



# TEST REPORT

## No. I22Z70288-EMC01

for

**Samsung Electronics Co., Ltd.**

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

**Model Name: SM-A042M/DS, SM-A042M**

**FCC ID: ZCASMA042M**

with

**Hardware Version: REV1.0**

**Software Version: A042M.001**

**Issued Date: 2022-09-15**

**Note:**

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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.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I22Z70288-EMC01	Rev.0	1 <sup>st</sup> edition	2022-09-05
I22Z70288-EMC01	Rev.1	2 <sup>nd</sup> edition	2022-09-13
I22Z70288-EMC01	Rev.2	Added battery information	2022-09-15

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

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## **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: 2022-08-01  
Testing End Date: 2022-09-01

### **1.5. Signature**



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Li Yan


(Prepared this test report)



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Zhang Ying

(Reviewed this test report)



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Zhang Xia

Deputy Director of the laboratory  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: Samsung Electronics Co., Ltd.  
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Telephone: +1-201-937-4203

### **2.2. Manufacturer Information**

Company Name: Samsung Electronics. Co., Ltd.  
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Youngtong gu, Suwon city 443 742, Korea  
City: /  
Postal Code: /  
Country: /  
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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 Phone with Bluetooth, WLAN
Model Name	SM-A042M/DS, SM-A042M
FCC ID	ZCASMA042M

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
UT09a	2270288UT09a	REV1.0	A042M.001	2022.08.01
UT10a	2270288UT10a	REV1.0	A042M.001	2022.08.01

\*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 1	/	/
AE2	Adapter 2	/	/
AE3	Adapter 3	/	/
AE4	Adapter 4	/	/
AE5	Adapter 5	/	/
AE6	Adapter 6	/	/
AE7	USB cable1	/	/
AE8	USB cable2	/	/
AE9	USB cable3	/	/
AE10	Headset1	/	/
AE11	Headset2	/	/
AE12	Battery1/2	/	/
AE13	Data Cable	/	Type C to C
AE14	Mobile HD	/	/

AE1

Model	EP-TA50JWE
Manufacturer	RFTECH Co., Ltd.
Length of cable	/

AE2

Model	EP-TA50JWE
Manufacturer	HAEM Co.,Ltd
Length of cable	/

AE3

Model	EP-TA50JWE
Manufacturer	DONGYANG E&P Inc.
Length of cable	/



AE4	
Model	EP-TA50UWE
Manufacturer	Salcomp (Shenzhen) Co., Ltd.
Length of cable	/
AE5	
Model	EP-TA50UWE
Manufacturer	HAEM Co.,Ltd
Length of cable	/
AE6	
Model	EP-TA50UWE
Manufacturer	DONGYANG E&P Inc.
Length of cable	/
AE7	
Model	GH39-01999A
Manufacturer	RFTECH Co., Ltd.
Length of cable	/
AE8	
Model	GH39-01999C
Manufacturer	RFTECH Co., Ltd.
Length of cable	/
AE9	
Model	GH39-02001A
Manufacturer	RFTECH Co., Ltd.
Length of cable	/
AE10	
Model	GH59-15054A
Manufacturer	DONGGUAN YOUNGBO ELECTRONICS CO.,LTD
Length of cable	/
AE11	
Model	GH59-15054A
Manufacturer	CRESYN HANOI Co., Ltd
Length of cable	/
AE12-1	
Type:	Secondary Li-ion Battery
SN:	HQ-50S
Manufacturer	SCUD (Fujian) Electronics CO.,LTD
AE12-2	
Type:	Secondary Li-ion Battery
SN:	HQ-50SD
Manufacturer	SCUD (Fujian) Electronics CO.,LTD

Note:

1. The USB cables are shielded.
2. AE13 and AE14 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 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 13, LTE Band 17 and LTE Band26.

### 3.5. EUT set-ups

<b>EUT set-up No.</b>	<b>Combination of EUT and AE</b>	<b>Remarks</b>
Set.1	UT09a + AE1 + AE7 +AE10	Adapter1 + R Camera+cable1+headset 1
Set.2	UT09a + AE2 + AE8	Adapter2 + MP4+cable 2
Set.3	UT09a + AE3 + AE7/AE8/AE9+ AE10/AE11	Adapter3 + FM + cable + headset
Set.4	UT09a + AE4 + AE9	Adapter4 + F camera +cable3
Set.5	UT09a + AE5 + AE7+AE11	Adapter5+ FM+cable1+headset 2
Set.6	UT09a + AE6 + AE8+AE11	Adapter 6+ R Camera+cable2+headset 2
Set.7	UT09a + AE13 + AE10/ AE11	TYPIC PC TO SD + F camera+headset1
Set.8	UT09a + AE12 + AE11+ UT10a	OTG + Headset2 + F camera +RX
Set.9	UT09a + AE10 + AE13	OTG MP4 + Headset1+ RX
Set.10	UT09a + AE7/AE8/AE9 + AE10/ AE11	USB SD TO PC +RX+Headset

Note: All the set-ups above were tested but only the worst test data of worst set-up showed in this report.



## **4. Reference Documents**

### **4.1. Reference Documents for testing**

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

<b>Reference</b>	<b>Title</b>	<b>Version</b>
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-2** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
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 °C, Max. = 35 °C
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-A042M/DS and SM-A042M is Dual SIM slot rack and Single SIM slot rack, the tests were performed on SM-A042M/DS and SM-A042M shared the SM-A042M/DS results.

