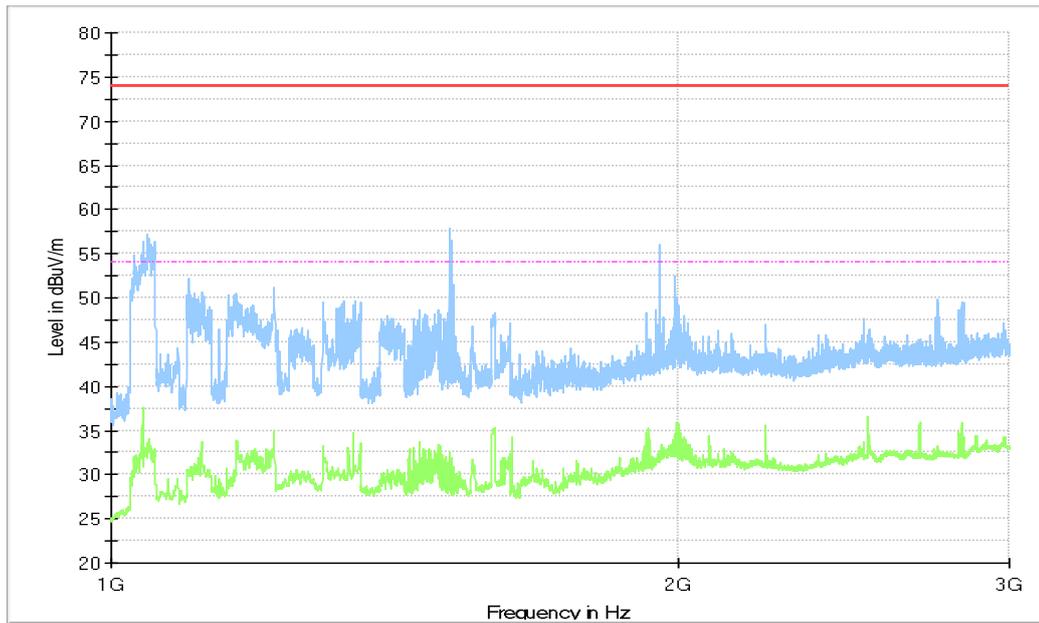**Figure A.9 Radiated Emission from 3GHz to 18GHz**

**USB mode (SD) + Headset + RX LTE Band5, Set.6+Mode7+Mode9**

Figure A.10 Radiated Emission from 30MHz to 1GHz

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.485000	26.8	125.0	V	225.0	-3.2	13.2	40.0
78.136250	30.0	125.0	H	262.0	-5.6	10.0	40.0
236.24625	31.2	100.0	H	97.0	1.0	14.8	46.0
665.47125	33.7	100.0	H	315.0	10.0	12.3	46.0
912.33625	35.8	100.0	V	0.0	12.9	10.2	46.0
959.98750	39.3	100.0	H	275.0	13.2	6.7	46.0

Figure A.11 Radiated Emission from 1GHz to 3GHz
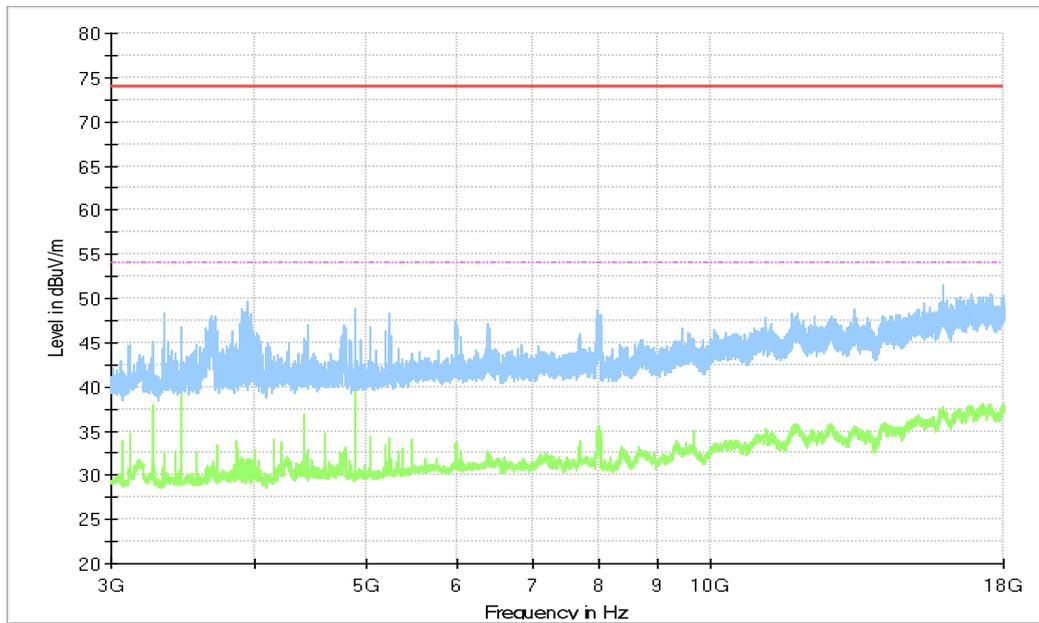
Figure A.12 Radiated Emission from 3GHz to 18GHz

A.2 Conducted Emission
Reference
FCC: CFR Part 15.107(a).