## 7. Test Equipment Utilized

### Test Equipment

NO.	Description	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESU26	100376	R&S	2022-09-15	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	01176	Schwarzbeck	2022-11-15	1 year
5	EMI Antenna	3117	00167252	ETS-Lindgren	2022-12-26	1 year
6	Signal Generator	SMF100A	101295	R&S	2022-12-04	1 year
7	Universal Radio Communication Tester	CMW500	159408	R&S	2023-03-01	1 year
8	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
9	Keyboard	KU-1601	2048361	Lenovo	N/A	N/A
10	Mouse	EMS-537A	8021S3MC	Lenovo	N/A	N/A
11	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 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 ( $\mu\text{V}/\text{m}$ )		
	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:

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

Where

$G_A$ : Antenna factor of receive antenna

$G_{\text{PL}}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

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

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

#### Measurement results for Set.1:

##### Adapter1+R Camera + Headset /Average detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17917.500	39.06	-26.2	41.2	24.01	54.0	14.9	V
17914.500	38.98	-26.2	41.2	23.94	54.0	15.0	V
17039.500	38.92	-27.0	41.6	24.32	54.0	15.1	V
17923.000	38.91	-26.2	41.2	23.85	54.0	15.1	V
17935.000	38.87	-26.1	41.2	23.77	54.0	15.1	V
17121.500	38.86	-26.9	41.5	24.31	54.0	15.1	V

##### Adapter1+R Camera + Headset /Peak detector

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17228.000	52.3	-26.9	41.3	37.83	74.0	21.7	V
17921.000	52.2	-26.2	41.2	37.13	74.0	21.8	H
16819.500	52.0	-27.3	41.5	37.78	74.0	22.0	V
17923.000	51.7	-26.2	41.2	36.65	74.0	22.3	V
17367.500	51.5	-26.8	41.1	37.19	74.0	22.5	H
17011.000	51.4	-27.1	41.7	36.82	74.0	22.6	V

**Measurement results for Set.5**
**Adapter5 +Headset +FM /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17915.000	39.17	-26.2	41.2	24.13	54.0	14.8	H
17927.000	38.95	-26.2	41.2	23.88	54.0	15.0	V
17922.500	38.92	-26.2	41.2	23.86	54.0	15.1	H
17916.000	38.92	-26.2	41.2	23.88	54.0	15.1	V
17124.000	38.89	-26.9	41.5	24.34	54.0	15.1	V
17921.000	38.87	-26.2	41.2	23.82	54.0	15.1	H

**Adapter5 +Headset + FM /Peak detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17812.500	52.2	-26.4	41.2	37.52	74.0	21.8	V
17012.000	51.5	-27.1	41.7	36.84	74.0	22.5	H
17997.000	51.3	-26.1	41.3	36.16	74.0	22.7	H
16405.000	51.3	-27.6	41.1	37.79	74.0	22.7	V
17847.500	51.3	-26.4	41.2	36.47	74.0	22.7	V
17918.500	51.2	-26.2	41.2	36.19	74.0	22.8	H

**Measurement results for Set.8**
**OTG + Headset+ Front Camera+ RX GSM850MHz /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)
17929.500	39.24	-26.2	41.2	24.16	54.0	14.8	V
17913.500	39.12	-26.2	41.2	24.09	54.0	14.9	V
17917.000	39.10	-26.2	41.2	24.06	54.0	14.9	V
17924.500	39.08	-26.2	41.2	24.01	54.0	14.9	V
17916.000	39.08	-26.2	41.2	24.04	54.0	14.9	V
17034.500	39.05	-27.0	41.6	24.45	54.0	14.9	H

**OTG + Headset+ Front Camera+ RX GSM850MHz /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)
17846.500	52.2	-26.4	41.2	37.41	74.0	21.8	V
17162.000	51.4	-26.9	41.4	36.89	74.0	22.6	H
17899.000	51.4	-26.2	41.2	36.38	74.0	22.6	H
17785.000	51.4	-26.5	41.1	36.71	74.0	22.6	V
17982.000	51.3	-26.0	41.3	36.09	74.0	22.7	V
17851.000	51.3	-26.3	41.2	36.45	74.0	22.7	V



**Measurement results for Set.10**
**USB mode (SD) + Headset + RX LTE Band5 /Average detector**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17915.000	39.29	-26.2	41.2	24.26	54.0	14.7	V
17917.000	39.23	-26.2	41.2	24.19	54.0	14.8	V
17916.000	39.22	-26.2	41.2	24.18	54.0	14.8	V
17919.500	39.15	-26.2	41.2	24.10	54.0	14.8	V
17918.000	39.15	-26.2	41.2	24.11	54.0	14.8	V
17921.000	39.15	-26.2	41.2	24.09	54.0	14.9	H

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

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
15958.000	52.3	-27.7	40.6	39.30	74.0	21.7	V
17822.000	52.0	-26.4	41.2	37.27	74.0	22.0	V
17917.500	51.7	-26.2	41.2	36.70	74.0	22.3	V
17958.500	51.6	-26.1	41.3	36.43	74.0	22.4	V
17941.000	51.6	-26.1	41.3	36.47	74.0	22.4	H
17038.000	51.6	-27.0	41.6	36.96	74.0	22.4	V

### Adapter1+R Camera + Headset, Set.1

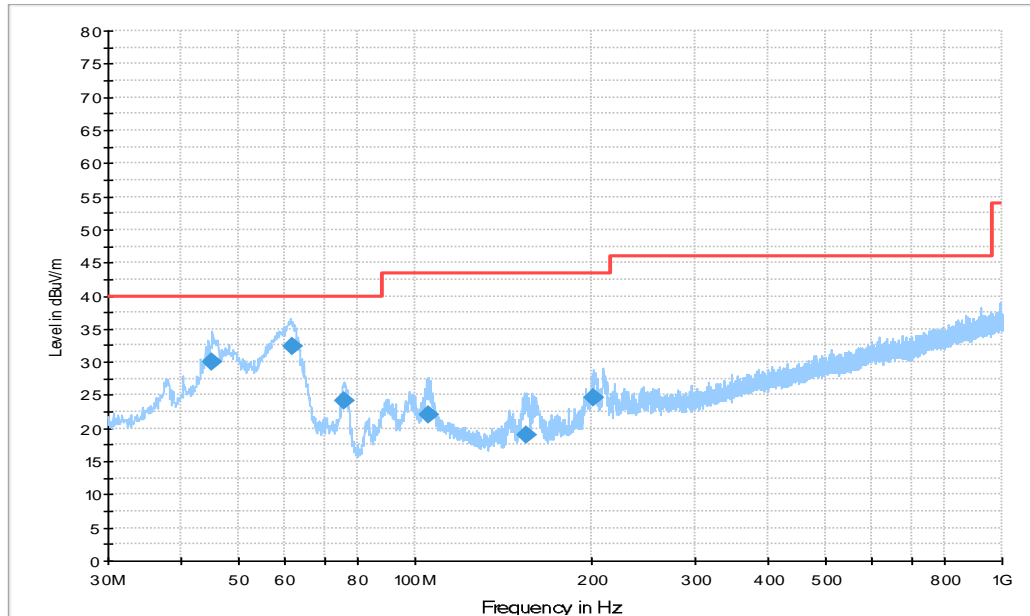
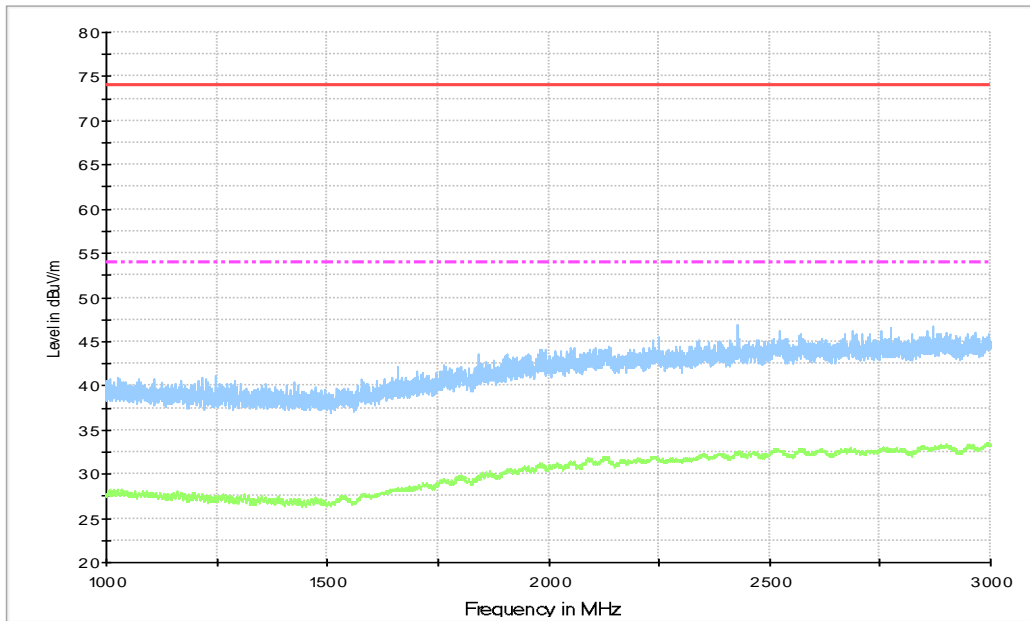


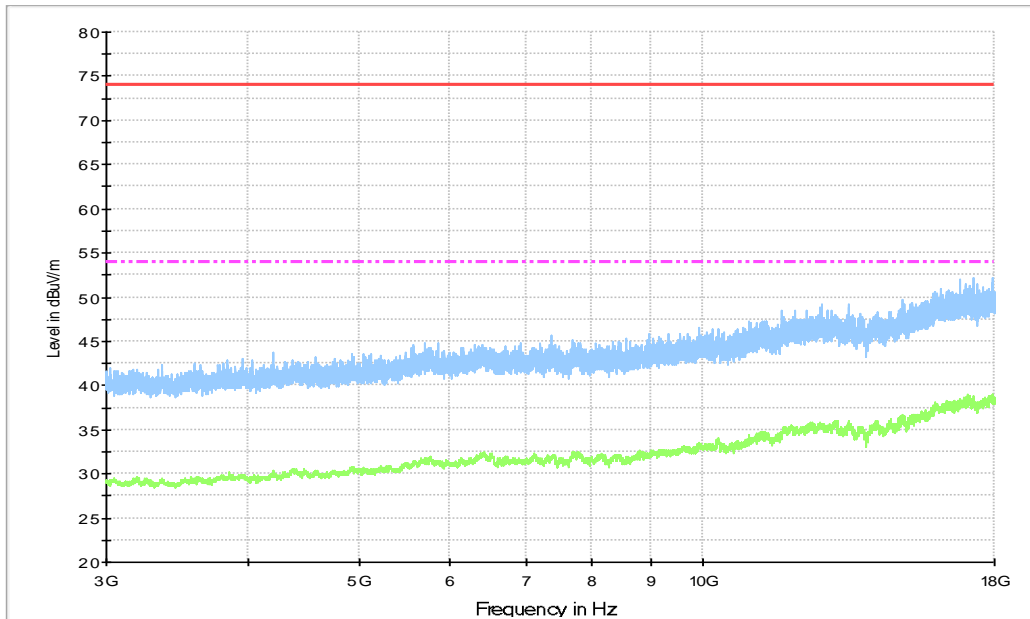
Figure A.1 Radiated Emission from 30MHz to 1GHz

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
45.132000	29.9	100.0	V	51.0	-0.1	10.1	40.0
61.913000	32.5	100.0	V	90.0	-1.9	7.5	40.0
75.493000	24.2	100.0	V	-40.0	-5.5	15.8	40.0
105.66000	22.0	125.0	V	225.0	-1.8	21.5	43.5
154.35400	19.0	100.0	V	270.0	-4.5	24.5	43.5
201.98100	24.5	100.0	V	64.0	-0.9	19.0	43.5