A.2.1 Method of measurement
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 7.3.

A.2.2 EUT Operating Mode
The MS is operating in the USB mode, charging mode, MP4, MP3, CAMERA and SD mode.
The software is used to let the PC keep on copying data to MS, reading and erasing the data after copy action was finished.
Note：I/O information：Printer – USB, Mouse – PS/2, Keyboard – USB.

A.2.3 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency		

A.2.4 Test Condition in charging mode

Voltage（V）	Frequency（Hz）
120	60

RBW/IF bandwidth	Sweep Time(s)
9kHz	1

A.2.5 Measurement Results

Measurement uncertainty: *U*= 3.10dB, *k*=2.

Note: all the set-up and operating mode list in section 3.5 were tested, only the worst test data are showed in this section.

Set.1+Mode8
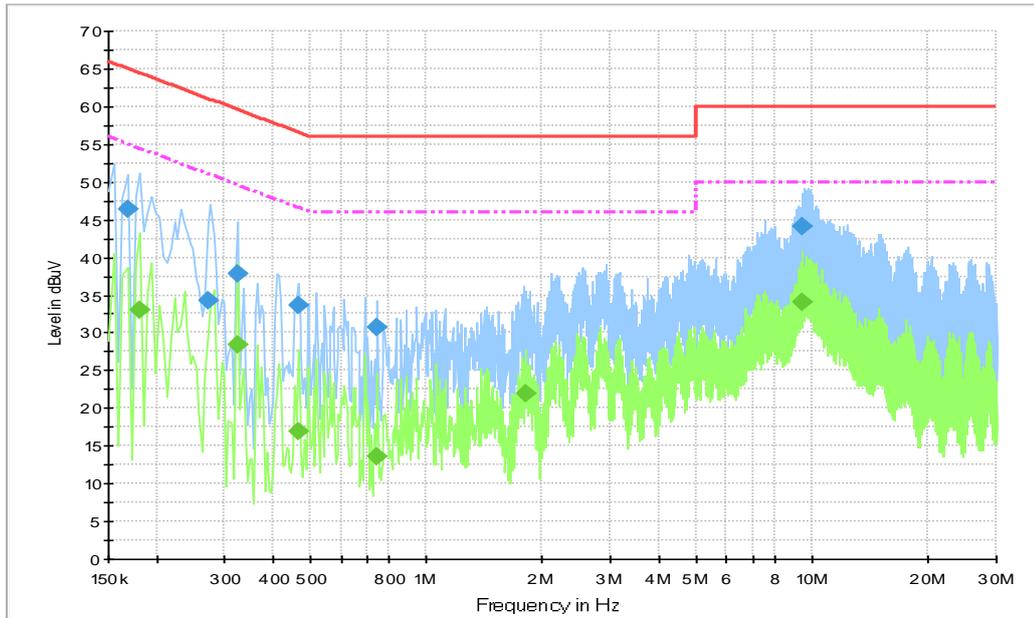
Figure A.13 Conducted Emission

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	46.4	9.000	On	L1	25.2	18.7	65.1
0.271500	34.2	9.000	On	N	19.8	26.9	61.1
0.325500	37.9	9.000	On	N	19.7	21.7	59.6
0.465000	33.6	9.000	On	N	19.8	23.0	56.6
0.748500	30.8	9.000	On	L1	19.7	25.2	56.0
9.447000	44.1	9.000	On	L1	19.8	15.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.181500	33.0	9.000	On	L1	22.8	21.4	54.4
0.325500	28.4	9.000	On	N	19.7	21.2	49.6
0.465000	16.9	9.000	On	L1	19.8	29.7	46.6
0.748500	13.7	9.000	On	N	19.7	32.3	46.0
1.815000	21.9	9.000	On	N	19.6	24.1	46.0
9.447000	34.1	9.000	On	N	19.8	15.9	50.0