**Figure A.2 Radiated Emission from 1GHz to 3GHz**



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

### Adapter5 +Headset +FM, Set.5

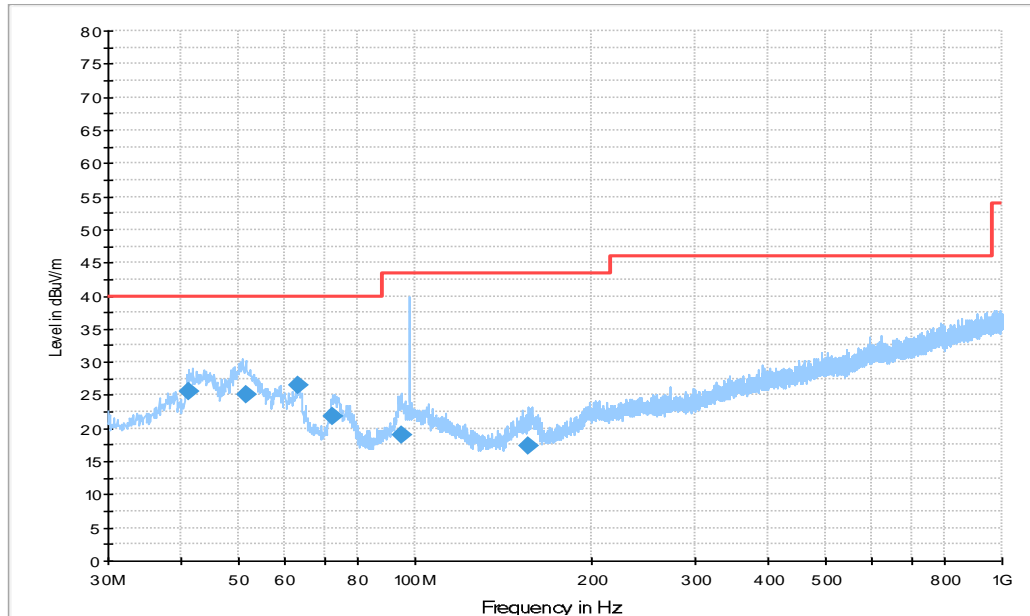
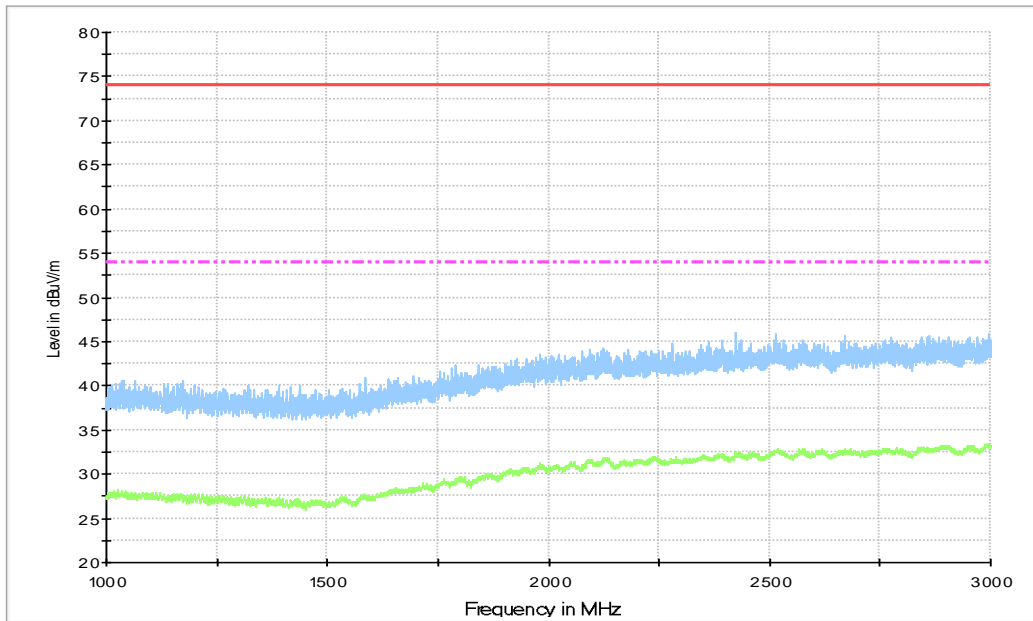


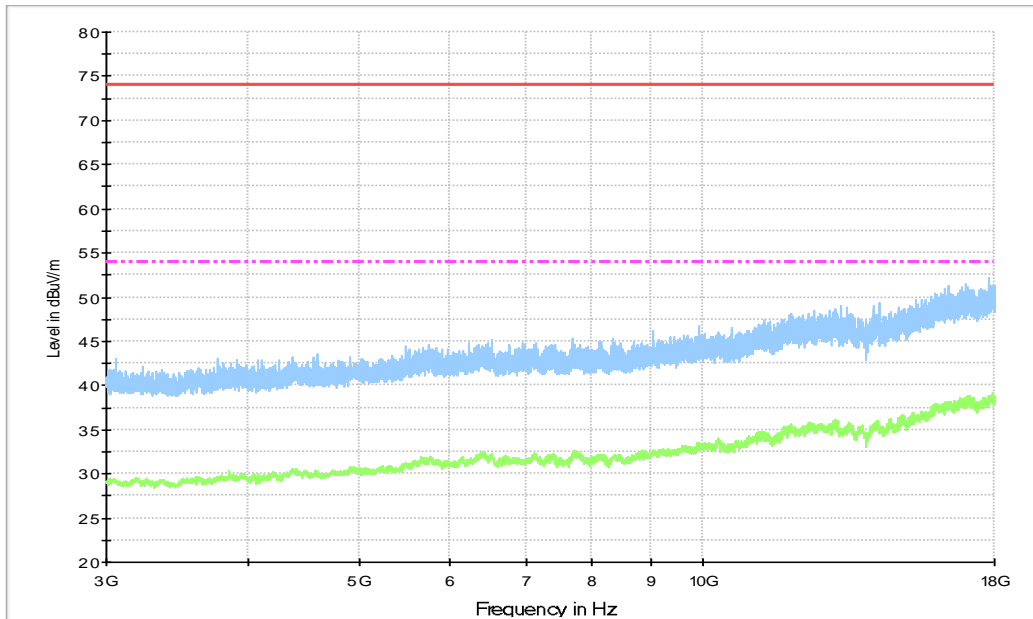
Figure A.4 Radiated Emission from 30MHz to 1GHz

### Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
41.252000	25.6	125.0	V	-45.0	-0.5	14.4	40.0
51.437000	25.0	100.0	V	96.0	0.2	15.0	40.0
62.980000	26.5	100.0	V	283.0	-2.2	13.5	40.0
72.583000	21.8	100.0	V	128.0	-4.9	18.2	40.0
94.602000	18.9	125.0	V	24.0	-2.4	24.6	43.5
156.29400	17.4	100.0	V	205.0	-4.4	26.1	43.5

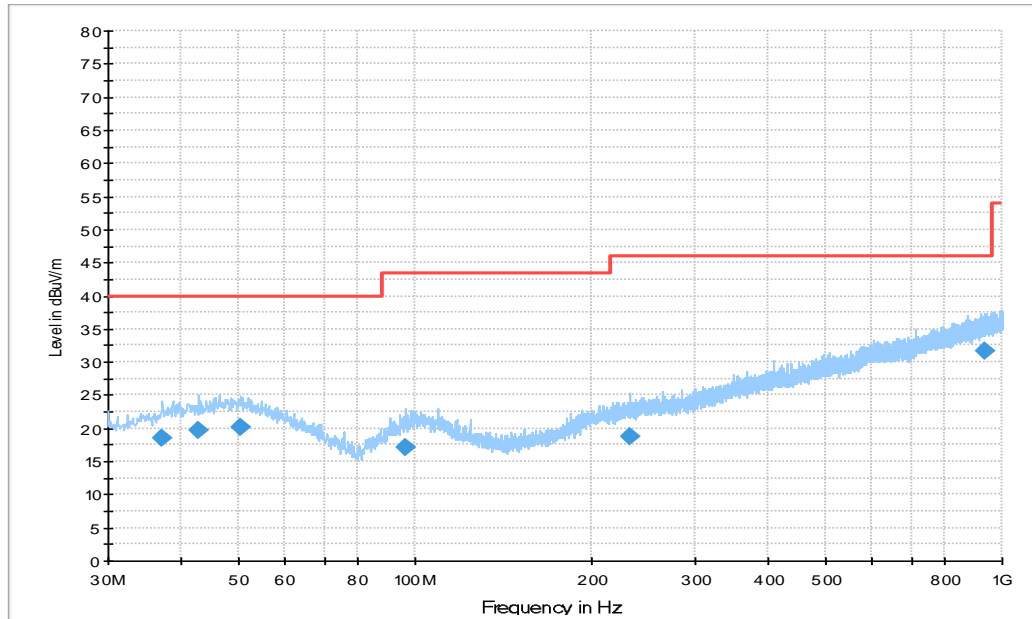


**Figure A.5 Radiated Emission from 1GHz to 3GHz**



**Figure A.6 Radiated Emission from 3GHz to 18GHz**

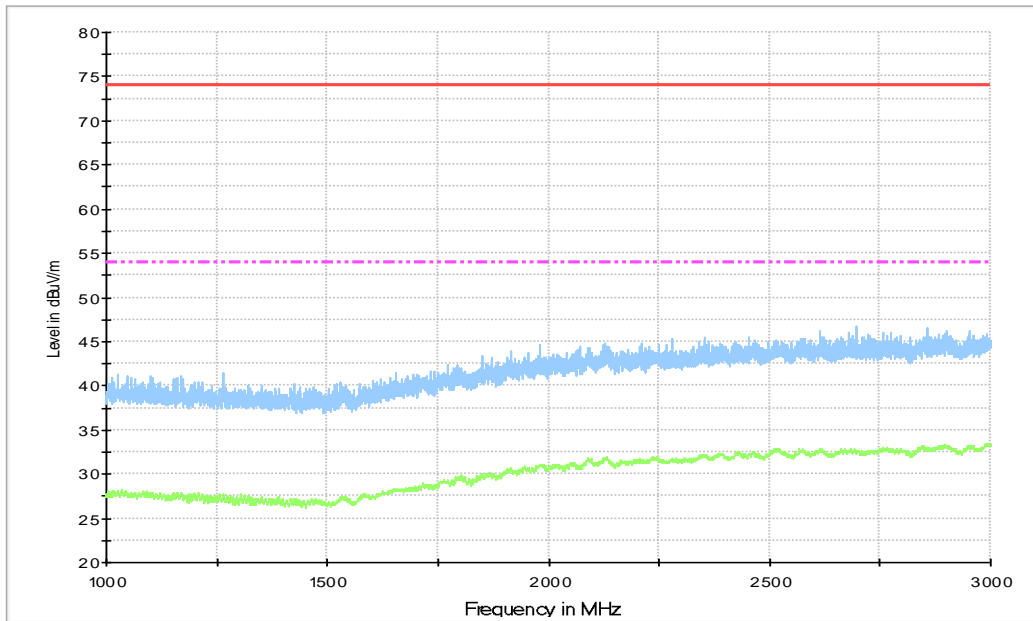
**OTG + Headset+ Front camera+ RX GSM850MHz, Set.8**



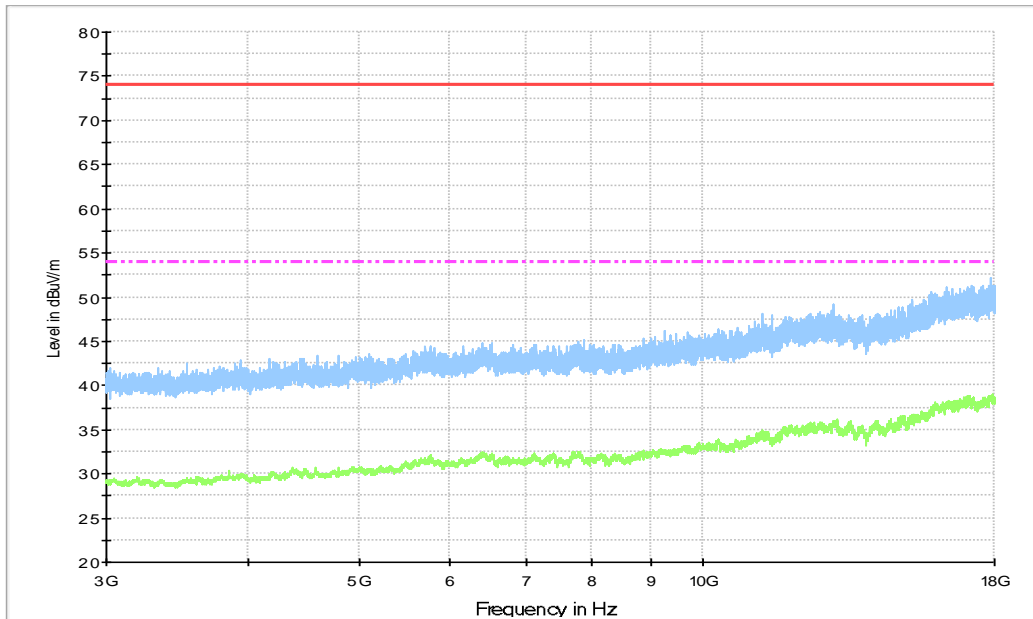
**Figure A.7 Radiated Emission from 30MHz to 1GHz**