Set.2+Mode2

Figure A.14 Conducted Emission

Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.
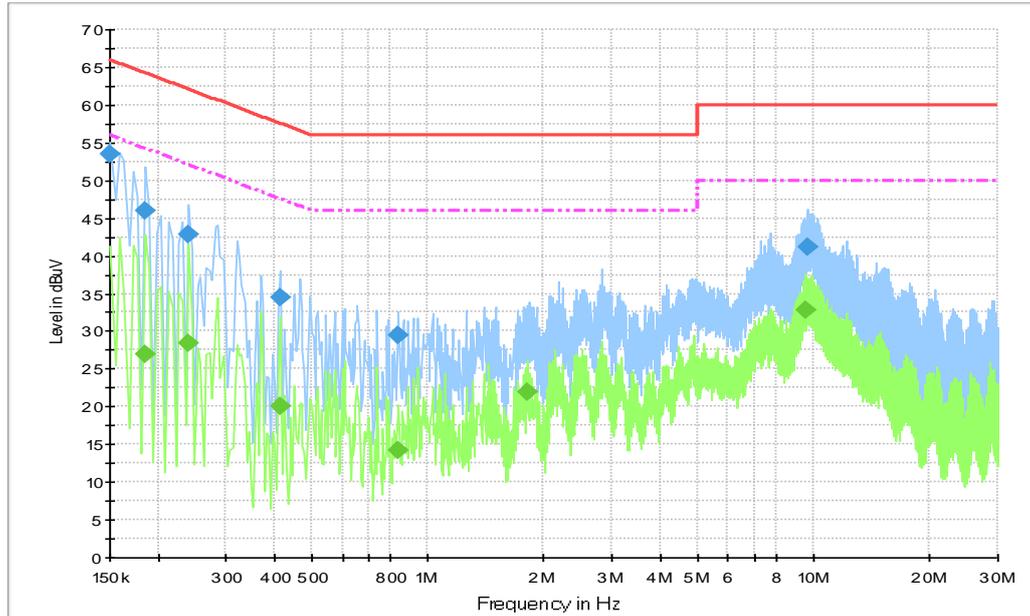
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	53.6	9.000	On	L1	28.6	12.4	66.0
0.186000	46.0	9.000	On	L1	22.0	18.2	64.2
0.240000	42.9	9.000	On	L1	19.8	19.2	62.1
0.415500	34.5	9.000	On	N	19.8	23.1	57.5
0.838500	29.4	9.000	On	N	19.7	26.6	56.0
9.703500	41.1	9.000	On	L1	19.8	18.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.186000	27.0	9.000	On	N	19.8	27.2	54.2
0.240000	28.3	9.000	On	L1	19.8	23.8	52.1
0.415500	20.0	9.000	On	L1	19.8	27.5	47.5
0.838500	14.3	9.000	On	L1	19.7	31.7	46.0
1.819500	21.9	9.000	On	L1	19.6	24.1	46.0
9.501000	32.8	9.000	On	L1	19.8	17.2	50.0

Set.6+Mode7+Mode3, USB (SD) mode

Figure A.15 Conducted Emission

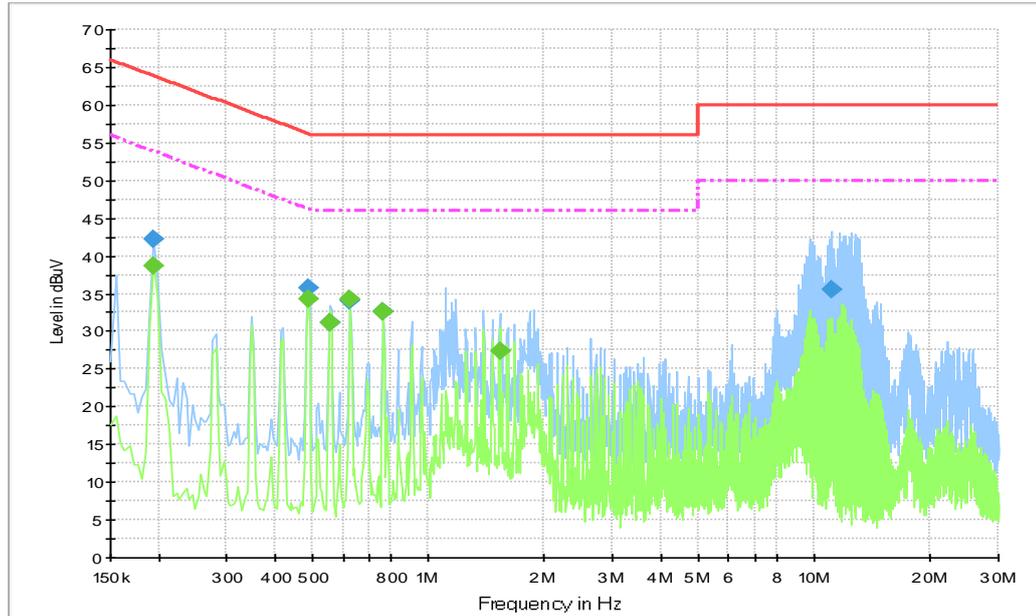Note: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	42.2	9.000	On	L1	20.5	21.7	63.8
0.487500	35.6	9.000	On	L1	19.8	20.6	56.2
0.555000	31.1	9.000	On	L1	19.8	24.9	56.0
0.627000	34.0	9.000	On	N	19.7	22.0	56.0
0.766500	32.6	9.000	On	N	19.7	23.4	56.0
11.040000	35.5	9.000	On	N	19.8	24.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.195000	38.7	9.000	On	N	19.7	15.1	53.8
0.487500	34.3	9.000	On	N	19.8	11.9	46.2
0.555000	31.2	9.000	On	L1	19.8	14.8	46.0
0.627000	34.2	9.000	On	L1	19.7	11.8	46.0
0.766500	32.7	9.000	On	N	19.7	13.3	46.0
1.531500	27.4	9.000	On	L1	19.6	18.6	46.0

.

ANNEX B: Persons involved in this testing

Test Item	Tester
Radiated Emission	Zhao Wenhui
Conducted Emission	Guo Qian

END OF REPORT