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
37.081000	18.6	113.0	H	135.0	-1.6	21.4	40.0
42.804000	19.6	100.0	H	282.0	-0.4	20.4	40.0
50.467000	20.2	113.0	V	51.0	0.3	19.8	40.0
96.348000	17.2	125.0	V	102.0	-2.1	26.3	43.5
232.14800	18.9	113.0	H	160.0	0.2	27.1	46.0
937.82300	31.6	125.0	V	57.0	12.6	14.4	46.0

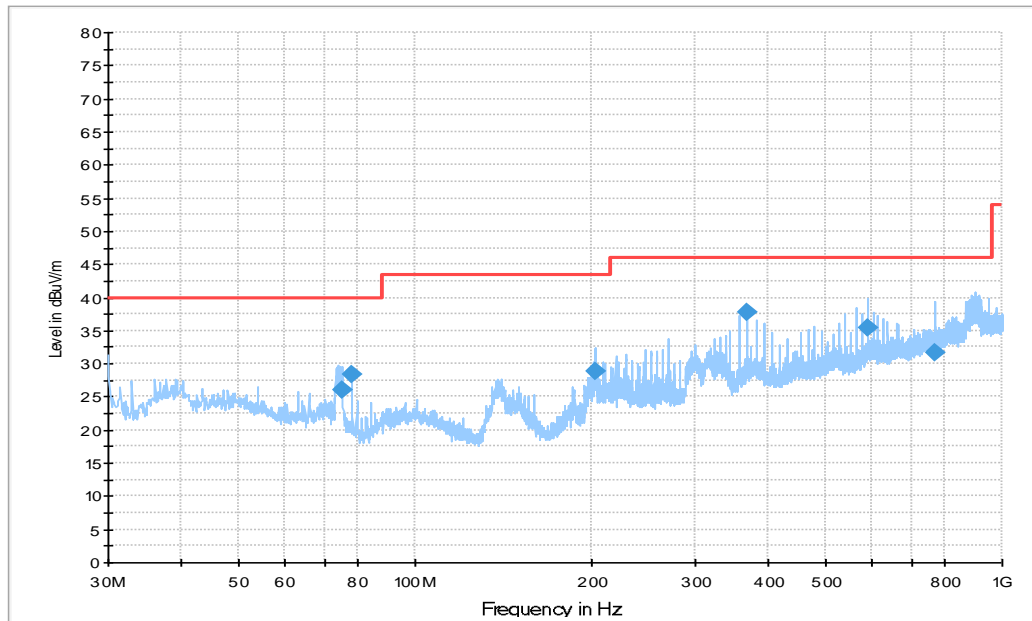


**Figure A.8 Radiated Emission from 1GHz to 3GHz**



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

**USB mode (SD) + Headset + RX LTE Band5, Set.10**

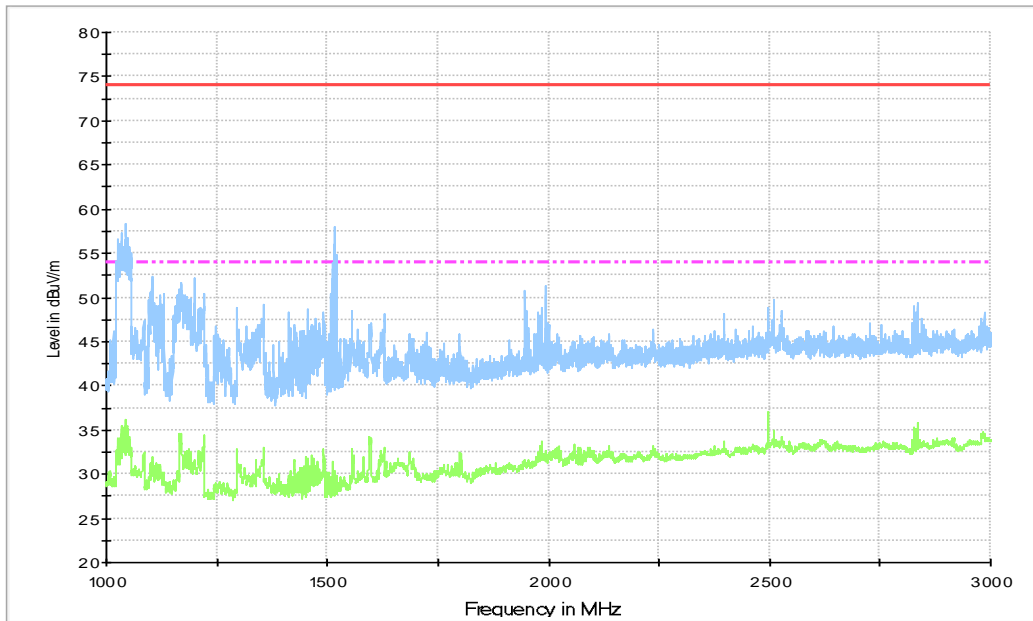


**Figure A.10 Radiated Emission from 30MHz to 1GHz**

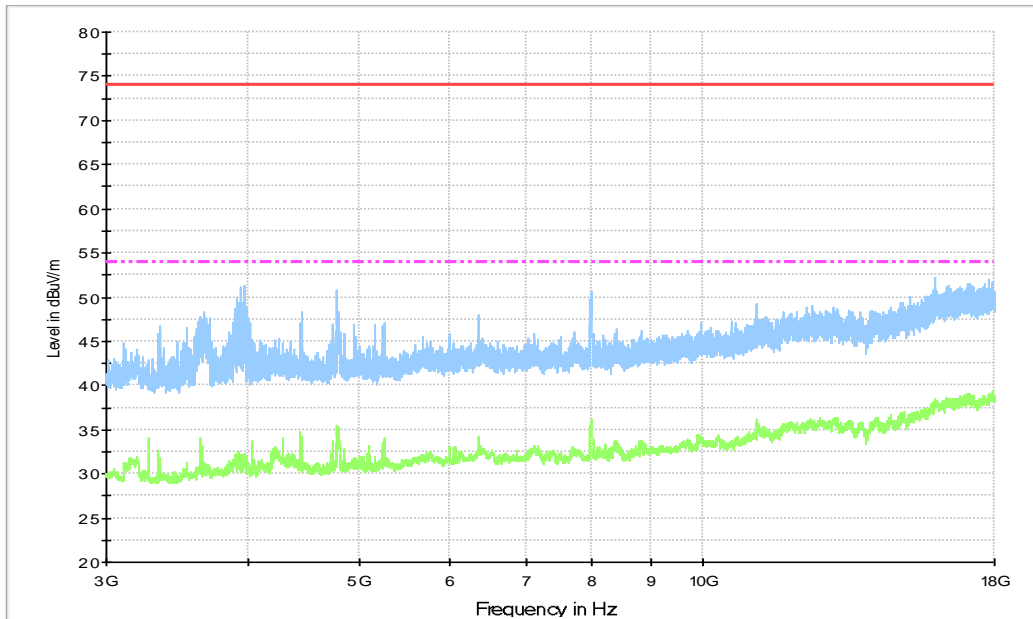
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
75.202000	26.0	125.0	V	315.0	-5.4	14.0	40.0
78.112000	28.3	125.0	H	262.0	-6.1	11.7	40.0
203.24200	28.8	113.0	H	115.0	-0.9	14.7	43.5
368.62700	37.7	100.0	H	262.0	4.0	8.3	46.0
589.88400	35.4	125.0	V	204.0	8.6	10.6	46.0
768.07300	31.6	100.0	H	135.0	10.8	14.4	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, FM, 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 (dB $\mu$ V)	
	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

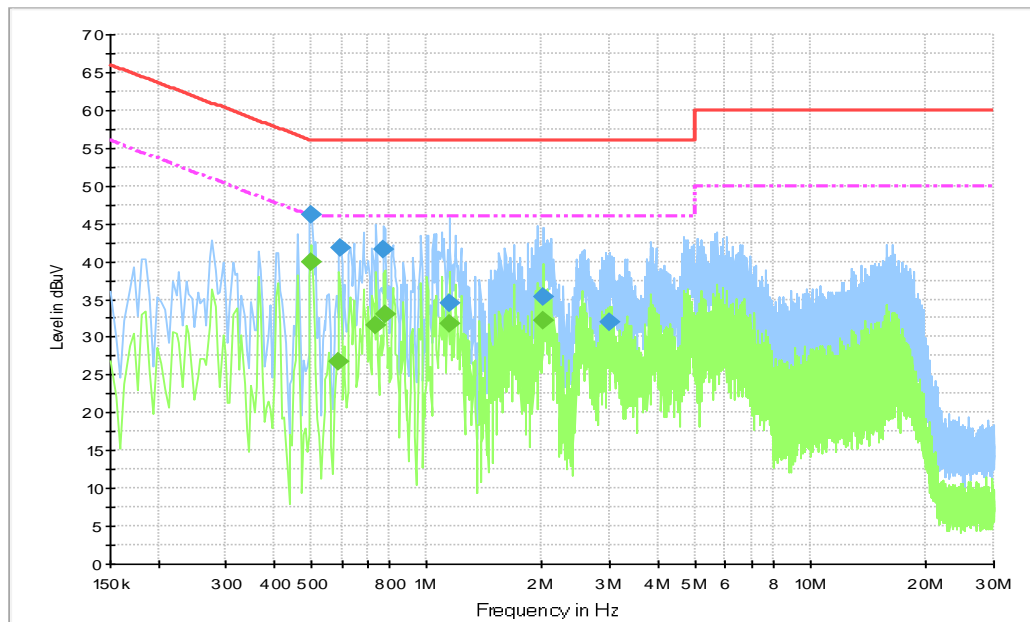
RBW/IF bandwidth	Sweep Time(s)
9kHz	1

### A.2.5 Measurement Results

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

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

#### Set.2



**Figure A.13 Conducted Emission**

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

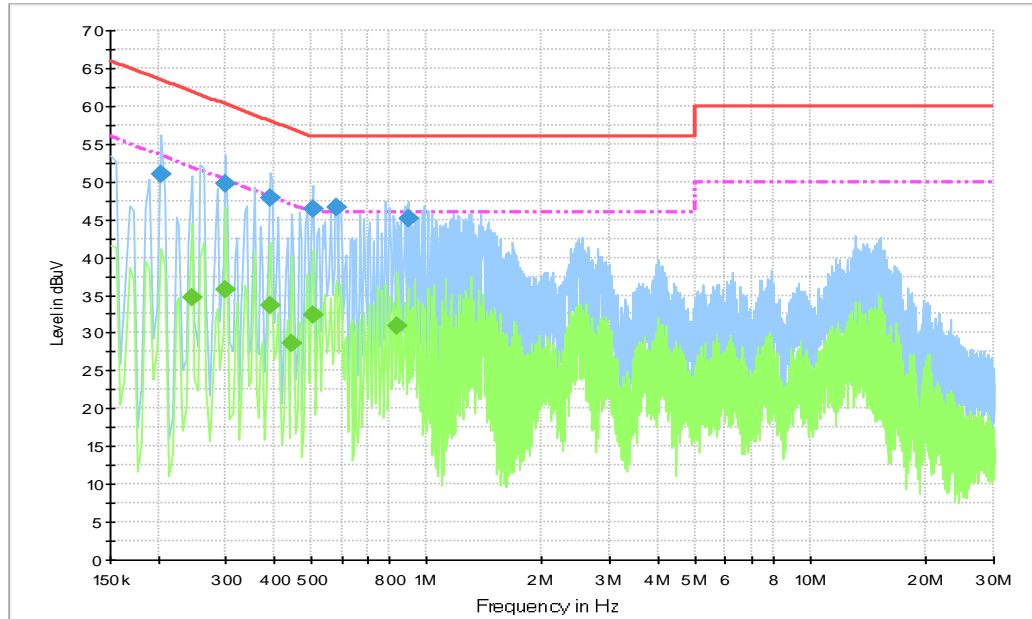
#### Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.501000	46.1	3000.0	9.000	On	L1	19.8	9.9	56.0
0.595500	41.7	3000.0	9.000	On	L1	19.7	14.3	56.0
0.775500	41.6	3000.0	9.000	On	L1	19.7	14.4	56.0
1.149000	34.6	3000.0	9.000	On	N	19.7	21.4	56.0
2.013000	35.4	3000.0	9.000	On	N	19.6	20.6	56.0
2.998500	32.1	3000.0	9.000	On	N	19.6	23.9	56.0

#### Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.501000	39.9	3000.0	9.000	On	L1	19.8	6.1	46.0
0.591000	26.7	3000.0	9.000	On	N	19.7	19.3	46.0
0.739500	31.5	3000.0	9.000	On	L1	19.7	14.5	46.0
0.780000	33.0	3000.0	9.000	On	L1	19.7	13.0	46.0
1.149000	31.7	3000.0	9.000	On	L1	19.7	14.3	46.0
2.013000	32.2	3000.0	9.000	On	L1	19.6	13.8	46.0

Set.5



**Figure A.14 Conducted Emission**

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

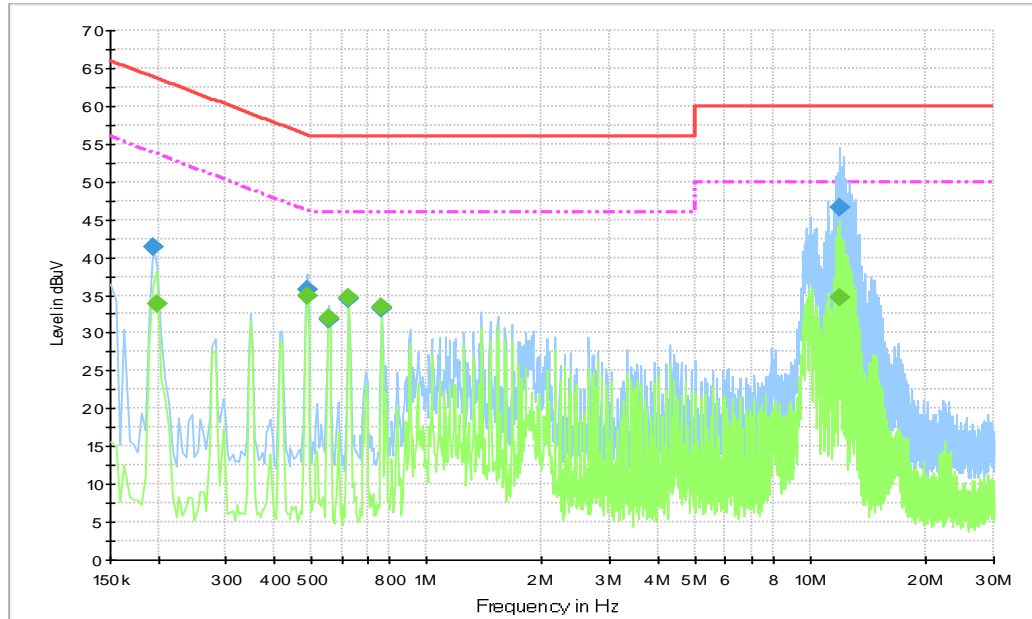
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.204000	51.0	3000.0	9.000	On	L1	19.7	12.5	63.4
0.298500	49.7	3000.0	9.000	On	L1	19.7	10.6	60.3
0.393000	48.0	3000.0	9.000	On	L1	19.8	10.0	58.0
0.505500	46.4	3000.0	9.000	On	L1	19.8	9.6	56.0
0.582000	46.5	3000.0	9.000	On	L1	19.8	9.5	56.0
0.897000	45.1	3000.0	9.000	On	L1	19.7	10.9	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.244500	34.6	3000.0	9.000	On	L1	19.8	17.3	51.9
0.298500	35.8	3000.0	9.000	On	L1	19.7	14.5	50.3
0.393000	33.7	3000.0	9.000	On	L1	19.8	14.3	48.0
0.447000	28.7	3000.0	9.000	On	L1	19.8	18.2	46.9
0.505500	32.3	3000.0	9.000	On	L1	19.8	13.7	46.0
0.838500	30.8	3000.0	9.000	On	L1	19.7	15.2	46.0

### USB (SD) mode, Set.10



**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)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.195000	41.3	3000.0	9.000	On	N	19.7	22.5	63.8
0.487500	35.7	3000.0	9.000	On	L1	19.8	20.5	56.2
0.555000	31.8	3000.0	9.000	On	N	19.8	24.2	56.0
0.627000	34.5	3000.0	9.000	On	N	19.7	21.5	56.0
0.766500	33.3	3000.0	9.000	On	L1	19.7	22.7	56.0
11.949000	46.6	3000.0	9.000	On	N	19.8	13.4	60.0

#### Final Result 2

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.199500	33.8	3000.0	9.000	On	L1	19.7	19.8	53.6
0.487500	34.8	3000.0	9.000	On	N	19.8	11.4	46.2
0.555000	31.9	3000.0	9.000	On	N	19.8	14.1	46.0
0.627000	34.8	3000.0	9.000	On	N	19.7	11.2	46.0
0.766500	33.4	3000.0	9.000	On	N	19.7	12.6	46.0
11.872500	34.6	3000.0	9.000	On	L1	19.8	15.4	50.0



**ANNEX B: Persons involved in this testing**

Test Item	Tester
Radiated Emission	Zhao Wenhui
Conducted Emission	Guo Qian

**\*\*\*END OF REPORT\*\*\***